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The Social Dimensions of Structural Adjustment in Sub-Saharan Africa

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VOLUME ONE

A Conceptual Framework

January 9 1989

FOREWORD

This document has been prepared by Tony Addison and Lionel Demery (consultants to the World Bank), under the overall guidance of Chris Grootaert and Michel Noël (AF1-SDA Unit). The major part of Volume 2 of the paper was written by Vijay Verma (consultant to the World Bank). Volume 3 contains, as an annex, a paper on 'Structural Adjustment, Smallholders and the Rural Poor: Background Paper on Conceptual Approach and Methods' prepared as part of an in-kind contribution by the International Fund for Agricultural Development (IFAD) to the SDA project. An initial draft of this document was discussed within the World Bank. This draft is being circulated for comments to Governments, UN organizations and donor agencies participating in the SDA project. It will be discussed at a series of seminars and workshops in Dakar, Arusha and Paris and will be further revised in the light of comments received on these occasions.

PREAMBLE

This paper sets out a conceptual framework for the Social Dimensions of Adjustment (SDA) project, which is a policy initiative of the World Bank, UNDP and African Development Bank. The project has recently been initiated in sub-Saharan Africa in an attempt to improve the capacity of member countries to monitor the effects of structural adjustment and other policy-lending programs on the human dimension, particularly on the welfare of the poor. The specific objectives of the SDA project are to strengthen the capacity of participating governments to:

(i) design and implement structural adjustment programs including specific policies and programs aimed at achieving growth with equity over the long term and at mitigating the transitional costs of adjustment for vulnerable groups;

(ii) carry out policy studies on the social dimensions of adjustment, with the objectives of assessing the evolution of socio-economic conditions for different population groups in the course of structural adjustment, and of identifying appropriate policy and program interventions;

(iii) develop and maintain adequate statistical data bases on the social dimensions of structural adjustment.

To organize the material of this paper, the discussion is divided into three major volumes. The first deals with the conceptual framework of the project, which establishes the broad theoretical underpinnings of the research and the major concepts that are to be used. This volume essentially sets the boundaries for the investigative studies and provides the necessary economic philosophy for empirical work to be both consistent across countries and helpful for policy design.

In the second volume, the report applies this analytical framework in a real-world setting by outlining an empirical framework. The objective of this volume is to give guidance to participating country teams in assembling the necessary data to achieve the objectives of the SDA project. The third volume will then take up the issue of the policy framework. This deals with the major policy issues that are likely to be addressed under the SDA project, including both alleviating the transitional costs of adjustment on the poor as well as enhancing their gains from growth.

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I. INTRODUCTION

1.1 There are at least two important reasons for focussing on the social dimensions of adjustment in Africa at the present time. First, it is now nearly a quarter of a century since the first oil shock of the 1970s, and since then, the developing countries of the region have experienced economic turbulence, shocks and disequilibria. After the commodity-price boom of the mid 1970s, most countries have faced a persistent decline in their terms of trade, caused in part by a general OECD recession. Interest-rate hikes have compounded their debt problems, whilst internal shocks (notably the sustained drought of the early 1980s) have considerably weakened their capacity to deal with macro-imbalances. In all of this, the poorer groups in African societies have suffered, and with little margin above subsistence, many of them have found themselves with little room for maneuver.

1.2 Secondly, with a return to a longer-term policy perspective, a greater emphasis is now being given to restoring sustainable growth in these countries. With this perspective, it is now both feasible and essential to give more careful thought to the social dimensions of adjustment: to consider how poorer groups in society can be encouraged to participate in the recovery; to examine how the health and education of the societies is likely to be affected; to investigate the effects on food security and nutrition; in short, to trace how structural adjustment policies will ultimately affect the wellbeing of the populations involved. The social dimension, however, is not only important for equity: unless human capital is protected, sustainable economic growth in many African countries will itself be threatened.

A. The Meaning of Adjustment

1.3 We begin by clarifying what is meant by adjustment and adjustment policy in developing countries, a subject on which the literature is not always in agreement. This would appear to be essential for the inter-country SDA project. The terms 'adjustment', 'structural adjustment' and 'stabilization' are by now commonplace. Yet the use of these terms is often imprecise and inconsistent. Adjustment is best considered as the implementation of comprehensive adjustments in macro- and micro- policies to both rectify inappropriate past policies that have hampered economic performance and to respond to shocks. The latter include both environmental shocks, such as adverse weather, and external shocks, for example terms of trade declines. These shocks have adversely affected a range of economic policy objectives, including the balance of payments, price stability, full employment, economic growth, the protection of the environment, equity and poverty alleviation. Shocks, whether internal or external, affect all policy objectives, and not simply the balance of payments and price stability, which is the traditional focus of concern. We are here concerned with how the adjustment programs have affected the objective of poverty alleviation and the wider social objectives of governments.

1.4 A useful summary of the 'language of adjustment' is to be found in World Bank (1988c: 23), which distinguishes between:

- stabilization: policies (generally relying on demand management) to achieve sustainable fiscal and balance of payments current account deficits, and to reduce the rate of price inflation;

- structural adjustment: reforms of policies and institutions covering micro-economic (such as taxes and tariffs), macro-economic (fiscal policy) and institutional interventions; these changes are designed to improve resource allocation, increase economic efficiency, expand growth potential and increase resilience to shocks;

- adjustment: policies to achieve internal and external balance, and changes in the structure of incentives and institutions, or both; where the emphasis is on the former, it can be identified as stabilization, and where on the latter, as structural adjustment;

- structural adjustment lending: World Bank lending that supports structural adjustment; this generally provides import financing and is relatively quick disbursing;

- sector adjustment lending: World Bank lending in a sector, focussing on institutional and micro-economic distortions; this is also usually quick dispersing.

1.5 The distinction between stabilization on the one hand and structural adjustment on the other should be regarded as two types of adjustment response by African governments. In restoring internal and external equilibria, stabilization is intended to re-align domestic absorption with domestic supply, whereas structural adjustment is designed to change the equilibrium configuration itself (Buiter, 1986).

B. The Policy Problem

1.6 The relation between structural adjustment and poverty can be analyzed from two broad perspectives. First, it can refer to the 'social' or 'transitional' costs that are incurred as the economy is moved from one time path to another. On the other hand a longer-term perspective can be taken, in which the steady-state effects of structural adjustment are assessed. The former deals with the costs incurred by the various socio-economic groups whilst the regime of controls is dismantled. The latter assesses the poverty effects as the economy assumes its new growth path. The underlying philosophy of the SDA project is that, once this longer-term perspective is taken, the objectives of poverty alleviation and structural adjustment need not be in conflict. The challenge for the policy makers is to identify that set of adjustment policies which will induce the participation of the poor in the process of recovery and growth. The objectives of the SDA project are as much concerned with the long-run effects as with the transitional costs. The study component of the project will

trace changes in the primary incomes of the poor (that is, incomes generated by both employment and self-employment) as well as with secondary incomes (involving transfers of these payments). The latter include not only transfers effected by the state, but also inter-household transfers (for example, urban-rural remittances).

1.7 Adjustment programmes are conceived primarily in terms of their economy-wide effects - to achieve macro-economic targets. Many of the policy instruments have an essentially macro-economic profile - exchange rate policy, fiscal and monetary policy, producer prices and so on. The principal problem is to establish the effects of these policies on households, which interact in varying degrees with the economy at large. As a basis for policy appraisal, the SDA project must establish analytically the links between the macro-economy on the one hand and the micro-economy of households and enterprises on the other. This link between the macro and the micro, termed the 'meso',1/ comprises the following key elements:

- Markets, and other resource-allocative mechanisms, are the main links between the macro-economy and individual households. These include product and factor markets, both official and parallel markets. Adjustment will alter the market conditions faced by households and enterprises through changing relative prices or the quantities traded in the markets.

- Economic infrastructure is a crucial part of the meso-economy in sub-Saharan Africa. Its provisions are directly determined by macro-economic policy, including public expenditures on physical infrastructure and support services. These can have a noticeable effect on the primary incomes generated in the micro-economy. In many cases the effects of market changes on the incomes of individual households will be conditioned by economic infrastructure. We include here the provision of support services (such as agricultural extension services) which influence the generation of primary incomes by households.

- Social infrastructure, consisting of health, education, nutrition support, and other transfers, affects the returns households obtain through market opportunities. These services also have direct effects on household welfare, especially in the case of health services.

1.8 The objective, therefore, is to establish how the macro-economic processes initiated under adjustment programs affect households, which requires an empirical understanding of the meso-economic linkages. Conceptually, the SDA faces two major research challenges. First it must establish the main links between events in the macro-economy (notably

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1/ The term 'meso' is derived from the Greek, 'mesos' or middle. It therefore describes those elements which come between the macro and the micro.

internal and external shocks and the consequent adjustment programs) and the meso-economy, the latter determining the intervening variables which communicate these changes to the households. Secondly, the SDA project must establish in what ways these intervening meso-economic variables affect individuals and households in both the short run (during which households do not respond to the meso-economic changes) and the longer run (after allowing for various household responses).

1.9 Our approach here is to concentrate initially on the micro-economy - the households where our principal interest lies, and to concentrate to some extent on the meso-micro linkages.2/ This 'micro-up' approach to the SDA project contrasts with much of the recent literature of adjustment and poverty, which has tended to begin with the policies, and trace their effects on a policy-by-policy basis (Knight, 1976, Demery and Addison, 1987). This approach rarely provides any clear indication of how the various socio-economic groups are affected by adjustment policies. More often than not, analysts taking this 'top-down' approach are obliged to use the factoral distribution of income. How changes in the factoral income distribution is mapped on to households, and how the various socio-economic groups are affected, requires more detailed information at the household level. This must be the SDA starting point.

C. An Outline of Volume 1

1.10 Given this emphasis on the determination of individual and household welfare, the conceptual framework begins by taking up the processes through which welfare is generated in the micro-economy. Our objective here (in section II) is to review the basic economic processes determining household welfare in Africa, and to derive a conceptual framework for analyzing household decision making. Discussion then turns to the macro-economic issues, beginning with an analysis of the impact of macro-economic disequilibria on household incomes in section III. Section IV outlines the main analytical features of the macro-economy under adjustment, and generates predictions of how meso-economic variables are likely to change in the course of adjustment, and how these are likely to affect household incomes.

2/ To some extent, the macro-meso links will be addressed in the main economic and sector work by the various country desks at the Bank. However, SDA country projects will certainly need to be clear about how macro-economic changes are likely to have affected the various elements of the meso-economy. Otherwise, it will be impossible to trace household changes back to structural adjustment policy interventions.

II. THE DETERMINANTS OF WELFARE

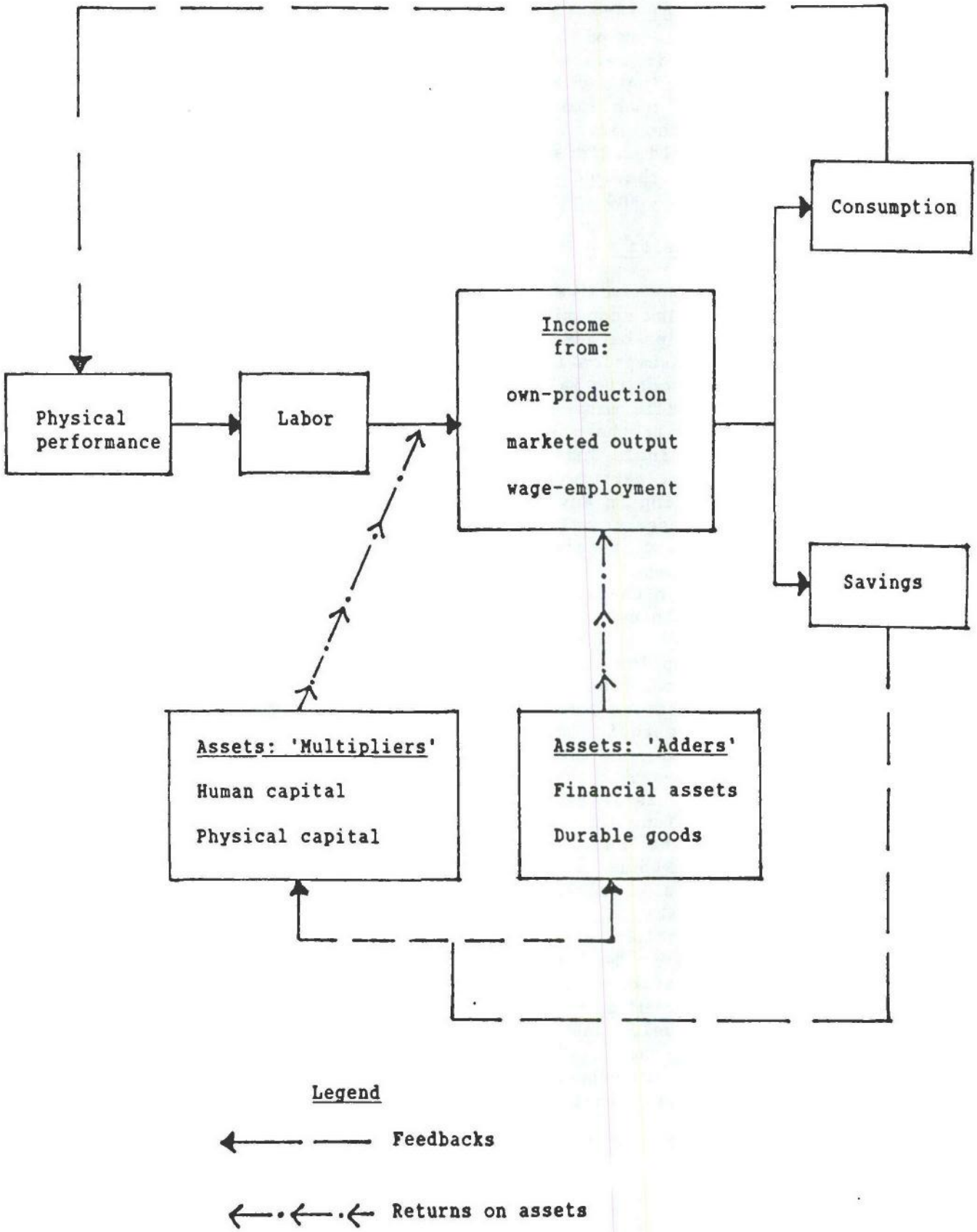
2.1 As we have already indicated, our approach is to take as our starting point the behavior of individual households, to understand what it is that determines their wellbeing, and how this is affected by economic policy. Before developing a choice-theoretic model of household behavior, we shall begin with a much broader perspective. Our purpose here is to establish what are the most fundamental relationships in determining individual and household welfare. We proceed in stages, beginning with a careful examination of the individual, and moving on to consider household and then intra-household and inter-household interactions and activities.

A. Individual welfare

2.2 The 'wellbeing' or 'welfare' of individuals in African societies is the outcome of complex economic and social processes. In this section we examine the relationships between physical performance, labor input, income-generation, and the consumption-investment decision. Our discussion is based on Figure 1 which sets out the main links between these variables in the form of a flow-diagram. While many linkages can be shown in such diagrams, we have chosen to show only the most important in order to simplify matters. Figure 1 describes a single individual who is able-bodied and working. We start with his physical performance which determines the amount of work he is capable of undertaking in any given period. Ignoring for the moment the role of assets, we can see from Figure 1 that he obtains an income, which may be in the form of wages or receipts from the sale of goods and services. An income can also be 'imputed' for the value of the goods that he produces for his own-consumption. In the next stage goods and services are purchased for consumption, and some income is saved in order to undertake investments.

2.3 These consumption and investment decisions in turn feed back into his physical performance. The first feed-back (indicated by the broken line in Figure 1) is that between consumption and physical performance. He needs goods and services for their 'material characteristics' - for example the calories, proteins etc of food, the warmth afforded by clothing etc (Lancaster, 1966). These, in combination with the personal characteristics of the individual (eg his metabolism), determine his physical performance. That performance or 'functioning' (Sen 1987), has many dimensions. Most obviously the level of nutrition is critical in determining physical performance, although there is much debate over the exact relationship between - for instance - calorie intake and human energy (see Pacey and Payne, 1985: chapter 3). The ability to purchase health services is also crucial. These interactions between consumption, nutrition, health and work performance are likely to be critical for the SDA project, since there may be significant productivity gains from improving the wellbeing of the poor. Thus 'poverty alleviation' may serve to further the aims of the structural adjustment program itself, and expenditures which raise the nutritional levels of sections of the population should be considered as investments which will yield favorable productivity outcomes in the future. For much of rural Africa, it is likely that the distinction between 'consumption' and

Figure 1: The Determination of an Individual's Welfare



'investment' interventions will be blurred. One of the objectives of the SDA project will be to establish the relationships between incomes, consumption and work effort. These relationships are certain to be complex. For example, not all consumption expenditures will improve nutrition, so that increasesin income and consumption will not necessarily improve nutrition. This will obviously depend on how consumption is allocated among alternative food and non-food goods. This will not only depend on relative prices and preferences as analyzed through orthodox household models, but also on social interactions within, and between, households (see below).

2.4 The second feed-back - between savings and the process of income generation -is shown in the bottom half of Figure 1. Savings are used to acquire assets. Personal savings are among the principal determinants of asset-acquisition in most low-income countries. Formal credit markets are thin, and access is generally confined to higher income - often urban - groups. Poorer people must resort to informal credit markets, including borrowing from their kin. Consequently asset-acquisition through borrowing is not shown in Figure 1, in order to focus on the savings-investment decision.

2.5 Assets can be classified into four kinds: human capital, physical capital (which can include physical infrastructure services), durable goods (eg. a house), and financial assets. These yield incomes but they do so in different ways. Human and physical capital increase the productivity of the worker. In this way they multiply the return that would be generated by labor alone. Returns are usually ascribed to human and real producer assets (their marginal products) separately to that of labor. But more fundamentally these returns cannot in most cases arise independently of labor, while labor can still generate a return independent of access to many assets. We therefore follow Lipton (1985:1) in describing human and real producer assets as multipliers of labor productivity. Financial assets such as savings accounts, as well as stocks and bonds also yield incomes in the form of interest and capital gains. Some durable goods, such as housing, yield rent-incomes. Owner-occupied housing is a major source of unearned income in developing countries, and rents must be imputed (see Grootaert, 1982: 19). Lipton (1985: 1) terms such additions to the income generated by work as 'adders'.

2.6 Figure 1 shows the returns of these different types of asset. Of course the distinction between income-adding and income-multiplying assets is not water-tight. Durable goods can also be said to play some role in multiplying labor productivity - for example work efficiency will eventually fall if someone is homeless. Owners of physical assets may choose to rent them to others rather than use them directly. In such cases the owner adds the rent to his income stream while the borrower uses the asset as a productive input. It is therefore the relative importance that a particular asset plays in either directly adding to income or multiplying labor productivity that is the determinant of our two-fold classification. As we noted above, economic and social infrastructure are important elements of the meso economy, in transmitting the effects of macro-economic policies to individuals. The design of the SDA project therefore must facilitate an

examination of how changes in access to physical (or economic) and social infrastructure affect individual incomes through these multiplicative processes.

2.7 Although our exposition of Figure 1 has proceeded in linear fashion from the individual's performance to consumption and savings, we can see that with the addition of the feed-backs, a person's physical performance exists within a system, and both determines, and is determined by, the system3/. Obviously we have presented a stylised picture of the individual's circumstances in order to capture some of the most basic elements of his or her economic life. But of course the individual's welfare is not just determined by his own actions and resources. Most people take part in social units (or networks) in which decisions about production and consumption are made, and which act as conduits for the transfer of resources between individuals. Such participation can enhance (or diminish) the welfare outcomes for the individual. It is to these interactions that we now turn.

B. The Economy of the Household

2.8 People are usually located in several overlapping social networks at the same time. The nuclear and extended families are obviously two such social units; the household is another. A number of criteria can be used to define the household: those commonly employed include: members have a common source of major income; they share a common source of food; and they sleep under the same roof or within the same compound (Casley and Lury, 1987: 163). But the criteria used to identify households must be relevant to the local situation, since their size and characteristics show wide variations by principal occupation, locality and country. The household may consist of a single family, but commonly in Africa they comprise several families, kin, and persons with no kin relationship. It is possible for families to be spread between several households, either temporarily or permanently. For example a married woman while young may continue to live in her father's household, while her husband lives under a separate roof.

2.9 The household is an important social unit because: (1) within it many of the decisions concerning individual members' activities and their consumption (and thus their welfare) are made, and (2) its physical properties - the fact that it is a collection of individuals with an identifiable location - makes it a useful sample unit in survey work. However, it must be emphasised that households are embedded in wider social networks, their lineage group for example, whose actions partly determine their member's welfare (see section F below). Given the importance of the

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3/ Figure 1 shows the flows which apply to an individual over a specified period of time. These will change with the passage of time, in part through the 'internal dynamics' of the system, and the process of accumulation which occurs, and as other important changes take place within the system (for example, demographic factors such as age). But they will also change in response to external adjustments, such as changing weather conditions, access to physical infrastructure, and so on.

household as a decision-taking unit we need a conceptual framework in which to analyze its decisions over the allocation of resources. In formulating a conceptual framework for the SDA project, two key issues are raised in the analysis of the household. The first is the role of the household as both the producing and consuming institutional unit. Whereas in much of orthodox economic theory, the firm is assumed to be the producing unit and the household the consuming unit, quite different institutional arrangements must be assumed for developing countries. This is especially the case in Africa given the predominance of agricultural activities in total employment, and the limited share of formal employment in most countries.4/

2.10 The second issue that has to be addressed concerns how household decisions are made - are they reached collectively or does one individual or group dominate the process? A related issue is whether we can correctly speak of a 'household welfare function', since there may be conflicts of interest within the household. In theoretical work, individuals are aggregated into households on the assumption that they possess identical preferences based on identical tastes (Deaton and Muellbauer, 1980). Household decisions are then analyzed in the same way as those of a single individual. Why people should group themselves in a household is usually analyzed as a secondary problem, but it is generally assumed that they make up a family. Sen (1983a:) calls this arrangement the 'glued-together family'5/. Alternatively a 'despotic family' is one in which the head of the family takes all the decisions, so that family behavior is simply a reflection of the head's choice-function.

2.11 However, major problems exist in using either the concept of the 'glued-together' or the 'despotic' family.6/ Crucially, preferences can differ widely between family members, arising particularly from age and sex differences. Given their different preferences family members will seek to allocate family-resources in different ways. The eventual allocation of resources will differ, perhaps substantially, from that under 'glued-together' or 'despotic' families. These difficulties apply with equal force to the unit of the household since large numbers of people, can be involved

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4/ Note that many households who have been previously reliant on formal-sector employment have now been forced by recession to supplement their incomes through self-employed activities. We should also note that all households, irrespective of whether they are employed or self-employed, undertake the production of goods and services for household use (see below).

5/ The labels applied to the different concepts of the family are presented by Sen (1983a), reprinted in Sen, 1984).

6/ For a more extensive discussion of these problems see Schultz (1974).

in decisions over its collective resources.7/ In such circumstances assuming a single-household utility function is even less valid than making such an assumption for a single family-unit.

2.12 To get round these difficulties, two approaches may be taken. In Becker's (1981) model of the 'super-trader family', members are assumed to maximise their individual utilities without regard to social norms. They trade with each other at implicit prices, and this determines the allocation of resources, and such important decisions as marriage. This model could be transferred to the larger unit of the household. However, while these trades do occur within families, and more commonly in larger household units, we concur with Sen that to focus on such trades alone - and to assume that all the stringent conditions for market equilibrium are met despite the absence of actual prices - is an unsatisfactory starting point for analyzing intra-family and intra-household behavior.

2.13 A second approach is to assume that family, and household, relations contain both cooperative and conflicting elements, which can yield many different arrangements depending on the bargaining strengths of the individuals involved (Sen, 1983: 375). This approach does not deny that social norms play a large role in determining the 'space' within which such bargaining takes place. For example women have a lower social status than men in many countries and this limits their bargaining power. Thus (following Sen) the conceptual framework within which we view the household is one that emphasises bargaining which yields cooperative outcomes. Taking a bargaining perspective of the household, allows us to focus directly on the inequalities that can be present within that unit, and to explain some important phenomena. For example, in certain situations we may observe an increase in household income (perhaps under adjustment) which does not yield an improvement in the nutrition of all household-members. This is difficult to explain using models in which all preferences are assumed to be identical. Starting from a bargaining perspective generates several hypotheses - for example that the extra income accrued to one group of persons who failed to distribute it within the household (because the bargaining power of the excluded is weak), or that the new-income source has altered the balance of household-power. A bargaining perspective allows us to see how advantages can accumulate through an improvement in one aspect of an individual's bargaining position strengthening other aspects of that position. For example in the case of the respective positions of men and women in household activities:

2.14 A better deal for the male in one period may, inter alia, include a better role in the division of labour with better training and more profitable job experience, and these may lead to a better placing in the next period's bargaining problem. Certain 'traditional' arrangements may emerge, eg. women doing housework and being able to take up outside work only if it is additional. These inequalities may solidify over time.' (Sen, 1983: 375)

7/ See Guyer (1986) for an anthropologist's perspective, and Jones (1986) and Dey (1981) for evidence from North Cameroon, and The Gambia respectively.

2.15 In addition, taking a disaggregated view of the household allows us to focus on intra-household transfers as important sources of individual welfare. Some individuals are effectively subsidised by 'taxing' other household members. At the extreme ends of the life-cycle - infancy and old-age - those transfers may represent a person's only access to resources. Furthermore, in any one period some household members will be less productive through ill-health or pregnancy. But not all transfers are made in order to safeguard the recipient's minimum needs, and some individuals may command larger household 'subsidies' through their bargaining power.

2.16 In Figure 2 we depict as a flow chart some of the components of the household economy. This is an elaboration of the single-person economy of Figure 1. The physical performance of those able to work determines their labor effort which, together with the returns on the household's assets, generates income (either in the form of wages or market sales or we impute a value for own-production). That income is effectively taxed to provide transfers within the household, the remainder being distributed to the consumption of the workers and to savings. Such 'household-taxation' may take different forms. For example in households which are entirely self provisioning the harvest may be divided out, with some of the working members getting less food than others depending on their 'tax rate'. Alternatively wages and the income from sales of produce may be pooled and then redistributed, or used to buy consumption goods which are then shared out but not in proportion to the cash contributions of the household-members.8/ Not all income may be pooled - an individual may retain some or all of the income he earns, but nevertheless receive transfers from within the household.

2.17 Given the role of intra-household transfers, any effects that adjustment has on them will be of concern to policy-makers. Note that the importance of such transfers is revealed when households fragment, putting the nutrition and health of the non-working members in danger, if compensating transfers from other sources - the wider community and the state - are not mobilized. A final, and crucial, dimension must be added to our household framework. Time and other household resources must be allocated to the bearing and rearing of children, to the provision of health-services, to the education of household-members (for example in cultivation), and to the daily tasks of household maintenance such as cooking, cleaning, washing clothes, water-carrying, firewood collection as well as house-building and

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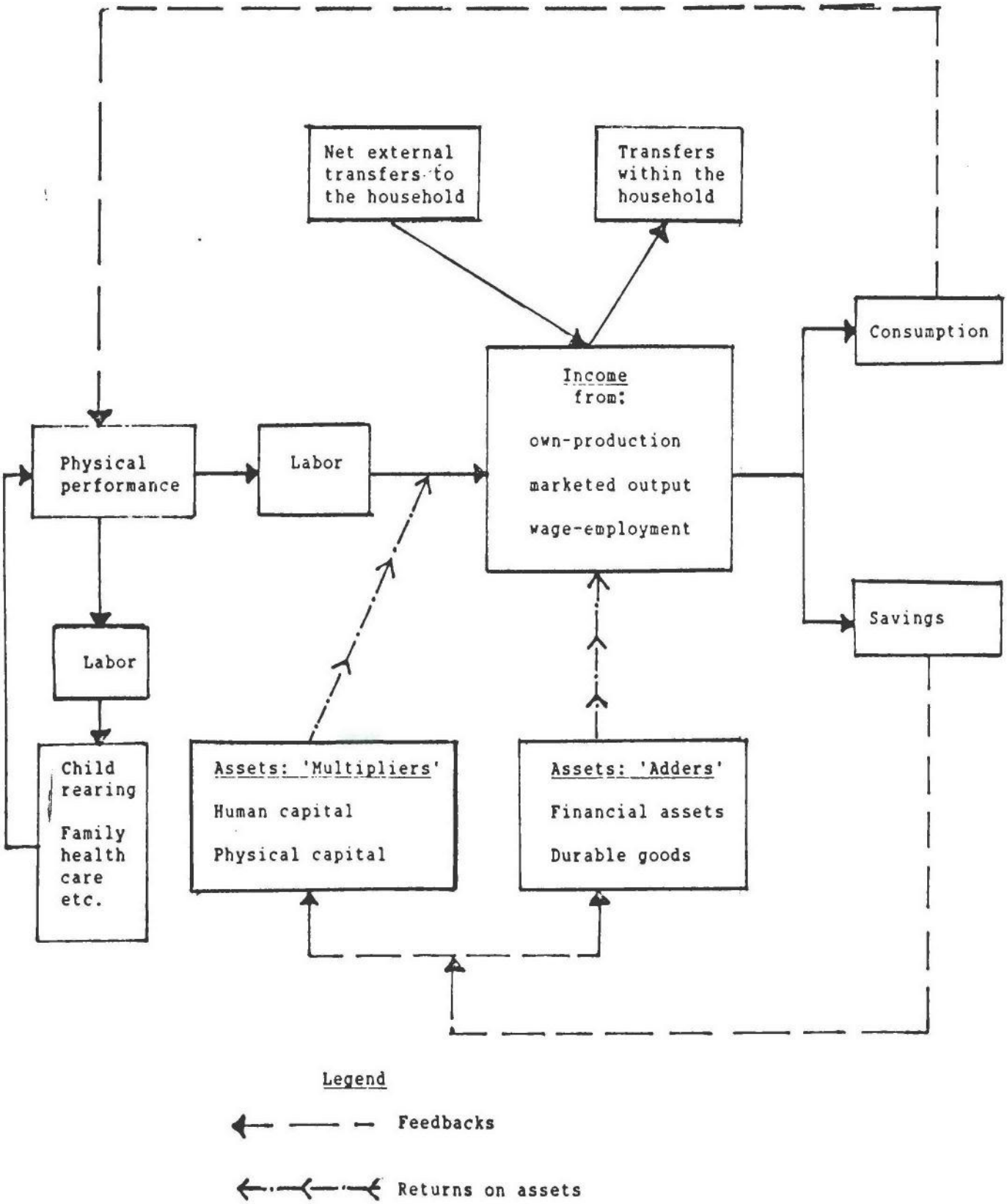
8/ A link between intra-household transfers and physical performance could be shown in Figure 2.

Figure 2: The Household Economy



repair.9/ As with the production of other goods and services, the sustained production of these items requires that the household's physical performance be adequately maintained. Therefore in Figure 2 physical performance determines child-rearing and the provision of household services, and these feed back into physical performance so that we effectively have a 'closed-loop' in that part ofthe flow diagram.10/ The burden of these home-tasks usually falls disproportionately on females, with often deleterious consequences for their welfare. We return to the 'gender-division of labor' in section C below.

C. Analyzing Household Behavior

1. Household Models

2.18 Faced with a multiplicity of household decisions we need a suitable framework within which to analyse them, if policy effects are to be correctly identified. To an outsider much of the decision-making process within households can only be seen imperfectly through direct observation, since the presence of the observer can itself cause changes in household behavior. Moreover, only small numbers of households can be directly observed, a drawback for national policy purposes when adjustment's effects are numerous, and few (if any) groups are unaffected. Finally, policy questions often centre on quantitative issues: for example, not whether consumer expenditures change in response to price adjustments, but by how much. If therefore we are to get inside the 'black box' of household decision-making, we need techniques which relate the outcomes of these decisions (changes in economic activity, expenditures and time allocations) to changes in the 'parameters' (of prices, markets and services) which households face. Within such a framework different models of household decision-making can be analysed consistently, and cause and effect can be assessed in a quantitative manner. To do this obviously requires an accurate data set if the analysis is to be relied upon for policy-making. Achieving such a data set is the subject of Volume 2.

2.19 The question therefore arises of what 'choice-theoretic' framework is appropriate in the African context. Our previous discussion has highlighted the dual role of the African household as both a unit of

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9/ The items produced by household labor-time are termed 'Z' goods in the literature, thus distinguishing them from purchased commodities, usually called 'X' goods (Deaton and Muellbauer, 1980: 245). Thus for example a household health-care input (a Z) is 'produced' using household labor-time, and purchased commodities - such as medicines (X goods). The distinction between Z and X goods is important because it highlights the crucial role of home-work in transforming X goods into consumables.

10/ Note that many more links between the key variables could be added in Figure 2, including for example the link between household health care and education and human capital. In poor societies these may be more important sources of human capital than the health and education services provided by the outside world (whether through the market or by the state).

consumption and a unit of production. Not all households fulfill this dual role in Africa, but a majority of them do, and this creates special problems for predicting the consequences of policies. In developed economies production decisions are largely confined to the unit of the firm, while most consumption decisions are taken separately in households. However, within the majority of African households there is an interdependence between consumption and production decisions, so that decisions on output also directly affect consumption and labor supply, and vice versa. Crucially, changes in the parameters determining one aspect of household behavior also affect others. For example, a change in the market wage will not only affect a household's labor supply, but may also affect its labor demand (because the household is a producing unit). Moreover, the level of home-production will be affected (because the returns on such an activity relative to market work will change), together with the level and pattern of household consumption. A similar chain of interrelated effects could be specified for other policy shifts such as alterations in consumer and producer prices. All these effects must be identified if a comprehensive assessment is to be made of the welfare impact of policy changes.

2.20 These different facets of the typical household are well recognized by the new class of models of agricultural households.11/ But the arguments apply with equal force to other household types, for example those in the urban informal urban sector. Much of the work in this area has been undertaken in the Asian context, a region which differs in important aspects, such as relative factor scarcities and tenurial arrangements, from Africa. But the studies of Africa so far undertaken have already yielded important insights: for example Low's (1986) analysis of food security in Southern Africa, Smith and Strauss' (1986) work on nutrition in Sierra Leone, and Braverman and Hammer's (1986) analysis of pricing policies in Senegal, to name a few. With these concerns in mind we proceed to outline a simple household model. The analysis is then extended to consider the distribution of welfare within the household.

2. A Basic Household Model

2.21 The model presented here is a simple version of the Barnum and Squire (1979) and Singh et al (1986) class of models.12/ The basic model assumes that household utility is maximized subject to a production function, a time constraint and an income constraint. The time of household members can be allocated to the household production of goods (for sale or own-consumption), home work (concerned with household maintenance and reproduction), to (labor) market work, and to leisure. These models therefore take a 'full income' approach to household welfare analysis.

11/ See, for example, Yotopoulos and Lau (1974), Barnum and Squire (1979), and Singh et al (1986).

12/ See also Ellis (1988: 128) for a useful summary of these models.

2.22 Consider the simplest case in which the household has a single utility function (equivalent to the 'despotic' or 'glued-together' household, discussed earlier). Further assume that the household can either produce or purchase a commodity - labelled Y on the vertical axis of Figure 3. The horizontal axis measures household time. The equilibrium of the household in production is given at point a, where w/p (which is the real wage) is tangent to the household production function (HPF).13/ The household produces Y_1 units of output using L_1 units of its time. The household's equilibrium in consumption is given at point b, where w/p is tangent to the household indifference curve I-I. We see that the household is willing to devote a L_2-L_1 units of its time to market work in order to obtain Y_2-Y_1 units of good Y through market purchases. The household has a maximum of L_{max} units of time at its disposal, and so the remaining time L_{max}-L_2 is free for other activities. This segment could be labelled 'leisure', but since the household has to produce non-purchased goods and services such as child care, food preparation and so forth, we label this segment 'homework', although it will inevitably contain some pure 'leisure' time as well.14/ In this simple model, the household engages in three sets of decisions concerning:

- the allocation of its member's time between the production of Y, market-work and home-work (which produces Z goods);
- the allocation of its non-labor factors of production between these activities;
- the allocation of its consumption between market purchases of Y and home production of Y.

2.23 One important feature of this model is the decision by households to buy or sell labor services. In the situation described, the household is assumed to sell its labor services in order to finance consumption in excess of its own-production. Alternatively, the household may be consuming at a point such as C (indicating a stronger preference for leisure), in which case it must be buying in labor services. In this case, the production point remains at L_1, but the household is seen to hire in labour services (L_3-L_1) in producing its output, thus generating for itself more available time for leisure and home work (L_3-L_{max}). It is immediately apparent that all these decisions will be revised if wages or prices change in the markets facing the household, an obviously key point for analyzing the welfare impact of adjustment. This is taken up in some detail in section IV.

13/ It is assumed that the household's endowment of the fixed factor/s of production is constant within the production period. Thus the curvature of the HPF reflects diminishing marginal returns to labor.

14/ The allocation of time between home work and leisure can be shown by defining a separate household production function for home-work (see King and Evenson, 1983: 55).

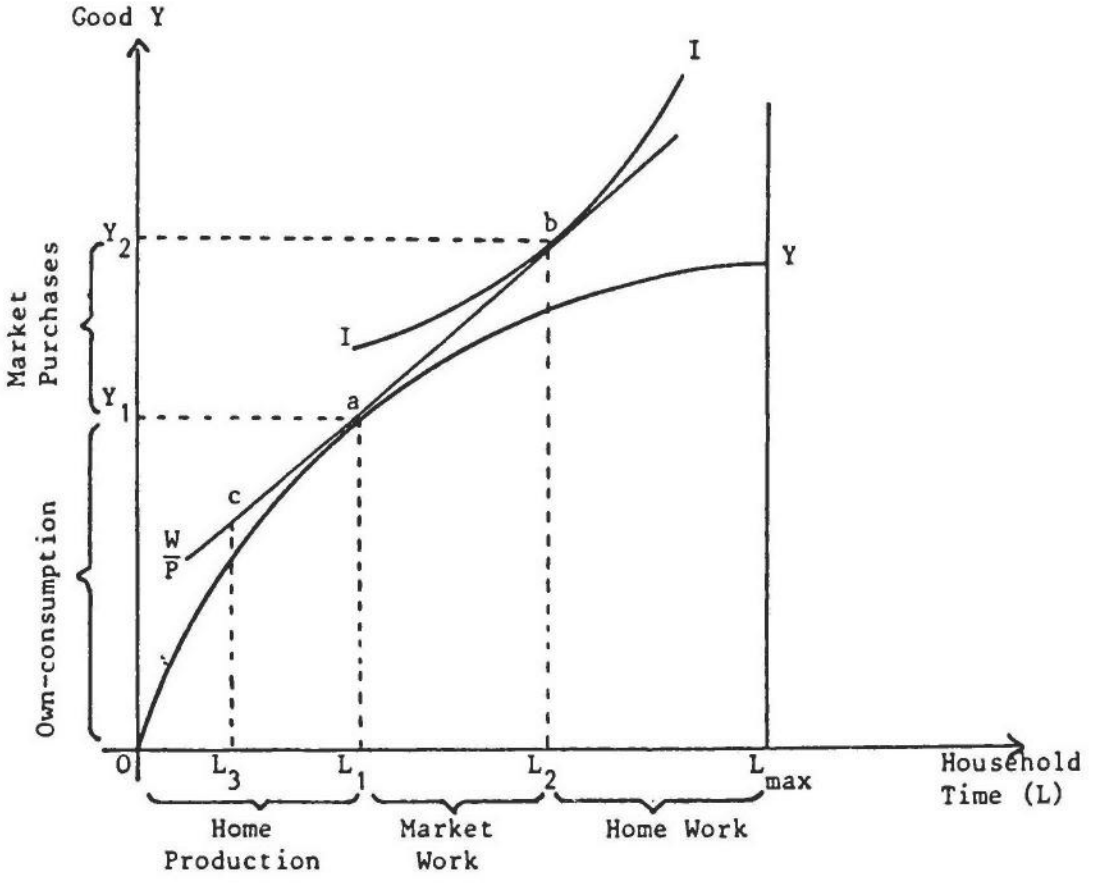
Good Y
I
Y
b
Y_2
Market Purchases
I
Y_1
a
c
$\frac{W}{P}$
Own-consumption
O
L_3
L_1
L_2
L_{max}
Household Time (L)
Home Production
Market Work
Home Work

Figure 3

3. Analytical Models in the African Context

2.24 If analysis is to serve the needs of policy, then it is essential that the use and further development of household models take full account of African circumstances. Obviously this is an issue which can only be resolved at the country level, as analysts refine their techniques in the light of local situations and policy needs, and as data collection allows a more rigorous testing of hypotheses than is presently possible. Indeed, sometimes large variations in the socio-economic characteristics of groups of households will necessitate considerable model variation. Households' time allocations, expenditures and investment strategies adapt themselves to the ecological and cultural context of the regions concerned together with the policy framework within which micro-units must take their decisions.

2.25 One major determinant of model structures appropriate to Africa is the characteristics of the markets in which households engage. In the model presented above it is implicitly assumed that households engage in 'complete markets' for goods and labor services, so that household decisions are made with reference to a set of exogeneous prices.15/ Whether this condition is met or not has important implications for modelling the functioning of the household economy, since the structures of such models are very dependent on the assumptions made concerning the markets that households face. The basic model described in Figure 3 depicts the main features of a class of models that has been developed for analyzing households which face complete goods and factor markets. These models are recursive in character. First the household sets its level of output by the maximization procedure that we described above. To do this it needs information on the price of output, the wage rate and technological relationships (described by its production function) between inputs and outputs. In the structure of these models, the household's production decision is made separately from its consumption and labor supply decisions (Singh et al, 1986: 7). However, consumption and labor supply decisions are dependent on production decisions because the latter determine household profits, which are a component of income, and which therefore affect consumption and labor-supply. The model is recursive in character because the production equations are solved first and the resulting solution is fed into the household's consumption and labor supply equations.

2.26 When a complete labor market exists, the valuation of the household's labor time is given by the market wage. A household which can neither sell nor hire labor will still value its labor-time, but this will be done subjectively, and this valuation will accordingly vary across households. But if they all face the same set of market wages, the valuation of each type of labor is externally given and is therefore the same for all.

15/ Incompleteness arises when private markets fail to deliver a good or service, even though the cost of provision is less than what individuals are willing to pay.

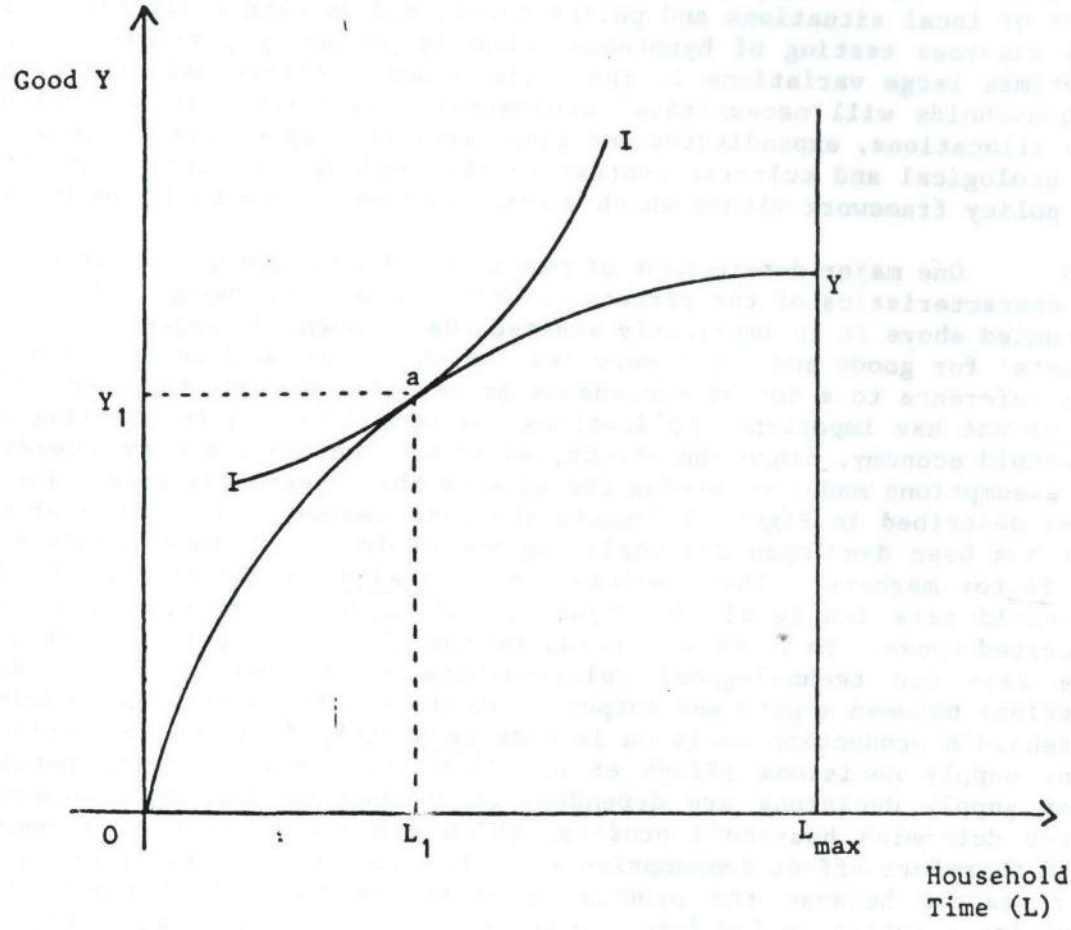

Figure 4

This situation is depicted in Figure 4. Again we have a household production-function (OY), and household income equals its output since there is no opportunity for market work. The household can still sell its product or consume it entirely. The equilibrium point for this household is at point a where the marginal rate of substitution of leisure for income (the 'subjective wage') is equal to the marginal product of labor (Ellis, 1988: 110). Since preferences, and thus the shape and position of indifference curves, differ across households, the marginal product of labor will vary between them.16/

2.27 The existence of a labor market permits a separation within the overall utility maximization, between the labor allocation to home work/leisure versus income, and the labor allocation related to home production, since the household can hire-in or hire-out labor (Ellis, 1988: 122). Similarly the existence of a complete goods market allows the amount of output produced to be determined independently from the amount consumed since the household can always buy or sell the good at the market price. When neither factor markets or goods markets exist the household must make all its producer, consumer and labor-supply decisions simultaneously: it can only consume what it produces and use its own labor (Singh et al, 1986: 6). Consequently in models describing such households, the production solution cannot be made independently of the consumption solution (production is non-separable): the model must be solved simultaneously rather than recursively.17/

2.28 Separability also breaks down when markets are absent for some important goods which may be produced within the household. For example if any of the commodities consumed or used as inputs into household health-production are absent, then to attain the desired level of health production, the household cannot rely on buying in the required amount of health inputs, and must accordingly divert labor resources away from home-production activities to produce the non-marketed commodities (Pitt and Rosenzweig, 1986: 158). The production of marketed commodities thus becomes dependent on consumption (of health goods). This is an important point if household welfare is to be analyzed in all its dimensions.

2.29 In short, it is obvious that great care must be taken in the assumptions made about market completeness, if analysis is to be appropriate to the African context. Aside from incomplete markets for labor services and goods (including health goods), the absence of markets to cover risks (insurance) and imperfect capital markets must be noted as a general feature

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16/ The analysis of such situations often gives prominence to the demographic structures of the household since variations in the ratio of non-workers to workers in the household will give rise to differences in the preference of work against leisure, and thus different equilibrium points for households otherwise faced with identical production functions (Thorner et al, 1966 and Nakajima, 1970).

17/ Hence the differences between Figures 3 and 4.

of Africa. These issues apply with special force to the situations of small farmers, a key policy target group. Much market imperfection is related to low levels of infrastructural development, particularly transport and communications, which aside from their vital role of distributing goods and services, bring buyers and sellers together, and establish the information flows upon which all markets are based. Many of the services which provide the essential, but often overlooked, context for proper market functioning are 'public goods', provided by government rather than private markets themselves (Stiglitz, 1988: 98). The depletion of infrastructure, which is a common feature of many countries, has retarded the market participation of households. Participation has also fallen prior to current adjustment efforts because inappropriate policies have reduced the benefits of market participation and increased its costs. Thus the context in which analysis is to be undertaken is changing, and analytical developments must be sensitive to this.

4. The Implications of Model-selection for Data Collection

2.30 Whether recursive or simultaneous models of households are chosen, has important implications for data collection. The separability of the production side of recursive models implies that the production and consumption equations of the model do not have to be estimated on the same household sample. Data can be drawn from samples on different households, provided that each data set is representative of the area concerned (Singh et al, 1986: 63). Thus many recursive household models use existing farm management surveys supplemented with information from other sources, such as household budget surveys. However, the estimation of simultaneous (non-separable) models does require the collection of both consumption and production data on an identical set of households, because under these models consumption and production decisions are interdependent (Singh et al, 1986: 63).

2.31 As we have seen, model selection depends to a large extent on our assumptions concerning the degree of market-integration of households. In many cases, market participation has fallen prior to current adjustment efforts because of policy induced distortions. Data collection and policy analysis under SDA auspices will often begin in the first phases of adjustment when these distortions are still unwinding.18/ For these reasons simultaneous models will sometimes be required, and accordingly a survey instrument which collects data on a common household sample is necessary.

2.32 Although integrated household surveys are not essential for estimating recursive models, the size of their data requirements still favors the use of such collection methods on the grounds of survey cost. Using

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18/ In so far as adjustment programs increase the access of households to markets, the relative usefulness of recursive,as opposed to simultaneous models, will change over time. This is an important 'meso-economic' consideration in the analysis of household welfare under adjustment, and one that is discussed further in later sections.

recursive models will still necessitate considerable data collection in most countries if all the important dimensions of household welfare are to be analyzed. In addition estimating both recursive and simultaneous models on integrated household data sets allows tests of the models to be performed to establish the validity of their respective assumptions. This is important since in some cases it is likely that the analyst will be unsure of the comprehensiveness of the market-conditions facing households, or the structure of their decision-making, and conclusions on this issue are themselves products of the analysis. The refinement of analytical models will therefore be an 'iterative' process: tests of models will lead to their revision and to further applications and testing.

2.33 In summary the above arguments favor the use of an integrated household survey, so that data are generated in a form suitable for the application of a wide selection of models. There are additional reasons which favor such a data-collection strategy. These are concerned with our ability to analyze the distribution of welfare within the household which is often a priority for policy. Accordingly the next section turns to this subject, and to its related data requirements.

D. The Distribution of Welfare within Households

2.34 The model presented in section C assumes that a single household-utility function exists - in other words the multiple-person household is analyzed in the same manner as a single-person household. Our previous discussion (in section B), however, has emphasised the importance of different preferences among household members, and differences in their circumstances caused by both social and economic factors. This, as we noted, applied with particular force to the gender division of household labor. We therefore need to extend our household model to provide some insight into this.

1. The Gender Division of Labor

2.35 A gender-based division of labor exists in nearly all societies, with males and females specialising in different tasks, and with marked differences between the sexes in the allocation of time between activities. Of special interest in the African context is the gender division of labor which is frequently observed in rural farming communities, and which has been

2.36 In general women tend to be relatively specialized in food crops as against cash crops.19/ This division is particularly prominent in the forest areas of West and Central Africa: men provide 80% of the labor for commercial tree crops, but on average only 9% of the labor for the root food crops (Guyer, 1986: 396). This specialization reflects the fact that while

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19/ However, there are exceptions - women provide 35% of the labor on tobacco in Swaziland and 37-47% of the labor on cotton in Malawi, while men provide 45-60% of the labor on upland rice in Sierra Leone (Guyer, 1986: 296).

women do some work on cash crop fields, their work on food crops, whether in jointly- or separately-worked fields, takes up most of their time.

2.37 In Figure 5, we drop the assumption that the household has a single utility function in order to consider a two-person household, consisting of a man and a woman, each with a specific utility function. In this model each person is responsible for producing a different good.20/ The left-hand vertical axis measures the quantity of good Y which is produced by the man only, while the quantity of good X, which is produced by the woman, is measured on the right-hand vertical axis (the output of both goods is measured in the same units). This model can be taken to describe a farm-household, but it could also apply to urban informal producers. The horizontal axis measures the time input of the man and the woman. We define a separate production function for both individuals (WPF for the woman and MPF for the man).21/

2.38 Given their relative productivities and the real wage that each can obtain in the labor market, the equilibria of both persons in production and consumption are shown. The production equilibrium for the man is given by point A, while his consumption equilibrium is point B. This gives him a time allocation of $O\text{-}LM_1$ for the home production of Y, $LM_2\text{-}LM_1$ for market work and $L_{max}\text{-}LM_2$ for home-work and/or leisure. The woman's production and consumption equilibria are given at A' and B' respectively. Her time allocation is $O\text{-}LF_1$ for the home production of good X, $LW_2\text{-}LW_1$ for market

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20/ This assumption is made to simplify the analysis at this point and allows us to draw our conclusions more clearly. In practice, it is common for the entire household to work certain fields collectively, and the food produced or the income earned is distributed by the male household head, subject to intra-household bargaining. Individual household members also cultivate separate fields. The produce is controlled by the cultivator concerned, and often stored apart from the crop of the cooperative fields. For example in Burkina Fasso, McMillan (1979: 301) in one area under study in 1979 found that jointly worked fields accounted for 60% of the total area planted and 60% of recorded labor hours. Individually worked fields accounted for the remainder.

21/ This assumes that the household's stock of land is not fixed so that the amount can be varied between production periods (but we retain the assumption of the earlier model that land cannot be varied within the production period). Consequently, variations in the amount of land used by one household member do not require compensating variations in land use by the other member. African rural economies are often described as land abundant, although there are some important qualifications to this. Making this assumption at this stage simplifies the analysis. See King and Evenson (1983: 58) for a model where total household land is fixed (applied to the land-scarce economy of the Philippines).

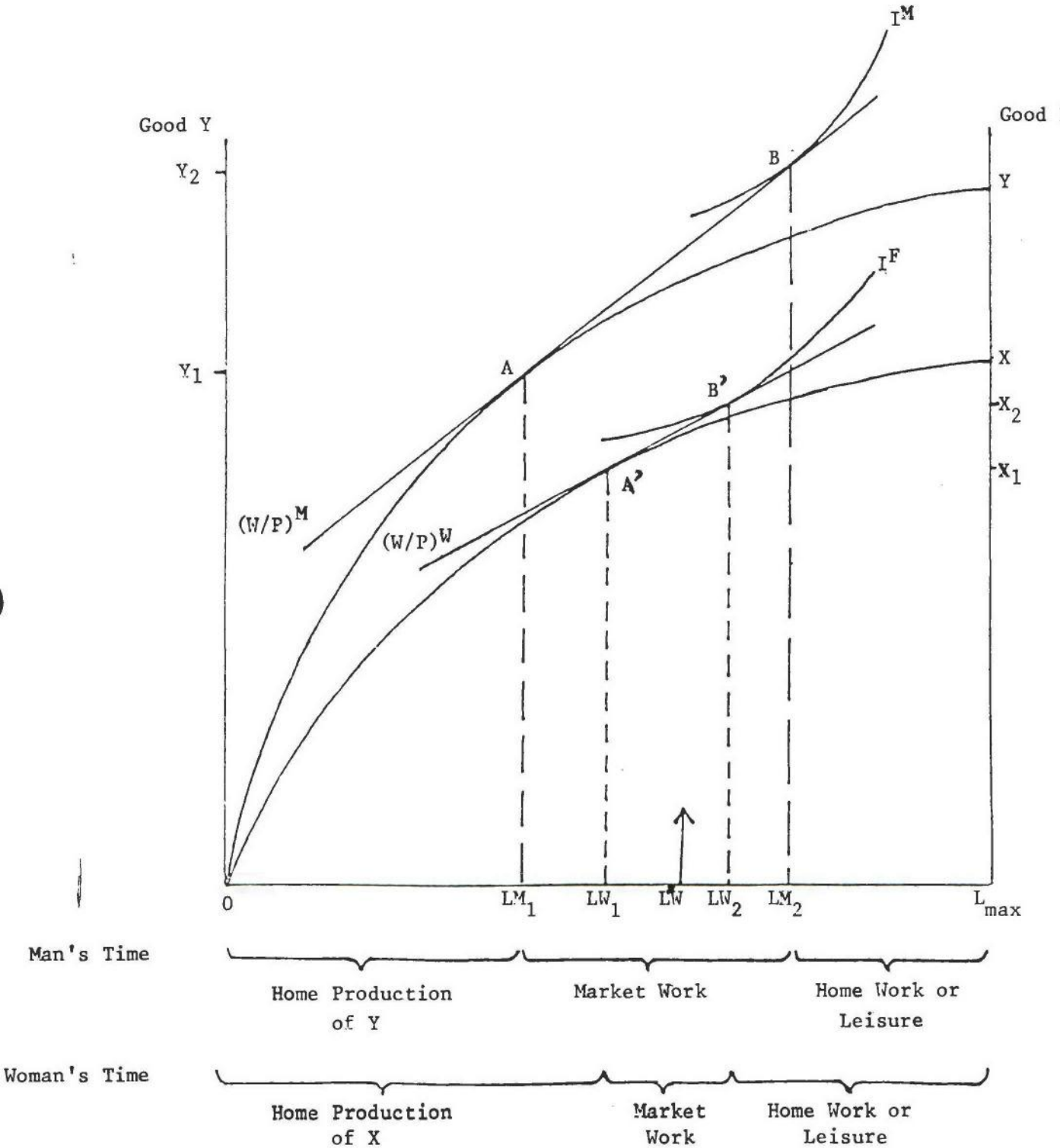
Good Y
Good X
I^M
I^F
Y_2
Y_1
Y
X
X_2
X_1
B
B'
A
A'
$(W/P)^M$
$(W/P)^W$
0
LM_1
LW_1
LW
LW_2
LM_2
L_{max}
Man's Time
Home Production of Y
Market Work
Home Work or Leisure
Woman's Time
Home Production of X
Market Work
Home Work or Leisure

Figure 5

work, and L_{max}-LW_2 for home-work or leisure.22/ As shown the woman would be responsible for more home-work or could have more leisure than the man. Time-use studies in Africa (as well as for other developing regions) show much longer working hours for females compared to males (Birdsall and McGreevey, 1983: 5), so it would be common for the man to take a high proportion of L_{max}-LM_2 as leisure, with the woman taking most of L_{max}-LW_2 time for home-work; thus in total the woman would work longer hours than the man.23/

2.39 Figure 5 shows just one possible outcome among many for the division of labor by gender in the household. The time-dispositions of the two sexes, their participation in market employment relative to self-employment, and their levels of output are determined by the relative prices they face, their preferences, and their respective production functions. As under the basic household model, adjustment can change all these outcomes through altering relative prices, production functions and preferences. However, the net effects of adjustment now become more complicated in this multiple-person household, for the preferences, production functions, and applicable sets of relative prices facing men and women can change by different amounts and in different directions. Thus when men and women face different sets of relative prices in goods and factor markets, adjustment can affect the gender division of labor within the household by changing the structure of those relative prices. Similarly uneven changes in the production functions of men and women can occur due to policy revisions. It is thus possible that the welfare outcomes of adjustment for men and women may vary by degree, and sometimes in directions. However, intra-household transfers - which are not represented in the model of Figure 5 - may change in a compensating fashion, thus influencing the net outcome.

2.40 In the above model the gender division of labor is determined by the comparative advantages of the respective sexes - for example males undertake more market-work than females because their wage-rate is higher (Gronau, 1973). However, social obligations and customs may predominate over individual preferences, especially for women, so that outcomes may not correspond to marginal utility principles in some (or many) cases (Ellis, 1988: 181). This can affect all the segments of a women's time disposition. For example women may be precluded from engaging in certain household-production activities by social customs backed up by community sanctions. Other 'barriers to entry' may be more indirect, as for example where women lack access to a factor of production important in a particular product-line. These circumstances may dictate the respective specialization of men and women in the production of goods X and Y in the above example, rather than

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22/ Ignore for the moment the vertical arrow at point L'W.

23/ For example McSweeney (1979) reports that in Upper Volta (now Burkina Faso) rural women work an average total of 9.78 hours per day as against 7.55 hours for men. For Tanzania, Shapiro (1979) - cited in Eicher and Baker (1982) - reports that in his sample, women work nearly 30% more total hours over the year than men.

their comparative advantages. Similar constraints can apply to women selling factor services, especially labor.

2.41 Critically, women can be constrained in either home-production or market work by the time involved in reproduction and/or household maintenance. Thus in Figure 5, the women's time involved in home-work may be constrained to amount L_{max}-L'W, which is greater than amount L_{max}-LW_2 which would be determined by her preferences and the applicable set of relative prices. Social custom may determine that males will undertake only a limited amount of home-work (and of a particular type), so that male time has a low substitutability for female time in home-work.

2.42 Socially determined constraints on the time-allocation of women have two-important effects. First, these constraints induce allocative inefficiency within the system: thus, in so far as the labor resources of the household are not allocated in accordance with its members' respective comparative advantages, output - and thus household income - is lower than it would otherwise be. Such inefficiencies may be an important source of female poverty, as well as a contributor to the overall poverty of a household. Second, the low-substitutability of male and female labor time in specific activities reduces the ability of women to reallocate their time in accordance with changes in market and non-market opportunities. This has important effects on the welfare outcomes of adjustment, again for both women individually, and for the household unit.

2.43 We have listed the respective production functions, preferences and applicable relative prices of male- and female- household members as subject to change under adjustment. We must now add a fourth item to this list: namely the social customs themselves which determine (and which are determined by) the social and economic status of men and women. These too can change under adjustment, since policy revisions, through altering the parameters under which household members control resources and allocate their time, alter the balance of household bargaining power. Programs of poverty alleviation implemented under adjustment will also have their effects on the latter. As the balance of household bargaining changes, so too may the wider social norms which it underpins. Consequently we must not paint too static a picture of the respective constraints under which men and women operate: adjustment can cause complex shifts in the structure of such bargaining. These shifts do not necessarily take long to occur (although this may be the case).

2. Mean Household Income as an Indicator of Welfare

2.44 To what extent does knowledge of a household's mean income give us a reliable indicator of its members' welfare? Consider again the example of a two- person household in which the man farms an export crop and the woman separately farms a food crop. Further assume that the return on labor is higher in export crop production than in food crop production. The male earns a higher income than the female. Say he earns $120 while the female earns $80: total household income is therefore $200 while the mean household income is $100. Now assume that out of his earnings the male transfers $10

to the female, and retains the rest. Post-transfer, the incomes of the male and the female are $110 and $90 respectively.24/ The variance of the within household income distribution is lower after the transfer than before.

2.45 The degree to which mean household income provides an indicator of an individual member's income therefore depends on (1) how far their pre-transfer incomes differ and (2) the size of the net transfers between them. If all income is pooled, the mean household income is a perfect indicator of its members' incomes.25/ With no pooling, the gap between the household's mean income and that of the individual member rises as the variance of the within-household income distribution increases. In summary when the pre-transfer income gap between the male and female is large, and pooling is small, then mean-household income is a poor indicator of the female's income (and thus of her overall welfare if we measure this by income levels).

3. Implications for poverty measurement

2.46 Figure 6 graphs per capita household income (y - on the vertical axis) against total household income (Y). The functions Y_m, Y_f and Y_h indicate male income, female income, and mean household income (respectively). Assume that all households consist of a man and a woman in Figure 6 are measured after any transfers within the household have taken place. As shown incomes within the household are distributed normally, and the distribution's variance is the same at all levels of total household income.26/ Suppose we identify per capita income level y' as the poverty line. This implies (given two-person households) that all households with total incomes below Y' are in poverty. Accordingly, two people - both the man and the woman - would be described as poor. However, this conclusion rests on the assumption that all income is pooled (in which case both Y_m and Y_f would collapse into Y_h). This is not however the case since male and female income levels are arrived at after all intra-household transfers have taken place. For example a per capita income of y' defines the household as being poor, but at this income level, only the woman - with an income y_f - is below the poverty line while the man is above it (his income is y_m). Using per capita household income leads to an overestimate of the number of persons in poverty. Inspection of the diagram shows that there is a range of household per capita income (y'-y'') above the poverty line in which the woman remains poor. In that range the household is classed as non-poor:

24/ An example could be constructed where the man and woman work jointly together, their product sells for $200, and the man transfers $90 to the woman.

25/ See Kuznets (1976) on using household income as the appropriate welfare unit when income is pooled.

26/ This is assumed for convenience only, and the figure could be drawn with non-linear functions reflecting differences in intra-household income variance.

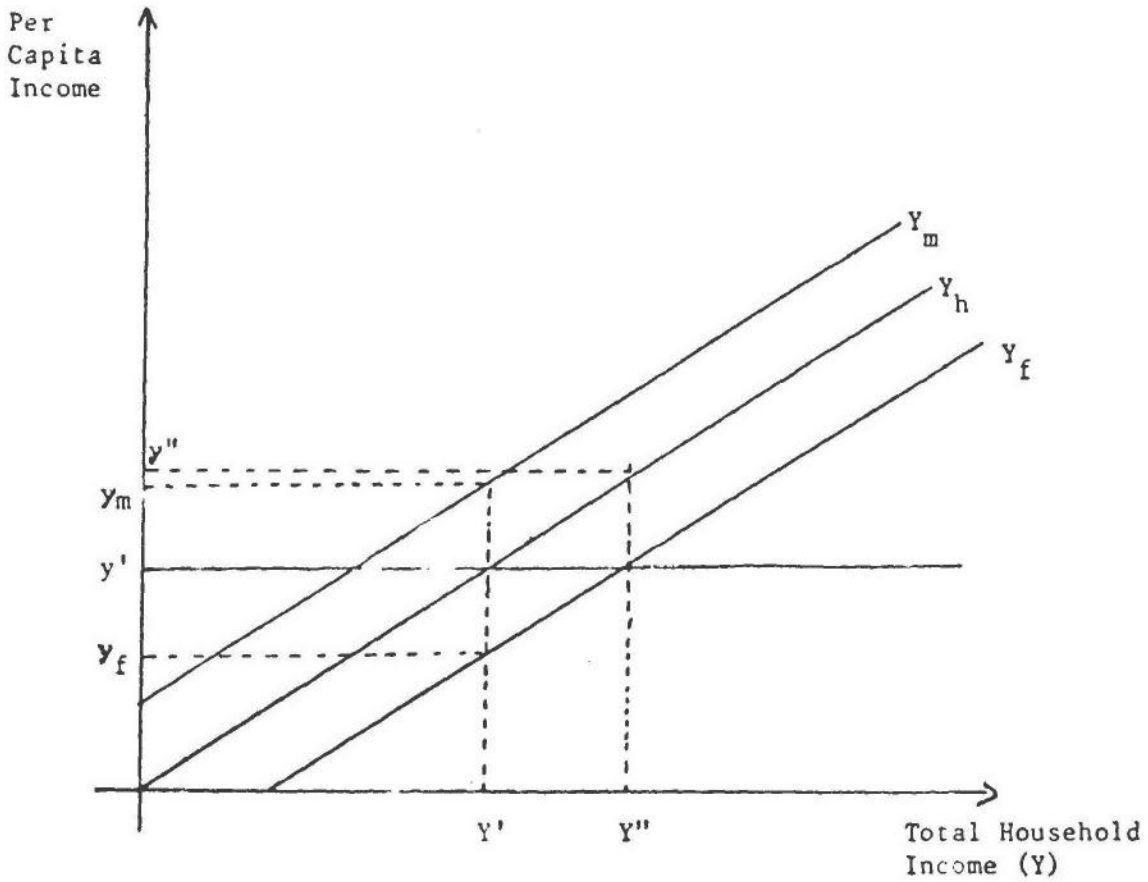
Per
Capita
Income
Y_m
Y_h
Y_f
y"
y_m
y'
y_f
Y'
Y"
Total Household
Income (Y)

Figure 6

using per capita household income would therefore underestimate the number of people in poverty.

2.47 Note that the severity of these measurement problems is affected if, contrary to our assumption above, the variance of the intra-household income distribution changes according to the level of total household income. Several alternatives are possible: for example, the variance of intra-household income may fall as total household income declines. This would arise if low-income men felt compelled by the greater poverty of their wives to make larger transfers to them. Family or social pressures could force them to do this or, alternatively, it could be in their own interest if the wife's poverty was threatening her reproductive role, and thus the household's future labor force.27/ However, equally plausible is the hypothesis that the variance of intra-household income could fall as household income rises. Male circular-migration may be greater from lower-income families, and such males may feel less compulsion to support a rural wife, especially if they also have an urban-based family. At higher income levels the husband and wife may engage in more joint enterprises, leading to a narrowing of income differentials between the sexes, and this differential between the respective genders may be less before transfers are taken into account (because the woman is more likely to be educated).28/

2.48 In summary, when there is significant variance in the intra-household distribution of income, there is a danger that the extent of female poverty will be underestimated, and that estimates of the total number of persons in poverty will be biased. While we have highlighted the problem with respect to the gender division of labor in agriculture, intra-household inequality may occur with respect to other characteristics such as age (for example if young and older males have different income sources, and pool little of their income).29/ Assessing the impact of adjustment policies on welfare will be affected by these measurement biases. Some policy reforms will have their direct effects on the incomes of only some household members, because of the household division of labor. If these beneficiaries fail to distribute their income gain amongst other household members, then we will be misled as to the benefits of the policy reform to the household as a whole. Second, specific policy interventions intended to alleviate poverty will not have their desired effects on poverty if they act through the

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27/ In labor-scarce, land abundant rural economies there are good reasons, as we have seen, to protect the household's stock of labor. This may give rise to less neglect of wives and children than in labor-abundant, land-scarce economies.

28/ It is also possible that the variance of intra-household incomes rather than rising or falling as household income increases, may alter over different parts of the income range.

29/ Intra-household inequality by age would be generated by life-cycle phenomenon. It could be a particularly important source of within-household income variance in the large rural households of some African countries.

economic activities of household members who do not distribute the gains proportionately.

2.49 While the discussion so far has indicated the importance in some situations of intra-household income inequality, acquiring a complete and consistent data set on the incomes of individual household members with which to test hypotheses presents a number of formidable problems. In the example given above the man and woman farmed entirely separately, and had first claim on the respective produce or income. Thus it was possible conceptually to distinguish male from female income. In practice, as we have discussed, while women often produce food separately, the sexes do engage in a significant amount of joint production. There exist therefore difficulties in allocating the income from those joint activities between the sexes. It may be possible in cases where only the man receives the cash income from the sale of the jointly-produced goods and makes a transfer payment to his wife, to apportion such income. But the nature of such payments and their irregularity make this a difficult task practically. More intractable is allocating the imputed income that comes from property jointly held, particularly the imputed rent from the home (Fields, 1980: 139).

2.50 Establishing the direct incomes (own-production and wage receipts) for individual members would be insufficient for intra-household income comparisons. To draw such comparisons one must have data on net intra-household income transfers. Without the latter few inferences can be drawn from direct incomes alone, unless there are special household characteristics which imply that transfers are zero or very low. Household members may have low direct incomes because they engage in economic activities specifically to supplement the income of the main breadwinners, on the basis that all income is shared (Fields, 1980: 139).30/ These arguments point to considerable difficulties in constructing a data set on the intra-household distribution of incomes. These difficulties do not rule out collecting data on the particular income sources of individuals where this is possible (and achieving an aggregate household income data set requires this). But it does show the difficulties of getting enough data to draw comparisons between the total incomes of each household member.

E. Household Expenditures

2.51 The level and pattern household expenditures is a crucial dimension of living standards. The household's expenditure on items of consumption and on intermediate goods for its economic activities can be subject to large changes during adjustment. The level of consumption provides a more direct measure of household welfare than income (Deaton and Case, 1987: 1). These data record outlays on commodities and services, both purchased items and those produced for own-consumption. Moreover, given the difficulties of

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30/ Such 'additional worker effects' become important during periods of recession and adjustment, as the fall in earnings of the main breadwinner forces other household members into economic activity.

collecting income data on individual household members, intra-household welfare issues must largely be handled through consumption data. In particular, even if income data can be constructed for individual household members, some household members have little or no income of their own, because of their position in the life-cycle, and thus consumption levels are more relevant for assessing their welfare.

2.52 One method for analyzing intra-household issues is the equivalence scale technique, which uses data on total household expenditures to compare expenditure patterns across households with different demographic and gender characteristics (Deaton and Muellbauer, 1980: 191). The effects on household expenditures of differences in household composition can be represented in terms of 'outlay equivalents': defined as '..the additional total expenditure that would generate the same change in expenditure on the good in question as does the presence of an additional person of each demographic type' (Deaton, 1987: 2). Certain goods are usually consumed only by children, while for other goods it can be presumed that their consumption is mainly by adults (for instance alcohol and items of adult clothing). Additional children will not generate a direct demand for 'adult goods', but outlays on such goods will have to be reduced to release resources for obtaining goods consumed by children: therefore the outlay equivalents for additional children on adult goods should be negative. This result can be used to test for age and gender biases in the household's allocation of expenditures - a phenomenon of key policy interest. For example, the reduction in expenditures on adult goods will be larger following the birth of a male child than a female child, if discrimination against girls exists (Deaton, 1987: 3). Similarly the ratios of adults to adult goods can indicate whether there are differences by age and sex in the allocation of goods within the household.31/

2.53 The equivalence scale technique thus uses cross-section data to give us a picture of intra-household expenditure inequality at any one point in time. If the technique is applied to data sets from successive years then a picture can be built up of how intra-household welfare is changing as adjustment proceeds. It can thus be used to pick up changes in intra-household welfare which are being generated by adjustment policies which have different effects on different household members. For example if a particular policy is benefitting males, and they are not increasing their transfers to other household members proportionately, then this can be identified by the equivalence scale method.

31/ Applying this technique to LSMS data on the Cote d'Ivoire, Deaton (1987: 4,18) finds no evidence that males are treated more favorably than females in the intra-household allocation of food. However, the allocation of adult goods is heavily biased towards adult males: women, old men, and particularly old women, appear to have much less access. Sen (1984b) cites African examples of bias against both females and children (see also Crawford and Thorbecke, 1980 on Kenya). Much of the evidence on the existence of such biases comes from South Asia (again see Sen, 1984b).

2.54 The advantage of the equivalence scale technique is that it uses data on total household expenditures. To apply equivalence scales, expenditures do not need to be broken down by household member. Expenditure data can accordingly be provided by the household member with the most knowledge of the households expenditures. However, for further monitoring of the levels of consumption of household members, sub-sampling within the household is necessary to establish the expenditures of household members. Generally such sub-sampling of consumption must be confined to certain items only such as food and clothing, since many items are jointly consumed (for example the shelter provided by the home, heat and light etc). Concerning the choice of sub-sample, one option is to randomly sub-sample individuals from the household, for example one male and female child, from all the girls and boys (under a certain age) in the household, an elderly male and female, and so forth. Nutrition surveys often weigh purchased and home-produced food items in order to measure food consumption directly, and this can be done for the sub-samples over a given period (see Martorell, 1982). However, this is costly in time and resources, and has been found unsuitable for living standards surveys (Grootaert, 1987: 134). An alternative is to ask the respondents to identify the cost of their food purchases and to put a market-value on their home-produced food over a given period. This is done in LSMS surveys to establish total household expenditures. This procedure could be applied to respondents from adult sub-samples, with adults responding for the selected children.

2.55 Another possible option for sub-sampling within the household is to take the matrifocal unit - the woman and her children. Where there are several matrifocal units within one household, then one such unit, randomly selected, would be appropriate. In some communities the mother is expected to support her children, and the husband has only limited responsibilities towards his wife (or wives) and children.32/ The mother is responsible for the child's nutrition, while the father takes responsibility for items such as school fees. The transfers from father to child are thus smaller than those from mother to child: it is in this sense that some observers seek to define a separate consumption unit - based on the mother and her children - within the household (Guyer, 1986: 400).33/ In such cases, choosing the woman as respondent, instead of the household-head would give a more accurate picture of consumption levels within the matrifocal unit. Given this structure of consumption, a reduction in a women's income, can have serious effects on the nutrition of herself and her children, unless intra-household transfers are mobilised to compensate. Where adjustment is likely to have

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32/ For examples of this in rural communities, see Berio (1983: 65) on the Cote d'Ivoire and Guyer (1984) on the southern Cameroon.

33/ Sometimes called the 'hearth-hold' (Guyer, 1986: 400). When the mother has to meet the principal consumption needs of herself and her children, and protect herself against widowhood and separation, it becomes advantageous for her to create a sub-unit of production within the household to provide a reliable source of income. This is one reason why women cultivate food plots separately to men.

such effects sub-sampling the expenditures of the matrifocal unit will be important.

2.56 In addition to gathering expenditure data, it is desirable to undertake more direct measures of individual welfare, such as weight-for-age, and height-for-age, particularly for children. Such anthropometric measures describe the 'output' of the household's activities. In the LSMS survey for the Cote d'Ivoire, the heights and weights of all household members are recorded (Grootaert, 1987: 138).

2.57 It may be asked why the household should be used as the sampling unit in cases where policy-makers are concerned with the welfare of individuals. For example, data on child-nutrition could be collected by drawing a random sample from all the children in a given community, or using schools or health-clinics as points to locate individuals of interest. Much valuable data is currently collected on child welfare from sample units outside the household: for instance the National Nutrition Surveillance System in Botswana reports (on a monthly basis) the nutritional status of all under-5s attending health clinics (Stewart, 1987: 266). These data are useful for policy because they are timely and because they are collected within an organizational structure that feeds information on deteriorations in nutritional status rapidly to executing agencies. Such systems are extremely valuable in times of rapid economic change in providing an early warning system. For many policy purposes we need to place information on the individual's welfare in the context of his or her economic environment. Nutritional surveillance exercises can provide some important information on this environment: for example the national surveillance exercise in Botswana disaggregates data on child nutrition on a regional basis, and further by villages, cattle-posts, and settlements (Stewart, 1987: 266). This information, along with data on food supplies and agricultural conditions in the areas concerned, allows executing agencies to monitor, analyze and intervene. Transfers, for example, can be mobilised in times of drought and more general distress.

2.58 However, such data collection exercises do not permit the analysis of the problems of child malnutrition in relation to household characteristics. Policy-makers need to know not only the level of child-nutrition within a community, but its distribution across households with varying characteristics. This need to correlate individual characteristics with those of the household arises from the requirements of policy design. Since consumption data and anthropometric measures describe the end-results of the processes occurring within the household (of work and of giving and receiving transfers), such data do not of themselves tell us anything about the causes of the observed welfare changes. These causes may lie on the consumption side of the household's activities, the production side, or within the intra-household transfer mechanisms. Consequently although consumption- and anthropometric data alone may identify a problem - for example a deterioration in child nutrition - they are insufficient for analyzing its causes. If we are to understand changes in welfare, expenditure data alone are insufficient, for we need to correlate changes in

our expenditure observations with changes in household incomes, time-allocations, and factor endowments.

2.59 This has bearing on the issue of designing appropriate policy responses. To take the example of child malnutrition again, having anthropometric or expenditure data alone allows us to respond with special feeding programs and other such measures. But to design policy interventions which reduce the root causes of malnutrition requires an understanding of the economic activities of the social unit within which the child is located. Thus the kind of data policy-makers require depends on the type of poverty alleviation strategies they intend to pursue. If the direction of attack is mainly to be through secondary income transfers, then data which signal a problem on the consumption side of the household are sufficient. But attacking poverty through people's primary incomes - generated by employment and self-employment - requires information on both the production and consumption sides of household activity. Whether the focus of poverty alleviation should be on people's primary or secondary incomes will depend on the situation in hand, and is discussed in Volume 3 of this paper. There it is argued that the first best policy option is to tackle poverty through primary incomes. Accordingly we need a data set that integrates all the main dimensions of household activity, and that allows analysis of within-household welfare issues when necessary.

F. Interactions Between Households

2.60 Although many important decisions are made at the household level, households are in turn embedded within wider social networks, whose functioning has important effects on them (Guyer and Peters, 1987: 206). The most important of these is the lineage group, comprising a cluster of households bound together by ties of marriage or blood, and under the control of an elder (Swindell, 1985: 33). Control of vital productive assets, such as land, is frequently vested in kinship groups, with the seniors determining the `use-rights' of the groups' members.34/ While such social groupings are most important to rural people, large numbers of urban dwellers maintain their links with them. Such networks mobilise transfers to households in times of distress through taxing other network members. This reduces the variability of household income, a major concern for people living close to subsistence levels and for whom insurance and other intertemporal capital markets are unavailable (Grootaert, 1987: 32 and Binswanger and McIntire, 1987: 82). These characteristics have importance for analyzing both the welfare impact of adjustment and the policy interventions that can be taken for poverty alleviation, and we shall frequently refer to their operation.

2.61 While households undergo periodic changes in their size and composition (due for example to marriage or the death of the household-head), they may also divide or combine in response to 'shocks': illness of family

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34/ The group's elders often regulate marriage transactions as well. Control over women, and therefore over the reproduction of future workers, is central to the success of labor-intensive agricultural systems (Swindell, 1985: 38).

members, displacement, drought, the creation of new market opportunities and so forth. The wider social networks may also suffer displacement, and the social structure in which households function needs to be viewed as a dynamic process. Various forms of inter-household co-operation can be noted. Within rural communities households frequently cooperate with each other over work arrangements - for example pooling their labor at harvest time, sharing child-rearing and food preparation. Households make 'implicit' contracts with each other over the sharing of work-loads, either on a regular basis, or to provide assistance to each other in times of personal distress. Such contracts may be underpinned by ties of kinship, although this is not always the case. Implicit contracts reinforcing reciprocal rights and obligations can exist over a large number of activities. By providing safety-nets they reduce risk, and make households less risk averse than if they operated on their own (Peters, 1986: 136).

2.62 The importance of affirming and strengthening ties between households will lead to the periodic distribution of gifts, in cash, food or manufactured goods. For example farmers sometimes distribute 'harvest gifts' to important allies within the village (as described, for example, by McMillan, 1987: 306 in Burkina Faso). Such gifts often form important components of the 'exchange-entitlements' of households and individuals, and household-survey questionnaires need to be designed to identify these. It is important to correlate such transfers with household characteristics, in order to analyze their role. Several hypotheses suggest themselves as to their function: transfers may take higher than average shares in the incomes of poor households or alternatively they may be disproportionately concentrated among wealthier households. Since such transfers provide the main means of 'social security' in most countries, it is important to verify changes in their importance and the pattern of their distribution during periods of adjustment. Adjustment, through changing the incomes of givers and receivers, may generate important shifts in the structure of inter-household transfers: for instance poor families may find their social support weakened or strengthened by changes in the incomes of their donors.

2.63 Aside from transfers and the sharing of factors of production, households also interact with each other through the market - more specifically through the product, labor and credit markets. Thus some of the contracts within the household's village may be explicit - for example over the provision of labor services, or share-cropping arrangements. Credit markets will also exist within villages. The relative role of market and non-market mechanisms in the allocation of goods and services across communities will vary by region and by country. As development proceeds, market transactions will increasingly take over from other ways of allocating resources. As farm-productivity rises, more output will become available for sale, and greater opportunities arise for selling produce as private and public investments are made in marketing. The extension of public goods such as transport facilities will increase the access of remoter regions to markets. In turn the greater availability of modern consumer goods will increase the incentives to sell produce, and to move from barter to a greater use of money. Finally, urbanization weakens the extended community, and households resort more frequently to market transactions with each other.

2.64 The increased role of market transactions in the distribution of goods and services will lead to further specialization in the division of labor, as greater market opportunities allow households to concentrate on their comparative advantages. Some will find that they no longer need to produce certain goods themselves because these can be obtained more favorably through the market. Activities that were undertaken in order to minimise the risk of shortfalls in income may be cut back if households perceive that the market offers less income-risk, or provides a better safeguard than own-production. Changes in the size and characteristics of product markets will in turn lead to changes in both the size and characteristics of factor markets. The development of product markets has been one of the factors behind a reduction in the importance of communal mechanisms of allocating resources within African societies.

2.65 In sum, households will interact with other institutions, and not only other households. Depending on the circumstances of the country and region concerned, they may enter markets in which firms are buying and selling - both product and factor markets. In the case of the credit market, they may have direct dealings with the organised banking system or other financial intermediaries. Of course, they may be taxed by local or central government, or receive services provided by the state (such as agricultural extension services, marketing services, health and education services etc.). Thus we must distinguish the market and non-market interactions between the household and other households, firms, and the state. We emphasise these otherwise obvious points because adjustment, together with the macro-economic disequilibrium that precedes it, causes changes in the structure of markets, the relative roles of market and non-market mechanisms in allocating resources, and the degree of market-integration of households. Changes in the 'market-parameters' under which households operate can have profound effects on their welfare.

III. MACRO-ECONOMIC DISEQUILIBRIA AND THEIR IMPACT ON HOUSEHOLD INCOMES

A. Introduction

3.1 Having established some micro-economic foundations, we turn now to consider the macro-economy, and specifically the economic imbalances that have occasioned the whole adjustment process in African countries. Our objective in this section is to explain how the various sources of macro-economic imbalance affect the 'real' economies of Africa, and how these changes are likely to be distributed across households. Much of the literature on adjustment and poverty ignores the distributive effects of the period of dis-equilibrium, prior to the implementation of adjustment policies. Quite apart from the fact that the SDA project may be concerned with changes in poverty during periods of disequilibrium, the effects of the adjustment on the incomes of various groups cannot be properly explained without reference to how they fared during the de-stabilizing phase. Understanding how these economies are destabilized, and the effects of this on households, is therefore essential for the SDA project, if observed changes in African poverty are to be at all understood.

3.2 The conceptual framework that we shall present is inevitably simplified, and is intended to highlight the most important interactions that are likely in countries experiencing macro-economic imbalances. Our approach will be to identify the salient features typical of Africa, and to apply these 'stylized facts' to a simple theoretical model. Having outlined the main structural effects of de-stabilization, we are then in a position to trace the expected changes in key variables (such as changes in the structure of demands, movements in relative prices, and so on) which will affect the different elements of the meso-economy, and thereby, the households.

B. The Nature of Macro-economic Disequilibria

1. Causes of Macro-economic Disequilibria

3.3 In the 1980s African countries have experienced large current account deficits, high inflation rates and low growth. Indeed, in many countries these problems first emerged in the 1970s. Balance of payments problems across the region are the most immediate sign of economic difficulty since, in highly open economies, the external position is crucial to overall economic performance. But all of these difficulties are visible symptoms of underlying disequilibria in the operation of their economies. These difficulties have been caused by inappropriate policies consisting of:

- overexpansionary fiscal and monetary policies, in turn associated with narrow tax bases and the poor performance of public enterprises;

- and domestic pricing policies biased against agriculture, especially with regard to producer prices, frequently underpinned by overvaluation of currencies.

3.4 In addition African economies have suffered two types of shock:

- external shocks, including higher oil prices, lower prices for primary commodities and increases in the real interest rate on commercial debts;
- and environmental shocks resulting from an increased variability in rainfall patterns.35/

3.5 These four sets of factors have contributed to economic distress in almost all African countries, although their relative importance varies across the region, and for individual countries at different points in time36/. Our approach in this section is to assess the effects on household welfare of the processes of de-stabilization. But before we begin this assessment, it is helpful to outline a simple theoretical model in order to identify the main interactions involved in tracing the real economy effects of de-stabilization and adjustment. The approach adopted here is to explain macro-economic processes (at least initially) by using the framework of the Salter-Swan 'Dependent-Economy' model, which has proved both popular and useful in analyzing the real economy implications of macro-economic policy in small open-economies (see for example Dornbusch, 1980, Lal, 1984, and Corden, 1985). We use this model to explain some of the main causes of de-stabilization and, in section IV, to trace the effects of macro-economic adjustments. This model, however, is quite inappropriate for tracing terms-of-trade shocks, and for adjustment responses which are designed to change relative prices within the tradables category. For these changes a three-sector model is required.

3.6 The analytical framework that we present here, and also later in dealing with the effects of macro-economic adjustment, has two features which bear mention at the outset. First, it assumes that the economies are at full employment, and that there is sufficient wage/price flexibility to maintain this status. It is a debatable point as to whether this assumption is appropriate for the African case, and in the last analysis, this can only be decided empirically, on a country-by-country basis. Of course, alternative models are available which involve an explicit recognition of structural rigidities (for example, Taylor, 1983) or of quantity rations in product and

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35/ Some countries have also suffered from military and civil instability, which have been economically destabilizing.

36/ Africa's experience is discussed in detail in World Bank (1981, 1984 and 1986a). See also Balassa and McCarthy (1984), Zulu and Nsouli (1985) and Liebenthal (1981).

factor markets (Cuddington et al, 1984).37/ Secondly, and perhaps more importantly, it is an equilibrium framework, and much of the analysis is comparative static. It can reveal little about changes that are essential dynamic and dis-equilibrium in nature. Yet most economies in Africa faced with the need to undertake adjustment are in disequilibrium states, which is why in the presentation which follows, we do not follow rigidly the logic of the model, but use it mainly as an organising framework. Indeed, our principal objective here is to show how de-stabilizing events (and later, how adjustment policies) affect the various elements of the meso-economy, and how these meso changes then affect households. It must be acknowledged that structuralist or disequilibrium models will predict different meso-economic effects than those reviewed below. But for simplicity of exposition, the framework we present is restricted to the neo-classical equilibrium framework as a way of illustrating meso-effects. Obviously, the actual meso-economic effects can only be determined empirically as the SDA initiative moves into its data-gathering stages. If there is unemployment, or if there are serious quantity rations in markets, the analytical framework adopted in the data analysis will undoubtedly have to reflect this.

2. Tradables and Non-tradables

3.7 At the core of Dependent-Economy models is the distinction between 'tradable' and 'non-tradable' goods and services. Non-tradables are those goods and services that are produced and distributed within the country, because of the nature of the good involved (eg. public services, housing and construction) or because transport costs prohibit either the import or the export of the good in question. In theory their prices are determined by domestic supply and demand. Tradable goods are those which cross frontiers and, in theory, their prices are determined directly by world market conditions, so that for a 'small' economy,38/ tradable prices are assumed to be exogenously given. One of the more important problems encountered in using this type of classification of product markets is that commodities can switch categories, frequently in response to the type of policy change under investigation. The most important reasons why goods are non-traded are commercial policy (eg. prohibition of imports) and transportation costs. Taking the transportation mark-up to be q, and the world price of a commodity to be P*, the domestic price must be equal to or less than $P^*/(1+q)$ in order for it to be exportable (assuming no trade taxes/subsidies). Similarly, for the commodity to be importable, its domestic price must be greater than $P^*(1+q)$, as otherwise its importer would not be able to compete with domestic suppliers. Thus we have a range of domestic prices for which the commodity is non-tradable - neither an exportable nor importable. This range is simply,

$$P^*/(1+q) > P_n > P^*(1+q).$$

37/ For a discussion of the effects of adjustment on poverty under quantity rationing see Demery and Addison, 1988.

38/ Note, here size concerns the relative importance of the country's exports and imports in relation to world markets.

3.8 The difficulty here is that a commodity price can cross these boundaries and move from being non-tradable to being either an exportable (if the domestic price falls sufficiently) or an importable (if the price rises). Although we assume away changes in commodity classifications in the simple analytical framework presented below, the country-based empirical work would clearly have to be identify where such changes occur.39/ A second difficulty is that commodity classifications may change geographically. A certain commodity may be importable at or near the port of entry, but as transportation costs increase its price in remoter areas, it may become entirely insulated from world markets. This problem may have become more acute under adjustment, since transportation networks in sub-Saharan Africa have deteriorated, and costs have risen accordingly. Again, the SDA project will be required to make a careful assessment of how all this may affect prices facing households, especially if such groups are located in remoter areas not well served by physical infrastructure.

3.9 There are sectors whose outputs clearly fall under the 'tradable' label, such as production of cash crops for export. Similarly, many government services are unquestionably non-tradable. In between these pure cases, there lies a grey area of conceptual ambiguity. Our preference is to include any sector which is protected by severe import quotas under the non-tradable banner, since changes in the world price will leave domestic prices unaffected, and will only influence the margins obtained by importers. Furthermore, our inclination (at least for most countries in sub-Saharan Africa) is to treat food production as tradable.40/ Food, in contrast to manufactured products, is rarely protected. However, in the last analysis, the categorization has to be country specific.

3.10 The definition of 'tradable' production is bound to raise serious conceptual and empirical problems when applied to African economies. We employ the tradable/non-tradable distinction here because it allows us to use a class of models that capture the main macro-economic processes powerfully and simply. In practice goods have to be ranked in terms of their 'tradability', so that we can say that one good is more tradable than another, in that its domestic price is open to greater influence by world

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39/ For a discussion of the endogeneity of the tradables/non-tradables and exportables/importables divisions see Dornbusch (1980:94-5) and Timmer (1986:Ch.4).

40/ While food is sometimes classified as a non-tradable good, see for example Lal (1986) on the Philippines, most analyses of Africa treat it as a tradable commodity - see for instance Lipton (1987b), Norton (1987) and Bevan et al (1987b).

prices.41/ So when building models to obtain quantitative estimates of resource changes, more refined concepts of tradability have to be used - for instance, computable general equilibrium models contain sectors characterized by different degrees of tradability depending on the trade substitution elasticities between domestic and foreign goods.42/

3. The Two-Sector Model

3.11 We begin our discussion with a variation of the Dependent-Economy model suggested by Devarajan and de Melo (1987), who apply a simple macro-economic model to three sub-Saharan African economies (Cameroon, Côte d'Ivoire and Senegal). While these three countries are in the CFA Zone, the approach is in fact sufficiently general to be of use to the majority of countries in the continent, although as we have already mentioned, it is intended only to gain insights into the most important interactions during the de-stabilization process, and to show how these interaction affect the meso-economy. It is not intended to exactly describe the events in any one country. Aside from assuming that the country is a price taker in world markets (which is an assumption held throughout this section and the next), we also begin by assuming that:

- two tradable commodities are produced, an exportable (X) and an importable (M). Their prices (P_x and P_m, respectively) are given by world markets, with P_m taken as the numeraire; we assume that the nominal rate of exchange (e) is fixed; a non-tradable is also produced, its price being P_n;

- for simplicity, only the importable and the exportable are consumed domestically, with the whole of the output of sector X exported;

- product and factor markets are perfectly competitive, so that the economy is in equilibrium on its production frontier;

- capital is sector-specific during the period studied, so that only labor re-allocations can change the output mix in the economy; this means that the time perspective taken is over the short to medium term;

- the private sector does not borrow either from the government or from abroad, so that net private domestic savings are assumed to be zero (this is a simplifying assumption, since it follows that the trade deficit is given by the budget deficit);

41/ For example Devarajan and de Melo (1987) in their model of three Francophone countries (see below) describe domestic manufactures as semi-tradables, because of the high rates of protection behind which they operate.

42/ See Dervis et al (1982, chapter 6) and Shoven and Whalley (1984: 1034) who explain the use of the so-called 'Armington' assumption, and Michel and Noël (1984: 21) for applications to the Côte d'Ivoire.

- the government exogenously purchases only non-tradables, financing its expenditures through trade taxes and foreign borrowing; assuming the former to be zero (at least initially) means that government spending is financed entirely through foreign borrowing, and is equal to the trade deficit. Assume that given its past economic performance, the government has access to foreign borrowing over the long run amounting to F units of foreign currency per annum.

3.12 We make these simplifying assumptions in order to focus on three characteristics commonly found in the initial stages of the disequilibrium phase in African countries: first, the maintenance of a fixed nominal exchange rate; and second, the use of foreign borrowing to finance the budget deficit; thirdly, the link between the budget deficit and the external deficit.

3.13 We are now in a position to outline the equilibrium of the system, before going on to examine how this is disturbed by inappropriate policies and external shocks. Initially we consider the case when the domestic price ratio P_x/P_m is fixed, which means that exportables and importables can be treated as a composite commodity, 'tradables'.43/ Consider the economy depicted in Figure 7, facing a production frontier N*T* which gives the combinations of the non-tradable and tradable commodities that can be produced given the level of technology and the sizes of the capital stock and labor force. If we assume that the terms of trade are constant and equal to unity, so that $P_x = P_m = P_t$, 'tradable' commodities can be measured along the horizontal axis. The level of production is determined at A, at which the slope of the production transformation frontier is equal to the relative price P_t/P_n.

3.14 The budget line faced by private consumers (assuming that there are no trade taxes or subsidies) will be given by the price line P_t/P_n drawn from the production point. Private consumption will be at point B, with the consumption of non-tradables given by OC, and of tradables by OM. The income-consumption curve (OB) indicates levels of consumption of tradables and non-tradables as income varies, keeping P_t/P_n constant. Equilibrium is defined when Pn is such that the production of non-tradables (ON) less the level of government spending on non-tradables (CN), is just equal to the level of private-sector demand, OC. The government deficit (which is the given here by the level of government spending on non-tradables (G = CN), is financed through foreign borrowing, and is exactly equal (given the assumptions of the model) to the trade deficit (equal to TM). It is assumed that the level of foreign borrowing required to maintain the current account and budget deficits, is consistent with expected long-run capital inflows

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43/ This assumption is dropped later.

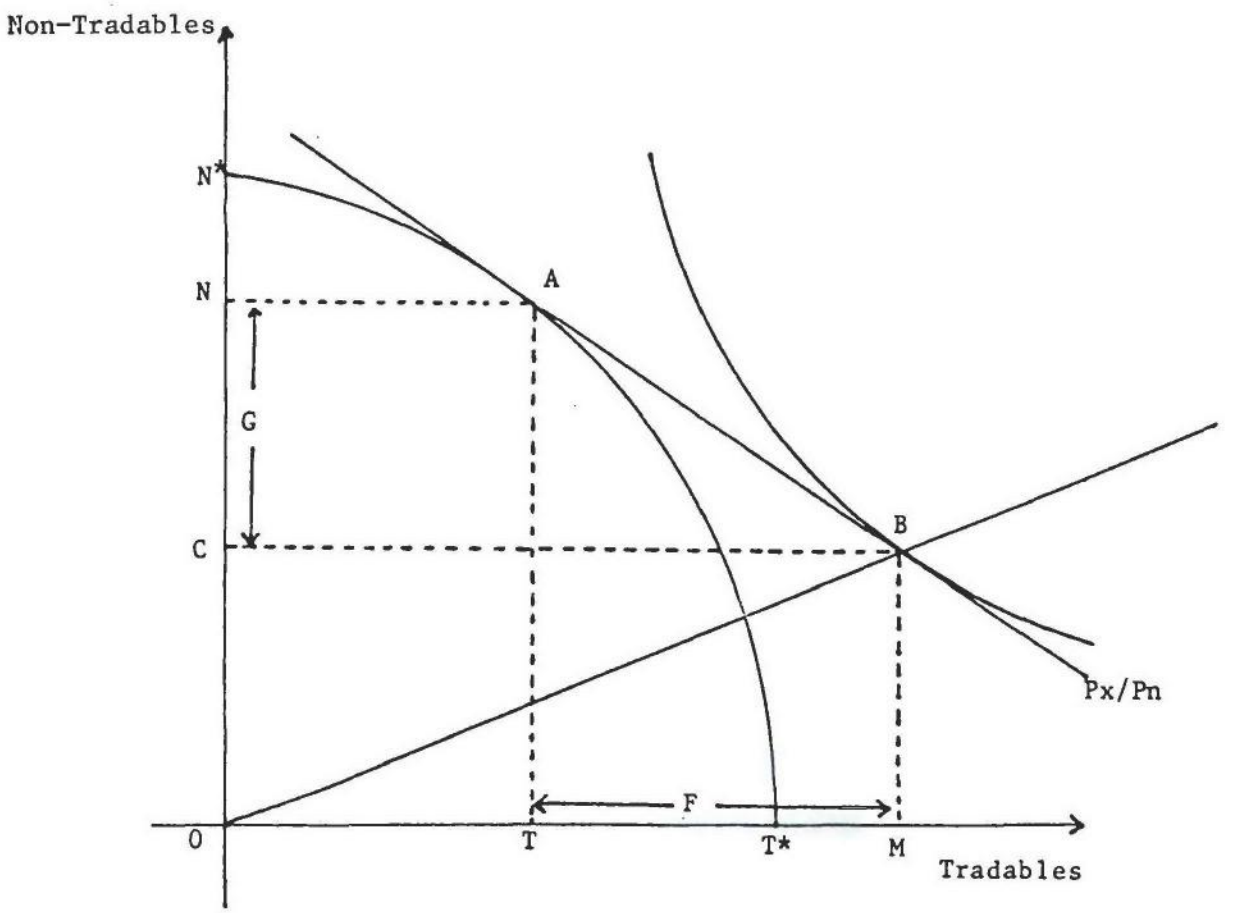

Figure 7

(F = TM). We are now in a position to examine the real-economy effects of excessive domestic demand expansion and external shocks.

4. Inappropriate Macro-Policies.

3.15 Overexpansion of the public sector has been a major source of macro-economic difficulties in Africa (World Bank, 1984: 37, Zulu and Nsouli, 1985: 1). The process by which this policy causes a deterioration in the external accounts runs as follows. In the simple macro-economic framework presented above, this process can be described through an expansion in government spending (and hence the budget and trade deficits) above that which can be sustained through long run capital inflows. The effect of an increase in G (which is assumed to be entirely directed towards non-tradables) will be to raise P_n, causing an appreciation in the real exchange rate (a decrease in P_t/P_n). Figure 8 depicts the change in the price line, and the establishment of the new production point at A'. Private consumers will therefore be faced with a new budget constraint, P_t/P_n'. If it is assumed that non-tradables and imports are complements rather than substitutes, the income expansion ray will be unchanged following the real exchange rate appreciation. This means that consumption will settle at B', indicating higher levels of consumption of both commodities44/.

3.16 With P_t/P_n moving in favor of non-tradables, it will be relatively less profitable to produce tradables, and the output of tradables will fall from T to T', while the output of non-tradables increases from N to N'. It follows that with the production of tradables lower (at T') and consumption higher (at M') the trade deficit has increased (to T'-M'), and will be greater than the long run capital inflow (F), which previously met the (lower) trade deficit. If tradables and non-tradables are substitutes in private consumption, so that the decrease in P_t/P_n induces a substitution effect out of tradables into non-tradables, the final consumption point will settle at B'' (along the new income-consumption ray) and the trade deficit will be even greater (equal to T'M'').

3.17 With the level of external financing able to sustain only the original external deficit, the increase in the trade deficit brought about by increased government spending will create a deficit in what may be termed the 'basic balance', which comprises the current account and long run capital account balances. As a result of this imbalance, monetary adjustments will be inevitable - specifically, a decrease in foreign exchange reserves and a consequent contraction in the money base. This would set in motion an automatic equilibrating mechanism, in which domestic money supply and P_n fall. However, the scenario with which we are concerned - inappropriate policies - is almost always characterised by over-expansionary monetary policy. So, while the fall in foreign exchange reserves would have, ceteris paribus, a stabilising effect on the economy, governments are usually counteracting (or 'sterilizing') this by expanding the domestic component of the money supply, and thus the macro-imbalance persists.

44/ This is due the 'general equilibrium' income effect of the expansion in G.

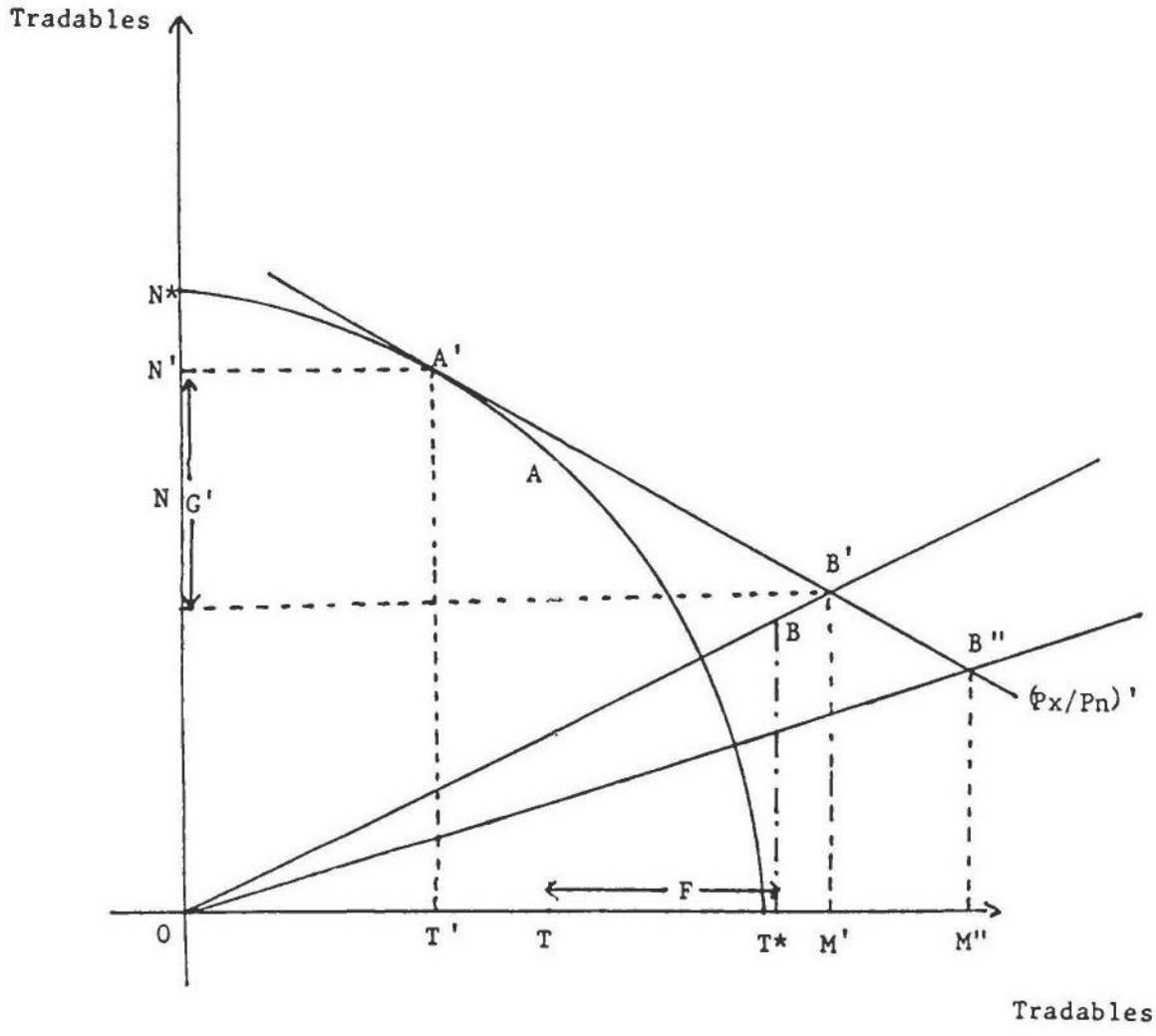

Figure 8

3.18 In the model presented above the government's deficit has been financed entirely by borrowing, thus the link between the budget deficit and the balance of payments is explicit. When the deficit is financed by borrowing from the domestic banking system (which leads to an expansion of the money supply), this link remains, although it becomes more complicated, being mediated through the operation of the money market. Real money balances will rise and, assuming that the money market was previously in equilibrium, the public will reduce its excess money balances through increasing expenditures. The demand for both non-tradables and tradables will increase, but the relative structure of prices will change due to differences in the respective supply condition of the two types of goods. The rising domestic demand for tradables will be met by increasing imports and redirecting exports to the home market. If the goods are pure tradables, as we have so far assumed, then monetary expansion will leave their domestic prices unchanged. In contrast, non-tradable prices will rise.45/ Accordingly, P_t/P_n will fall - ie the real exchange rate will appreciate - as in the previous case in which the budget deficit was financed by foreign borrowing.

3.19 Under this scenario direct effects on the supply side will also occur as the cost of credit falls with the expansion of the money supply, and producers find it cheaper to borrow from the banking system.46/ The magnitude of this effect will depend on two factors: first, the access of producers to the formal credit market; and second, the degree to which the informal and formal credit markets are linked. Access to formal credit markets is highly concentrated in Africa, almost certainly more so than in other developing regions. The public sector, together with large urban businesses are generally the largest borrowers, followed by large estate farms and mining companies, and those farmers who are able to offer collateral. Most smallholders have only limited access to the formal banking system and will therefore receive few benefits from the fall in loan interest rates. They may benefit on the supply side, if a counterpart of the government's budget deficit and consequent borrowing from the banking system is translated into higher liquidity in the state crop marketing boards. The latter will then have higher levels of funds to pay farmers in advance of collecting their crop, thus effectively giving them credit for the

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45/ Where exportables and importables are not pure tradable goods their domestic prices will rise, but generally by less than the increase in the prices of non-tradables because of differences between the elasticities of supply of the two types of good. The short-run supply of non-tradables will be more inelastic compared to tradables given that their only source is domestic production.

46/ Where the rate of interest on loans is fixed by the government rather than by the market (as in so-called 'repressed' banking systems), this effect will work through the real loan interest rate. Thus while the nominal rate remains fixed, the real cost of credit will fall in proportion to the rate of inflation.

intervening period.47/ The articulation between informal and formal credit markets seems to be very weak in most African countries, so that a fall in the cost of formal credit probably has little effect on the cost of informal credit, since the suppliers of the latter are in turn limited in their ability to borrow from the commercial banks.

3.20 Overall the effect of monetary expansion on aggregate supply is likely to be small and highly concentrated in most African countries, compared to other developing regions - for example Latin America - where the distribution of credit, although unequal, is more disbursed, and thus where supply-side effects of credit expansion can be expected to be greater. In so far as formal credit is concentrated in the public sector and urban services and industries, which are mainly non-tradable (see below), the effect of monetary expansion on the supply side of the product market will reinforce the effect on the demand side of the associated real appreciation, to further shift output towards non-tradables.

3.21 The effect of the monetary and fiscal expansion which has created the external disequilibrium will depend on the incidence of the expenditures concerned. A simple, but useful approximation involves disaggregating expenditure changes during the period of de-stabilization into four broad categories - government consumption, government investment, private consumption and private investment. It should be possible to decompose the change in the current account deficit which has arisen from excessive domestic expenditure into these expenditure categories, using the national income and product accounts. In this way, it should be feasible to identify whether the expansion in expenditure which caused the growing external deficit was caused by an increase in government or private spending, and whether it was devoted to consumption or investment expenditures.

5. Terms of Trade Shocks

3.22 The above treatment of macro-economic de-stabilization using the two-sector dependent-economy model is only valid in cases where the domestic price P_x/P_m is constant. There are, however, two main reasons why this assumption is inappropriate in analyzing the adjustment process in sub-Saharan Africa. First, as we have already noted, the international terms of trade has deteriorated rapidly for many African countries, thus causing P_x/P_m to fall, and balance of payments disequilibria to arise.48/ Secondly, many African countries have applied import restrictions of various kinds (through either quantitative controls or tariffs), which have had additional effects

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47/ In many countries smallfarmers effectively lend to the crop marketing boards since crops are collected but payment comes later.

48/ Lal's (1984) attempt to prove the usefulness of the dependent-economy model in analyzing the stabilization process fails on these grounds alone, since he was obliged to explain de-stabilization entirely in terms of monetary and fiscal expansion, and made little reference to the terms of trade shocks to which most African economies have been subjected.

on P_x/P_m. With the relative price of exportables and importables influenced by both external shocks and discretionary policy, the use of the tradables composite is clearly difficult to justify.

3.23 Dealing with these relative-price shocks requires a different analytical framework from the dependent economy model. The model we shall use to take into account these terms-of-trade effects has its origins in Dornbusch (1974, 1980), but follows closely the extension and refinement of this model by Collier (1988). Recall the simplifying assumption that exportables are not consumed domestically, but that the entire output is exported. Both importables and non-tradables are produced and consumed domestically, although the former are also purchased from world markets (subject to various trade restrictions). In such a model, the domestic price of exportables (P_x) will be determined by the world price, the exchange rate and any export taxes/subsidies imposed. Similarly, the importables price (P_m) will be given by the world price, the exchange rate and any import controls or tariffs in place. The price of non-tradables (P_n) will be determined by domestic demand and supply conditions. The demand for non-tradables will depend, inter alia, on fiscal and monetary policy, which will therefore play an important part in determining P_n. There are therefore three relative prices defined in such a model, only two of which are independent:

$$P_n/P_m = P_n/eP_m^*(1+k)$$

$$P_x/P_n = (e/P_n)\ P_x^*$$

$$P_x/P_m = P_x^*/P_m^*(1+k)$$

where e is the nominal exchange rate, k is the tariff rate (or equivalent), the asterisk refers to world prices and where there are no taxes or subsidies on exports. The two independent relative prices are P_x/P_m and P_n/P_m, the former depending on the international terms of trade and on the trade restrictions imposed, whilst the latter will be determined by the exchange rate and the domestic money supply (which determines the price level of non-tradables).

3.24 P_x/P_m and P_n/P_m are traced on the vertical and horizontal axes respectively in Figure 9. This means that no change in P_n/P_m occurs for vertical movements, and no domestic terms of trade changes occur horizontally. NN is a locus of values of these relative prices which give equilibrium in the **non-tradables market**. Along the curve, the supply and demand for non-tradables are equal, so that

$$D_n(P_n/P_m, y, M/P) = Y_n(P_x/P_m, P_n/P_m, K_n)$$

3.25 In other words, the NN locus (which is in relative-price space) is drawn on the assumption that real income (y) and real money balances (M/P) are constant. Changes in any these will shift the curve. The NN curve can also shift in response to movements in capital stock (K_n) into or out of the sector. Thus if capital is transferred out of the tradables sector into

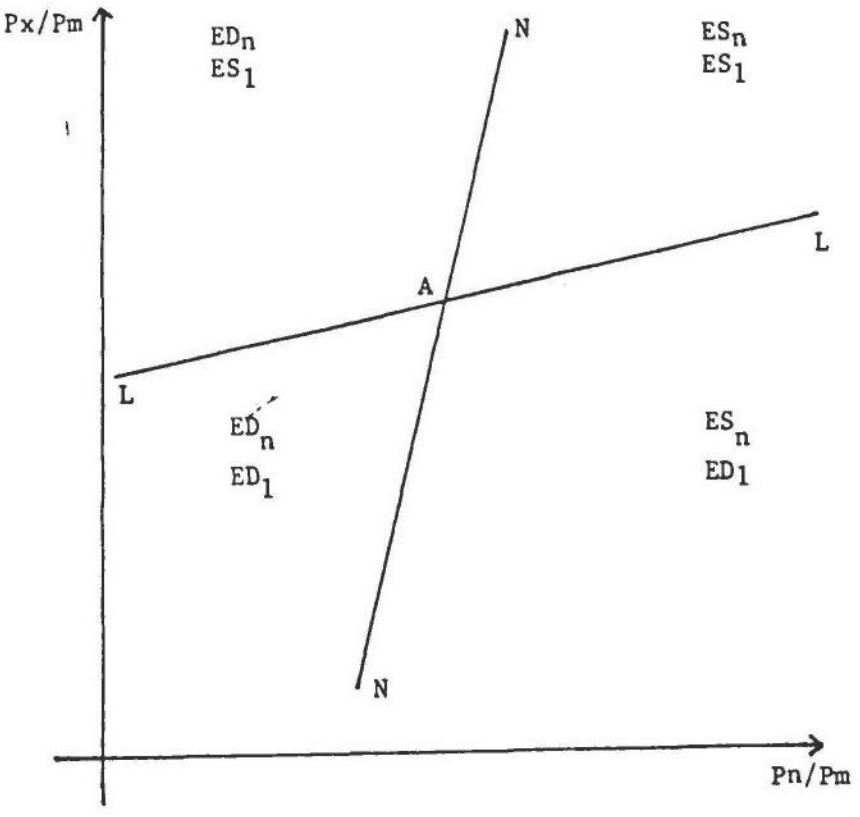

Figure 9

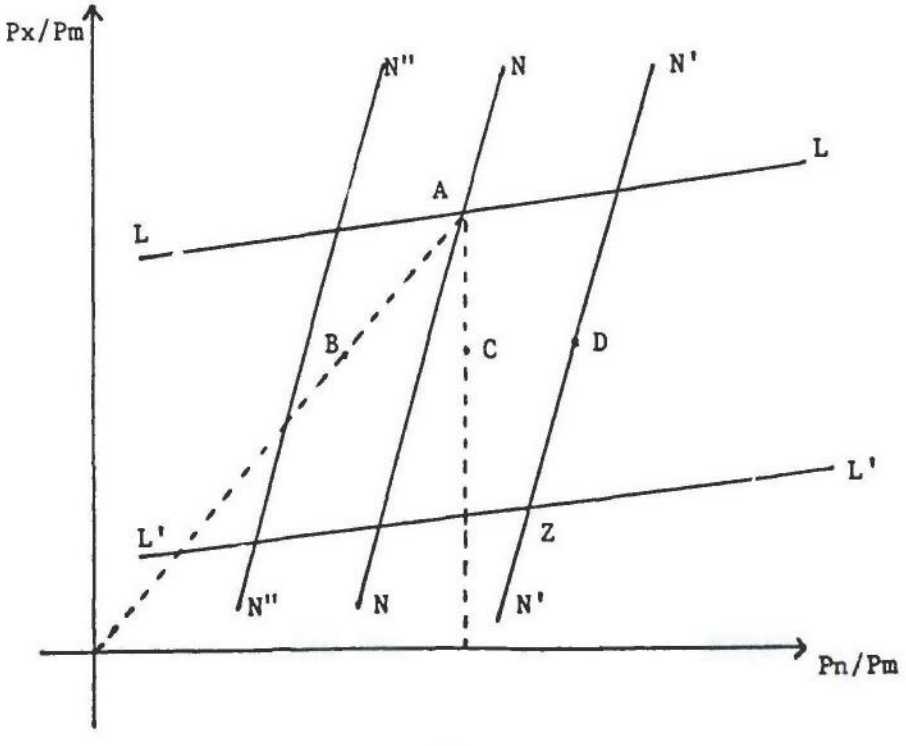

Figure 10

non-tradables, the NN curve would shift to the left.49/ To the right of NN, non-tradables will be in excess supply and to the left, in excess demand. NN is positively sloped, and its slope will be greater than a ray through the origin (Collier, 1988: 2-3).

3.26 Similarly, the LL locus denotes values of these relative prices which give equilibrium in the money market, assuming that real income, asset demand and money supply are constant. That is, LL satisfies,

$$M_s = M_d(P_m, P_n) \quad : \bar{A}, \bar{y}, \overline{M_s/e}$$

3.27 Again, with the locus drawn in relative-price space, it will shift with changes in asset demand (A), real income (y) and money supply expressed in foreign currency (M_s/e) - e being the rate of exchange.50/ With the price level being too high below LL,51/ the money market is in excess demand, whilst above the locus, the market is in excess supply. If money supply were to increase (caused either endogenously by a balance of payments surplus or exogenously through discretionary policy), the LL curve would shift downwards. As drawn, Figure 9 shows that full equilibrium is at A, with both money and non-tradables markets being in equilibrium. It follows (from Walras law) that there is zero excess demand in the tradables market, and that the balance of payments is in equilibrium. With this simple apparatus, we can now analyze how destabilization and adjustment may influence these key relative prices.

3.28 For purposes of exposition, we shall trace the changes in the economy following what may be considered typical destabilizing processes in SSA. Since the different sources of destabilization have conflicting effects on the positions of the curves, the net outcome in theoretically ambiguous. However, we show for illustrative purposes one possible outcome. Country specific experiences can of course be accommodated in this framework. The deterioration in the terms of trade reduces real incomes (y), and thereby shifts the NN locus to N"N". The initial movement of the system depends on whether the deterioration is due to an import- or an export-price shock. With an import price shock (as for example with the two oil-price shocks), the economy will move to a position such as B (with P_x/P_n remaining unchanged initially), whilst an export price shock would take the economy to C (with

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49/ In a putty-clay model, where capital once accumulated is sector specific, its transfer across sectors is effected through capital depreciation in the declining sector, and accumulation in the expanding sector.

50/ For convenience, money supply is measured in units of foreign exchange in this model, since it means that an x% devaluation is equivalent to an x% increase in domestic money supply.

51/ Comparing point C (in Figure 10) with point A, it is clear that since P_x is fixed, both P_m and P_n must be higher, so that the demand for money will be higher at C than at A.

P_n/P_m unchanged). As drawn, the market for non-tradables is assumed move into excess supply.

3.29 At the same time (as we have noted), governments have followed expansionary fiscal and monetary policies, which have shifted the LL curve to L'L'. The expansion in real money balances will cause demand for non-tradables to increase, and the NN curve will shift back to the right to N'N'. As depicted in Figure 10, the non-tradables market is now assumed to move into excess demand, with the effect of the monetary expansionary more than compensating for the deflationary effects of the terms of trade deterioration. Thus, with no change in discretionary policy, the economy is jolted into a disequilibrium situation, with Z signifying the combination of relative prices which would re-establish equilibrium in all markets, but with disequilibrium prices (at B or C depending on the nature of the terms of trade shock) prevailing. Assuming no further changes in the terms of trade (or in government trade policy), the excess demand for non-tradables at B or C will cause P_n to rise until the equilibrium in the non-tradables market is restored (at D).52/ This is partly because demand for non-tradables will fall with the price rise, but also because labor re-allocations from exportables and importables will raise the supply of non-tradables.

3.30 Thus, the combination of a deterioration in the country's terms of trade and an expansionary fiscal and monetary policy would be associated with a movement in the key relative prices from A to D, through either B or C (depending on the nature of the terms of trade shock). Full equilibrium, however, is not restored, since the money market is in excess supply and by implication, there exists excess demand for tradables and a balance of payments deficit. The combination of these shocks, in taking the economy from A to D, is seen therefore to lead to a decrease in P_x/P_m, an increase in P_n/P_m and a decrease in P_x/P_n.53/ These relative price changes will then signal resource re-allocations, specifically from exportables into non-tradables and importables.

3.31 These shocks, however, will also induce changes in factor markets, as resource transfers take place between the sectors. Following Edwards (1988), and assuming that exportables are the most labour intensive whilst importables are the least, we can trace the effect of a terms of trade shock on the factor markets. Recall that the shock results in a decrease in P_x/P_m, and the domestic effects of this may be fuelled further by increasing import controls, which will have the effect of decreasing the relative price

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52/ For simplicity, we are assuming that the loci drawn hold even when other markets are in disequilibrium. This means that NN continues to signify market-clearing values of relative prices even when the money market is characterised by non-zero excess demands. In other words, NN and LL are assumed to signify effective as well as notional equilibrium values.

53/ P_x/P_n is given by the slope of a ray through the origin.

further.54/ Figure 11 illustrates the long-run effect of the terms of trade deterioration on relative factor prices under the above factor intensity assumptions. The initial equilibrium occurs at A, the point of intersection of the isocost curves XX, MM and NN.55/ This gives the wage-rental combination before the terms of trade shock. The increase in P_m causes the MM curve to shift to the right (to MM', since higher combinations of wages and rental rates will now be permitted in the importables sector. The new long-run equilibrium is given at B, the intersection of XX with MM'. Since the increase in P_m will cause an equilibrating rise in P_n, this will cause the NN curve to shift to the new intersection point at B. This terms of trade shock, therefore, will lead to adjustments in factor markets which raise the rental rate and lower wages. The resource re-allocations from the exportable sector into the more capital intensive non-tradable and importable sectors will therefore lead to pressure on the real wage to fall. Insofar as poorer households derive their income from selling their labor services, these shock are likely to hit them particularly hard.56/ Edwards (1988) also analyses the short run effects, in which capital is sector-specific. In this case, a terms of trade deterioration will decrease the production of exportables, increase the production of importables, but have ambiguous effects on the production of non-tradables. Similarly, the effect on the real wage is ambiguous, and (as in the two-sector case discussed above) will depend on the consumption bundle of workers.

3.32 Drawing all the threads together, we may now summarise the effects of the terms of trade shock combined with a fiscal/monetary expansion that we have illustrated in the above example. It has caused:

- P_x/P_m to fall;
- P_n to rise, so that P_x/P_n falls;
- resource re-allocations out of exportables into non-tradables and importables;
- real wages to fall in the long run, with ambiguous short run effects.

3.33 These then are the major meso-economic effects of destabilisation on product and factor markets. There would also be effects on the other components of the meso-economy- namely the physical and social infrastructure. Insofar as the disequilibria have been caused by expansionary domestic fiscal and monetary policies in the countries

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54/ Edwards (1988) shows that a terms of trade deterioration (improvement) has the similar effects in the domestic economy to an increase (decrease) in tariff rates (or their equivalent). The only difference is that the income effect is greater under the former.

55/ The capital-labor ratio in each sector is given by the slope of its isocost curve.

56/ This assumes, of course, that the exportable sector is more labour intensive than either importables or non-tradables.

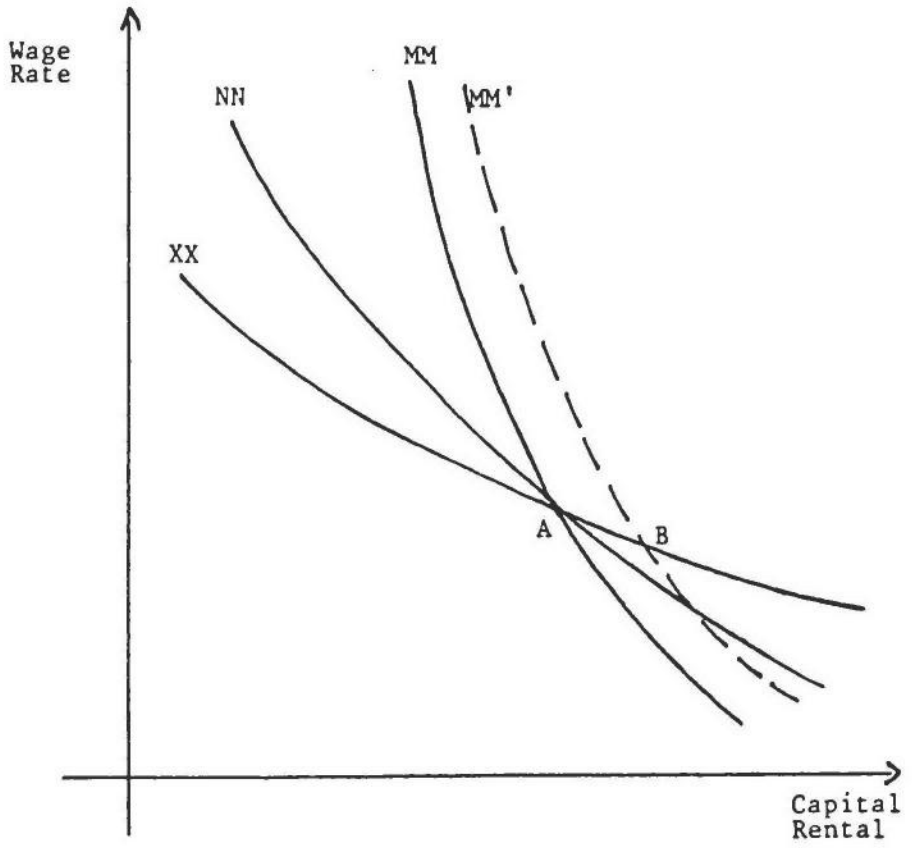

Figure 11

concerned, there may be direct effects on these elements. This, of course, can only be determined at the empirical (country) level. We now trace how these meso-economic effects may impinge on household welfare during the period of disequilibrium.

C. Household Incomes under Alternative Scenarios of Macro-economic Disequilibria

3.34 Thus far, our analysis has been concerned primarily in tracing how macro-economic destabilization leads to meso-economic changes - specifically, to changes in factor and product markets. These have been traced in theory in terms of major changes in relative factor- and product-prices. With governments following a policy of import compression, quantitative constraints can also occur in markets. Our task now is assess how these meso-economic changes impinge on the various household types discussed in Section II.

1. Alternative Policies

3.35 We have seen that the causes of economic difficulties in Africa range from domestic policy orientation to multiple shocks. Governments have varied in their policy responses. But while recent events have been complex, and while the chronology of government policy has been detailed, there are basically four courses of action that governments take to deal with balance of payments problems:

- finance the current account deficit through obtaining additional external capital inflows;
- reduce the deficit to the level of available external capital inflows through tightening capital and trade restrictions;
- undertake macro-economic stabilization policies to restore internal and external balances, mainly through fast-acting restrictive monetary and fiscal policies;
- implement structural adjustment policies at both macro- and micro-economic levels, involving also institutional policy reforms.

3.36 Under the terms of the definitions introduced in section I.A., the latter two are different adjustment strategies.

3.37 Each of these strategies has in turn implications for the other main targets of macro-economic policy - namely the inflation rate and the growth rate. In addition each of the three strategies has ramifications for employment and income distribution (ie the government's 'welfare' targets), and for the political economy within which governments have to operate. The preferences of governments affect the weight assigned to each of these policy-objectives in the final choice of strategy. At the same time governments operate within constraints given by the structures of both the

domestic economy and the international economy. These, too, affect the ranking of policy objectives.

3.38 The first two strategies - financing and exchange controls - are often viewed as alternatives to each other and to the third strategy, adjustment. However, each of the first two strategies contain inherent weaknesses which make them incapable of producing solutions to the kinds of problems experienced by African countries over the last decade. In fact they only appear to be alternatives to adjustment in the early stages of macro-economic difficulty. But for various reasons, to be outlined below, financing followed by exchange controls is often chosen as the policy response in the early stages. Only later is serious adjustment undertaken. Many African countries have taken-up the three strategies in sequence, first additional external finance is sought, then exchange controls are tightened, and then concerted adjustment is implemented.

2. Financing the Current Account Deficit: The Impact on Household Incomes

3.39 We have seen that an excess of absorption over income can arise either from the domestic policy orientation adopted, or from internal and external shocks. Whatever the cause of the deterioration in the external position, the government may decide to finance the current account deficit through external borrowing once foreign exchange reserves have been run down. Governments usually look first to financing the deficit because, of all the possible strategies, it is the least likely to require changes in other policy objectives. If sufficient finance can be obtained to meet the current account deficit, governments tend to conclude that they can keep to their growth, investment and welfare targets, without major changes in policy. Taking this strategy is perceived to imply minimum disruption to the underlying political economy of the country.

3.40 If the only policy response is to seek finance for the external deficit then the underlying causes of the macro-economic imbalances will not be tackled, and the underlying economic disequilibria will grow over time if these policies are not changed. Thus the current account deficit will continue to widen if in each year monetary expansion is maintained at a rate above the growth in money demand, due to the real balance effect and the appreciation of the real exchange rate. Similarly if nominal official producer prices are not adjusted in line with consumer price inflation, the real producer prices faced by farmers will continue to fall, thus exacerbating the balance of payments problem through reducing the output of agricultural importables and exportables. In order to trace the effects of this policy scenario on household incomes, assume a one-off rise in the money supply due to a rise in the budget deficit. Ignore for the moment the issue of whether this policy is pursued in successive years, and assume that the level of national output is fixed. We employ a number of simplifying assumptions in order to illustrate the most important distributional effects. At the end of this section we discuss these assumptions further, but show that while relaxing some assumptions increases the complexity of the processes, the conclusions of the simpler model are not fundamentally

altered. Recall (from section B) that excess monetary expansion will lead to an increase in the price of non-tradables, while tradable prices will remain constant, under the assumption that their domestic prices are given exogenously by world market conditions.

3.41 We begin with household-based production activities since these have been identified as one of the most important sources of household income in Africa. The value of a household's output is given by the price of the good or service multiplied by the quantity produced. Prices are exogenous to households but they do have some control over the level and composition of their output. In the very short-run, when households cannot adjust their allocation of factors between activities, they will be confined to producing the same goods and services that they did before non-tradable prices began to rise. Thus in the very short run, with the composition of output fixed, the effect of the monetary expansion on the value of household output will be determined entirely by the shift in relative prices towards non-tradables. The nominal incomes of households producing non-tradables will accordingly increase. We can label this very-short run effect, the impact effect. Nominal incomes could remain constant in the tradables sector if this sector does not use non-tradables as intermediate goods (and given that tradable prices remain constant). Otherwise they will fall.

3.42 One outcome of special interest is that, holding all other parameters constant, the distribution of income will shift in favor of urban households, since they engage more in the production of non-tradables than do rural households whose production activities are concentrated on tradable agricultural products. Urban households producing items which are protected through quotas will gain the most, since the scale of their protection rises as the real exchange rate appreciates. Given that it will be urban households with the largest factor endowments that receive the largest gains, we can expect a rise in the level of income inequality in the urban sector. This, combined with the fact that most poor households are typically located in the rural sector, will mean that a rise in the overall level of income inequality is a likely outcome.

3.43 As time elapses households will attempt to shift resources into the production of non-tradables. Within the household-based production unit, labor is the easiest resource to reallocate, while the households capital resources are sunk in equipment which may not be so easily transferable to non-tradable activities. The period during which only some factors can be reallocated will be labelled the short-run, while the long-run begins when its is possible to reallocate all the household's factors. In the long-run non-tradables will have taken a higher share of national output leaving tradables with a lower share. Domestic production will accordingly meet a lower proportion of national demand for tradables. Since we have assumed that total national output is fixed, output of non-tradables will be higher, and output of tradables lower, in absolute terms.

3.44 Incomes from household-based production activities will be affected not only by the prices at which households sell, but also the prices at which they buy. First, consider purchases of intermediate goods. Recall that in

theory, if importable goods are pure tradables, their domestic prices will remain unaffected (assuming a fixed nominal exchange rate) by the government's monetary expansion, since the market for importables immediately clears at given world prices through further imports in response to extra domestic demand. Thus producers of non-tradables find that the value added (and hence their implicit profits) of their goods and services increasing, since their retail prices are rising but the costs of their imported intermediate inputs remain constant. The effects on households within the tradable household will depend on whether they use non-tradables as intermediate goods. If they do not then their value added - and therefore their nominal income - will be unchanged. Those households using non-tradables as intermediate goods will see their value added and nominal income fall.

3.45 Households will also consume tradable and nontradable goods in different proportions. If non-tradable producing households consume only their own non-tradables, and thus purchase only tradables, then their cost of living basket will remain unchanged. This, together with the increase in the price of the goods they sell, will unambiguously raise their real incomes. Non-tradable households will be hit by the increase in the prices of their purchased consumer-tradables and this, together with the unchanged prices for the goods that they sell, will unambiguously reduce their real incomes. The worst-hit households in this sector will be those who purchase large amounts of intermediate non-tradable goods and have large shares of non-tradables in their consumption baskets.

3.46 In summary, we will observe a shift in real income shares towards households in non-tradable sectors.57/ What will happen to poverty? While the rise in real incomes in the non-tradables sector will be unevenly spread depending on the ownership of factors and so forth, low-income households will benefit, and this may be sufficient to bring some of them above a defined poverty-line. How many of them cross this threshold will depend on the distribution of income within the sector, and the magnitude of the real income increase among poor households. On the other hand, poor households engaged in the production of tradables (and especially exportables) will find their real incomes declining, with a consequent increase in poverty. The net effect on poverty in the country will therefore depend on the relative strengths of these opposing effects, and on the ability of households to switch from tradable into non-tradable (or protected-importable) activities (Kanbur, 1987, Demery and Addison, 1987b). One hypothesis is that non-tradable goods, since they consist of mainly urban services and domestic manufactures, take a higher share in the consumption baskets of wealthier

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57/ With terms of trade shocks also causing macro-disequilibrium, relative prices were also shown to move in favor of importables. The relative price configuration of the move from A to D in Figure 10 would affect the various households, depending on the proportions of their sales and purchases of importables, exportables and non-tradables. Some households may find themselves not only switching to non-tradables, but also to protected importables.

households than poorer households, whose consumption basket is more heavily weighted to (tradable) foods. So with tradable prices constant, and non-tradable prices rising, the cost of living of better-off groups is more affected than the cost of living of the poor. This may offset some of the negative impact on the poor resulting from their high participation rate in tradables.

3.47 What of households selling factor services? Under the impact effect with no factor mobility between the tradable and non-tradable sectors, factor sellers in the non-traded sector will gain higher money incomes since the demand for all factors will rise. If labor is underemployed in the sector then most of the initial benefits to labor will accrue in the form of higher employment rather than higher wages. Over the longer term as factors become mobile, factors will flow from tradable to non-tradable sectors. Recall that public and private service employment is classified as non-tradable while formal manufacturing - and to a degree some informal manufactures - are afforded sufficient protection to make them non-tradable goods. In such circumstances the direction of labor flow will be towards public and private service employment together with non-tradable formal and informal manufacturing, and away from tradable agriculture. The final outcome for sellers of factor services will depend on the relative factor intensities of these activities. Ranking sectors by factor intensity is a difficult business in developing countries. We know that most smallholder agriculture is very labor intensive in Africa, and uses relatively little capital (see section B). Informal manufacturing is also labor intensive, and likewise the public and private service sectors. However, the formal manufacturing sector is generally characterised as relatively capital-intensive due to the promotion of cheap capital imports through overvalued exchange rates and explicit subsidies to capital users. So the final outcome for factor-sellers will depend on the shares of these activities in the non-tradables sector. If non-tradables amounted to only labor-intensive informal activities then the long-run effect on the wage of the shift to non-tradables would be small. But if non-tradables are dominated by capital intensive manufactures then the wage would fall in the long-run.

3. Further Extensions

3.48 We have obviously presented a stylised picture in order to illustrate some basic processes. A key element of the stylised facts has been that non-tradable prices change, while tradable prices remain constant, because we make the assumption that exportables and importables are pure traded goods, and world prices have been assumed not to change during the analysis. But in most countries the influence of world prices on locally produced tradables is imperfect (partly because local and international tradables are imperfect substitutes), so that domestic demand conditions are most likely to have some - perhaps a large - influence on the domestic prices of locally produced tradables. In addition non-tradables will enter into the production of tradables as intermediate goods, thus increases in prices for the former goods induce cost-push price increases for tradables. Thus we will almost certainly observe rising domestic prices for both non-tradables and tradables under a scenario of excess monetary expansion. Nevertheless

within the overall rate of nominal price inflation a shift in the structure of relative prices in favor of tradables will be occurring, and in practice this is borne out by the close empirical correlation between appreciation of the real exchange rate and periods of monetary expansion, and by examination of the structure of output in such periods. Thus although the story becomes more complicated, the basic message is the same: the composition of output shifts to non-tradables and households who are most able to move into non-tradables gain.

3.49 The analysis of this section has so far been conducted under the assumption that while the composition of total output can change, the level of output itself remains fixed. If we relax this assumption and assume that the government either maintains or raises its budget deficit in successive years, and thus continues to add excess money balances to the system through financing its deficit from bank borrowing, then the level of output may increase in a Keynesian manner through the pull of rising aggregate demand. The demand for both tradables and non-tradables will grow, inducing a growth in the output of both types of good. Thus we may observe a pattern of economic growth in which tradables take a declining share of total output, but their absolute production level rises. So households producing tradables may see their incomes increasing, if this growth process is achieved, but not by as much as households in non-tradables.

3.50 However, such demand-induced growth is unlikely to be sustainable for a long period of time in most African countries because of the supply constraints under which they operate. While these supply constraints can be reduced by appropriate investment strategies, public investments in Africa have generally yielded low returns during periods in which macro- and micro-polices have been inappropriate (World Bank, 1986: 1). Thus a rapid reduction of supply constraints is unlikely during the policy scenario under discussion, especially given the disincentive effect of the real exchange rate appreciation on agriculture. With domestic supply increasingly constrained, and demand continuing to expand, the inflation rate will eventually accelerate, and may generate its own momentum as price- and wage-fixers adjust their forecasts upwards.

3.51 The acceleration in nominal inflation will hit households with a high dependence on market purchases to meet their needs. Poor urban households while they may have benefited from the swing to non-tradables will are likely to be the most substantial losers from high inflation rates. Rural households dependent on wage-employment may also lose, although many are still paid predominantly in food in Africa, which will reduce the effect on them. Subsistence farmers will be relatively protected in good years, but may be very vulnerable if drought drives them into a food market which is undergoing rapid inflation. Inflation will also redistribute income among savers. Households which hold their savings in cash will be hit the hardest. Deposit rates are set by governments in many African countries and have not generally kept up with the rate of inflation. Households dependent on such income will lose out unless they are able to transfer their savings into foreign currencies. Loss of confidence in the domestic currency as a store of value will encourage capital flight, both legal and illegal. Wealthier

households have more access to international stores of value and will adjust the share of domestic financial assets in their portfolios. Households holding their savings in commodities - eg cattle - may actually gain as the prices of their savings assets rise.

4. Import Compression: the Impact on Household Incomes

3.52 The limit to the financing strategy is reached when the supply of external finance becomes inadequate to meet the rising current account deficit. At this point the government concerned may choose to implement an adjustment program, and section IV is devoted to discussing the welfare effects if this decision is made. However, instead many governments resort to a reliance on tightening import restrictions and exchange controls as their balance of payments strategy. It is the welfare effects of this strategy which concern us here. Both tariffs and quotas are generally in place prior to the onset of severe balance of payments problems, since they are used in strategies of import-substituting industrialization to provide a protected domestic market. In situations of balance of payments crisis resort to quotas has been the main way of extending protection, although tariff rates are often raised as well. The following discussion confines itself to quotas, in order to maintain simplicity.

3.53 In the simple three-sector model outlined in section B above, the government can intervene by changing the level of trade restrictions, the rate of exchange and the budget deficit/money supply. We can use this apparatus to show how governments can avoid the necessity of adjustment through increasing the protection afforded to importables. Figure 12 depicts the situation immediately following the destabilizing events which were illustrated previously in Figures 9 and 10. To restore equilibrium, policy choices should involve some combination of fiscal and monetary contraction (shifting the LL curve upward towards D) and trade policy changes in order to decrease P_x/P_m and P_n/P_m - that is an increase in protection which would raise P_m. One solution is at E, involving total reliance on exchange rate and monetary policy, which would shift LL to L*L* and NN to N*N*58/. In this case, no import controls are imposed, and no policy-induced change is made in P_x/P_m. This adjustment mechanism can readily be analyzed using the two-sector dependent economy model, since the adjustment process leaves P_x/P_m unchanged and shifts the economy horizontally in terms of Figure 12. On the other hand, governments may wish to adjust trade policies in order to restore a compatible and sustainable combination of policy instruments. An increase in tariffs or import quotas would lower both P_x/P_m and P_n/P_m, moving relative prices along the ray OD (say to F). The degree of fiscal and monetary contraction (shifting the NN and LL curves)

58/ Note that if devaluation were carried out without fiscal and monetary contraction, the NN curve would remain at N'N', so that excess demand will emerge for non-tradables, E being to the left of N'N'. This will raise P_n, taking the economy back to D. For devaluation to restore equilibrium at E, therefore, it must be combined with a contractionary fiscal and monetary policy, shifting NN to the left, and LL upward.

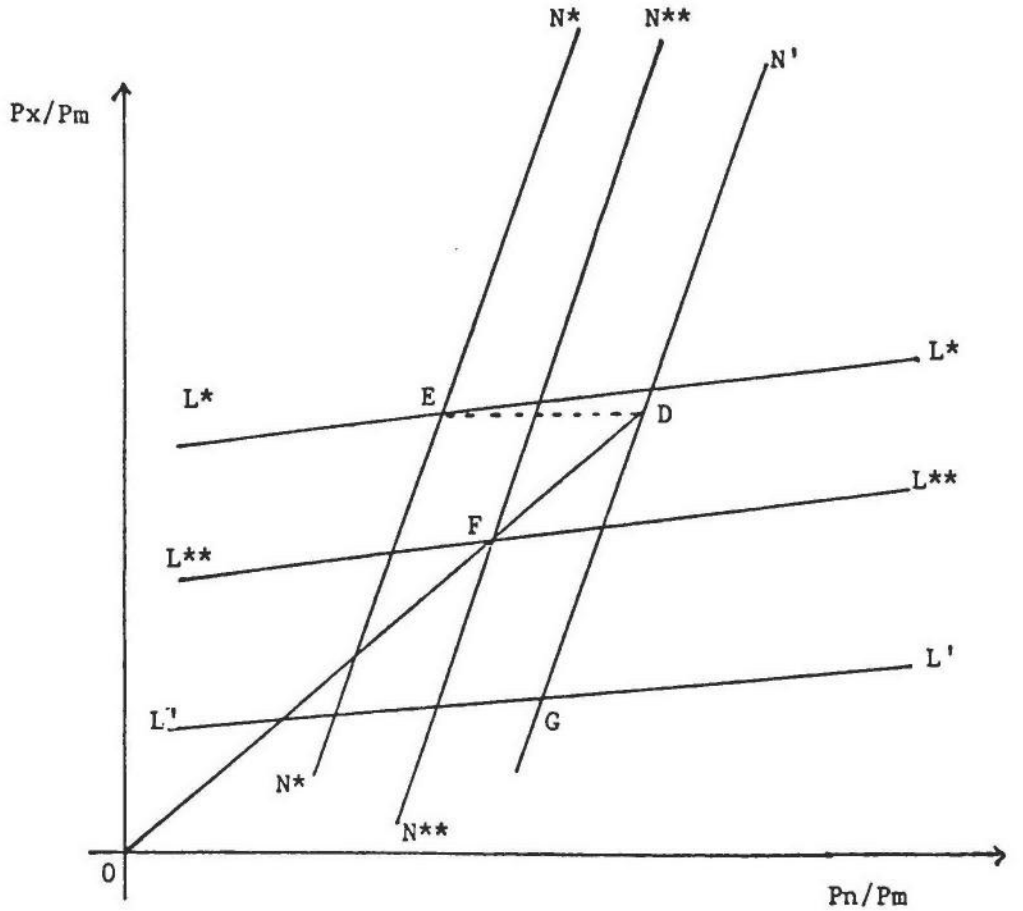

Figure 12

that is necessary to restore equilibrium will consequently be reduced, taking the economy to F (rather than to E).

3.54 If government policy can be characterised as involving a movement from D to F, it is clear that it places much greater emphasis on a decline in P_x/P_m (ie an increase in import protection) than the movement from D to E, which is achieved through increases in P_x/P_n and P_m/P_n (as a result of devaluation and fiscal contraction). The movement from D to E would be associated with a general shift of resources out of non-tradables into both exportables and importables, whereas the movement from D to E implies resource re-allocations from non-tradables and exportables into the importables sector.

3.55 However, these import restrictions will not only affect relative prices in product markets. They can also result in quantitative adjustments in these markets which will have far-reaching effects on both the meso-economy, and on the households. Applying quotas to importables cuts the supply of tradable goods, but it does not reduce the level of demand for tradables if the government maintains its over-expansionary fiscal and monetary stance. In addition, if the government is forced - by the foreign exchange shortage - to cut into importable intermediate goods domestic production of both tradables and non-tradables will fall, the size of the fall depending on how the scarce import quotas are rationed between sectors, and the possibilities of substituting home-produced inputs for importable ones in the production process. So in addition to the contraction of available goods due to the cut in imports, aggregate domestic supply will also fall through the reduction in domestic output of both tradables and non-tradables.

3.56 With aggregate demand continuing to grow, and aggregate supply reduced, the inflation rate will increase, given that tradables market can no longer clear itself through sucking in imports. As inflation accelerates many countries have tightened their consumer price controls. Consumers accordingly find themselves rationed in the controlled markets. But with monetary policy driving excess demand in goods markets, equilibrium prices steadily move above controlled prices. Sellers therefore have an incentive to establish parallel markets. With the imposition of import quotas and price controls, economic rents become increasingly important determinants of household incomes. Those households with access to the increasingly scarce commodities can make large gains with the prices of those goods rising in parallel markets. Access to scarce consumer goods is generally gained through rationed import licenses and smuggling goods from neighboring countries.59/ These are 'Directly Unproductive Profit' (DUP) seeking activities, where DUPs are defined as activities which give pecuniary gains to those engaged in them, but with no corresponding output of goods or

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59/ It is at this point that official trade statistics usually begin to underestimate trade flows.

services60/. Since these activities take resources away from productive activities, they shrink the economy's production possibilities for such goods (Srinivasan, 1985: 46).

3.57 The rise in the overall inflation rate (as measured by uncontrolled parallel market prices) will be accompanied by changes in relative prices (again measured through parallel markets). The real exchange rate will continue to appreciate since its course is driven by the over-expansionary monetary policy. Thus the relative price of non-tradables to exportables will continue to move in favor of non-tradable activities. Households in disadvantaged tradables will attempt to shift some their resources into DUP activities, but since these are inherently rationed activities (since they depend on rationed inputs such as foreign exchange licenses) not all households will be able to.

3.58 With the rise in the prices of consumer, capital and intermediate goods, and static nominal producer prices, the real price received by the farm-household will fall. While agriculture as a tradable activity will be disfavored under this policy scenario, within agriculture incentives tend to shift towards food crops and away from export crops due to the operation of the parallel market. The domestic parallel market is usually much larger for food crops than for non-food export crops. Thus food producers, faced with low official prices, find it easier to turn to redirect their sales to the parallel market, while export crop producers, unless they can smuggle their produce to neighboring countries with better prices, must continue to sell most of their output to the state at controlled prices. Thus the structure of parallel market prices favors food over export production, and farmers redirect their resources into food. Since both food and export crops are grown on most small farms, this is relatively easy for them to do. Over time, with demand expanding as the budget deficit widens, the structure of prices between food and non-food export crops on the parallel market will shift further towards food. This will compress the income differential enjoyed by export farmers over food farmers. In section III access to export cash crop production was identified as an important source of intra-household income variation.

3.59 With aggregate supply now restricted by the tightening of import controls, excess money balances build up as the government budget deficit continues to generate a monetary supply expansion in excess of money demand. As the current account deteriorates further, the government, unable to obtain financing, further restricts imports. In the early stages of the crisis, priority has usually been given to imports of key intermediate imports. But as the external situation deteriorates further, a position is eventually reached where cuts begin to be made in imports of intermediate imports, and the available supply is then rationed among producers. As import constraints tighten, capacity utilization and then output fall. This is exacerbated by

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60/ On the theory of DUPs see Bhagwati, Brecher and Srinivasan (1984), Srinivasan (1985), which build on the earlier work of Krueger (1974).

the high dependence of import-substituting industry on intermediate imports, itself partly due to inappropriate macro-policies.

3.60 Unless the government reverses its policy of keeping producer prices low, real producer prices continue to decline as inflation accelerates, thus reducing the incentive to produce cash crops. Moreover, even if producer prices are raised at this stage, the supply response of small-holders may be limited, as they are now rationed as buyers in the consumer-goods market. Extra cash no longer buys them 'incentive goods'. Imports of intermediate inputs for farming are also reduced and rationed, and typically larger and better-off farmers gain more access to the rationed inputs than smaller and poorer farmers (World Bank, 1986: 62). This together with the fall in capacity utilization of domestic agro-industries, and the effects on the crop collection and transport systems further disrupts agriculture.

3.61 In the labor market, the contraction of capacity-utilization leads to short-time working and increasing redundancies. Up to this stage employees in the protected import-substituting industries have been relatively favored, particularly through the sharing out of excess profits into higher wages. The contraction of employment in the manufacturing sector will put pressure on money wage levels, and the degree to which reduced labor demand is translated into reduced employment or reduced wages will depend on the flexibility of wages. Faced with demand constraints in the labor market, the urban unemployed will look for alternative incomes. With the contraction of formal-sector job opportunities, new labor market entrants will look increasingly to the informal sector for their survival. Employment in the informal sector accordingly increases during such periods. However, aggregate real incomes are now falling with the decline in formal sector activity, so total sales of informal sector products tend to decline as well. Accordingly informal producers find themselves competing for a shrinking market, and average incomes in the sector usually decline. A second alternative is to move to the rural areas, either into farming or into the rural informal sector. For some this will be return migration, but for second generation urban dwellers this will be a new experience. Those rural dwellers engaged in circulatory migration between their homes and the towns may cut down the frequency of their visits and their duration.

3.62 The contraction of GDP reduces the government's revenue base, which in turn raises the public sector deficit, thus adding to inflationary monetary expansion. The revenue base also stagnates because, as market-equilibrium prices rise above controlled prices, a larger number of sales are conducted through parallel markets. Incomes generated in parallel markets avoid income tax. Moreover sales taxes are usually set as a given percentage of the controlled price level, so that the difference between the price on the parallel market and the controlled price is effectively not taxed.

3.63 With imports cut, and domestic supply rationed, governments increasingly find that they are unable to maintain both economic and social infrastructure. The effective supply of public goods falls, for example schools and clinics cannot provide their previous levels of education and

health care, because of increasing scarcity of school books, drugs etc. Like the strategy of financing the trade deficit, the option of reducing the deficit through cutting imports does not solve the underlying disequilibria and the economy remains unstable. Unless corrected by sufficient policy adjustments a spiral of falling output and imports is generated which feeds in on itself. What the theoretical limits are to this spiral are unknown, but a number of African countries - including Ghana, Guinea and Tanzania - show how far it can go.

D. Policy Sequences in Africa

3.64 Obviously this is a stylised picture of the process that countries go through. In particular the financing and import-compression strategies often overlap. In sub-Saharan Africa the access of most non-oil producing countries to international commercial finance has been limited when compared to Asia and Latin America. Most low-income African countries reached the limits of international borrowing early on in their present difficulties, and therefore quickly resorted to intensifying exchange controls. Moreover, although governments have sometimes apply adjustment measures in the early stages, these have often taken secondary place to seeking finance and intensifying exchange controls. Thus a devaluation may take place, but this has frequently of insufficient size relative to the scale of the currency's overvaluation. In addition, it is generally not coordinated with sufficient monetary restraint, so that the real exchange rate resumes its increase after a while because domestic inflation continues to grow ahead of the world inflation rate.61/ Examples of African countries that have taken action quickly after an external shock are relatively few.62/ So while a stylised picture has been presented, it approximately summarises the actual path that African governments have followed (see Zulu and Nsouli, 1985: 3).

3.65 A further complication is that a number of countries have started along the path, but have then doubled-back. They have gone through the sequence from financing to import restriction to adjustment, but have then abandoned adjustment and reverted back to earlier strategies. This has frequently been related to changes of government, for example those which occurred in Uganda during the 1980s, and in Ghana during the 1970s. Temporary windfalls have also led to the relaxation of adjustment efforts begun in an earlier period - for example the coffee price boom in the mid-1970s contributed to the relaxation of the adjustment efforts made by coffee growing countries such as Kenya after the first oil price shock. The boom in the copper price in the same period delayed Zambia's adjustment to the

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61/ Thus while African countries took some exchange rate action over 1980-82, the real exchange rate nevertheless registered a 31% increase between 1969-71 and 1981-83 for a representative group of 14 countries (World Bank, 1986e: 67)

62/ Botswana's rapid tightening of monetary policy after the second oil price shock is one rare example (see World Bank, county memo and Harvey, 1985)

unfavorable long-term trend in the world copper price (World Bank, 1981: 29).

3.66 In addition the history of events over the last decade has not consisted of African countries having to adjust to a one-off shock only. In the 1980s African countries have found their economies shocked from both the import side (including sharp increases in the prices of imported energy, intermediate and final goods) and the export side (lower commodity prices). Aside from these external shocks, many have suffered internal, environmental shocks, to their agricultural sectors, often occurring simultaneously to the external shocks. Adjustments begun to deal with the first round of shocks have had to be extended and widened to deal with these new shocks (Zulu and Nsouli, 1985:14). Consequently macro-economic targets which would have shown improvement given the measures applied, have sometimes shown little improvement because of fresh deterioration in the world economy or new droughts63/. Given the structure of African economies, delayed responses to the implementation of adjustment policies have been inevitable, so that a time-lag exists between the start of a vigorous adjustment programme and the realization of all its objectives. Finally, although large groups of countries in Africa have suffered from similar shocks at the same point in time - eg the non-oil producers in 1978-80 - others - eg the oil producers benefitted during the same period. The gainers and losers were reversed after the oil price began to fall back in the mid-1980s, and countries such as Nigeria are now having to implement adjustment programs.

63/ In their survey of adjustment experiences over 1980 to 1983 Zulu and Nsouli (1985: 14) cite a number of examples of fund-supported programs during that period whose success was limited by unforseen factors - including for example Madagascar (fall in coffee prices), Malawi (failure of the maize crop), Sierra Leone (unfavorable weather), and Zimbabwe (disruption of the transport system).

IV. ADJUSTMENT AND ITS IMPACT ON HOUSEHOLD INCOMES

A. Introduction

4.1 In the previous section we saw how economies can be de-stabilized by both inappropriate policies and various types of shocks. If governments rule out entirely the correction of policies in the form of an adjustment program, they have two choices: either find external financing for the trade deficit; or compress imports. Each of these scenarios has implications for the distribution of household income which we explored in previous sections. We now take up the story at the point at which the government has decided to tackle the fundamental distortions underlying the internal and external imbalances through the implementation of a comprehensive adjustment program.

4.2 As we have already noted, 'adjustment' can be achieved either through stabilization, which mainly involves short-run demand management, or through structural adjustment, which introduces micro-economic and institutional reforms to the adjustment process. Stabilization and structural adjustment are not alternative modes of adjustment, and many countries implement stabilization packages in agreement with the IMF and structural adjustment programs under World Bank support. The latter essentially takes a more medium- to long-term policy perspective. Before considering how these various policy responses may affect households and the social dimensions of government policy, we briefly review the types of adjustment response that have been observed in sub-Saharan-Africa.

B. Adjustment Policies in Africa and their Macro Effects

4.3 Two recent studies (Balassa, 1988 and World Bank, 1988c) have made an assessment of structural adjustment lending and its major impact in the developing world. Both studies provide useful information on the experience of African countries with structural adjustment. The first and obvious question that has to be addressed concerns the content of the structural adjustment programs: what were the policy instruments manipulated under the program. In its review, World Bank (1988: 88) provides a useful summary which is repeated here in Table 1.

4.4 There are three major implications of these results. First, adjustment lending by the World Bank in the SSA countries reviewed has embraced a wide range of policy interventions, with energy being the only sector not covered in SSA countries as much elsewhere. More attention seems to have been paid to public expenditures, public enterprises, agricultural policy and (surprisingly) industrial policy in SAL conditionality in SSA. Although (for reasons given in the table) the data are difficult to interpret, the evidence also suggests that exchange rate interventions are more likely in adjustment policies in SSA than elsewhere. Trade policies, public enterprises and agricultural policy account for 61.8% of the total number of policy conditions set under adjustment lending by the Bank in SSA (World Bank, 1988c: Table 4.1).

4.5 Secondly, whilst these data give an indication of the content of the loan agreements, they do not necessarily reflect the ex post operation of policy instruments. Some attempt was made in the World Bank

Table 1

The Policy Content of World Bank Lending Operations[a]

(percentage of total number of loans with conditions in various policy areas)

	SSA	All Countries
1. Exchange Rate[b]	30.8	15.7
2. Trade Policies	76.9	78.4
3. Fiscal Policy	61.5	64.7
4. Budget/public expenditure	69.2	51.0
5. Public enterprises	61.5	52.9
6. Financial sector	38.5	39.2
7. Industrial policy	53.8	25.5
8. Energy policy	7.7	23.5
9. Agricultural policy	76.9	49.0
10. Other	23.1	13.7

a/ Lending operations under structural adjustment and sector adjustment loans in SSA (Ghana, Kenya, Malawi and Zambia) and 11 other countries.

b/ Since the IMF has responsibility for exchange rate policy, these figures underestimate the importance of exchange rate conditionality in the Bank's adjustment lending.

Source: World Bank, 1988c: Table 4.2

review to assess the extent to which these policy conditions were implemented. It found significant variations in the ability of governments to undertake the specified policy intervention: whilst 70% of exchange rate policy conditions were fully met in the 15 countries investigated (four of which were in SSA), only 57% of agricultural policy conditions and 55% of trade policies were fully met. The report concludes that 'the policy areas where implementation has been most successful are those involving changes in prices such as exchange rates, interest rates, or agricultural and energy prices; those where political sensitivities are the least ...; and those where institutional changes ... are not required' (World Bank, 1988c: 90). However, it also observes that the performance of SSA countries was not as effective as elsewhere. Whilst just over 60% of all policy conditions were fully implemented in the 15 countries, the full implementation record for the SSA countries was only 52%. Clearly, in policy analysis under the SDA

project, care must be taken to establish which of the adjustment policy conditions are effectively implemented.

4.6 Finally, the World Bank study found that in most cases there were four or five key policy conditions in each structural adjustment program, most of which concern trade policy (35%), public expenditure and fiscal policy (19%), public enterprise reforms (14%) and pricing policy (especially agriculture and energy pricing comprising 14%). Whilst the Bank study reports only the figures for all 15 countries, it is likely that similar orders of magnitude apply to SSA countries (except the role of energy pricing policies which were not a feature of most SSA programs).

1. Macro Effects

4.7 Before we consider an appropriate analytical framework in which to consider the meso-economic effects of these policies, we shall briefly summarise the main macro-economic effects of the adjustment programs as reported in World Bank (1988c).64/ This study attempted to assess the impact of adjustment programs on performance indicators,65/ adopting a simple methodology for evaluating whether adjustment enhanced the performance of these indicators. Two approaches were adopted: the first compared the performance indicator during the three years before the first year of an adjustment program with the performance during the following three years; the second compared unweighted average values of the indicator for all countries in receipt of adjustment lending (AL countries) with those of other countries in each country group (NAL countries). The latter method was to compare the change in the indicator between the three year periods before and after the implementation of the adjustment program, with the change in the indicators experienced by countries not in receipt of adjustment loans. Our interest obviously lies in the results for the SSA country group.

4.8 The results for the SSA country group reported by the World Bank are given in Table 2. The numbers in the table indicate the number of countries in the AL group which performed better than the NAL control. The sign indicates whether the direction of change in the average value of an indicator was better (+) or worse (-) in comparison with the same indicator for the NAL group. These data show that the performance of SSA AL countries is decidedly mixed when compared with the control group. There is evidence in these results of a general improvement in the two key imbalances - the balance of payments current account and the budget deficit. The former seems to have been brought about by expenditure switching policies, as evidenced

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64/ Balassa (1988) makes a similar assessment using a similar approach.

65/ These relate to GDP growth, investment performance, savings performance, export growth, real exchange rate, current account balance, budget deficit, inflation, and external debt. These nine indicators measure performance in four areas of policy concern - growth, external balance, internal balance and external debt.

by the favorable indicators of export growth and the real exchange rate.66/ The external debt situation has also improved compared with the control group. However, the longer term effects are not so favorable. Three key indicators reveal an unfavorable comparison with NAL countries - GDP growth, the investment/GDP ratio and the rate of inflation. The first two of these

Table 2

Relative Performance Indicators for 15 SSA Countries

Number of AL countries:	15
Number of NAL countries:	22
1. GDP growth	7 (-)
2. Investment/GDP	6 (-)
3. Export growth	10 (+)
4. Real exchange rate	11 (+)
5. BoP C/A deficit/GDP	8 (+)
6. Budget Balance/GDP	6 (+)
7. Inflation	5 (-)
8. External Debt/GDP	9 (+)
9. Debt service/exports	7 (+)

Source: World Bank (1988: Table 2.4a)

suggest that the longer-run prospects for rapid growth have not been enhanced through the policy interventions that have been made. The poor inflation performance suggests that the favorable real exchange rate indication may not continue into the future.

4.9 The slow supply response in aggregate output in SSA suggests that a longer time perspective may be required in inducing more rapid growth. Moreover, the need for institutional changes (which many regard as critical to improving the growth performance), as we have mentioned, require more time, and are more difficult to achieve, even under adjustment lending instruments (World Bank, 1988c: 90).

66/ Balassa (1988: 17-20) also found evidence for expenditure switching in SSA in the better performance of agricultural output growth and import substitution.

C. A Framework for Analyzing Adjustment and Household Incomes

1. Macro-Meso Links

4.10 This review of adjustment policies in SSA and their effects would suggest that the analytical framework for assessing how policies have affected the various elements of the meso-economy must include both expenditure switching policies (depreciating the real exchange rate and increasing the growth of agricultural production, exports and import substitutes) and expenditure reducing policies (as evidenced by the budget balance performance indicator). The following framework features these two principal instruments of adjustment. Although there may be some support in the two Bank studies mentioned above that institutional changes have been slower to implement, so that this model may be a reasonable account of the major effects that have been experienced, it must be acknowledged that this framework is only an approximation, and in many countries, institutional reforms can have fundamental and dynamic effects on the economic system - effects that cannot be handled in this simple comparative static framework.

4.11 Figure 13 shows the familiar small-country 'dependent-economy' case, with the production of traded and non-traded goods bounded by the frontier N*T*. As a result of events and policies in the macro-disequilibrium period, the level of real expenditure (OA in terms of the non-traded good) exceeds output, which given the relative price of tradables to non-tradables (P_t/P_n - AA' in Figure 13) has settled at x. Expenditure is at y67/, so that there is a trade deficit of xy. Internal balance is assumed (non-tradables demand equals supply).

4.12 The government could cut the trade deficit by reducing absorption relative to income through fiscal and monetary contraction. An excess supply of non-tradables would be created, and if non-tradable prices were fully flexible, they would fall to clear the market. The real exchange rate (P_t/P_n) would depreciate, causing production switching out of non-tradables and into tradables. Figure 13 shows that with real absorption cut back to OB, and the real exchange rate to BB', internal and external equilibria are restored at z. The output of tradables increases from T_1 to T_2, and non-tradable output falls from N_1 to N_2. The general price level would fall, since the price of tradables is unchanged and that of non-tradables has fallen. This is a 'classic' deflationary program: in theory there are no costs in terms of factor unemployment since the economy moves around its production frontier. The introduction of frictions and short-run rigidities in the labor market (such as wage inflexibility) may lead to transitional unemployment as the economy is shifted from z to x. Moreover, the change in relative prices is reflected in a fall in the nominal price index, so we would not expect any inflationary pressure.

67/ Unlike the earlier variant of the dependent-economy model, government expenditure here is not treated separately. Consequently, we do not necessarily assume that governments only spend on non-tradables.

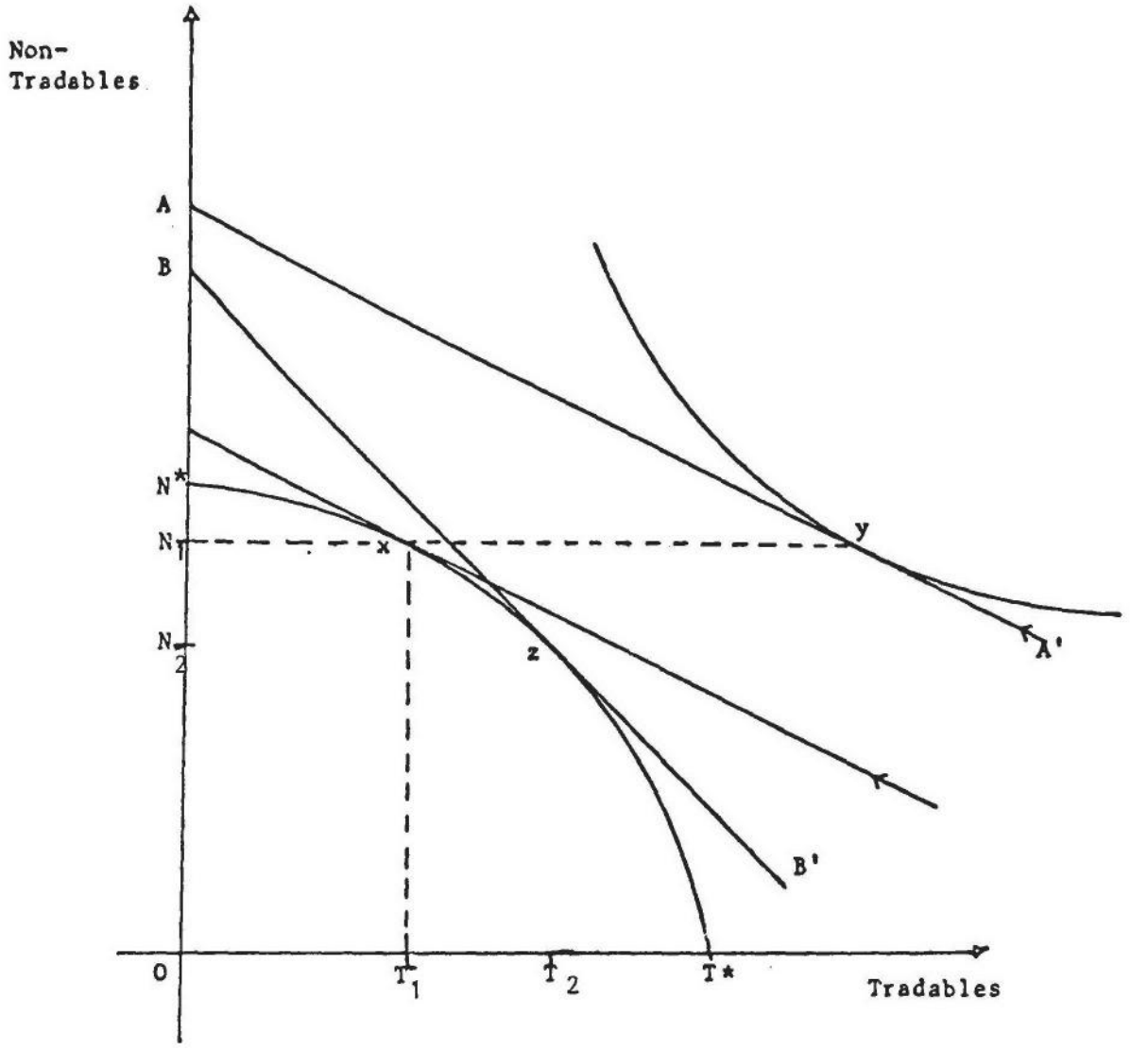

Figure 13

4.13 However, the flex-price case has limited application to sub-Saharan African countries. The existence of adverse expectations about policy-credibility is one cause of price rigidity. In the scenario discussed above, non-tradable producers may be reluctant to lower their prices when demand falls, especially if they believe that policy reversal is probable (this is one reason why the inflation rate is sometimes unresponsive to monetary contraction for a while). But in addition government intervention in African product markets is pervasive, with many direct controls. The price control systems established during the import-compression phase will slow adjustments down, depending on how much output is traded in the controlled and parallel markets. In addition much of the manufacturing sector is oligopolistic and this inevitably produces greater price stickiness than under more competitive systems.

4.14 If P_n is inflexible downward, demand deflation can still be used to achieve external balance. Figure 13 illustrated the case in which the cut in domestic absorption resulted in a rise in tradable output, so while the trade deficit was partly closed by a fall in the domestic demand for tradables, the rise in tradable output also helped. With P_n rigid in the face of demand contraction, there will be no depreciation of the real exchange rate, and no induced expansion of tradables. The cut in absorption will have to be greater when non-tradable prices are rigid compared with the flex-price case, because no expansion in tradable output can be expected. Thus, without any change in the real exchange rate, absorption will have to be cut to OC to give external balance (Figure 14)68/. However, restoration of the external balance by moving the economy to u is only achieved by sacrificing internal balance, since there is an excess supply of non-tradables equal to ux. Non-tradable prices will not fall to clear the market, and producers will cut back on non-tradables. Factor unemployment will thus occur and, unlike the flexible P_n case, this may not be transitory.69/

4.15 With non-tradable prices inflexible, reductions in aggregate expenditure have to be combined with a devaluation (and possibly other price policies) if non-transitory factor unemployment is to be avoided. In this case, the depreciation in the real exchange rate (the increase in P_t/P_n) is achieved through a rise in P_t rather than a fall in P_n, and this induces the production switching required to restore equilibrium (at z)70/. Devaluation reduces the size of the absorption cut required (the 'extra' expenditure cut needed if demand deflation alone is used is BC in Figure 14).

68/ Recall that OE is the income-expenditure ray.

69/ This fix-price case is reviewed in Demery and Addison (1988).

70/ Throughout this analysis we assume that if the government controls prices, it adjusts these prices accordingly when it devalues - for example raising producer prices for cash crops to reflect the now higher border prices.

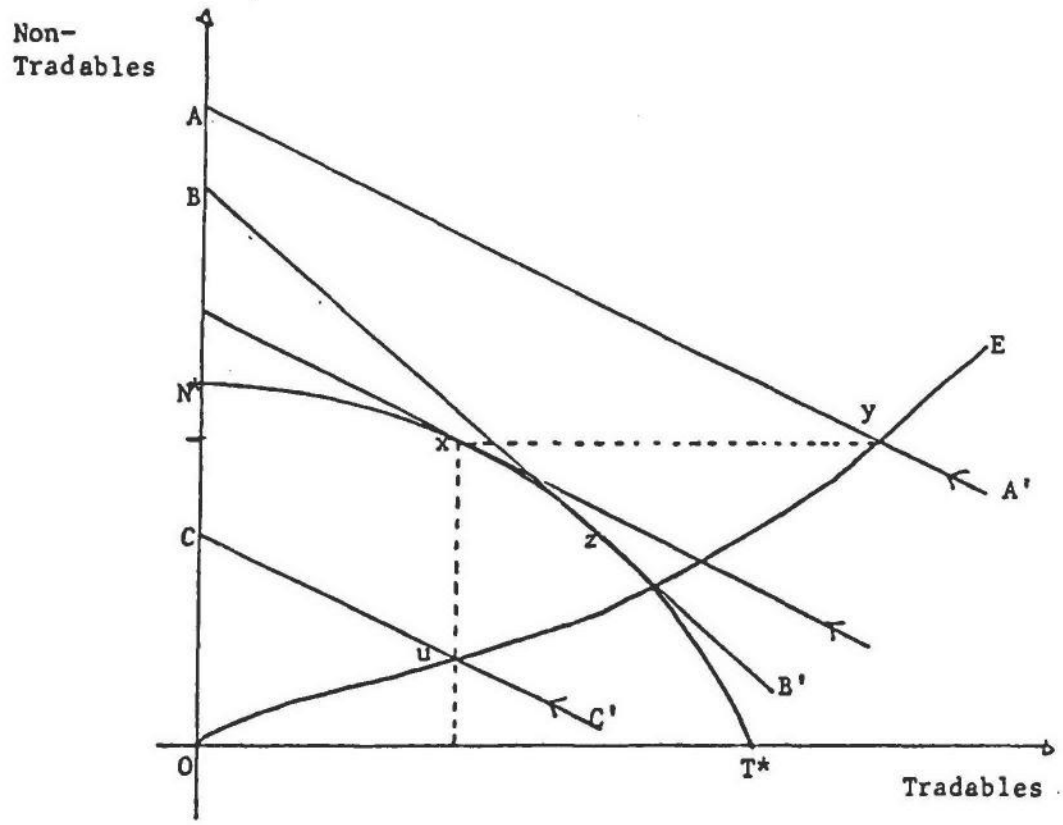

Figure 14

4.16 Note that the general price level rises when devaluation is used since tradables prices rise in domestic currency and non-tradable prices remain fixed (by assumption). This contrasts with the case where P_n is flexible and demand deflation is used. Whether the adjustment program is associated with a rise or a fall in the consumer price index (as well as a change in relative consumer prices), does of course have a major bearing on the social costs of adjustment. The effects of these price changes on the cost of living baskets of different groups must be assessed, since patterns of consumption will vary, often widely. In some cases households may be adversely affected by changes in the structure of producer prices, but they may benefit from changes in consumer prices. We reserve further discussion of consumer price effects to the next section since the actual practice of adjustment in Africa raises some further complexities.

4.17 Adjustment therefore affects the product markets by changing the relative price regime in favor of tradables. As we shall see, these relative price shifts will have predictable effects on households buying (as consumers) and selling (as producers) in these markets. It is worth noting here that adjustment also entails removing controls in product markets, which affect both prices and quantities. Thus the relative price changes brought about by the combined devaluation/fiscal contraction will be modified by these policy-specific changes. In addition, quantitative constraints may be lifted as a result of adjustment, and these somewhat profound changes in product markets can have important implications for households. The discussion of these changes is postponed to Section IV.C. below.

4.18 We now move to consider the effects of adjustment on the labor markets, since many poor households rely on the sale of labor services as a means of livelihood. To do this, we distinguish between short- and long-run effects. In the short-run, the switching effects an increase in P_t/P_n, will induce a movement of labor into tradables and out of non-tradables. For this to happen, the real product wage (W_i/P_i, $i = n,t$) must decrease in tradables (to encourage increased employment) and increase in non-tradables (to induce the release of labor).71/ The effect on the real consumption wage (which is the nominal wage deflated by the consumer-price index - the latter being a weighted average of tradable and non-tradable prices) will therefore be ambiguous, and depend on the consumption bundle of workers. If wage-earners consume mainly non-tradables, their real wages are likely to rise in the short run.

4.19 While in theory the movement to point z in Figure 13 entails a smooth adjustment around the production frontier so that total output remains constant, this is very unlikely to occur in practice. As we have noted, transitional unemployment may arise as the economy moves between these positions. Non-tradable activities will generally contract faster than

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71/ This assumes that there is no unemployment in the domestic labor market, so that increased employment in tradables has to be drawn from non-tradables labor.

tradable activities can expand, especially if the latter require the rehabilitation of equipment and new investments. Hence, total output may fall in the short-term, and factors will be unemployed in this period while awaiting their reallocation to tradables. This transitional unemployment will gradually be reduced as tradable activities expand, since they are more labor-intensive than non-tradables.

4.20 The long-term, the real effects of the adjustment process described will depend on the relative factor intensities of the tradable and non-tradable sectors. With full factor mobility between sectors, it is clear that production switching towards the tradables sector will redistribute incomes towards those factors used relatively intensively in the tradable sector. Since the tradables sector is likely to be relatively labor-intensive (compared with non-tradable) in most African countries production switching would, at existing factor prices, lead to excess demand for labor. The increased demand for labor in the expanding tradable sector will exceed the supply of labor yielded by the contracting non-tradables sector. With labor in fixed supply, the real wage rate will rise in the long-run.72/

4.21 Which non-tradable sectors contract will be very much determined by policy during this period. The contraction in non-tradables is induced by a cut in the government budget deficit (associated with monetary restraint). Some of the fall in non-tradables will therefore be a direct result of a cut in government activities which are predominantly non-tradables. Overall budget priorities will determine which public activities are cut. The first to go are usually temporary employees, and the hiring of new employees is usually curtailed. Although the 'output' of public services is reduced, the government may not at this stage decide to shake-out its permanent workforce, preferring to leave this to later because of implementation difficulties. Much of the contraction of non-tradables could fall on urban services, particularly in the informal sector. With the latter characterised by a very flexible labor market, a fall in demand will affect renumeration rather than employment, and this is exacerbated by the entry of workers made redundant from other non-tradable activities, seeking informal employment as a last resort.

4.22 Inevitably the transition path of adjustment will be very country specific. In theory, tradable producers simply reorientate themselves to the foreign market, with the fall in domestic demand. However, this can take time, and will depend on whether the government provides suitable new marketing channels for them. Expectations over the probable outcome of the program will also be important. If the program is credible in the view of the public, in the sense that the government is expected to persevere with its new policies, the shift in relative prices will be viewed as permanent, and productive resources will be reallocated accordingly. But reallocating resources to tradables can be highly costly to agents if the adjustment program is cancelled, and the policy-bias against tradables is resumed. So,

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72/ See Knight (1976), Johnson and Salop (1980) and Lal (1984).

with uncertain expectations about the program, agents will delay their decisions about resource allocations as they gather information. New programs most often lack credibility when there is a history of past policy-reversals. In Africa this has been all too common and governments, if they are committed to adjustment, must send out very clear signals that policy changes will be sustained.

4.23 Insofar as devaluation conveys the message that the government now intends to shift resources into tradables, it enhances the credibility of the adjustment program, and therefore raises private sector confidence about investing in tradables. Action at the micro-economic level to encourage greater price flexibility will also help - in particular inappropriate micro-pricing policies which create price rigidities need to be eliminated. In summary adjustment programs, which include devaluation and suitable micro-economic reforms, can maximise the rate at which resources will move into tradables, and can therefore minimise resource unemployment costs. Thus the way programs are designed has a major bearing on the issue of social costs under adjustment.

4.24 We have seen then that macro-economic adjustment will influence both product and factor markets, which in turn affect household welfare. It may also have important effects on economic and social infrastructure, since these government services are frequently adversely affected by fiscal austerity. Whilst the reductions in economic infrastructure can have important indirect effects on household productivity and income, cuts in social infrastructure will also directly reduce current welfare (particularly cuts in health expenditures). These effects are essentially country-specific, so we shall simply observe here that the supply of these services may well be reduced as a result of a structural adjustment program. The implications for cuts in economic infrastructure are analyzed in the next section, we review the effects of social expenditures in Section IV.D.

4.25 In most African countries fiscal contraction is closely associated with monetary contraction, so that adjustment is usually associated with significant changes in the credit market. The credit markets invariably consist of a formal market, which is dominated by the organised, modern banking system, and an informal or 'kerb' market. The former is directly subject to the restraints that are imposed under monetary contraction, while the latter is affected only indirectly. Typically, a credit squeeze will reduce the supply of credit in the organised banking system, so that many borrowers have to shift to the informal market to obtain their credit requirements. Since interest charges are fixed (and generally low) in the organised market, such borrowers face increased interest charges on their new debt. Interest rates in the kerb market, which are flexible, will therefore rise as the credit contraction in the formal market pushes more borrowers into the kerb market. Thus the effect of monetary contraction is to restrict the availability of credit in the organised market, and to increase interest rates in the kerb market.

4.26 In some programs, the fixed-interest regime of the formal market (referred to as a 'repression' of the money market in the literature) is

dismantled, so that interest charges are allowed to settle at their market-clearing values. Thus, in addition to any decrease in credit availability in the formal market, borrowers may face increased interest charges in the market as well. How this affects the various borrowing units, including the households under study in the SDA project, will clearly depend on their credit dependence, and on which of the credit markets they rely on for their credit needs.73/

2. Meso-Micro Links

4.27 Thus far, we have established the effects of adjustment policies on the meso-economy. To draw the threads of our argument together, we now summarise these meso-effects, and describe briefly how they will influence households. The main meso-effects of the adjustment policies reviewed here are:

- an increase in P_t/P_n in product markets;
- resource reallocations from non-tradables into tradables;
- a short-run increase in W/P_n and decrease in W/P_t;
- long run changes in the real wage which depend on factor intensities;
- short-run or transitional increases in labor unemployment;
- increases in domestic interest rates, and cuts in credit availability;
- cuts in government expenditure, with implications for economic and social infrastructure.

4.28 Evidently, the effects of these changes on the various socio-economic groups in any country undertaking structural adjustment will be quite complex. They will depend on the choice of policy instruments, the nature of the markets involved, and the characteristics of the households in each group. Consider households which possess only their labor - that is those households which comprise the urban poor and the rural landless. For such households, the labor market and the social infrastructure will hold the key to how they are affected by adjustment. Under an expenditure switching adjustment strategy, the short-run effect on the real wage will depend on the consumption behavior of the households involved. Since we know that W/P_t will decrease and W/P_n will increase (assuming full employment), households which consume mainly non-tradables may find their real incomes rising in the short run, whilst those consuming mainly tradables will face a cut in real incomes.

4.29 Added to these real-wage effects, households may face deteriorations in employment prospects, especially during the transition period. Households experiencing unemployment among its members will obviously respond and seek job placements in expanding sectors. This may require some additional skill acquisition, or it may involve geographical

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73/ Financial sector policy conditions were not particularly prominent in adjustment lending in SSA according to the World Bank (1988c) study.

migration. The time such households take to perceive the need for these responses and their capacity to make the adjustments are critical in determining their share in these transition costs. It may be that for certain households, some advantage may be gained from direct micro interventions (such as retraining or re-location grants) by the government. This type of assistance will reduce the transition costs, reduce the welfare loss of such households, and at the same time enhance the capacity of the economy to achieve its structural adjustment objectives. Changes in the 'social wage'- those benefits transferred to laboring households by the state - should also be taken into account. Adjustment may well reduce the provision of these benefits - caused by cuts in food subsidies, other transfers, education and health expenditures, and so on. The incidence of such cuts on the various households in essentially an empirical issue.

4.30 Many poor households in sub-Saharan Africa possess productive assets other than their labor: they include those engaged in the urban informal sector and small-holder groups producing agricultural commodities. Changes in the product markets affect these households not only as consumers (or purchasers in these markets) but also as producers (or suppliers to the markets). Similarly, changes in the labor market may affect these households in their capacity as hirers of labor services and not only as sellers. Because of this, the meso-economic effects on such households are rather more complex. Despite this complexity, it is possible to set out a range of possibilities using the simple micro-economic framework we reviewed in section II above - namely the recent literature on agricultural household models (Singh, et al, 1986).

4.31 We shall take for illustrative purposes the recursive version of these models, which is valid for cases where households are price takers in product and factor markets. It assumes therefore that all households have uninterrupted access to these markets. With the recursive model, it is possible to analyse the effects of these meso-economic changes in stages, beginning with the household's output decision, and moving on to evaluate the consumption effects. In order to trace the effects on the household of the changes induced by adjustment using this class of models, it is helpful to proceed in stages, utilizing the simple framework described in section II.C.

4.32 We begin by tracing how households are affected by the relative price changes induced by an adjustment program. In terms of our simple household model, this is depicted by a change in the relative price, W/P. If the household produces and consumes tradables, this ratio is likely to fall during adjustment, whereas producers of non-tradables will experience a rise. Assume initially that the household produces and consumes only one commodity - a tradable food good. Taking the framework which was presented in Figure 3 (and repeated here in Figure 15 for convenience) we can trace how its production and consumption decisions are affected by the relative price change.

4.33 Assume that adjustment reduces W/P, rotating the price line to (W/P)'. The first effect is to increase the level of production of the tradable good, from A to A'. This occurs independently of consumption

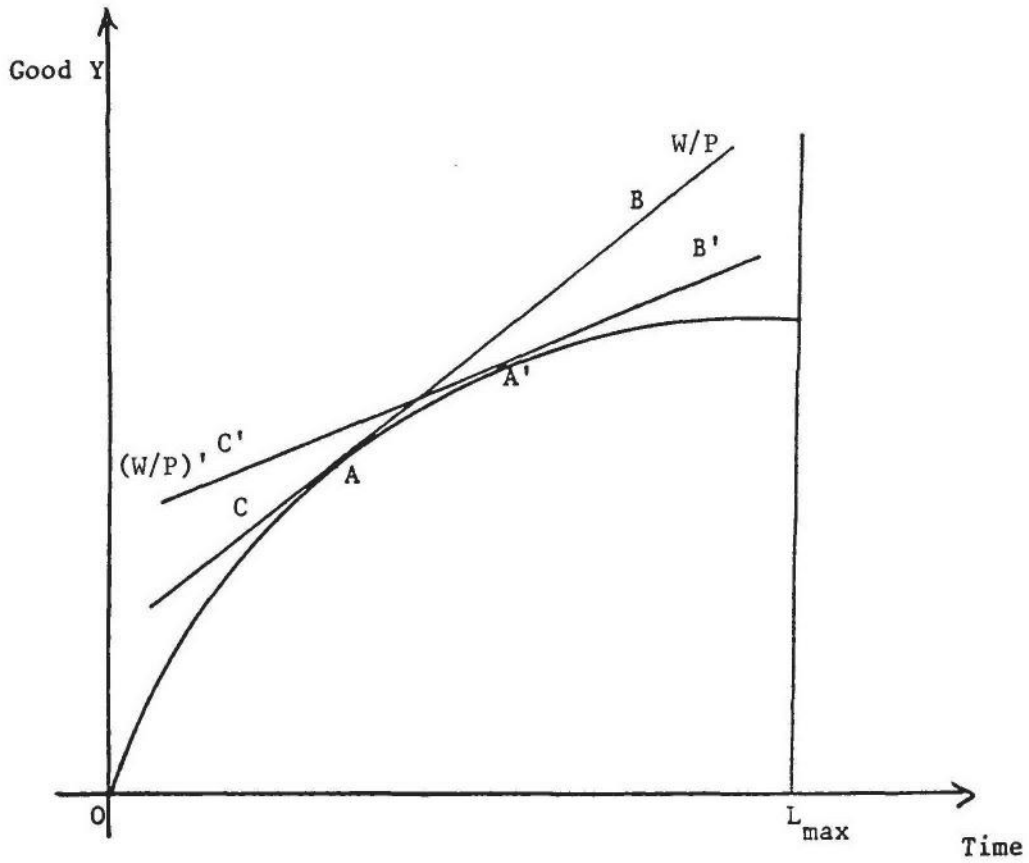

Figure 15

decisions, and whether or not hired labor is used. But how the household's utility is affected by this relative price change will depend on whether it is selling or buying labor services. Clearly, it falls for households which sell labor services, with the consumption point being drawn in from B to B', and this will involve a cut in both the consumption of food and leisure/home care. It is only households which buy in labor services that will gain, their consumption point expanding from C to C'. Thus although all households increase output as a result of adjustment, only those buying labor services are likely to gain.74/

4.34 This analysis is useful in showing how consumption and leisure/home care can be adversely affected for some producing households, even though they may be producing the commodity favored by adjustment. However, its main drawback is the assumption of only one commodity consumed, since relative product price changes are generally crucial elements of an adjustment program. We therefore proceed to the next stage, and analyse how a household may be affected if it produces one commodity and consumes another. In modifying the analytical structure used in section II, we assume that the household produces one commodity (say the tradable commodity, T). It consumes both T and a non-tradable (N), the market price of each being P_t and P_n respectively. We shall assume also that the consumption of these commodities alone yields utility to the household, which means that no utility is gained from leisure (or house work as defined in our earlier discussion).75/ Figure 16 depicts the initial equilibrium in which the household finds itself prior to the adjustment program. The production decision is derived in Quadrant I, which traces household labor (say in terms of man-hours - L) horizontally against total household output (of T) vertically. The initial production point is at A.

4.35 Because, under our assumptions, maximizing utility is equivalent to maximizing income (leisure yielding no utility), the household will devote all its available time to work, either in own-production or in market work. To derive consumption, we must identify the consumption possibility set facing the household. In maximizing the availability of T, the household would devote OL_1 to producing T, and all the proceeds of its market work to buying T. Since each unit of labor devoted to market work yields a real return of W/P_t in terms of the tradable, LT* is the maximum consumption

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74/ Note, those neither buying nor selling in the initial equilibrium (that is consuming and producing at A) will gain, and will become net purchasers of labour services following adjustment.

75/ This implies that the marginal utility of leisure is zero over the relevant range. This assumption is simply required to keep the exposition simple - in two dimensional space.

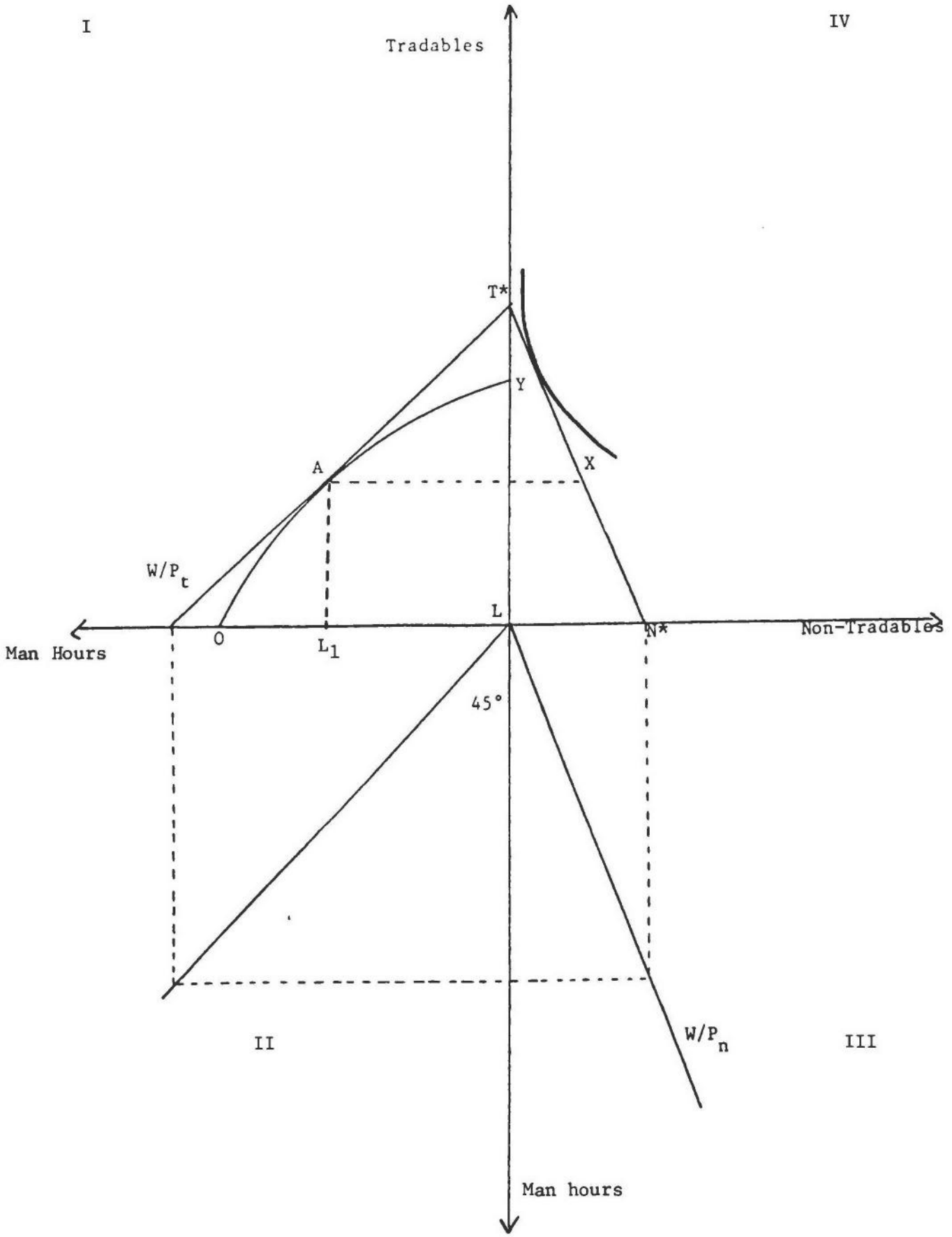
I
IV
Tradables
T*
Y
X
A
W/P t
L
O
L1
N*
Non-Tradables
Man Hours
45°
II
W/P n
III
Man hours

Figure 16

point for tradables.76/ To maximize its consumption of non-tradables, the household will be required to devote all the proceeds of its market work to purchasing N, and at the same time sell all its output of tradables in exchange for non-tradables. This gives a maximum consumption of LN*. Household equilibrium is then given at the point of tangency of the indifference curve and the budget constraint (N*T* in Quadrant IV). Consumption points to the north-west of X on the budget line indicate that the household consumes T in excess of its production, so that it is a net purchaser of the commodity it produces. Similarly, the household must be a net seller of T if its consumption point is to the south-east of X. The household in the case of Figure 16 is assumed to be a net purchaser of T, consuming at C.

4.36 Now, consider a decrease in W/P_t and an increase in W/P_n brought about through adjustment. This will increase the production of tradables, from T' to T" in Figure 17. These relative price changes will also change the budget line in Quadrant IV, from N*T* to N**T**. The consumption (and welfare) effects will depend on the original consumption point. For households consuming along the segment ZT* originally, the relative price change will involve a welfare loss, whilst households along ZN* will experience a welfare gain. Note in particular, that it is possible for some households to be net purchasers of the good in question, and yet gain from the increase in the relative price of T (ie, those households originally consuming along the segment XZ). The reason for this is simply that the households consume also non-tradables, and their price has fallen (relative, that is, to the nominal wage). This reduction in W/P_n obviously benefits the household as a consumer, and more than compensates for the increase in P_t. However, even if W/P_n were to be held constant, for discrete changes in W/P_t, many producers who were previously tradables-deficit households, become net surplus households as a result of the production increase brought about by the increase in P_t. For some of these households, a rise in P_t will be beneficial, even though they were net consumers prior to the price changes brought about by adjustment.

4.37 Similar, though opposite reasoning may be applied to households which produce non-tradables and consume tradables. For such households, production would decline, and net sellers of N would experience welfare losses. The effects on net purchasers would depend on their consumption bundles. To summarise, the effect of changes in product and labor markets on production will be to unambiguously increase the output of tradables and reduce that of non-tradables. It will also cause predictable re-allocations of labor time, with tradables households reducing supplies and increasing demands for labor, and non-tradable households increasing their supplies (or reducing their demands) for labor. The net effect on household welfare will also depend on the consumption preferences of the household groups.

76/ Note, in Figure 16, W/P_i (i = t,n) gives the real product wage (and therefore the real purchasing power of the wage) in terms of the two commodities.

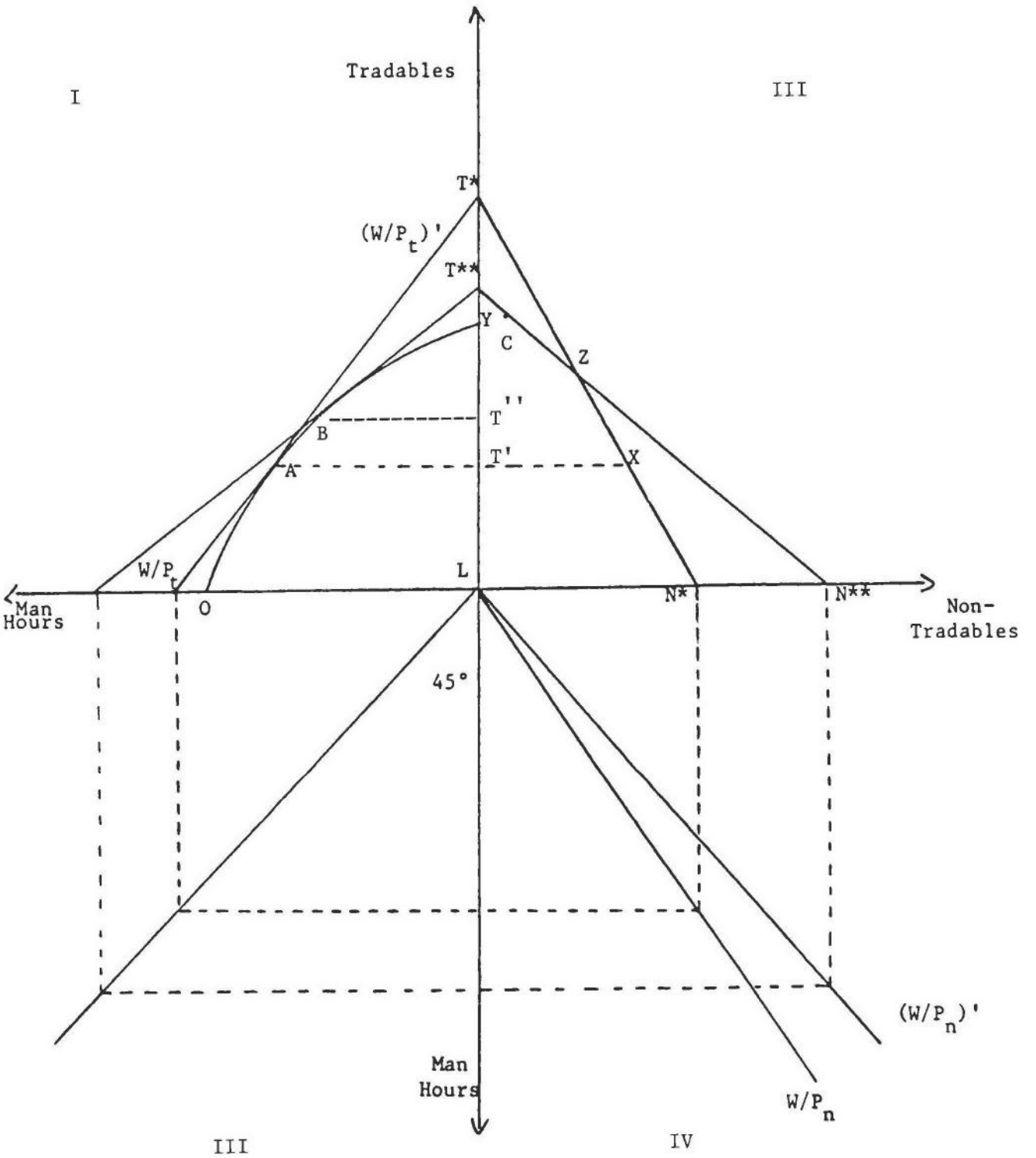
Tradables
I
III
T*
(W/P_t)'
T**
Y
C
Z
T''
B
T'
A
X
W/P_t
L
N*
N**
Man Hours
O
Non-Tradables
45°
(W/P_n)'
Man Hours
W/P_n
III
IV

Figure 17

4.38 This simple framework abstracts from a number of real-world complications which are clearly important. In the first place, households may produce both tradables and non-tradables, so that changes in the relative price structure will induce them to switch resources in response. A key determinant of the net welfare effect would be the extent to which such production switching is possible, in the short and long term. Similarly, they may use intermediate commodities in the productive process, the price changes of which will have to be taken into account in computing the net effect of adjustment policies on the rates of return that can be obtained. Farmers relying on tradable inputs (such as fertilizers) may find farm profits declining during adjustment, even though the output price is rising. Those activities that are intensive in the use of non-traded inputs (such as irrigation) will receive stronger positive price inducements.

4.39 Households will also be affected by changes in the credit markets that we have observed result from monetary contraction. Again, they will face either increased quantitative constraints in the market, so that they simply cannot obtain the amount of credit they need at the existing rate, or they will find interest costs increasing. The effect of these changes in the credit market are more likely to be indirect in the African context - they will have adverse effects on farm productivity (on the ability of households to purchase inputs in a timely manner), farm incomes and thereby on household welfare.

4.40 Finally, such household enterprises will be affected by changes in the economic and social infrastructure. Both of these will influence farm productivity and profitability. A reduction in physical infrastructure services and other farm support services is certain to impose constraints on farm profitability, and the ability of farmers to respond to the relative price opportunities offered by structural adjustment. These 'conditioning' effects have been largely ignored in the adjustment literature, and yet they are likely to be very important for many groups of African small-holders. In many African countries, the physical infrastructure serving many rural areas has seriously deteriorated, so that access to needed input and output markets has become significantly more difficult. The fact that prices in urban or near-urban markets have improved may be of little relevance to farmers in remoter areas. The SDA project must take into explicitly account how these economic infrastructural effects are likely to affect small-holder productivity and income.

4.41 Similarly, human capital enhancing services (such as health and education) may have indirect effects on farm productivity 77/ in additional to any direct effects of household welfare. Again, the SDA project must make some attempt at estimating how any observed deterioration in the social infrastructure which provides such services has affected small-holder productivity and income.

77/ See for example, Jamison and Moock (1984), Jamison and Lau (1982), Lockheed et al (1980) and Moock (1986).

D. Some Characteristics of Recent Adjustment Programs in Africa

4.42 The previous section has presented a basic model of the adjustment process, and the respective roles played by demand deflation and devaluation. Some major assumptions have been employed, but these allow us to focus on the most important processes. The fundamental principle which emerges is that to reduce a current account deficit either domestic absorption must be cut, or the domestic output of tradables raised, or some combination of both must be achieved. Although import controls can suppress the deficit, they lead to a steady erosion of output because the underlying causes of disequilibrium are not tackled. It is true that adjustment can cause some factor unemployment, but the careful co-ordination of policy instruments will reduce the extent of this problem, and confine it to the transition period when the structure of production is changing. In this section we develop our story further by examining more closely aspects of recent adjustment experiences in Africa. We shall highlight some important features which arise from the predominance of import-compression in many African countries.

1. The Growth Factor

4.43 The import-compressed economy is characterised by poor output performance, high inflation and extensive shortages. It must be emphasised that the pre-adjustment situation in the majority of African countries is almost never characterised by satisfactory growth in output or employment. The overall picture is not one of fast-growing economies going into recession because of a balance of payments and financial crisis, and because of the application of stabilization measures. In fact, donor-supported programs with their associated finance can raise total output, even in their early stages.

4.44 Aside from attracting increased bilateral and multilateral aid, policy reforms will increase the confidence of commercial lenders. The injection of foreign exchange from both concessional and commercial sources will raise capacity utilization where imports of intermediate inputs have previously been compressed. The distribution of this extra foreign exchange will vary depending on the sectoral priorities of the adjustment program, and the recovery in capacity utilization will be uneven across sectors. In most donor-supported programs agriculture and its supporting infrastructure as well as factories producing agricultural inputs are given priority. With the beginning of the recovery in capacity utilization output growth may occur in the initial stages of adjustment. The time taken to achieve the pre-import compression level of output will depend on how far capacity utilization had previously sunk, and the magnitude of the foreign exchange injection.78/

78/ Depending on the length of the import-compression phase, there will have been some loss of productive capacity. For example transport and manufacturing equipment may have deteriorated through an inability to obtain imported spare-parts. Similarly, soil-quality and crop-yields may have

4.45 In their early stages donor-supported programs also begin to reform inappropriate policies which have caused the misallocation of resources - reducing the gap between domestic and world prices for export crops is one example. Figure 18 illustrates the case where domestic relative prices are set so as to discriminate against exportables. Assume that the world relative price is given by the price line I, whilst the imposition of import controls (or tariffs) shifts the domestic price to II. Domestic output is at P_2, so that exportables output valued at world prices is OX_2. Removing these distortions shifts the economy to P_1, and there is an unambiguous gain in the output of exportables, to OX_1 valued in world prices (Kanbur, 1987). This gain will contribute to the increase in total output in the early stages of the program. If this growth process is achieved during the first years of the program, some of the social costs can be reduced. Our earlier discussion presented a rather static picture of the adjustment process, and did not therefore fully capture the dynamics of an economy recovering from import compression, since attention was directed to the movement around the production frontier (in Figure 13) towards tradables.

4.46 Figure 19 introduces the growth effect. Again assume that pre-adjustment expenditure is at y while the production point is x on N*T*, thus yielding a trade deficit of xy. The real exchange rate P_t/P_n is given by AA'. Our previous analysis showed that a program of demand deflation plus devaluation depreciates the real exchange rate to BB', giving a new production point z, and the elimination of the trade deficit. The output of non-tradables falls from N_1 to N_2 while that of tradables rises from T_1 to T_2. However, if at N*T* productive capacity is underutilized,79/ then an injection of foreign exchange plus the reduction of production-inhibiting micro-distortions could move the production frontier to N**T** in the short-term - say the first year.80/ Policy makers could then include this supply expansion in their calculations, and would accordingly need only to cut absorption to OC rather than OB in the case of no output growth. Similarly, the size of the nominal devaluation will be less. This adjustment package would yield a real exchange rate depreciation of CC' (which is less than the depreciation to BB' under no growth), and the new production point would be at v. Now compare the pre-adjustment output configuration at x with the post-adjustment configuration at v. Total output is higher at v (since the economy is now on N**T**), and the output of both tradables and non-tradables

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deteriorated. Thus some measure of reinvestment will be required, and it may thus take several years for output levels to recover.

79/ N*T* is therefore to be considered the 'effective' production frontier, since it is subject to the output-reducing effects of the domestic relative price distortions within the tradables sector.

80/ We do not assume that N**T** represents the full impact of the extra finance and micro-policy reforms on aggregate output since these are expected to work through gradually. N**T** simply represents the point that output has reached in the short-term.

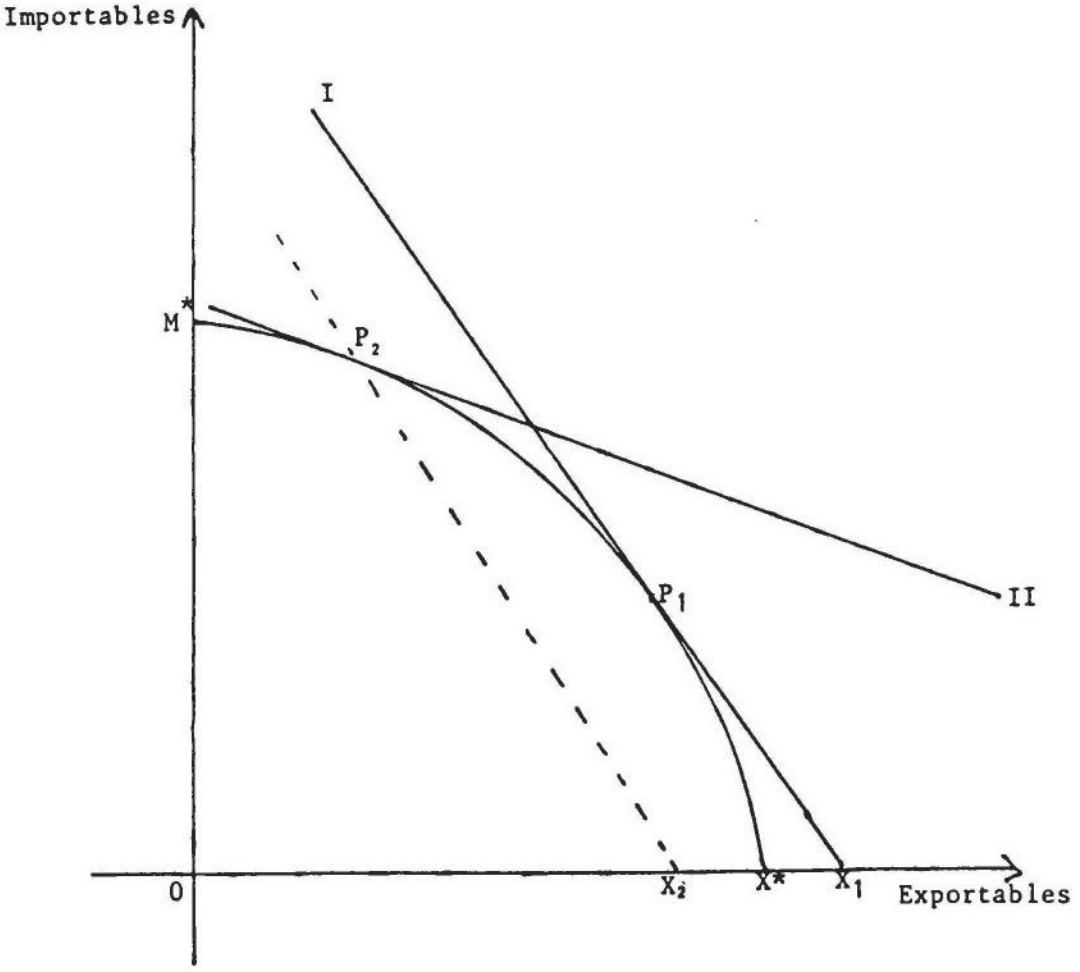

Figure 18

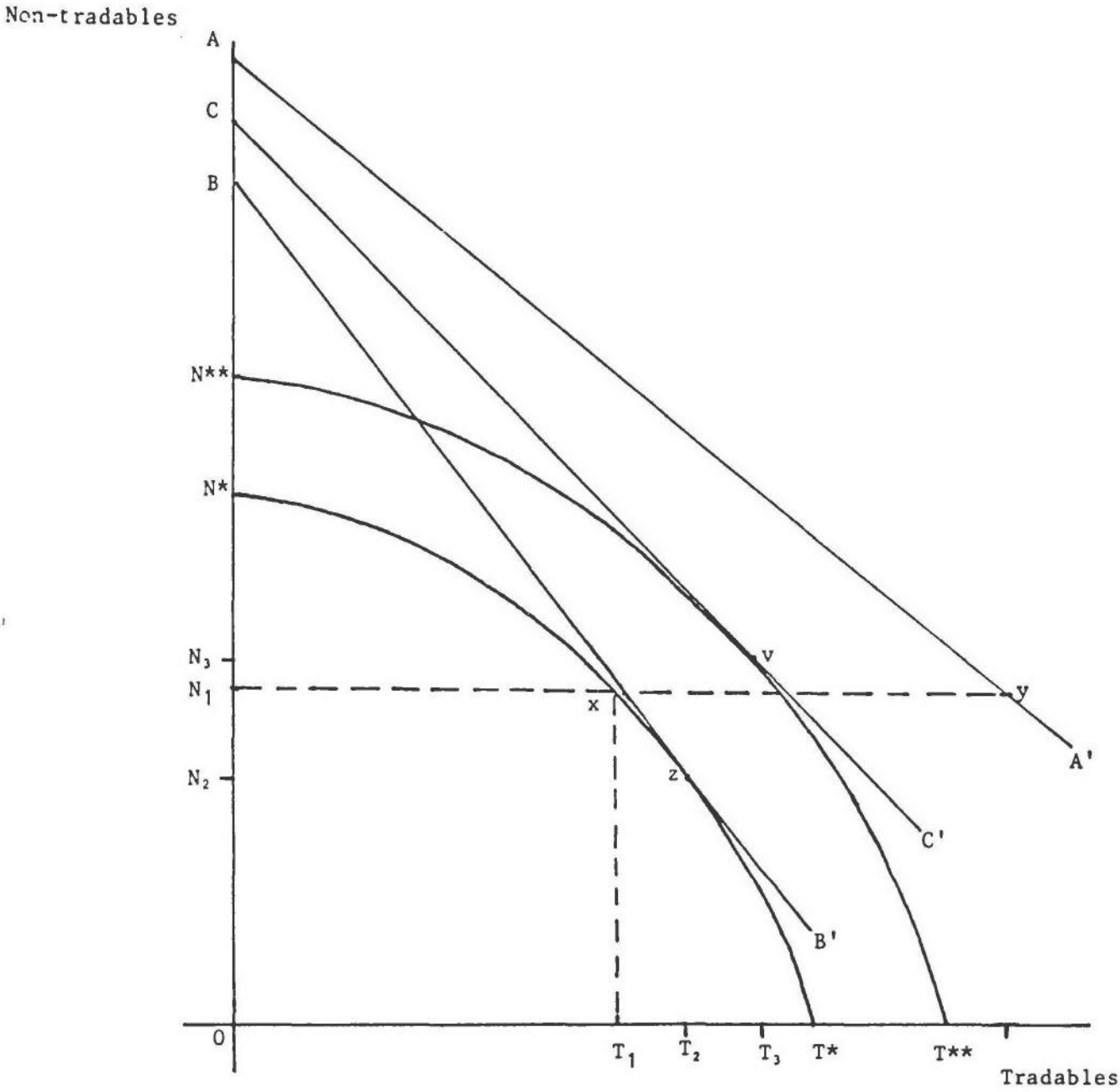

Figure 19

is higher, although because non-tradables have increased by less than the rise in tradables, the share of non-tradables in national output has fallen. The deficit has been eliminated and the structure of output shifted to tradables. We do not suggest that these movements will be smooth, since only some of the rise in tradable output can come from the restoration of capacity utilization. The issue of transitional unemployment raised in the previous section still applies.

4.47 It follows from this discussion that if growth occurs in the manner described - ie 'tradable-led growth' - then there are four important points for the social costs of adjustment:

- the impact of adjustment on households receiving incomes from non-tradable activities will be less than in the no-growth situation, because there need now be no absolute fall in the output of non-tradables; but, overall, income distribution will still shift towards tradable producers and away from non-tradable producers;

- transitional unemployment will be less than in the no-growth situation, since sellers of labor will find a better market with the economy growing;

- because the real exchange rate depreciation is less under the growth scenario, the 'knock-on' effect into higher nominal prices will be smaller than in the no-growth situation - so those households hit by the rise in nominal prices due to the increase in P_t will suffer less of an effect;

- because the required cut in absorption is less under the growth-scenario, the government will have more lee-way to protect social expenditures; social services are non-tradables and a degree of expansion in their facilities may be possible since some growth in non-tradable output is viable under tradable-led growth.

4.48 It must be emphasised that these benefits only occur because the growth process engendered by the adjustment package and the donor support is based on tradables taking a larger share of (growing) output. In section III we saw that the growth process based on a rising share of non-tradables associated with macro-destabilization was not sustainable. Under the present scenario, tradable-based growth is sustainable because of the accompanying policy shifts and finance. The growth in output engendered by the foreign exchange injection and the restoration of capacity utilization is a one-off effect - full capacity utilization can be recovered, but further large increases in output will not occur until new investments make their effects felt. Similarly, policy-distortions against exportables can only be removed once, so the initial increase in output that their removal creates is also a once and for all gain (although it may take several years for all the output-effect to occur).

4.49 These reforms do, however, provide a policy environment that is conducive to productive investment so in that regard their effects are

lasting, and in the second phase of the adjustment process planners will begin to engage in further policy-reforms, particularly major trade and financial liberalization. But the stock of policy-reforms that can be undertaken will gradually diminish (provided the adjustment program stays on course). Consequently, while some growth - perhaps sizeable - can be achieved in the early stages of the adjustment program when starting out from a base of capacity underutilization, sustained growth over the medium- to long-term depends on the magnitude of the new investments made and their rates of return. However, the evidence reviewed in section IV.B. above would throw serious doubt on the growth and investment performance of many SSA countries undertaking structural adjustment. Why many of the countries reviewed in the World Bank studies that were mentioned exhibited such poor growth performance indicators is beyond the scope of this paper. It must be pointed out, however that most countries implementing structural adjustment programs in Africa have been faced with multiple shocks, making growth an increasingly difficult policy objective to attain.

2. Effects of Liberalization

4.50 Given the prevalence of import controls during the pre-adjustment phase, there is an obvious opportunity for many African governments to remove these controls and liberalize product markets. Trade reforms are currently under implementation in many structural adjustment programs in sub-Saharan Africa. As Table 1 indicated, trade policy conditionality was present in over three quarters of adjustment loans to SSA countries (and import policy in particular has been a feature of many programs - World Bank, 1988c: 54-56). The principal objective of these reforms is to adjust the domestic relative prices of tradable goods into line with world relative prices. Thus if governments had been relying on import controls, tariffs or export taxes/subsidies, domestic relative prices tended to deviate from world prices, causing a policy-induced distortion in resource allocation. Generally, import controls and tariffs create systematic biases against the export sectors, and against unprotected import competing sectors. This is because the imposition of these controls leads to an appreciation in the real exchange rate.81/ To correct for these biases, structural adjustment frequently involves the dismantling of import restrictions. This can take the form of replacing tariffs for import controls, and reducing the level and spread of tariff rates. Their net effect is to shift the domestic relative price in favor of exportables and/or unprotected importables, and to lead to resource re-allocations accordingly.

4.51 The meso-economic effects of trade liberalization can be readily analyzed using the Dornbusch/Collier model outlined earlier. In this case, P_x/P_m is raised through a discretionary policy which reduces P_m. This will

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81/ The real exchange rate appreciates under import controls or tariffs through two processes: first the nominal exchange rate will appreciate in the face of the induced balance of payment surplus; and secondly, the prices of non-tradables will tend to rise as a result of import restrictions as consumers switch from importables to non-tradables.

result in a decline in P_n, assuming that non-tradables and importables are gross substitutes. Referring back to Figure 12, assume that the economy is in equilibrium at F (with the equilibrium loci being N**N** and L**L**). A trade liberalization would take the economy to a point such as D, thus creating excess supplies of both money and non-tradables. P_n would therefore fall to clear the non-tradables market. These relative price changes (increases in P_x/P_m and P_x/P_n) will lead to predictable resource reallocations towards exportables and out of both importables and non-tradables. At the same time, these resource flows will affect the factor markets, only now there will be a tendency for the real wage to rise and the rental rate to fall, so long as the factor intensity assumptions we made earlier are maintained (Edwards, 1988).82/

E. Effects on Social Expenditures

4.52 In assessing the impact of adjustment programs on social expenditures care must again be taken to make the correct comparisons with the pre-adjustment period of economic decline. Section III has shown that with the compression of imports and the decline in public resources caused by poor economic performance, the effective delivery of social services has almost always fallen sharply prior to the adoption of a comprehensive donor-supported adjustment program. If governments fail to adjust comprehensively, or they pursue adjustment insufficiently, then the economy's ability to generate sufficient tax revenues to finance social expenditures will remain weak. Without such revenues (and in the absence of external financial support) governments are forced to cut social budgets, whether they want to or not. Failure to adjust, or insufficient adjustment, reduces the government's room for maneuver in its budget decisions. In such situations maintaining social expenditures by increasing taxation is equally not a sustainable solution since without sufficient adjustment the taxable economic base continues its decline. Even if a comprehensive adjustment program fails to achieve its objectives - because of a new external shock for example - the situation post-adjustment is often still be superior to that pre-adjustment because some gain will have been made in tradable output, thus allowing a larger measure of protection to social budgets than if adjustment had not been undertaken, and the additional domestic resources not generated.

4.53 To be sure, budget decisions to cut social expenditures can still be made under an adjustment program if the government's first priority is to preserve or raise expenditures on economic infrastructure. The key point is not that the government may or may not decide to make such cuts, but that comprehensive adjustment raises domestic resource mobilization, and thus allows more room for choice on social expenditure priorities. In addition the inflow of resources under donor-supported programs to finance projects under the development budget reduces the size of expenditure reductions needed to cut a given budget deficit.

82/ Here the logic of Figure 11 is reversed.

4.54 If reductions are made in social budgets then special attention must be paid to the pre-adjustment incidence of such expenditures, and changes in that incidence under adjustment. There are quite serious inequalities in access to public health and education services in many African countries. Reductions in such social expenditures, if they occur without major changes in the incidence of the service, will disproportionately affect the size of benefit received by better-off households who are the main consumers of such services. However, while these households may suffer larger cuts in such services than poorer households, the latter may be more critically affected, because even a small reduction could have a critical effect on their health status and human capital. Furthermore, the application of reductions in health budgets could be skewed towards cutting services mainly used by the poor. This is an empirical matter that can only be resolved through the careful examination of trends in social expenditures and their composition. Greater benefits to the poor from public health and education services can still be achieved despite reductions in total expenditures, and these are explored in the policy section of this paper.

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UNITED NATIONS DEVELOPMENT PROGRAMME

REGIONAL PROGRAMME FOR AFRICA: FOURTH CYCLE

Assessment of the Social Dimensions of Structural Adjustment in Sub-Saharan Africa

RAF/86/037/A/01/42

VOLUME TWO

An Empirical Framework

January 9 1989

FOREWORD

The major part of this volume has been prepared by Vijay Verma (consultant to the World Bank), with additional inputs made by Tony Addison and Lionel Demery (consultants to the World Bank). The work was conducted under the overall guidance of Chris Grootaert and Michel Noel (AF1-SDA Unit). An initial draft of this document was discussed within the World Bank. This draft is being circulated for comments to Governments, UN organizations and donor agencies participating in the SDA project. It will be discussed at a series of seminars and workshops in Dakar, Arusha and Paris, and will be further revised in the light of comments received on these occasions.

Volume 2: An Empirical Framework

V. INTRODUCTION

5.1 Given the complexity and range of issues encompassed by the SDA project, policy analyses require a detailed 'information system' covering micro-, meso- and macro-variables. It will be recalled (from volume 1) that the meso-economy encompasses markets and economic and social infrastructure through which macro-economic variables transmit their effects to micro-economic decision-takers, such as households. Data on macro- and meso-variables are currently collected as inputs into policy formulation. Given the sparseness of data on the operation of micro-economic units, the main thrust of data collection under SDA auspices is towards households. These, as we have seen (in volume 1) constitute the basic units through which the welfare of individuals is affected by policy changes.

5.2 Accordingly, this volume addresses three principal issues. First, it traces the implications of the conceptual framework as discussed in Volume 1 for the data requirements of the SDA project. This issue is primarily concerned with data coverage - ie it is concerned with the range of variables that will be required in tracing the effects of adjustment on the social dimensions. Secondly, it outlines an appropriate survey methodology for collecting these data, particularly at the household and community levels. Finally, it sets out the principles of an analysis plan.

Objectives of this Volume

5.3 The objectives of the volume are to highlight a diversity of important technical and practical issues in the design and implementation of national systems for generating data essential for monitoring the social dimensions of adjustment; to identify available options and issues involved in making choices from among these options in the light of country-specific needs and circumstances; and to provide guidance on these issues where possible, on the basis of accumulated experience at the national and international levels.

5.4 Perhaps more importantly, it is intended to underline some important issues in data generation methodology and procedures which require further consideration, research and discussion. It is necessary to emphasize the importance in SDA Project work of developing and improving the statistical methodologies to be used by countries, and of establishing proper quality control procedures. In view of the urgent needs of countries undergoing structural and sectoral adjustments, the SDA Project work (especially in the area of data collection) has to begin in some countries on the basis of the existing experience. This experience, as well as the new experience emerging from country SDA projects already in progress, should be evaluated to guide methodological development where possible. However, there will remain situations and issues where the available information is insufficient for this purpose. Sufficient allowance should therefore be made in the SDA Project work for undertaking experimentation and testing as necessary to resolve technical and procedural issues and to improve survey methodology. It may be possible, already at the present stage and even more so as project implementation proceeds, to identify the most important issues for which no obvious 'best' solution is available. Further investigation of these issues, including field experimentation where necessary, can in fact

be the starting point of a common, international effort to refine statistical methodology in the context of the SDA Project. The speeding-up of this task may be greatly facilitated by harnessing the contribution of competent and experienced statistical organizations and individuals, including those not otherwise directly involved in the SDA project work.

5.5 As we have noted in Volume 1, changes under structural adjustment are expected to be complex and uneven. This complexity determines certain basic features of the type of data-generation system required to monitor social dimensions of structural adjustment, which include the following:

(i) Firstly, households and persons residing in households must constitute the basic units of enumeration for data collection and analysis. This is because, as already noted, they constitute the basic units of consumption as well as production.

(ii) Information to be obtained from households must be varied and complex, covering diverse topics such as background characteristics, size and composition of the household; housing, other amenities and services available to it; its durable, productive and financial assets; its productive activities both agricultural and non-agricultural; its income, transfers, savings, food and non-food consumption and expenditures; health, nutrition, education, employment and time-use of its members; and changes in all these under the process of structural adjustment. These various aspects have to be monitored simultaneously in relation to each other, at the level of the household and its individual members.

(iii) Furthermore, these aspects have to be monitored over an extended period of time on a continuing basis, since structural adjustment policies may be sequenced to run in stages over several years, and their effects on households and households' responses to them may be extended over even longer periods.

(iv) At the same time, the system must have the capacity to process, analyze and release the information collected in a timely manner and on a regular basis in order to meet the users' requirements in the face of a rapidly changing situation.

(v) Since structural adjustment generally affects the whole nation, the information required to monitor its impact would also have to be national in scope.

(vi) At the same time, it would be necessary to identify and focus on various 'target', and especially vulnerable, groups in the population in so far as they differ both in the effects on them of adjustment and in their responses to these effects.

(vii) Notwithstanding the focus on households and individuals within households, special issues and problems may require collection of information from other sources and other types of unit as well, such as communities, markets, enterprises, other organizations or institutions, and possibly groups of persons living outside the household sector.

5.6 It follows from these requirements that the primary source of information for monitoring the social dimensions of adjustment has to be a multisubject, interview-based household survey covering the general population and a variety of topics simultaneously on the same set of households. Generally, it would need to be national in scope, but at the same time designed to focus on various target groups. The survey would need to be installed on a permanent basis with continuous or periodic rounds to provide a regular flow of information. Henceforth, we will refer to such a system as a national Permanent Household Survey (PHS). In any particular country its PHS may be supplemented by information from other sources.

Operational Requirements

5.7 Establishing a Permanent Household Survey (PHS) of the type described above will amount to a major new effort on the part of national statistical agencies over the next several years in many of the participating countries in Africa. It is critical therefore to ensure that the PHS is developed in proper coordination with other statistical projects and survey operations in the country; that it is designed to make the maximum possible contribution towards enhancing national capabilities; and that to the extent possible and reasonable within the specific national SDA project objectives, it tries to respond to major gaps in the available statistics in the country.

5.8 In the context of relationship with other surveys, it should be noted that despite its coverage of diverse topics, the PHS will not be necessarily - or usually - an adequate substitute for other unisubject or specialized surveys, such as surveys on the labor force or agriculture. This is because the specific objectives and sample size and design requirements of the PHS may be quite different from those of such specialized surveys. The above of course does not preclude the possibility of the data generated through the PHS meeting certain information needs adequately, thereby making it unnecessary to conduct a specialized survey separately for the purpose.

5.9 In addition to relationships of the type noted above, it is also important to ensure operational coordination between surveys. At the national level it is necessary to examine carefully the demand for local resources, especially personal resources. In planning the PHS, resource requirements must be assessed not only of ongoing programs but also of programs, such as the population or agricultural census, which the country may be planning to undertake in the near future.

5.10 To summarize, operationally the PHS must be designed in balanced and close coordination with other national statistical activities (in particular with other household surveys), and in a manner that makes the maximum possible contribution to the national statistical capability. These operational characteristics are important in ensuring that the survey, once began, can be sustained on a permanent basis, or at least over an extended period, to monitor the short-term as well as long-term effects of structural adjustment.

Survey Content and Measurement Issues

5.11 This section identifies the major topics which may be covered in a PHS to monitor social dimensions of adjustment, noting at the same time some pertinent measurement issues to be taken into consideration. In describing these data requirements it is worth reemphasizing that the detailed survey content will be determined or adapted at the level of each country. Some of the topics listed may be covered in more detail in some countries and less so in others. Sometimes it may not be necessary, useful or possible to include a particular topic, or it may be necessary to include additional items of information to meet particular analysis and/or policy needs. Having said that, however, it should be noted that the policy objectives of the project in most countries will require most of the main topics to be covered in considerable detail simultaneously on the same set of households and individuals.

5.12 In discussing the type of information to be collected and the related measurement issues, attention must be paid to the type of units to which it pertains and the category of respondents from whom it may be realistically collected. It is also useful to distinguish between the type of information which can be obtained on a single occasion (either because it pertains to the current situation or because it can be obtained realistically through retrospective questioning relying on the respondents' memory), and the type of information which by its very nature requires repeated visits to the same household or individual. Most suitable reference periods will also differ among different items. Such factors can be helpful in appropriately organizing the information to be obtained in the survey questionnaire(s), and determining the appropriate survey structure.

5.13 Several categories may be distinguished in the context of the PHS concerning the type of units to which the information to be collected pertains and the type of respondents from which it may be collected:

- Simple information which can be easily obtained on a relatively extensive scale by observation or only a brief interview with any member; this can include listing of households, enumerating their basic characteristics for stratification and sampling, as well as for identifying target groups of special interest in the survey.

- General information on the household such as housing conditions, amenities and possession of durables etc. also obtainable from any

adult member but usually collected only for the households selected into the sample.

- More specialized and complex information pertaining to the household as the unit, such as consumption and expenditures, typically requiring a lengthy interview with specified member(s) of the household judged to be the most well-informed on the topic.

- Information on production, inputs, income, etc. pertaining to each household enterprise (agricultural and non-agricultural) as the unit, again requiring interviews with individuals identified to be the best informed.

- Identification of household members and their basic demographic and other characteristics, usually obtainable as a part of the general household interview with any adult member.

- Detailed personal information on each individual member, such as on employment and income, usually obtainable only directly from the person concerned.

- Information pertaining to other types of units outside the household, such as the community, local markets, other organizations and institutions - usually obtained from specially selected 'key' respondents.

VI. EMPIRICAL IMPLICATIONS OF THE CONCEPTUAL FRAMEWORK

A. Identification of Target Groups in the Population

6.1 As noted earlier, besides analysis at the aggregate national level, country SDA projects will also be concerned with monitoring particular target groups. The process of identifying target groups of interest can be more or less complex depending on the type of criteria defining them and the size and distribution of the groups in the population. Groups which are large and concentrated and defined in terms of simple criteria are easily identified and enumerated; relatively small or well dispersed groups may require the screening of a larger population. Some target groups of common interest are defined and identified relatively simply and easily in terms of criteria known a priori or from information on the location of the sample areas, such as by region, type of place, etc. Some other groups of interest may be simply post hoc classifications of the sample cases on the basis of the information collected in the detailed interview; the criteria defining them may be relatively simple or complex. However, for certain target groups it may be necessary to identify them prior to the final sample selection so as to ensure that adequate numbers of households in each are captured into the sample. In other words, it may be necessary to screen a larger number of households in the population than the number finally selected into the sample. Usually, the most convenient opportunity for such screening is provided by the household listing operation. Typically, multi-stage sampling requires listing of all households (or dwellings or structures containing households) within each lowest-stage area unit in the sample, with information for identification and classification of households for selection of the final sample. In the context of the PHS, the listing operation may have an added function: namely identification of target groups of special interest to permit their selection into the final sample in the required manner. No special provision may be necessary if the groups of interest are defined on the basis of simple criteria easily observed or enumerated at the listing stage; examples are relatively distinct ethnic or linguistic groups, broad classifications of households by sector of activity (e.g. agricultural versus non-agricultural), rough classifications by socio-economic level, as judged for instance from housing conditions. However, in certain circumstances it may be necessary in the PHS to put additional resources and effort into the listing operation, for instance if it is necessary to collect additional information at this stage to identify target groups defined in terms of more complex criteria, or to increase the size of the operation to capture in sufficient numbers relatively rare or dispersed groups of special interest. Examples are female-headed households, rural landless households, urban households with no member in regular wage employment and so on, depending on specific data requirements of the country. Obtaining such information would require that the simple household listing operation is replaced by an interview with households in sample areas, relatively brief in content but on a scale which may be substantially larger than the final sample to be interviewed in detail.

6.2 In many situations, however, the requirements may be much simpler, though variable among countries. It is possible that typically the basic

analytical requirements in monitoring the social dimensions of adjustment may be served by studying a few (say 5-7) relatively large groups defined on the basis of relatively easily identified criteria, each accounting for say 10 percent or more of the total population and not requiring any specialized scheme for sample selection. Given the pervasiveness of the effects of structural adjustment across diverse population groups, it will usually not be necessary to identify and study groups which are too small, rare, diffused, or too narrowly defined. In any case, since the sample size requirements will critically depend on the number of groups for which separate estimates are required, that number cannot be made too large in view of the cost and practical constraints limiting the maximum sample size feasible. This issue will be discussed more fully in a later section.

B. Household Membership

6.3 As in practically all household surveys, it will be essential in the PHS to obtain information on the size and composition of the household and on basic demographic and related characteristics of its members. The objectives of enumerating individual members in the household are: to define what constitutes the particular household; to identify its structure, both in terms of familial relationships (e.g. nuclear versus non-nuclear) and in terms of economic subunits which may exist within it; and to identify individuals from whom and on whom further detailed information is to be collected in the survey.

6.4 Correct identification of what constitutes a household is of special importance in the PHS in comparison with some other types of household survey. This is because for the PHS the household is not merely an operational concept to capture individual persons in the population, but also the basic, substantive unit of data collection and analysis. It is necessary therefore not only that the household is defined consistently between different operations of the survey (such as listing, interviewing, etc.) but also that the definition is substantively meaningful. There are several problems and difficulties which can arise in the definition and proper identification and analysis of households in the African context. Countries will need to develop appropriate procedures to deal with these problems. A major problem is the changing composition of the household over time, which may in fact become more marked during the process of structural adjustment. In some societies special procedures will be required to deal with very large, communal households. Some target groups may cut across households, as for instance in the case of domestic servants who may be regarded as a part of the household where they live and work, yet who form a separate social group of special interest. Such persons are also easily missed in household surveys. Special difficulties will also have to be resolved in obtaining data on nomads and pastoralists, if such data are required by policy-makers.

6.5 In defining the composition of a household, a choice has to be made on the coverage definition to be used. A 'de facto' coverage definition identifies household membership as persons present in the household at a certain specified time (such as the night before the interview) irrespective

of the persons' normal place of residence. The 'de jure' coverage definition includes only "usual" residents, usual residence being defined in terms of sharing within the household certain basic living arrangements, for at least a certain minimum duration prior to the interview. The relative advantages and disadvantages of these two systems in household surveys are well-known. Usually, the de facto approach has the advantage of simplicity in that it depends on a relatively clear single criterion (presence at a specified time); it is also less prone to non-response due to temporary absence of household members. By comparison the de jure approach relies on more complex criteria defining usual residence, both for inclusion of recent additions to the household and for exclusion of past members who may have temporarily or permanently moved away from the household. However, there are problems with the de facto approach as well. It fails to cover a (usually unknown) number of persons in 'transit' who were not present in any household at the specified time. But more seriously, in the PHS many variables of interest are more meaningfully related to the usual composition of the household rather than to persons who happen to be present at an arbitrarily chosen point in time. Despite its problems, the de jure membership is also more stable over time and hence more appropriate when the objective is to study the performance of households over an extended period of time. Finally, this approach to coverage is conceptually clearer when the fieldwork to enumerate the sample for a survey round is spread out over a long period, such as a year as may be the case in a PHS.

6.6 To summarize, the de jure coverage definition preferred for the PHS. Nevertheless, it may be noted that a combination of the two approaches has sometimes been used with advantage to improve coverage: for instance one may adopt the de jure approach in the main, but improve coverage of the survey by also including non-resident members who are known to be living at some place outside the household sector not directly covered in the survey. Another useful (and common) practice is to list household membership on <u>both</u> de jure and de facto basis in order to identify difference between the two approaches, but then to choose only one of these two to follow-up for the more detailed interviewing of individual persons.

6.7 In terms of identifying the structure of subunits within the household, four criteria can enter the standard definition and analysis of households: members living together; sharing common food arrangements; pooling resources and sharing expenses; and related by blood, marriage or adoption. The first two are the basic criteria; the third differentiates economic units equivalent to or within the household; while the fourth criterion is usually not a part of the definition but is introduced to permit further analysis of the household structure. The identification of nuclear units may be particularly important in the African context where households are often large and may include several nuclear units.

6.8 In defining usual residence, an important choice concerns the minimum period of residence which qualifies a person to be included in the household, and the minimum period of absence which results in exclusion of the person. Minimizing the minimum period for inclusion at the data collection stage has the advantage of permitting maximum flexibility at the

subsequent analysis stage; however, reducing this minimum would increase the danger of double-counting at the data collection stage. Several other issues need further considerations and country practices vary. For instance: should the minimum periods be overridden in cases where the intention to stay (by recent arrivals) or to stay away (by recent departures) are believed to be permanent? Should the minimum refer to a continuous period, or would it be more appropriate in certain situations to take it to mean the sum of all durations (of stay or absence) during a longer interval such as a year? Should the minimum criteria be the same for inclusion and exclusion? Should they be the same for all members, or should an exception be made (as has been done in many surveys) in the case of persons identified for example to be the household head?

6.9 Apart from enumerating household membership, the household roster is also a convenient place to obtain some basic information on individual members, particular items of information which are relatively straightforward and can be obtained usually without undue difficulty from any one member of the household in respect of all members. In addition to basic demographic characteristics, some information on education, current activity status and past migration may be pointed as specially relevant in the context of the PHS. Information on education may cover, for instance, years of schooling and grade completed, vocational training and apprenticeship, and school enrollment and actual attendance by children of school age (particularly concerning primary schooling). A detailed migration history, with causes and consequences of migration, etc. may be too complex to be collected at this stage; also the sample and survey design requirements to study migration properly are unlikely to be met adequately by a sample appropriate for a multipurpose complex survey such as the PHS. However, some simple items may be covered very usefully: place of birth, place of childhood residence, place of residence 'x' years ago, etc.

6.10 Finally, it may be noted that in addition to information on current residents, it could be useful in the PHS to also collect some information on past members, for instance to obtain indicators on past investment in education, relationship of education and employment with outmigration etc. Information on <u>recent</u> changes in household composition may also be useful for certain analyses.

C. Household Production

6.11 One immediate implication of the analysis of section IV (Volume 1) is that knowledge of the product markets in which households trade is essential to predicting the impact of adjustment on their welfare. Analysts need a full listing of the enterprises which households operate, their levels of output, and the income derived from the profits of their sales. Furthermore, since households will adjust these variables in response to policy changes, the relevant data must be collected over time in order to assess the impact, short-run, and long-run effects of adjustment on them.

6.12 In agriculture one of adjustment's most important effects is its impact on the production of food relative to non-food crops, the division of output between marketed produce and own-consumption, and the incomes earned from different crops. A comprehensive data set on the levels of output accounted for by the different crops grown by the household, and the incomes derived from them, is therefore required. A variety of procedures can be adopted to obtain such estimates. Direct estimates by farmers of their output is the standard procedure, but the LSMS survey in Cote d'Ivoire adopts a more indirect method since in this case pre-tests found that farmers had difficulties in giving accurate production estimates (Grootaert, 1987: 118). The final choice of procedure will in the end be determined by local circumstances and the survey costs of the selected methods (Casley and Lury, 1987: 185). These methods are discussed further in the section on 'issues in survey design'.

6.13 Being able to relate this information to household characteristics of policy interest is a major advantage of a multi-topic household survey. The household's output of food, and the amount sold, is closely correlated with household income. So is the household's production of non-food cash crops.1/ The ability to monitor the participation of the poorest households in cash-cropping is valuable information since it shows to what extent poverty alleviation is being achieved by shifts in the domestic terms of trade towards agriculture. Special projects to help the poor can then be implemented if these benefits are found to be insufficient.

6.14 Since ecological factors play a large part in determining the amount of food produced and the types of cash crops grown, and since these factors usually differ widely across countries, there are often large differences in mean household incomes between regions.2/ Adjustments in food prices relative to those of non-food crops can have significant effects on the distribution of income by rural region, an important outcome for governments concerned to monitor the social dimensions of adjustment. In countries where such regional differences are marked it is important to draw the sample so that all regions are adequately covered. If sample sizes are sufficiently large then data such as mean household incomes can be reported on a regional basis, provided that sufficient numbers of households from each region are covered. For small sample sizes it may only be possible to split the country into two or three regions of policy interest.

6.15 Significant differences have also been found between male- and female-headed households in their crop-mixes. For example East African data show that female-headed households are less likely to adopt tree crops (Bevan et al, 1987). Policy changes favoring the growers of such crops will thus

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1/ For instance see Glewwe and de Tray (1987: 20) on Cote d'Ivoire, Greer and Thorbecke (1986: 131) on Kenya, and Collier et al (1987: 75) on Tanzania. This is discussed further in part 3.

2/ As for example in Ghana and Cote d'Ivoire (see Demery and Addison, 1987a: 15).

have fewer benefits for women. It is therefore important to assess the scale of this phenomenon, so that projects can be implemented to raise female participation in the most profitable crops. A household survey allows the crop-mixes of female-headed households to be analyzed using potential explanatory variables such as their access to land and credit. Since it is intended to survey agricultural activity on a plot-by-plot basis, it will be possible to identify those cases where women cultivate plots of land separately to the household's main farming activities, and where they retain the earnings.

6.16 Data on the product mixes, output levels and sales of non-agricultural household enterprises is also needed for policy analysis. Many rural households specialise in non-farm activities, while farmers also engage in them especially during slack periods in the agricultural year. These include distributive trades, the construction of housing and economic infrastructure, informal manufacturing, carpentry, machinery repair, and transport provision (Hazell, 1987: 2). Such activities generate substantial amounts of income even in very poor rural communities.3/ In many countries the rural non-farm economy has been held back by the stagnation of farm incomes caused by inappropriate policies. With the growth in farm incomes under adjustment, off-farm employment will provide more income for rural families. It is therefore important that policy-makers have the appropriate data to evaluate the participation of different income groups in this growth process.

6.17 In urban areas, households' self-employed activities mainly consist of informal manufacturing, trade and the provision of services. In addition many cultivate food and keep livestock for their own consumption or for sale. Collecting data on these occupations requires a classification requires of the most important product types, so that the respective occupations can be satisfactorily allocated to the sample households. Since this topic merges into the more general one of time use, it is to the latter that we now turn.

D. The Household's Time-Use

6.18 Some of the most powerful welfare effects of adjustment arise out of its impact on the use of time. The adjustments that households make in their self-employed activities is one important effect since labor is among the factors of production that households must reallocate. But substantial changes also occur in their employment opportunities as the demand for labor by both enterprises and other households is adjusted to meet new requirements. Household members can be affected in different ways by these changes since they can face different sets of relative prices in factor and

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3/ Non-agricultural rural activities have been estimated at 30% of total primary rural employment in Kenya (Anderson and Leiserson, 1980: 229). See also King and Byerlee (1977) on Sierra Leone.

goods markets.4/ For example some members of an urban household may work in a formal enterprise in the non-tradable sector while others are engaged in the informal sector producing tradable goods. Accordingly, they will be affected differently by the shift in relative prices towards tradables. The outcome for household income will depend on the importance of each income source.

6.19 Household time-use will also be affected by the unwinding of rationing in goods markets. Shortages of both consumer and producer goods prior to adjustment encourage households to substitute home-produced items for those they cannot purchase, but once these goods become available again this situation may reverse itself. The increased availability of capital goods and intermediate inputs will also lead to alterations in the use of labor in the production process. Whether these effects occur will also depend on adjustment's impact on prices. For example goods may be more readily available but their prices may rise through the effect of devaluation and the withdrawal of government subsidies.

6.20 Changes in the time allocated to economic activities will in turn affect other important uses of time including house work tasks, participation in education, and the use of health services. We first consider time-use in economic activities, and then time-use in house-work tasks (time allocations to education and health are discussed under the relevant sections).

1. Time Allocated to Economic Activities

6.21 Data on this variable are required for all adult household members, and older children as well since the latter often engage in a significant amount of economic activity.5/ This data must be collected for an appropriate recall period, or periods. Seven day reference periods are standard practice in labor force surveys. However, in countries where there is pronounced instability in employment (which is often the case in urban areas) and where it is highly seasonal because of agriculture, this practice can be unsatisfactory for household surveys which are conducted only once a year (Grootaert, 1987: 55). Employment instability is certain to become even more pronounced during periods of both macro-economic disequilibrium and adjustment. Consequently, a longer reference period - for example one year - should be used in addition to the seven-day period if employment changes under adjustment are to be adequately captured. Analysts will need some information about the occupational history of the respondents. In LSMS

4/ Thus if we return to Figure 5 again (in volume 1) which highlighted the gender division of labor we can see that the relative price ratios of men and women could change by different amounts (and possibly in opposite directions) thus affecting their respective time-dispositions in different ways.

5/ The age cut-off must be chosen with regard to both the de jure and de facto practices of the country concerned. Legislation on the employment of children is often ignored, especially by household enterprises.

surveys only the last change in occupation is requested. Since it is important to know what the occupations of people were prior to the implementation of current adjustment programs it will necessary to enquire about the history of job changes over a specified prior period.

6.22 Respondents should be asked whether during the recall periods they have worked in a household agricultural activity, a non-farm enterprise operated by the household, or for an employer outside the household. Complications are created by the fact that many respondents will undertake several occupations, and that some may have made a number of changes over the year. A main occupation can be identified from the others on the basis of hours worked in each. Collecting data on the other occupations will depend on whether the benefits of this information exceed the additional survey costs incurred. Cut-off points can be selected accordingly.

6.23 The sectoral location of each activity should be identified together with the sector's characteristics such as the application of minimum wage legislation, the existence of a formal employment contract, and the provision of social security. Such criteria can be used to assess whether the sector is formal or informal in nature. Having this information is important for policy analysis - not only because we need to know whether households with different characteristics are concentrated in informal or formal sectors, but also because adjustment has different effects on such sectors due to the wage and employment rigidities caused by minimum wage legislation etc.

6.24 Respondents themselves can name the type of trade, industry or business and may be able to supply information on its characteristics. It may be advisable to ask them to identify the activity from a pre-selected list. The advantage of the latter is that the characteristics of the activity can be determined in advance, allowing distinctions to be made between sectors, according to the effects that policy changes are known to have had on them. For example, within the formal manufacturing sector some types of industries might have been favorably affected by specific policies while others may have been unfavorably affected. Textile manufacturers for instance may have suffered from reductions in import quotas, while manufacturers of farm-implements may have benefited from policy changes. Rather than the respondent identifying himself as a factory worker he could be asked to identify himself as a worker in the pre-selected industries of policy interest. The extent to which such distinctions can be employed will, however, depend on sample size since too fine a classification may not give sufficient observations in each category for the purposes of analysis. Where such questions are of particular policy interest (for instance among urban-dwellers), the sample would have to be designed accordingly.

6.25 It is then necessary to determine the amount of time spent in the relevant occupations, together with the level of remuneration (including the monetary value of remunerations in kind) for this employment over the recall periods. The incomes derived from household enterprises are more difficult to collect than those from paid-employment since the former requires calculation of the profits, and therefore accurate information on sales

together with costs. Since adjustment will alter both the prices at which household enterprises sell, and the prices at which they buy their inputs, this information must be especially accurate in order to capture the net effects of adjustment on incomes from self-employment. Aspects of collecting data on inputs are discussed below.

6.26 Aside from data on employment, information is also needed on periods of unemployment and their duration. Unemployed days are common in the slack periods of agriculture, but some farmers are able to engage in non-farm activities, and thus register lower unemployment than others. It is important to know how far seasonal unemployment is concentrated among households with particular characteristics. For example if considerable seasonal unemployment is found among poor households, then projects can be implemented to help this group participate in non-farm activities. But the question must be framed in such a way that respondents do not count time involved in house work as unemployed time. For as we have seen the latter is critical in maintaining the functions of the household, and ignoring such time will lead to an overestimate of the amount of time potentially available for other economic activities.

6.27 Questions must be framed in such a way that the reasons for unemployment are correctly identified - separating seasonal unemployment from unemployment due to loss of the regular occupation, for example. The concept of voluntary and involuntary unemployment is a crucial one for the social dimensions of adjustment that concern us here. Clearly we want to distinguish those who do not want to work from those who do. At the same time whether unemployment is voluntary or not depends on whether the person concerned is willing to work at the going wage. This is not necessarily his previous wage, and in the circumstances of macro-economic change wages may have fallen considerably. Consequently the question must be framed in such a way that it is clear whether the respondent is willing (and able) to work at the current rate for the occupations available to him. The response is thus made on the basis of the respondent's own knowledge of the prevailing level of payments, and the available occupations. In addition to direct questioning, econometric analyses could be applied to the data in order to estimate the extent of unemployment by main category (eg voluntary, unvoluntary, frictional, seasonal etc.).

6.28 One problem is that the respondent may omit certain occupations on the grounds of preference. This is especially the case among urban dwellers. For example an urban unemployed person may rule out returning to agriculture at the levels of remuneration prevailing in that sector on the grounds of his preference for an urban job. Thus when stating his availability for work he may implicitly consider only urban occupations. He is therefore voluntarily unemployed while searching for his preferred job, but his response may misleadingly classify him as being involuntarily unemployed. However, if he cannot afford the relocation costs of taking up a rural occupation he is involuntarily unemployed. As we discussed in section IV, there are a variety of reasons why the urban unemployed may not respond rapidly to the new opportunities created in agriculture by adjustment. Knowledge of the reasons

for their unemployment (and underemployment) are important for framing appropriate policy interventions.

6.29 Reporting the time-use of men and women separately in addition to that of the household as a whole will be important where it is predicted that adjustment will affect the household division of labor across economic activities. One such effect will arise through the impact of adjustment on the goods market, discussed earlier. The reduced need for the household to produce goods which were in previously short supply may affect some individuals more than others. Women may be affected more than men if they were the principal producers of these items.

2. Time Allocated to House-work Activities

6.30 In section II (of the first volume) we discussed the importance to households' welfare of their time allocations to the essential tasks of household maintenance. Such time allocations can be affected in a number of ways by adjustment. First, changes in the use of time for economic activities will inevitably affect the time available for house-work. This effect can be either favorable or unfavorable, and it can vary significantly for different household members. Second, house-work time will be directly affected by adjustment. For example the time involved in searching for scarce goods will fall as rationing declines. Women may be more favorably affected by this than men if they are mainly responsible for provisioning the household.

6.31 It is important to bear in mind that 'house-work' includes activities directed to child care, and changes in the amount of time allocated to such activities can have a direct effect on child welfare in the household. Any attempt to obtain information on time allocation should make an explicit attempt to identify the time devoted to child care, not only by parents, but also by parental surrogates (elder siblings or other relatives).

6.32 In addition, certain price reforms will also affect house-work. For example increases in the prices of commonly used energy sources - such as kerosene - will lead to a substitution of locally gathered firewood in the household's energy use. This is an example where female time-allocations will be predominantly affected since fire-wood collection is a mainly a female task. Time-dispositions will also change as adjustments are made in the pattern of public and private investments in infrastructure (both social and economic). For example alterations in water-supply programs will affect the amount of household-time allocated to water collection. Females will be most affected since this is again a traditional female task. Changes in private investments in transport infrastructure will alter the time involved in marketing cash-crops, often a male task. This set of effects can be either beneficial or adverse depending on how public expenditures are adjusted, the effects of policy reforms on the patterns of private investment, and whether donors undertake assistance to particular programs.

6.33 There are several alternative strategies for collecting data on house-work. One strategy is to go for a complete time breakdown of representative household members. A choice then has to be made on the degree of detail required. The finer the activity breakdown, the smaller the units of measurement have to be. Data collection can then be undertaken through recall or observation (Acharya, 1982: 28).6/ The recall method has been found to be less accurate than the observation method, especially when detailed time breakdowns are needed. Problems also occur with the recording of concurrent activities - for example child care often takes place simultaneously with housework. Observation methods avoid these pitfalls since the interviewer records all the activities of the selected person. However, this is a very costly technique given the large numbers of interviewers required, and these costs would be prohibitive for collecting data from all persons in a national household survey (Acharya, 1982: 29). Moreover, since activities are highly variable over the year in rural communities because of the seasonal nature of agriculture, it is necessary to observe time-use at several points within the year. Household surveys which consist of two rounds or less would be insufficient for carrying out such an exercise at the houehold level. Since the survey is conducted over the whole year, however, it will be possible at the socio-economic group level to trace these seasonal effects.

6.34 Consequently, detailed time-use studies can only be considered feasible in the context of special surveys intended to deal with particular topics - for example the impact of more intensive farming on womens' time use, or the effects of policy changes on the time-use of women in the informal sector. Since it is desirable to link this information with household characteristics this would imply that the selected households would undergo both the rounds of the main household survey, and the rounds of the time-use survey. There is therefore a danger of respondent 'fatigue'.

6.35 A second strategy for dealing with time-use issues is to collect data on specific topics only. Again observation or recall methods of collection are possible, but for integrating such time-use topics into the framework of a household survey, recall methods would have to be used. Some loss of accuracy is thus implied. This can be minimised by choosing topics where the time period involved is reasonably well-defined - for example the daily walk to school or to the local well, the daily collection of firewood etc and travel to clinics.7/ These topics are discussed further at the appropriate points in subsequent sections. However, this will not be satisfactory for important topics such as the time devoted to child-care for the reasons discussed above.

6.36 In the end the choice of whether to go for a full time-use study in module form, or questions on selected topics only, will depend on the

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6/ A third method - that of diary keeping by the individuals under study - is not possible in countries with low literacy rates.

7/ Such data are currently collected in the LSMS questionnaires.

importance of the chosen target group balanced against survey costs. Where adjustment is felt to be having particularly adverse effects on the nutrition and health of children - because mothers are substituting economic activities for child-care, for instance - then there is a strong case for considering some form of time-use study in module form. The methodology is, however, still at an experimental stage, and different collection methods may be necessary in different circumstances.

E. The Use of Hired Labor by Households

6.37 The use of hired labor by households has two important dimensions of interest. The first of these is that policy-makers will want to forecast changes in the level and pattern of labor demand as adjustment proceeds, in order to assess the impact of this on households supplying labor services. Knowledge of the hiring practices of households is one important component of such exercises. The second dimension concerns that of the welfare of the household hiring the labor. In order to respond to the new signals sent out by adjustment, households may have to deploy more labor than they currently have access to. If there is a constraint on them hiring additional labor then their ability to raise output will be adversely affected. It may be thought surprising to raise the possibility of constraints in the supply of labor when so many countries are characterised by extensive underemployment, often exacerbated by macro-economic disequilibrium. Moreover, section IV showed that in certain circumstances labor-unemployment is one likely outcome of the restructuring that occurs under adjustment. The problem is, however, largely confined to agriculture. Urban households and enterprises will be able to draw upon the urban unemployed, although problems in securing enough skilled labor may occur (thus favoring households with the latter endowments).

6.38 In general the distribution of labor-input over the year is much more unequal in the farming systems of sub-Saharan Africa than in other comparative developing regions.8/ In agricultural systems where the majority of farms reach their peaks in labor demand at the same time, there are only limited opportunities for hiring labor from other farm-households in the same area.9/ Shortages of labor are common in the peak periods when land clearance, primary cultivation, weeding and harvesting are undertaken, while

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8/ This is especially the case in the drier areas where one rainy season per year allows only an annual crop with the heaviest labor demands being concentrated in the middle of the rainy season for a few months.

9/ Hence rural labor markets are underdeveloped, and hired labor is usually less than 20% of the total labor input in most countries (Eicher and Baker, 1982: 103).

labor is underemployed at other times of the year (FAO, 1986c: 10-14).10/ Such labor shortages pose a serious impediment to the expansion of production in response to favorable prices.

6.39 Accordingly farmers with sufficient resources to bid for scarce labor at peak times are significantly advantaged.11/ Being able to call on help from others within the community is also important, and the reciprocal obligations established between the household and its wider social network become crucial at such times. Differences between the amounts of labor (both family and hired) that households can command will be important in accounting for variations in their output-responses to favorable price changes. Wealthier households may show larger output responses than poorer households because of their larger 'wage-funds' and their greater power within the community. For these reasons it is especially useful to know how much labor is hired over the course of the year by households with different characteristics, information which can be gained through a multi-topic household survey.

6.40 In addition information on the source of this labor is important. Farmers can be asked to state the share of hired labor accounted for by persons from their local ethnic group, and the share accounted for by foreign labor (if this is a prevalent hiring practice). The latter information is important because the expansion of agriculture under adjustment in one country may draw in labor from a neighboring country, especially where frontiers are permeable. Without such data ministries of labor will overestimate the impact of adjustment on the national labor force.12/ The hiring of persons who normally reside in towns or who have recently migrated to the rural locality can also be identified. This will indicate the extent to which urban-dwellers undertake circular migration to work on farms and the extent to which they will relocate to rural areas as farm-laborers. Both of these can increase as adjustment reduces the level of urban incomes relative to rural remunerations.

10/ Exceptions occur when temporary migrants can be hired from a neighboring region with a different agricultural-cycle, and when annual migrants can be hired from poorer regions (Binswanger and McIntire, 1987: 76). This sometimes involves migration across national borders - for example the circulatory migration of labor from some of the Sahel countries to coffee- and cocoa- farms in Cote d'Ivoire.

11/ Estimates of the shadow wage rate for farm labor generally show that it increases sharply at peak times of the year (see for example Heyer, 1971 on Kenya).

12/ This point applies equally to the urban informal sector since in many countries foreign nationals predominate in particular trades.

F. Household expenditures

6.41 Data on total household expenditures are necessary, both as a measure of the household's overall welfare, and to analyze households' adjustments to the level and pattern of their expenditures in response to relative price changes. Some issues relating to household expenditures, and the distribution of those expenditures within the household, were discussed in section II.5. In particular we noted that expenditure data allow analysts to use equivalence scale techniques to determine the existence of any biases in intra-household consumption. Total household expenditures are arrived at by aggregating expenditure sub-categories (food, clothing etc). In addition to reporting total household expenditures for each household income-group, it is desirable to report the mean values of the expenditure sub-categories, together with their shares in total expenditures. This will permit analysis of the welfare effects of changes in the prices of important consumer items. Thus changes in relative prices collected at the community level can be matched with changing expenditures by income group (or with other household characteristics of interest).

6.42 One important dimension of consumer behavior under adjustment is the effect of the unwinding of rationing in the consumer goods market on households. This affects the consumption-dimension of household welfare, and through it the household's labor-supply and output decisions. It will be particularly important in the early years of adjustment programs of countries moving out of the severely rationed systems characteristic of macro-economic disequilibrium (see section III, previously). Data on the distribution of consumer goods across regions may already be available through state marketing organizations or regional governmental offices. Suitably compiled this will permit policy-makers to analyze changes in the regional distribution of goods as adjustment proceeds. In certain cases it may be possible to use this data in a multivariate analysis of households' labor-supply and production responses.

6.43 However, it is desirable to correlate information on the availability of consumer goods with household characteristics, and an integrated household questionnaire offers the opportunity to do this. Thus while existing data collection exercises give policy-makers information on (say) the availability of a particular item by region or area, it is important to know whether such availability varies between households in that region. For instance regional figures on stocks of textile goods may give a favorable picture of their availability, but a household survey may show that some households are still rationed (because, for example, they are discriminated against by sub-regional allocation mechanisms). Data can be collected from households on the their purchases, and attempted purchases, of certain basic consumer items, previously identified as being important in consumption baskets. Thus the respondent could be asked whether he/she had wanted to buy (at the market-price) a specified commodity during a recent period. If a respondent answered that they had been unable to obtain the quantity desired, then they can be asked to estimate the shortfall in their purchase (as a percentage), and asked to select a reason from an appropriate menu of options. These items could include specific brands of products in

cases where it is known that the distribution of these has been severely disrupted.

G. The Household's use of Productive Assets and Inputs

1. Productive Assets

6.44 In the resource-poor economies of sub-Saharan Africa, labor is one of the most important factors of production that households have. But their access to other factors of production, including land and capital, also plays a decisive role in the success or failure of their enterprises.

6.45 Many assets are complementary in the production process, so that an asset not only generates a return itself, but raises the returns of other assets. Those with the best access to productive assets are in the best position to benefit from the growth process engendered by adjustment.13/

6.46 Adjustment measures will affect the access of households to productive assets in a number of ways. Direct effects include specific policy interventions in asset markets including price reforms (such as the removal of both official price controls and subsidies), improvements in the marketing mechanisms used to distribute capital goods, sales of publicly-owned assets under privatization programs, alterations in the laws governing ownership of assets (for example those on land-tenure) and regulations governing their use (zoning restrictions for example). Policy measures intended to mitigate the social costs of adjustment - for example the transfer of an asset to a poor target-group - will affect not only the target-group itself but the access of other households to that asset. Increases in the output of domestic industries producing capital goods under industrial rehabilitation programs will alter the supply of such productive assets, as will increases in foreign exchange allocations to imported investment goods, and increases in import support from donors for such items. Finally, changes in trade and exchange rate policies, will affect the domestic prices of capital goods.

6.47 These policy changes will shift the production functions of households (and those of any household sub-units), and thus the quantity of output they are able to supply to the market. An integrated household survey allows us to determine the distribution of productive assets across households and the role of such assets in determining income. We will be able to monitor how adjustment affects household's access to assets and the changes that occur in the returns that they obtain on the assets they hold.

6.48 Three non-labor factors of production are most important: land, livestock, and capital equipment. We briefly outline some of the effects that adjustment can have on the access of households' to these assets (more detailed discussion is given in the policy part of this paper).

13/ These issues are discussed further in volume 3 in the context of policy interventions.

Land

6.49 Unequal access to land is a major source of rural inequality in many developing countries. However, landlessness is less common in Africa although there are exceptions such as Kenya where it is serious problem, and Cote d'Ivoire, Malawi and Zambia where it a growing problem. Most of the region is described as 'land-abundant'. But soil quality can vary widely within small areas so that the better soils are often fully taken up even in zones of only moderate population density. Farmers with access to these soils are consequently advantaged. Thus while land availability is generally less of a constraint on small-farmers in Africa than (for example) those in South Asia, it is nevertheless still a significant cause of income differences between households.

6.50 Most importantly, the supply of land suitable for cash crops - especially high-value tree crops - is frequently in far shorter supply than arable land generally. Since most adjustment programs emphasise the expansion of export-cropping, the demand for such land can be expected to rise, and those households excluded will be disadvantaged.14/ It is known that shortages of good quality land are driving up its shadow price and land sales are becoming more frequent within communities, while those holding prime cash-crop land can now expect larger rents (Noronha and Lethem, 1983 and Delgado and Ranade, 1987). These forces are undermining the traditional systems of communal land ownership in some countries, and the commercial pressures on such systems can be expected to intensify as adjustment programs make farming a more lucrative activity.

6.51 With the value of cash-crop land increasing, wealthier households who can bid for it will be favored, and poorer households may lose their access. Wealthier households may also have stronger positions within the social networks that determine the allocations of land within the community. In addition, land access should be analyzed in relation to other household characteristics - for example female-headed households may face special problems in their access to land if they suffer discrimination under male-dominated systems of communal land allocation - for instance they may be denied access to land suitable for the most profitable crops (and this restriction may increase as adjustment increases those profits). Similarly those who are outsiders to the local community may have restrictions placed on their rights to land and on the crops they can grow. In some rural communities outsiders are increasingly confined to poorer-quality land, and they are not permitted to grow tree-crops in order to prevent them claiming a more secure right to the land on the basis of length of cultivation (Feder and Noronha, 1987: 154). Critically, such restrictions may impede the ability of urban-dwellers to resettle in their rural communities. Those who have not maintained their links with rural kin may find it difficult to establish themselves as farmers. This is an important impediment to factor

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14/ See for example Gbetibouo and Delgado (1984) on the Côte d'Ivoire and Delgado and Ranade (1987: 119) on Eastern and Southern Africa.

mobility, and reduces the ability of urban-dwellers to cushion the impact of urban recession on themselves by migrating to rural areas.

6.52 Accordingly data are needed on the land acreages available to farm-households, in order to correlate access to this factor of production with the households' characteristics. Gathering such data over time will allow policy-makers to monitor changes in distribution of land. It is also desirable to make some assessment of changes in distribution of land suitable for the most profitable crops. However, this is difficult to do through the instrument of a general household questionnaire since it would require the survey team to grade the land in the locality concerned prior to the implementation of the survey. And since it is difficult to standardize grades of land-quality, it would not be possible to compare land-access across different localities. One alternative is to ask respondents to estimate how much of their land is allocated between different types of crop: for example food crops as against tree-crops (the specification of the crop groups would have to be relevant to the region concerned). They can then be asked if they wish to expand their cultivation of a particular crop, whether they can accomplish this, and the reasons for not being able to do so (alternatives would include lack of labor, lack of capital or lack of access land). This system of questions has the advantage that it will identify a range of constraints on the expansion of small-scale farming. And because this is undertaken within the context of a household questionnaire, the results can be correlated with household characteristics of interest.15/ However, in regions where knowledge of land-constraints was particularly important to policy-makers a more intensive survey module could be attached to the main survey.

6.53 Given the growing importance of land transactions, particularly those due to the impact of adjustment, information must be collected on sales and purchases of land by households. The income so derived can then be correlated with household income levels, and monitored over time. In addition all households, irrespective of whether they have engaged in any recent land transactions need to be asked if they have a right to sell or buy land in their community. Such data will indicate changes in communal land-tenure systems which may be related to adjustment's effects.

15/ Given the possibility of restrictions on 'outsiders' in communal land systems, respondents can be questioned as to their previous residence, and whether this was a town or another rural area. This is currently done in the migration component of LSMS surveys. Additionally the respondents can be asked to identify whether they come from the ethnic group predominant in the area. This information can then be correlated with data on their land holdings. However, if insufficient numbers of new immigrants are identified in the household survey, then a special survey of this group would be needed.

Capital Equipment

6.54 A second productive asset of importance is physical capital. As we have seen the market for capital goods will change appreciably under adjustment as policy reforms affect both its demand and supply sides. Some of this effect will be indirect, as household incomes change and accordingly their demand for capital goods alters. Households are also significant suppliers of capital goods, and just as the capacity utilization of enterprises producing such goods will rise, so too will that of households.

6.55 For households operating in the informal manufacturing sector the distribution of capital equipment is a significant determinant of the distribution of output and income. While many informal producers operate with a low level of capital equipment, only simple tools in some cases, the most profitable activities require substantial amounts of capital (relative to the average capital requirements prevailing in the sector). Large capital requirements act as barriers to entry in activities such as blacksmithing and vehicle repairs; see for instance JASPA (1980) on The Gambia and House (1987) on Sudan.

6.56 With regard to farm equipment surveys generally pick up large differences between households at different income levels in the ownership of productive equipment - for example Watanabe and Mueller (1984: 119) find pronounced differences in rural Botswana. The level of farm-mechanization in most African countries is much lower than in Asia, and advanced farm equipment is more concentrated than in other regions (World Bank, 1987b). So ownership of capital equipment may be important in accounting for differences between the most modern family-farms and those of other households, but not so important in the determination of income variations between traditional farms.

6.57 In order to collect the required data the most important pieces of capital equipment need to be classified at the questionnaire design stage, so that the ownership of these items can be enumerated. This will obviously differ between agricultural and manufacturing enterprises.16/ In addition other data will be required on the scale of rationing in markets for capital goods and trends in prices. Collection of such data is considered with that on intermediate inputs below.

Livestock

6.58 Ownership of livestock, especially cattle, is the most important source of income among pastoralists, and is a major income source for those settled farmers who keep livestock as a secondary activity. In rural areas cattle are often the dominant form of wealth-holding (Schneider, 1979:

16/ Some households conduct both types of enterprise, for example a farm-household which also engages in some informal manufacturing. Certain items will be common to both enterprises - for example vehicles, while others will be enterprise specific.

241).17/ In countries where hyper-inflation has destroyed confidence in the currency, cattle offer an alternative, although imperfect, store of value.

6.59 Differences in the ownership of livestock are very significant determinants of rural income distribution.18/ Not only do cattle owners get returns from the animals themselves, but cattle increase the returns on other productive assets.19/ Animal traction is still a minor source of farm power in most African countries, but cattle-owners can plant a larger area than farmers with no animals, and can plough at the most favorable time, unlike those who must rent animals. Finally, urban-dwellers also derive significant incomes from keeping small livestock, and may have shares in rural livestock enterprises.

6.60 Data are therefore required on the ownership of livestock, and its trend over time, and a household survey allows this information to be correlated with household income-characteristics.20/ In addition information is needed on sales and purchases of livestock by households in order to estimate the value of this income source, and community price data on livestock prices in order to estimate supply and demand elasticities for livestock. The latter will be needed in policy-analyses of the effects of government price and market interventions on livestock markets.

Housing

6.61 Housing is an important dimension of welfare, for not only do people receive utility directly from it, but dwellings are frequently the location for production processes, and are thus an essential input into the household's economic activities. Consequently, policy interventions which improve the quality of housing can convey both consumption and production benefits to the family. It is therefore important to have information on housing conditions.

6.62 For the purposes of data collection we are concerned with the 'dwelling unit' - all the rooms and all the separate buildings used by the household. In many communities a number of households will live in a single

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17/ This is especially the case where there are tight controls on individual land-ownership, as for example in Ethiopia and Tanzania.

18/ See for example Jamal (1983) on Somalia, Livingstone (1986: 262) on the arid and semi-arid regions of Kenya, Watanabe and Mueller (1984: 118) and Colclough and Fallon (1983: 143) on Botswana and Collier et al (1986: 73) on Tanzania.

19/ With fertility enhancing technologies in short supply, cattle manure restores the soil, and raises the return on land.

20/ Cattle-ownership can be a significant indicator of gender inequality - for instance in Botswana 75% of female-headed households own no cattle, as compared to 25% of male-headed households (Livingstone and Srivastava, 1980).

compound, while undertaking mostly separate economic activities. The structure within which the household resides is not in such cases the household's dwelling unit: hence the need for a careful recording of the actual space used. The latter can involve measurement of the dimensions of the property in order to calculate the amount of living space (Grootaert, 1986: 67). This when expressed in per capita terms, can be an important measure of welfare especially in urban areas where land is in short supply. Information on the construction of the dwelling is a good indicator of the quality of the housing which people have access to. In devising questions on this topic close attention must be paid to local conditions since certain construction materials will be closely associated with standards of living. Lastly, the proportion of the property used for business should also be established so that the indirect effects of housing policy on this use can be analyzed.

6.63 In addition to information on the physical aspects of the dwelling-unit, data are needed on housing expenses, both as useful information in their own right, and as a component in the calculation of total household expenditures. Obviously a key question is whether the household rents (and the type of landlord concerned) or owns its dwelling. This allows a picture to be built up of the source of housing for different income groups, and gives policy-makers a starting point for devising interventions to assist the poor. Changes in the role of public and private sources of housing can then be monitored for target groups in response to, for instance, changes in investments or in policies such as rent controls. All the payments made by the household for the use of the dwelling must be accounted for: this includes the value of payments made in kind. Housing costs met by transfers from outside the household - from other households, from private firms, and from government - should be calculated. This data can then be used to estimate the distribution of - for example - public housing subsidies which can be a major contributor to standards of living.

6.64 For house owners a value for the housing unit and an imputed rent can be calculated. This is important information for deriving estimates of the total value of the household's assets, and in the calculation of total income. The physical size of the unit is one important explanatory variable used in the analysis of imputed housing value and imputed rent (Gootaert, 1987: 82).

6.65 Information is also required on the household's use of related services, including its access to sanitary facilities, water (whether from well or pipe), electricity, and methods of garbage disposal. The amounts paid for these items (to both private and public suppliers) are needed since they can be an important component of household expenditures, and are open to change when policy adjustments occur (for example through changes in user-charges, and indirectly through the effects of adjustment on their costs of supply). Questions on these items can be framed in such a way that they reveal the number of people using a particular facility and, expressed in per capita terms, such data are useful for monitoring the welfare of different income groups over time. This allows analysis to be done of the effects of adjustments in the supply of services - for example the withdrawal of a

public service may be picked up in an increase in the number of households sharing a facility.

2. Intermediate Inputs

6.66 The pre-adjustment period of macro-economic disequilibrium is usually been characterized by accelerating prices for variable inputs, reflected either in official prices or, if the latter are controlled, in parallel market prices (see section III). Inputs are also limited in their availability with rationing by official and unofficial means, and their overall supply is usually highly variable. This inevitably affects the output-mix of households, since it increases their uncertainty about the environment in which they operate.21/

6.67 Adjustment will begin to change this environment in the following ways. First, the total supply of inputs (and its reliability) will almost certainly improve through the rehabilitation of domestic production, the relaxation of import constraints, and the priorities accorded to agricultural-inputs in decisions over foreign exchange allocations, transport priorities and so forth. The distribution of that supply will also change, reflecting both direct policy decisions - for example over allocations through private and public marketing channels, and indirectly as adjustments in other sectors - most critically transport and storage -take effect. The systems for determining the prices of these inputs will also alter, as input-prices are decontrolled (or as controlling-agencies adjust prices to nearer market-clearing levels), and as subsidies are modified. Finally, the demand for inputs will change as the level and pattern of economic activity adjusts to the new market signals.

6.68 These adjustments on the input side of the economy will feed into the economic activity, and thus into household income, over time and should be monitored. Ministries of agriculture often collect input data on a regular basis (for example supplies by region and sub-region), and information on input prices may be available through regular community price surveys. If this is not already done on a satisfactory scale then an SDA community price survey offers a useful vehicle, especially where existing surveys are not adequately accounting for parallel market prices.

6.69 Collection of data at the household-level on the quantities of inputs purchased will permit the estimation of the price elasticity of demand for inputs by household-income groups. Such estimates are important for determining the effects of adjustments in government input pricing policy - for instance the removal or addition of subsidies - on different types of household enterprise.

21/ This is especially the case in agriculture where farmers may be less willing to grow certain crops because there are no guarantees over the availability of inputs at critical times or over the prices at which they will be available.

3. Collection of data on capital goods and intermediate inputs

6.70 The effects of reduced rationing in the markets for capital goods and intermediate inputs are important for policy-analysis. Section VI.6 has already discussed one method for determining the scale of rationing in markets for consumer goods, and this can be applied to important capital goods and intermediate inputs as well. In particular, respondents can be asked to identify whether particular items of equipment that they purchased, or attempted to purchase, were of foreign or local manufacture. In order not to overextend the questionnaire it is necessary to preselect some of the most important items at the questionnaire design stage. Such data will permit analysis of how policies such as trade liberalization are affecting the availability of imported capital goods and inputs, and how the rehabilitation of domestic industries is influencing the availability of these items. The amounts purchased of such items, and the magnitude of the shortfall in purchases, can be correlated with household characteristics. For example it may be found that rural informal manufacturing suffers from greater shortfalls in access to imported items than those in urban areas, or that poorer households suffer higher levels of rationing than wealthier households.22/

6.71 In the community price questionnaire the prices of important producer goods need to be collected alongside those of consumer items. Establishing regional variations in such prices will be important for determining the cost-differentials that face producers in different locations. Changes in these regional price differentials may be correlated with changes in marketing and transport structures (themselves changing under policy-adjustments). For example it may be found that the differential between the prices of capital goods in urban and rural areas begins to fall over time as adjustment improves rural transport infrastructure, and thus reduces the costs of rural marketing.

4. Credit

6.72 The availability of credit, and the terms on which it is granted, can be an important determinant of household asset accumulation. It may also be important in day-to-day operations when it provides working capital. As we noted in section III (Volume 1), in most African countries the formal banking system is geared to lending to urban businesses and lending to agriculture is generally concentrated on large commercial farms. The majority of smallholders have little access to the formal credit market. Households who can obtain formal credit are usually those holding individual titles to land which can be used as collateral, or those with large non-farm

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22/ This will be important for the analysis of changes in the pattern of employment among household enterprises. For example it may be found that employment expansion among rural manufacturing enterprises is being constrained by a higher levels of goods-rationing than among urban enterprises.

incomes.23/ Similarly, urban informal manufacturers with the largest net-worth are more attractive to banks than those with few assets to pledge against a loan. This illustrates how economic advantages become cumulative: asset-ownership and other collateral allows a person access to a market that would otherwise be closed.

6.73 In many countries government policy has also directly and indirectly biased the financial system against lending to smaller enterprises. Financial repression, through depressing loan rates below market-clearing levels, results in excess demand for credit and the rationing of some borrowers (World Bank, 1987e: 118). This leads banks to cut loan allocations to small-borrowers first, because the share of overhead costs in the total costs of lending tends to be higher for small loans than large loans. Thus large enterprises and wealthier households receive priority, while the credit needs of lower-income households are squeezed out because they are less profitable to lend to. Moreover, the demands placed on bank-borrowing by the escalation of public sector deficits crowds-out the loan needs of private enterprise, and again it is usually smaller borrowers who lose.

6.74 For these reasons most low-income households must fall back on the informal credit market. Much less is known about informal rural credit markets in Africa as compared to other developing regions, but generally such markets are thinner in Africa than in South Asia. Fewer households derive incomes from the business of lending money as they do in other comparable regions.24/ Instead, informal lenders usually combine money-lending with farming or trading (Miracle et al, 1980). Richer farmers sometimes lend money on a regular basis, and groups, often based on kinship, make loans within the network (Eicher and Baker, 1982: 200). These rotating savings and loan associations are common in both rural and urban areas - for example the ekub in Ethiopia and chilemba in Malawi (Holst, 1985: 122).

6.75 Adjustment, through both reducing financial repression and by cutting public-sector borrowing from banks, will have major effects on financial markets. Raising loan interest-rates will impact on households' levels of economic activity and incomes, depending on their participation in such markets. Higher loan interest rates will adversely affect the production activities of households and enterprises which have been heavily reliant on credit. But the reduction of interest rate restrictions will

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23/ For example in rural Kenya lenders look to non-farm income as a criterion for judging the credit-worthiness of smallholders, so that those with above average non-farm incomes receive the largest share of loans (Collier and Lal, 1984: 1015).

24/ One reason for the thinness of informal credit markets in rural Africa is the prevalence of communal land-tenure systems. The development of a rural credit market is associated with the expansion of individual titles to land, so the former are much deeper in the land-scarce economies of Asia (Binswanger and Rosenweig, 1986).

allow banks to lend to smaller borrowers through raising their interest rates to accommodate the higher costs of small loans. Households on lower-incomes may now find their access to formal credit markets increasing and this will have a favorable effect on their production activities. For these reasons it is important to establish the amounts borrowed by households from the different formal financial institutions (commercial banks, state-owned banks, co-operative banks etc), and the terms of such loans (interest rate charged, and type of collateral required).25/ Likewise it is important to know the amounts lent to these institutions by households. This is necessary both to establish interest-rate income, and to monitor the benefits that higher deposit rates confer on different households.26/

6.76 It is also desirable to have data on the level of borrowing and lending in informal credit markets, and the terms and conditions imposed. Information on informal interest-rates is useful to policy-analysis because the differential between formal and informal rates (and changes in it) indicates how far the financial system is segmented, and whether such segmentation is falling as financial reforms take effect.27/ And as the links between formal- and informal credit markets become closer, so will the effects of monetary policy become more widely distributed than before (an important point for the design of adjustment programs).28/

25/ The conditions applied to such loans can then be correlated with household characteristics. For example it may be found that lower-income households are charged a premium over the interest rate charged to wealthier borrowers, because of the latters' greater collateral. Similarly, female-headed households may be charged higher rates because they can offer less collateral (such as land-titles) than men, or because of gender-discrimination in the loan market.

26/ People can be sensitive about supplying this information, and it may be necessary to ask persons other than the household-head to respond about their savings (Grootaert, 1987: 137). It may therefore be worthwhile to sub-sample persons of interest within the household - for example women, given that they may keep some of their savings separate to those of a male household head. The mean levels of savings of men and women by household income group can then be separately reported if desired.

27/ As financial repression is reduced more people will have access to commercial bank loans and some of this will be on-lent to others informally. In so far as flows between the formal and informal credit markets rise, the interest rate differential between the two markets will fall through arbitrage.

28/ If the informal/formal interest rate differential is known by region, then this indicates the level of integration between local and national financial markets. Such information can be used to assess how the real economy effects of monetary policies are distributed across the country.

6.77 Collecting data on informal credit markets is, however, difficult since such markets are fragmentary, and they largely consist of borrowing from private individuals. It is useful to have the occupation of these lenders listed (money-lender, trader, farmer etc) and to know whether they are kin. This will allow the structure of informal credit markets to be laid out, and will provide information on the types of participation that different households have.29/ This can be handled through a household survey of the LSMS type.

6.78 More problematic is verifying the costs of informal loans because lenders will often not quote an interest rate. Only the amount and regularity of repayments may be given, the interest rate being left implicit, and the respondent will often be unable to give it. If the rate of interest is to be calculated (in order to compare the costs of formal and informal loans) then information is needed on the sum borrowed, the amounts and regularity of repayments, and the termination date of the loan. However, complications arise when repayments vary and the loans are extended, and when the loan is partly repaid in the form of goods or labor services, in which case these items would have to be valued.

6.79 These complications imply that collecting data on the costs of informal credit across all of the household sample would be a time-consuming business. However, given the policy importance of this issue, there is a case for conducting special surveys on informal interest rates where policy-makers have a need for such data. If this is required then the choice of sample-unit depends on the source of the informal loans. If informal credit is dominated by money-lenders then it may be possible to establish informal rates of interest through a community questionnaire. But where the informal money market is conducted as a side line - for example richer farmers lending to poorer farmers - the terms of the loan can may be very particular to the transaction concerned. The required data would then have to be obtained through a special module to the main household questionnaire, and applied to a sub-sample of households.30/

6.80 Finally, the costs (in time and money) of travelling to a bank to deposit or borrow money can be important disincentives to using the banking system, particularly in rural areas. These costs may discourage users as much as low interest rates. In particular lower-income households may be the most discouraged - poor households may face the highest access-costs because they live in remoter areas (with high transport costs) and must incur high opportunity costs in terms of income foregone in order to travel to a

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29/ For example it may be found that poorer households rely more on borrowing from their kin (because they are too poor to obtain loans from other informal lenders, for example)

30/ If this alternative were chosen then the costs of informal credit could be correlated with household characteristics. It may be found that certain types of borrower - for example poorer households - are charged a premium over the going rate.

bank. They will therefore not benefit as much from the removal of financial repression as better placed households, and policies for financial mobilization will not be as effective as governments intend. Data on how many lower-income households possess bank accounts will give some guidance, but asking respondents about the time it would take them to reach the nearest bank, and the costs of doing so will also be useful for policy-interventions concerned with both financial mobilization and poverty-alleviation.

H. Access to Economic Infrastructure

6.81 Economic infrastructure covers transport and communication systems, power networks, public storage facilities, and government extension and marketing services. Such infrastructure can be provided by both the state and the private sector. It is well known that the distribution of economic infrastructure across African countries is unequal, and that infrastructure is usually concentrated in the main urban centres, in rural regions with proximity to towns, and in areas in which cash-cropping is concentrated. Colonial investments often by-passed large areas and in many countries a more dispersed pattern of infrastructure is only just beginning to emerge. The problem is compounded by generally low population densities in rural areas and large distances, which lead to high per-unit costs in supplying transport, power, and communications through centralized grids.

6.82 Large variations in access to economic infrastructure are important in determining the income-opportunities of different regions, since it is a source of regional comparative advantages. Farmers who want to increase cash crop production in regions with good transport links to markets will be less constrained than farmers in areas with poor transport infrastructure. Within regions farmers will have different capacities to pay for access to economic infrastructure, for example to pay private truckers to move produce. The factor productivity of poor farmers is often low because they lack access to economic infrastructure, and given low productivity they lack the resources to pay for access which would raise their productivity (Lipton, 1987: 217).

6.83 One of the most important features of current adjustment programs is the attention given to rehabilitating and extending high-priority infrastructure through donor assisted projects and import support. The injection of external resources into the economy to relieve supply bottlenecks is crucial to the success of economic recovery programs given the level to which infrastructure has frequently deteriorated in the phase of import-compression.

6.84 Information and data on such infrastructure is usually available through the responsible government ministries. It can accordingly be used alongside the data generated by households surveys to track some of the effects of changes in infrastructure development on household and enterprise production. For example it may be found that households across different regions, but with otherwise similar circumstances, are displaying significantly different output responses to relative price changes. Inspection of information on the distribution of infrastructure may reveal that the cause lies in different rates of improvement in economic

infrastructure between the regions. The method of identifying rationed markets for consumer and producer goods discussed above may reveal differences between regions in supply-shortfalls, thus alerting policy-makers to the effects on household welfare of different rates of improvement in transport and marketing infrastructure.

6.85 Community price data from different regions can be used to track the effects of improvements in transport and marketing infrastructure on households across regions. If the differential between regional price indices (of an identical basket of goods) begins to fall then this is one indication that transport and marketing costs are being reduced by improvements in this infrastructure.

6.86 Valuable information on the effects of improvements in economic infrastructure can also be gathered through household surveys. Respondents can be asked the time and monetary costs involved in travelling to their place of employment, travelling to markets to sell their products, and to purchase their consumer and producer goods. Such costs will almost certainly be greater in rural areas than urban, and may be greater for poorer households than wealthier ones - because the poor are unable to afford faster modes of transport, or have less access to cheaper (or free) transport such as vehicles provided by government agencies and private firms. Changes in these monetary and time costs give one indication of the effects of improvements in transport infrastructure on different household income groups.

6.87 The expenditures side of the household questionnaire will also reveal changes in households' consumption of the services of public utilities such as electricity and telephones, and the collection of this data alongside data on household characteristics allows policy-makers to determine how the benefits of such services are distributed. It also allows them to analyze the effects of altering user charges on such expenditures, and to determine which income groups will bear the burden of increased charges.

I. Access to Social Services

6.88 We have seen (in section III of Volume 1) that the contraction of expenditures on the social sectors, and the consequent decline in social infrastructure, is one of the principal features of the macro-economic disequilibrium that precedes adjustment. It has also been argued (in section IV.4) that adjustment has substantial effects on the ability of governments to supply health-care and education. Through restoring the basis for growth, adjustment leads to the generation of more domestic resources which governments can mobilize to finance public services. But whether these additional resources are allocated to social expenditures depends on competing claims such as the need to finance the economic investments which drive the adjustment process, and the social priorities of the government itself. Moreover, adjustment also influences the private supply of social services, through changes in policy strategies regarding the desired mix of public and private provisions. Finally, not only does adjustment affect the supply-side of the social sectors, it also affects the demand side. Direct

effects on quantities demanded occur through alterations in user-charges, while important indirect effects occur as demand schedules shift because of changes in incomes. In sum, moving an economy out of macro-economic disequilibrium generates powerful changes in peoples' use of social services. We accordingly need a range of data to monitor these effects over time, and this section discusses the major requirements for policy formulation.

6.89 Ministries concerned with social issues already possess a range of information sources on such items as the regional distribution of different kinds of health and education facilities together with their staffing and equipment levels. Administrative channels also exist for determining trends in the delivery of services (such as numbers of patients treated, numbers of pupils), and problems in supply. Existing information can be used to reach judgments on such important issues as the distribution of schools and clinics between urban and rural areas, and the availability of essential items between different localities. In some cases, however, this data may not be compiled in ways that would maximize its usefulness, it may not be timely, and the channels through which the information flows may be weak. Some important groups of policy-makers may not be adequately incorporated in the existing data-generation process, so that for example, macro-economists in ministries of finance in drawing up budget frameworks may not be fully aware of some important dimensions of the current situation in the social sectors. This point on the distribution of information applies not just to the social sectors but also to other dimensions of welfare.

6.90 Likewise some important information sources from outside the government system may provide valuable and timely insights into important dimensions of welfare (again not just those exclusively in the areas of health and education). Local and international NGOs aside from being very important instruments for poverty alleviation also possess a wide range of information on the situation of the people they assist (Stewart, 1987: 265). This information will be both qualitative and quantitative. Such information may already be in a form directly accessible to policy-makers, but it may have to be translated into formats that allow its speedy transmission up the system. Accordingly, where such information has a high value for policy, resources may need to be allocated to enhancing its accessability.

6.91 In summary, policy-makers need to evaluate their existing data sources carefully for the information they do provide, and improvements may be needed in its coverage, quality and timeliness. But there are a number of fundamental aspects of social policy, particularly as they relate to adjustment, which are not adequately served by existing information or data collection methods. It is to these that we now turn.

1. Health

Aspects of ill-health

6.92 The health status of individuals is a fundamental dimension of their welfare, and a critical determinant of their ability to generate income, and so meet their material needs.31/ Since the frequency of ill-health, together with its causes, can vary appreciably across households depending on their income and other characteristics, we need to be able to relate health-status to household variables. An integrated household questionnaire provides an instrument for doing this. Each household member (with respondents selected for children) should be asked to identify periods of illness, their length of duration and - where relevant - the number of working days lost.32/ It is important that all forms of work should be considered with respect to this question. Frequent illnesses among individuals who undertake important household tasks affects not just their welfare but also the consumers of their services. For example a deterioration in the health-status of women may be associated with a parallel deterioration in the health and nutritional status of the household's young children. It is also important that the numbers of school-days lost through ill-health be recorded since a greater frequency of illness among poor children is a barrier to the household raising its human capital.

6.93 While the number of days of ill-health and the number of working days lost can be reported as an aggregate for each household, and thus compared across groups of households (weighting for differences in household size), it is desirable to report such information on individuals with characteristics of special interest - young children for example. This applies not just to the type of data presently under consideration, but also to other indicators of health- and nutrition- status (such as the anthropometric measures discussed in section II).

6.94 If this reporting procedure is adopted then the relationship between ill-health and household income can be studied for important sub-household target groups. Such information can be of especial value to policy. For example a strong negative relationship may be found between child ill-health and household income. Depending on whether the household is located in a sector which is being favored or disfavored by adjustment (and thus whether its income is rising or falling) this information will

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31/ These productivity-health connections are discussed more fully in the context of policy interventions in volume 3.

32/ One problem with this data must be noted. Losing income through ill-health is more serious for the poor than the well-off, since the former have fewer reserves to fall back on. Consequently, a poor person may attempt to carry on working despite being ill, while a better-off person with the same illness might take the day off. The number of working-days lost through illness may therefore be an imperfect guide to the incidence of ill-health itself.

alert policy-makers to the effects of their macro-policies on child-health, and they can intervene accordingly. And having information on such relationships gives them some important guidance in their decisions over policy-mixes. For example if it is found that income growth in a particular sector is not having proportionate benefits for child health, then one possible conclusion is that more resources need to be given to special programs directly tackling the nutrition and health problems of children, and less reliance must be placed on altering the primary incomes of households to achieve this particular goal.33/

6.95 Reporting health data on sub-household groups also allows comparisons to be drawn between the health status of male and female children within households (controlling for household income and other characteristics), and similarly between adult men and women, within the household. This data supplements information on intra-household welfare derived from other sources, which were discussed earlier, such as the nutrition components of a muti-purpose survey and the equivalence-scale technique operating on aggregate household expenditures. Having a selection of such information sources on intra-household welfare is desirable both because there are a number of welfare dimensions involved, but also because they can - to a degree - act as a cross-check on each other, so that reliance on one single welfare measure does not generate misleading signals.

6.96 Some health-policy issues may require more deeper investigations than recording the incidence of illness, and reporting anthropometric and nutritional measures. Policy-makers may also need information on whether specific illnesses predominate among households with specific characteristics - the rural poor for example. They may already have community level data on the causes of ill-health, but be unable to relate this to wider socio-economic phenomenon. The need for such information can arise if, for instance, it is feared that certain aspects of an adjustment program will indirectly increase the chances of particular illnesses occurring among certain people. For example if the prices of particularly important drugs are to be raised, or if certain health-care programs are to be affected by adjustments in social budgets (malaria control, for example). Collection of such data, however, requires an accurate identification of the illness which

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33/ We emphasise that this is only one possible policy conclusion to be drawn from this example. An alternative is that among projects which raise primary incomes there might be certain types of project which will give a higher benefit to child welfare than others. For example those which raise the incomes of women, in situations where males do not traditionally pool any extra income. In some circumstances such projects may have more sustainable effects on child welfare, and be more cost-effective, than programs aimed directly at child health and nutrition. If income data can be sub-sampled from women within a household, as discussed in section II, then some analysis of these effects can be undertaken. However, given some of the difficulties in gathering such data - indicated in that section - a special module on women's incomes and their relationship to child-welfare would have to be undertaken.

the respondent is often unable to give (his symptoms may be due to a range of causes both known and unknown to him). This makes a multi-purpose survey unsuitable for the collection of such data (Grootaert, 1987: 85). One option is therefore to conduct special surveys as an adjunct to the main household survey. This will allow some correlation between household characteristics (particulary economic ones) and the incidence of specific illnesses, which would not be otherwise satisfactorily achieved through surveys of health-status alone.

6.97 Policy-makers will have to balance their need for this information against the relatively high costs of its collection, the possibility of respondent 'fatigue', and whether data from other sources - community surveys for instance - gives them enough information to work on. This principle applies to the attachment of all special modules to a multi-purpose household survey, although the costs of such attachments will vary significantly according to the type of information needed. While the intention of the SDA project is to achieve co-ordination with statistical exercises presently being conducted under other auspices, health is one particular dimension of welfare where the benefits of co-ordination will be particularly fruitful. Critically SDA can provide a socio-economic framework for the analysis of health issues in countries where this framework is underdeveloped in current data-collection exercises and policy analyses.

Health-care provision

6.98 Health services, aside from being consumption goods of major importance, are vital to maintaining peoples' productivity, and thus their incomes. Having reliable information on the access of people to such services is essential for guiding the allocation of health-care resources in the most efficient and equitable way. Health-care can be provided by a number of sources, and it is important to identify the use of all of them in order to analyze the pattern of demand. Data on people's use of the state system is obviously important since the supply of these services is under the direct control of policy-makers. But similar data is also needed on alternative private sources such as 'modern' private clinics, traditional healers, and health-care provided within the household, so that the supply and demand for non-state health-care can be analyzed.34/ This is important because large shifts can occur in the both the demand for different health services, and their supply, as economies move through the adjustment process. These changes can not be predicted a priori. For example import-strangulation may have been characterised by a decline in the provisions of public health-services and an increase in private and household supplies if these are less import-dependent. When adjustment reduces the import constraints acting on the state sector, the previous changes may reverse

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34/ There are large inequalities in people's access to public health services in many countries, and modern private services are thinly spread, so that many households have to fall back on traditional healers (Roth, 1987: 123). This may also be their first preference in some societies, especially when the costs of access to 'modern' health systems are higher.

themselves. But alternatively adjustment may be accompanied by the withdrawal of important subsidies to the state sector, and increased user-charges, so that changes in the use of public and private services under adjustment are not simply the mirror image of those under macro-disequilibrium. Moreover the income changes generated by adjustment will change the level and pattern of demand for health-services. With the restoration of economic growth the demand for health services will rise as incomes grow, and ministries of health will need to predict the future demand for both private and public health services in order to make the appropriate investments.

6.99 Collecting data on the use of health services within the framework of a multi-purpose household survey places such use in a socio-economic context. Critically the effects of policy changes on access of different income groups and households in different regions can be analyzed, for example increases in user charges by private and public health services. In fee-paying systems the demand for health services will vary across income groups since if health is a normal good, the demand for health care will become more price elastic as household income falls.35/ Estimates of such elasticities are important for assessing the social impact of a number of policy reforms in the health sector.

6.100 The health section of a household questionnaire must therefore include a range of questions. First, once a period of illness has been identified, the respondent should be asked to recall the type of health practitioner consulted. Since people may consult more than one practitioner, it will be necessary for them to identify the person consulted first, and then the order of those consulted afterwards. However, this will increase the size of the questionnaire since all subsequent questions relating to the particularities of the consultation will have to be asked for each type of consultation.36/

6.101 The place of the consultation is important information (particularly to identify whether the consultation took place in the person's home), as is the type of establishment (public and private), and the monetary and non-monetary costs involved in travelling to the place. Non-monetary access costs such as travel time are important in health care choices (Acton, 1975). Poor people may have to travel long distances to obtain health care, and the opportunity costs involved may be so high as to substantially limit their demand. The geographical location of health facilities is often more favorable to the wealthy than the poor, and to those living in towns rather than villages. Thus respondents should be asked the time involved in the

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35/ See Gertler et al (1987: 2) for discussion of these issues using LSMS data from Peru. Policy proposals for applying user fees, and their relation to poverty alleviation in the Africa, are discussed in Part 3 of the conceptual framework.

36/ The LSMS survey of Cote d'Ivoire questions respondents about the first consultation only.

travel together with its costs. This information can be used to establish the effects of improvements in transportation under adjustment. In some situations new roads and transport systems can be as important as new health facilities in improving the access of people to health-care. Likewise changes in transport user-charges under adjustment will affect demand schedules, perhaps appreciably for some groups.37/

6.102 The fees for the consultation must be established for each type of practitioner, together with those of related services (hospital fees for example) in order to compare the costs between them for different household groups. Respondents must also recall the costs of medicines purchased for the identified illness. We have already discussed one technique for identifying the extent of rationing that buyers face in markets. It was noted there that in many countries the unwinding of rationing is one of the most important effects of adjustment in goods markets, but that the scale of improvements can vary substantially between different household groups (due to differences in their access to official and unofficial sources of supply for example). In the case of medicines respondents, after they have been asked the costs of certain basic drugs, can be asked whether they were unable to purchase the required amount at that price, and their estimate of the percentage shortfall in their purchases. A basic list of drugs would need to be identified pre-survey, and particular brands of items could be used - if for example policy-makers want to know whether an improvement in supplies from domestic pharmaceutical manufacturers are reaching all households.

6.103 The benefits of incorporating such a topic will depend on how extensive shortages were pre-adjustment and the expected scale of improvement. For some countries emerging out of relatively mild recessions the scale of goods rationing may be only minor, and quickly resolved. In other countries the depth of recession and import-compression may be such that rationing only slowly unwinds.

6.104 Where special health programs such as vaccinations, and other preventative programs are in place, or are being introduced, it is important to question respondents about their participation. Such programs can be positively or adversely affected by adjustment, depending on government expenditure choices and changes in the quality and quantity of donor assistance to these activities. Again government agencies will have data on the numbers taking-up these services, but gathering such information in the context of a multi-purpose survey allows correlations to be made with household incomes etc. Where such special programs, for example those relating to maternal and child care, are not implemented in the respondents' communities it is important to have information on the costs of their travel in time and money.

37/ The various costs of access to health-care are one important determinant of the different uses made of public and private health systems. Increases in transport user-charges may significantly diminish the use of public health facilities by poor households in remote areas (who may then increase their recourse to local traditional healers).

6.105 Since all the information discussed in this section is collected for each household member it is desirable to report the data for important household sub-groups such as adult men and women and male and female children, in addition to reporting the data at the aggregate household level. Variations in the use of particular types of health facility by these household sub-groups can then be tracked, and differences identified in the costs borne. This will allow policy-makers to spot changes in their programs which have particularly strong effects on certain types of individuals, and to act accordingly.

2. Education

6.106 Households invest in education because additional human capital raises the returns on labor and other productive assets, thus generating higher incomes and extra resources for investment. Education increases occupational mobility, for example it gives rural households the chance of obtaining lucrative non-farm urban employment (Baum and Tolbert, 1985). More education for women generally leads to a reduction in fertility rates through its direct effects on family-size preferences, and indirectly through its effects on child-survival and women's employment opportunities. This too has favorable effects on household incomes. Finally, more income feeds-back to the demand for education. For these reasons adjustments in education policy will have major implications for household welfare in general, and poverty in particular.

6.107 There are several important educational topics on which household surveys can yield valuable information for policy. The first of these is literacy and its relation to household characteristics such as income, location, and occupational status. Literacy can be measured with varying degrees of accuracy depending on the measurement technique employed. It is most accurately measured through examinations but this is not a technique suitable for the instrument of a household survey. Instead the degree of literacy can be approximated through asking the respondent whether he can undertake tasks of increasing complexity (reading a newspaper, writing a letter and so forth). Information on the present and past educational participation of each household member is also necessary.38/ This includes the number of years of education received, the highest school grade attained, and the highest diploma held. The most difficult area to collect information on is informal 'on the job' education. Yet this can be one of the most important sources of skills. Respondents can be asked if they have ever been apprentices, and the length of time involved. However, apprenticeships can vary from those involving systematic study to those where skills are transferred only intermittently and haphazardly. The latter is often the case in the informal manufacturing sector where young persons are apprenticed to a craftsman, the quality of training they receive being highly variable from person to person. In countries where more thorough data are required

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38/ This should include the education of children who are residing elsewhere.

for policy-formulation, a special module could be attached to more general household surveys to investigate these questions.39/

6.108 Further information is needed on characteristics of educational participation. For example, whether the training establishment attended was public or private (including whether it was provided by an NGO).40/ In order to establish whether children are spending less hours at school than required, the number of hours of attendance over some specified recall period can be asked. The actual number of hours can then be compared to the norm. Such exercises may indicate important differences between household groups in child school attendance.41/ The shortfall in school attendance can be due to a number of factors, including illness, obligations to participate in household enterprises, and travel costs, and these can be identified by appropriate questions.42/ This would yield important information on whether, for example, school attendance by poor children was more affected by ill-health or greater participation in work. These factors may change significantly under adjustment. Alterations in the provision of public health services will affect child health, and thus school attendance. Similarly changes in the structure and level of household activities affect the use of household labor, as we saw previously. Information on the costs of travel (in time and money) to schools can be obtained in a similar way to the collection of such data for health.

6.109 Data are also needed for expenditures on education, including school fees, purchases of books and materials, and other essential items. Techniques for assessing the impact of rationing of school materials on different types of households can be employed in the way discussed for health-care inputs. Since not all of the household's education expenditures may be met out of its own resources, it is necessary to question respondents about the value of scholarships received, and the payment of school expenses by persons outside the household. The latter information indicates how far transfers are used to fund the household's accumulation of human capital, and

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39/ By, for example, asking the respondent if he has ever received training in a selection of skills: metal working, vehicle repairs, bookkeeping etc.

40/ Information on the different types of private establishment attended can be important where they apply different charges, and where there costs are variably affected by adjustment. Education provided by NGOs - especially church missions - is often particularly important in rural areas, while profit-making private schools are usually confined to towns.

41/ However, some recall problems have occurred with such questions in LSMS surveys, but more accuracy can be achieved through modifying the questions (Grootaert, 1987: 84).

42/ The household survey is an appropriate instrument for collecting such data since it will pick up non-attenders, while surveys using schools as sample units will inevitably miss those children who do not come at all (and will be unable to relate participation to household income).

can be used to pick up changes in such transfers occurring because of adjustment's effects on the sender. Since urban households frequently make transfers for such purposes to rural households, adjustment through its substantial effects on urban incomes can change levels of these payments significantly. Accordingly respondents should be asked whether the sender lives locally or in a different area. The more general issues of collecting data on transfers are, however, discussed below.

6.110 As with health data, it is desirable to report education data not only for the household as a whole, but for boys and girls, and adult men and women. In most countries females have generally less access to education than males, especially at the post-primary levels (World Bank, 1988a). This disadvantages them in their participation in labor and product markets. Being able to correlate levels of female education with their occupations and incomes (if these can be separately identified from those of the household) is thus valuable from a policy perspective. Adjustment programs can have either negative or positive effects on this participation depending on the policy-mix employed, and the characteristics of households. For example increases in household output to respond to favorable price signals may place more burdens on the time of females. In particular the structure of household power may be such that the extra time needed for economic activities may be taken out of the school time of girls rather than boys. On the other hand the household may use some of the extra income earned to buy in more labor, thus releasing female labor-time for school, the new income now allowing the household to afford school fees. The effects of adjustment on educational access are thus complex, and can only be established through empirical analysis using an appropriate data set.

J. Access to Transfers

Private transfers

6.111 In section II (of volume 1) we emphasized that taking the household as our main sampling unit should not lead us to ignore the wider social networks in which households function. Critically, large transfers - in both cash and kind - often take place between households, frequently on a regular basis, and for a wide variety of purposes. For some households these transfers may constitute the main source of their survival. Evidence on the pattern of inter-household transfers in African communities is fragmented, especially with regard to the socio-economic characteristics of the recipients and senders. Most is known about urban-rural remittances, although these are only one component of all the transfers that regularly take place. Moreover, little is known about how adjustment affects inter-household transfers. Given that adjustment will have large effects on the primary distribution of incomes, it must be presumed - as a first hypothesis - that the effects of inter-household transfers are significant. But this is one of the least studied questions in the debate over the social dimensions of adjustment.

6.112 The household survey provides a useful instrument for the collection of data on transfers, and for determining their distribution over

households with different socio-economic characteristics. Aside from the value of the transfers (including those in kind), information is required on the relationship of the sender and recipient. This can usefully identify the scale of transfers between husbands and wives located in different households, for example. The location of the person outside the household should also be identified. The latter must cover the main regions of the country since, as we have seen, adjustment can have substantial effects on the regional distribution of incomes.43/ Thus as adjustment runs its course, we may observe large changes in inter-regional transfers between households. Remittances across national borders should also be established. The latter can change because of adjustment in the country concerned, or because of economic changes in foreign countries. Thus for example, the successful implementation of adjustment in a neighboring country may lead to an increase in remittances. Finally, we need to know whether the recipient or sender outside the household is located in an urban or rural area. Typically the net flow of remittances is from urban to rural areas. However, this flow can be reduced by adjustment, since policy reforms usually cut the differential between rural and urban incomes. Much depends on whether those sending remittances are still obliged to do so when their incomes fall. Evidence from Côte d'Ivoire suggests that a fall in the real wages of civil servants has not been translated into a proportionate reduction in their remittances since their social status still obliges them to remit substantial sums to their rural communities (Mahieu, 1988: 7). However, in countries where urban incomes have fallen substantially, it may now be the case that urban households are net recipients of remittances. There is some evidence that transfers of food from rural to urban areas have increased recently. These are questions that can only be resolved through empirical analysis.

6.113 The framework of a multi-purpose household survey allows us to analyze transfers with respect to a cluster of characteristics - for instance the amounts received by poor female-headed households in rural areas, and to make comparisons with other household groups. Critically, we can make some assessment of the level and pattern of net transfers to poor households. The poor often lie outside social frameworks that could mobilise help to them. A household data set will allow some analysis of this issue. Since the data are collected over time we can observe how transfers to the poor are changing as adjustment proceeds.

6.114 In designing the questionnaire care must be taken to avoid the double-counting of transfers (both received and sent). Previous sections have already noted some questions pertaining to transfers received for specific purposes, for example to pay the household's housing and health expenditures. When other transfers are identified by respondents, it must be clear that these do not include items already accounted for. Care must

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43/ A question must also be included to identify whether the transfer between households is taking place in the same locality.

also be taken so that some transfers are not missed.44/ One strategy is to prepare a closed list of all types of transfer, with a value being collected for each item. Using this information a total value for all transfers can be calculated, and values for individual items of interest can be reported separately. One problem with the first method is that households will often receive transfers and use them for several purposes, so that it may be difficult for them to recall the exact division. And the approach may be difficult for the household's expenditures on transfers, since the household may not be able to identify accurately what the recipient used the money or goods for.45/ One alternative is to collect data on specific items of interest, and then the respondent can be asked to state a total value for all remaining items (from the list). But this may also lead to inaccuracies if households underestimate the residual item.

6.115 If a complete set of both receipts and expenditures on transfers can be obtained, then we can calculate whether overall the household is a net recipient or a net donor. If in aggregate the household transfers resources to other households this can be reported as percentage of its total expenditures, while if it is a net recipient its receipts can be given as a proportion of its income. This can then be reported with respect to household characteristics of interest.

6.116 While a household survey can yield much valuable information on inter-household transfers, there are a number of this topic's dimensions which cannot be captured adequately. Critically, the function of such transfers in providing economic security and support to the household cannot be fully assessed. Although a household survey will provide a quantitative dimension to the issue by telling us how important transfers are, and for what they are used, it will not capture the sociological dimension. For example we may find that households with certain characteristics receive very small transfers from others in the their locality. The data will not, however, reveal the workings of the community which gives rise to this.

6.117 To understand fully how inter-household transfers within a community are affected by adjustment, more direct methods, such as participant observation, are needed. Such studies could, in addition to the issue presently under discussion, consider the entire web of inter-household relations - particularly those of labor and credit - discussed throughout this paper. This has the advantage that many of these relations are interrelated - the household receives transfers from others in the knowledge that this is an implicit contract for it to reciprocate with labor services

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44/ Recording loans to or by the household as transfers must also be avoided, since credit is dealt with separately. The respondent should be asked whether such assistance will be repaid.

45/ Knowledge of what the household's transfers to other households were used for indicates the type of commitments that they have to make. Itemization allows us to analyze some of the effects of adjustment on the pattern of household commitments.

at some future date.46/ By their nature such studies are concerned with small communities, and these must be appropriately selected for the policy issues of concern. For instance, we could select a community where the expansion of cash-cropping under adjustment is particularly pronounced, and investigate the effects of this on the relationships between households growing cash-crops, and households without such income. Or to take another example, an urban community could be selected as the basis for a study of the effects of policy changes on co-operative tasks between households.

6.118 It must be emphasized that such anthropological studies too have their drawbacks. By concentrating on small communities they do not allow us to build an aggregate picture of the flow of resources across households. The latter is an outcome of a national household survey. Thus the different methods of collecting information should be seen as complementary rather than as competitive.

Transfers from the state and other agencies

6.119 The state makes both implicit and explicit transfers to the household. Implicit transfers are those that arise from the operation of policies such as subsidies on consumer and producer goods. These can be analyzed using the data set discussed in section VI together with knowledge of the costs of subsidies in government expenditures. We are here concerned with any direct - 'explicit' - transfers that the state may make, together with those made by other agencies, such as foreign government agencies and NGOs. These may take a variety of forms, including grants to pursue particular economic activities, vouchers for the purchase of special commodities (for example milk for children), and most importantly, direct assistance in the form of food.

6.120 Such transfers are major contributors to household welfare, especially that of the poor, so it is important to establish their value (including imputed values) and the characteristics of recipients. As with the valuation of food produced for own-consumption, respondents can be asked to place a market value on, for example, the amount of food received. One problem is that large food transfers to households will themselves lead to a change in the market price of food as households adjust their demands for purchased foods. Care must therefore be taken to be sure that households respond with a valuation of the transfer based on the prices prevailing at the time the transfer was made, and not an earlier set of prices.

K. Taxation

6.121 Reforms in the tax systems of African countries are now a major component of their adjustment programs. At present the base for direct taxes is small - personal income taxes are collected from less than 5 per cent of the population in sub-Saharan Africa (World Bank, 1988: 97). However, policy reforms are being implemented to widen this base, both in terms of the

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46/ See section II in volume 1.

numbers covered and amount of income considered for tax purposes. We can therefore expect the welfare dimensions of personal income taxation to become more important over time.

6.122 The instrument of a multi-purpose household survey can be used to collect data on the direct taxes paid by the household and to relate them to the household's income level for the calculation of marginal tax rates. The tax rates so calculated may differ radically from the ones previously estimated, since the household survey will (if households identify their incomes accurately) yield a more accurate estimate of income than that provided by existing sources. For example income from self-employment is often largely untaxed. But if these exercises are to be accurate then the household's response of the taxes actually paid must be accurate as well, It is therefore important to emphasise the confidentiality of the responses.

6.123 Data from multi-topic household surveys will allow a much more thorough analysis of the welfare effects of indirect taxes than has previously been undertaken in African countries. This is one reason why the collection of data on the household's expenditures needs to be comprehensive, and in a form which can be disagregated for the estimation of demand systems. The issue of separable versus non-separable models discussed in section II.3.3 is relevant for the taxation issue. Separability assumptions have major consequences for the structure of optimal tax and pricing systems (Deaton, 1987: 92). As we discussed earlier the multi-topic household survey allows the estimation of both separable and non-separable models, and thus a more accurate empirical analysis of the welfare effects of indirect tax changes.

VII. SAMPLE DESIGN ISSUES

A. Definition of the Target Population

7.1 As noted earlier, the coverage of a PHS ideally should be national in scope, with households and individuals residing in households as the basic units of enumeration. It is necessary to be more specific and precise in the operationalization of these requirements in the actual survey. The survey population has to be specified in terms of its extent and its content.

7.2 Population extent refers primarily to the boundaries of its geographical coverage. Though in principle the coverage of the entire country is desired, considerations of cost and practicality may dictate the exclusion of some areas or parts of the population, such as sparsely populated remote areas of certain nomadic groups. Two important points should be noted in relation to such exclusions. First it is important to ensure that exclusions are as small as possible, and at least that they do not result in compromising the primary objectives of the survey. In a permanent survey, it is important to reassess periodically whether such exclusions have in fact remained fully justified and unavoidable, and seek clear justification for exclusion in each case. It may become possible with time to adopt special arrangements to include them, such as by taking disproportionately small samples from the more difficult or expensive parts of the target population. Secondly, it is important always to document the exclusions. To the extent possible, one should also assess the impact of exclusions on national representativeness of the survey results. Sometimes small exclusions may not affect much the overall estimates from the survey, but may still bias the results pertaining to particular target groups in the population.

7.3 Apart from geographical boundaries, a population is also delimited in the time dimension. New units are constantly being created and old ones disappear or change their composition and characteristics. A sample once selected tends to become increasingly less representative of the changing population with passage of time. The same can apply to retrospective information collected from the survey; this is illustrated for example by the much discussed difficulties of interpreting household income for the past year or another period when the composition of the household has been changing over this period. In the presence of pronounced seasonal or cyclic variations, an added requirement is the representativeness of the sample in the time dimension, in addition to its spatial representativeness. What this means is that only a representative selection of time segments (individual months, quarters, seasons) for sample enumeration from an entire interval of interest (e.g. a year) can permit inference from the sample to average conditions over the entire interval of interest. Therefore in the PHS, the sample enumeration should be distributed in a representative manner simultaneously both in space and in time.

7.4 Population content refers to the type and characteristics of the elements which make up the population. In the case of the PHS this requires the specification, among other things, of the type of households and other

groupings to be included in the survey, rules and procedures of associating individual persons with these units, and characteristics of individuals determining their inclusion in (or exclusion from) the survey population. For instance decisions have to be made on whether, in addition to private households, persons residing in collective households or institutions are to be included; whether households with special living arrangements (e.g. the homeless, mobile groups, etc.) are to be included; whether households or persons with certain special characteristics (aliens, particular ethnic groups) are to be included; and within households, whether de jure or de facto or some other coverage rule is to be used to define membership. These specifications have to be formulated in clear operational terms.

B. Sampling Frame and Listing

7.5 Once the population to be surveyed has been defined, it has to be represented in a physical form from which samples of the required type can be selected. A sampling frame is such a representation. The objective of a sampling frame is to permit the selection of a sample of elementary units in the population with the application of suitable randomized procedures such that every unit has a known, non-zero, probability of being selected. As in any household survey, the sample for the PHS will typically be selected in a number of stages: one or more area stages, terminated by listing and sampling of households (or similar units) within the last stage area units. There are numerous considerations involved in the choice of the number of sampling stages and the type of units used at each stage, such as the availability of sources and materials from which the frame can be constructed, including the cost and work involved; field logistics and sample design and implementation considerations, including cost and quality control requirements; and especially in the context of the PHS, requirements of possible repeated and long-term use, including the need for appropriate linkages between different rounds of the survey and for controlling the cost of maintaining and updating the frame. Naturally these considerations (and consequently the choices) will differ among countries. However, it is expected that in most developing countries the primary source of sampling frames for area units will be the most recent population census: the census enumeration areas or other units derived from them, with maps, descriptions and information on size and other characteristics of the units. Even in countries where the last available census is several years old, it is often possible to see the census results, possibly with some addition or updating - for instance rough recount of known areas of high growth.

7.6 By contrast neither the census nor, in most developing countries, any other source can provide a usable frame (list) of dwellings or households for the final selection of the sample. In some situations and in some types of household survey it may be possible to avoid this last stage of selection within sample areas, by taking into the sample all households in each selected area. This 'compact cluster' sampling is not likely to be a reasonable option for the PHS in most situations. In most participating countries in Africa, the available cartographic and census materials tend to be such that the smallest area units suitable for use in sample selection are too large to be included for complete enumeration in the survey. This is all

the more so in the case of an intensive, relatively small-scale survey like the PHS, where a reasonable spread of the sample can be obtained only by limiting the number of households to be surveyed from each area. This means that virtually in all cases, listing and sampling of households within sample areas will be unavoidable.

7.7 Careful attention needs to be paid to the quality of listing in order to ensure good coverage, and to ensure that the selected units can be later identified for interviewing. Generally it is desirable to organize listing and sample selection as operations separate from the main field interviewing. At the same time, it is important that lists are up-to-date, i.e. the time interval between listing and interviewing is controlled and minimized. How durable the lists are depends on circumstances and the nature of the units involved. The units of listing can be households, or other units such as dwellings or structures with which households can be associated. Dwellings or structures as listing units can have some advantages. They tend to be less unstable so that their lists are usable for longer, perhaps for up to two years in many situations with settled areas and permanent structures, but less so in developing areas or areas with temporary and make-shift structures. Another advantage is that often dwelling lists can be prepared more quickly than household lists in so far as the former do not require contacting residents. Household lists by contrast tend to be less durable - perhaps usable for no more than a year without updating in most situations - and possibly more time consuming to prepare. However there can also be some important advantages in choosing to list households rather than structures. In rural areas and poorer sectors in cities, structures may be difficult to define, identify and locate. Structures can be variable in size (in terms of the number of households each contains), and hence somewhat less efficient for sampling households. More seriously, there can be problems in uniquely associating households with structures, especially when one household may occupy many structures. Finally, with household listing there can also be more scope for obtaining additional information for stratification to increase sampling efficiency. (This can be important when the survey which follows is complex with high cost per interview.) In the context of the PHS, this last mentioned consideration is important in another respect as well: namely obtaining more or less elaborate information on household characteristics to improve the procedures for sampling target groups of special interest, as was discussed earlier.

7.8 There can be living arrangements where even households are not easily defined and identified, or for some other reason cannot serve as suitable units for listing: as for example in the case of institutional populations, communal households or compounds found in some countries. In such situations, it may be necessary to prepare lists of individual persons and, if appropriate, then define households in terms of some suitable operational criteria on the basis of the additional information obtained.

C. Sample Size

7.9 The choice of sample size is one of the most basic design decisions in any survey. Despite considerable variation in country circumstances and requirements, certain basic considerations apply. The national PHS is expected to be quite elaborate and complex in content. Furthermore, surveying each household to obtain the complex array of information will require several specified members of the household individually and several visits to the household. Moderation in the choice of sample size is therefore an essential requirement for the successful implementation of the survey. First, what is feasible, manageable and sustainable is limited by the available budgetary and technical resources. Even if a large sample size may be feasible on occasion in one-time surveys, this will generally not be the case for a permanent survey system which has to be sustained by the national statistical organization over an extended period to generate a regular flow of current statistics on a variety of interrelated topics. Secondly, for the survey to be useful for immediate policy purposes, it is essential that the data are collected and processed in a timely manner, without delays and accumulation of unused data. Thirdly, non-sampling errors often increase with increasing sample size, a relationship which can become particularly adverse beyond a certain sample size under given practical conditions of survey implementation.

7.10 At the same time, however, the sample size must be large enough to yield information with sufficient sampling precision to be useful for policy-relevant analyses. Clearly, the minimum sample size requirements depend on the type of analyses envisaged. The major determinant in this context is the number of analysis domains for which separate tabulations and estimates are to be reported. Sample size for each domain must be sufficient for analyses of many forms of socio-economic behavior among households, taking into account that not all phenomena of interest occur in every household. Therefore, the process of choosing the sample size for a national PHS may proceed along the following lines. Given the major groups (or analysis domains) for which separate results are required, one may determine the minimum total sample size to meet these analytical requirements. However, it is important that this does not exceed the maximum sample size which, under given practical circumstances, is considered feasible, manageable and sustainable. If the initial choice exceeds this maximum, then it is best to reconsider and adjust the objectives and reporting requirements of the survey rather than try and impose an unrealistically large sample size. Furthermore, the initial choice may also be improved subsequently on the basis of an assessment of sampling and non-sampling errors involved, emerging policy requirements and possibly also changing practical constraints.

7.11 On the basis of experience gained from surveys similar in type to the PHS, a minimum sample of 400-800 households is likely to be required for each major reporting domain for the type of analysis envisaged in studying the social dimensions of adjustment. Typically the total population, hence the sample, may be divided into 5-7 (usually non-overlapping) analysis domains in several ways on the basis of one or more criteria such as type of place (e.g. urban and rural areas classified according to size categories),

region (or other major geo-administrative divisions) or some other relevant socio-economic characteristics of households defining target groups of interest. The above requirements would suggest a typical national sample size of 2,000 - 4,000 households per survey round.47/ While the analytical potential of the survey, particularly for sub-national and target-group analysis, will be generally enhanced by increasing the sample size above this range, the limiting factor in the choice of sample size has to remain the practical constraints mentioned earlier. Of course the actual choice of sample size will depend ultimately on the specific requirements and circumstances of each participating country. Countries which are larger and more diverse, which require separate results for more domains, or which have a more developed statistical capability with ample resources, may entertain somewhat larger samples than countries which are smaller and/or statistically less developed. In some cases it may be desirable and feasible to increase the sample size somewhat as the survey is established, experience is gained, or as new data needs for target groups of particular 'interest' emerge. By contrast, there may be cases where negative experience in survey implementation will suggest some reduction in the sample size initially chosen.

D. Survey Rounds and Sub-rounds

7.12 In a continuing survey such as the PHS, it is useful to divide the survey period into time-segments called rounds. Within each round, the idea is to enumerate a spatially representative sample on the basis of which separate estimates for the round can be produced. The sample for the round consists of a set of distinct units (households). Each round may cover a time-segment of the same duration such as a month, quarter or a year; in the last case the year may be a calendar year or some other convenient segment such as an agricultural year. In the discussion of the sample size requirements and constraints above, it was assumed that in the PHS annual rounds are the appropriate choice, i.e. the survey will involve enumeration of say 2,000 - 4,000 households per year, with reports and analyses produced in full detail on an annual basis. Both for operational and substantive reasons, as well as to report some main results more frequently (e.g. each quarter), the survey round may be divided into sub-rounds, each sub-round itself consisting of a spatially representative sample. This aspect of survey structure will be discussed further below. Note that in the present context, a round refers to a period of survey-taking, and not necessarily to the reference periods to which the information collected relates. These reference periods will generally vary in length, depending on the item involved; furthermore in a survey with continuous fieldwork the reference period is 'moving' i.e. relates to different calendar periods for different households in the sample.

7.13 Within a survey round, it is by no means implied, or necessarily the case, that any particular unit (household) is interviewed only once.

47/ The meaning of sample size per survey round is discussed in the next section.

There can be two types of reasons for multiple interviewing during a round.

(a) firstly, during a long period such as a year, the sample household may change in composition, characteristics, income, consumption or other important variables being measured. This may mean that reasonable aggregate or average values for the whole year for any individual unit can be obtained only by surveying it several times during the year, ideally at equally spaced intervals e.g. once each quarter. The only alternatives to this would be to obtain the variable information with retrospective questioning - which may not be feasible or practical - or to impute the obtainable information for the recent period to the whole past year.

(b) The second set of reasons for multiple interviewing during the same round are operational. Given the complexity and length of the PHS interview, it would be convenient for the interviewer and the respondent to break this operation into more than one separate visits: we may call them "interview sub-rounds". For consistency, the interval between interviews with the same household should be as short as possible. However, if the interviews are separated by a fixed interval equal in length to an appropriate short reference period for obtaining information on frequent items of consumption and expenditure (e.g. two weeks, say), then the opportunity of repeated visits can be used to improve the quality of retrospective reporting by "bounding" the reference period. As discussed later, this arrangement also makes possible the proposed system of decentralized data entry and editing, proceeding on a continuous basis in parallel with data collection.

7.14 To summarize, there are likely to be clear advantages in dividing the total interview into two or more closely-spaced "interview sub-rounds" separated by a fixed interval. Field and data-entry work may be organized as follows. Consider for instance a model in which an interviewer team covers one survey area during one week for the first part (sub-round) of the interview, and then a week later returns to the same area for a final week. For each sample household in the sample area there will then be an interval of two weeks between the two interview sub-rounds. Information on frequent items will be obtained with a bounded reference period of two weeks. The same pattern can be followed in a neighboring area: after spending one week in the first area, the team moves to a neighboring sample area for the next weeks while the data for the first area are being entered and edited using microcomputers at centers which cater for a set of teams. During week 3 when the team returns to the first area it can correct any errors found in its earlier work, and complete the second sub-round of interviewing. The same is repeated in week 4 in the second area. In this way with two sub-rounds, a pair of sample areas will be covered for data collection and entry in 4 weeks.

7.15 Such a system has in fact been used in the Living Standards Survey. It is possible in principle to extend this system to more than two interview

sub-rounds. The advantages of this extension would be to distribute the lengthy interview into more uniform and smaller components, and more importantly, to provide bounded reference periods of longer total duration (without extending the recall period), permitting information on items or events of interest to be collected with greater sampling precision. Also a greater proportion of the total interview can be entered and edited while the team is still around the sample area, since that cannot be done only for the last sub-round. However, before considering such an extension, some serious disadvantages should also be noted. It would tend to increase complexity of field logistics. It will reduce the number of sample areas which can be covered by a team in a given period, unless the duration for which the team stays in the sample area in each sub-round can be reduced below one full week - a change which may not be so convenient or efficient. If this duration is maintained unchanged, the number of interviews per sample are would need to be increased correspondingly or size of the team reduced; this may again not be so convenient or efficient. Furthermore, the time taken to complete the survey fully in a given area will increase, which may adversely affect the survey organization's capacity to release at least the main results at frequent and regular intervals, such as on a quarterly basis. Despite these considerations, it is possible that the exact arrangements will differ among countries depending on the specific situation.

7.16 The situation is rather different in relation to the possibility of introducing well spaced-out multiple interviewing over the same households during the year, say for instance once each quarter to capture seasonal and other variations at the level of individual households, to measure annual averages at the individual level without resorting to long recall periods such as a whole year, or to measure more precisely the distribution of annual income, etc. This type of repeated interviewing is quite different from the previous case in that here each repetition requires obtaining more or less the full set of information (and for that reason may itself require division into interview sub-rounds of the type discussed above!). Furthermore, it will require repeated returns to the same area after rather long intervals, which may easily involve a considerable increase in the distances to be travelled. Consequently, with a given number of households in the annual sample, the total work is increased more or less in proportion to the number of times a household is enumerated during the year. Or in other words, with given resources and work load, the annual sample size will have to be reduced more or less by that factor, reducing substantially the sampling precision of annual estimates (of course the quality of the information may be enhanced so far as conceptual and non-sampling errors are concerned). Another drawback would be the resulting complexity at the data processing and analysis stage owing to the need to match data over several spaced-out visits. Finally we should also note that the respondent burden will also be increased.

7.17 The most serious disadvantage of introducing multiple interviews during the year is the resulting big reduction in the effective annual sample size within a given budget. This clearly will be undesirable given the severe cost and practical constraints on the sample size as discussed earlier. Fortunately, it is perhaps also not essential to the objectives of

the SDA Project to introduce such multiple interviewing during the year. Substantively, good measurement of cross sectional variables can be considered to be of much higher priority than more accurate measurements of say income distribution. Consequently, the suggestion is not to introduce multiple interviewing of the same households during the year.

7.18 It may still be useful to divide the annual sample into non-overlapping sub-samples, each geographically representative and covered during a particular period (e.g. a quarter) of the year. Such a system will provide a basis for producing more frequent (quarterly) estimates from the survey, at least on its major findings. Of course with severe limits on the total annual sample size which is feasible, the quarterly sub-samples will be rather small in size, and the primary focus of the survey will have to remain the production of more detailed annual estimates through accumulation of the non-overlapping quarterly sub-samples. Nevertheless, the production and prompt release of usable quarterly results will also be a necessary and highly desirable feature of the PHS. Since the quarterly sub-samples are small and non-overlapping, measures may have to be taken to ensure that quarterly comparisons do not suffer from large random fluctuations. This may require a careful balancing (matching) between the quarterly sub-samples into which the annual sample has been divided. In some cases it may become necessary to apply some smoothing adjustment to the quarterly results, e.g. to present them in the form of moving averages over the preceding four quarters.

E. Sample Rotation

7.19 In a continuing survey sample, rotation refers to changing some or all units in the sample from one round to the next. With a multi-stage design, the rotation may involve units at different stages such as areas and/or households. The appropriate system of rotation depends on statistical as well as operational considerations. Firstly, we note that the PHS may be required to produce estimates of various types, for example:

(a) Quarterly estimates to ensure quick release of results for policy purposes

(b) Measurement of seasonal variations

(c) Analysis of the annual sample, involving aggregation of sub-samples enumerated during quarters of the year

(d) Measurement of longer-term year-to-year changes

(e) Analysis of results aggregated over several years to augment the sample numbers available

7.20 These different types of estimate present somewhat conflicting statistical requirements and the appropriate system of sample rotation will have to be a compromise reflecting the relative importance of these objectives. Perhaps (c) is the most important of the above objectives.

Given the limited number of households which can be covered during the year, this objective will usually require that the quarterly samples be independent, so that they can be cumulated with the maximum efficiency to yield annual estimates. Independence requires that each quarterly sample covers a different set of areas. Consequently, the total number of sample areas which can be handled in any quarterly subsample would tend to be somewhat fewer than the number which may be feasible if quarterly sub-samples could share sample areas (hence share listing costs, etc.). As a result of increased clustering within quarterly sub-samples, the precision of (a) will be somewhat reduced, especially concerning estimates for geographic divisions of the country. The precision of estimates of type (b) will perhaps be affected more seriously. Measurement of differences or change benefits from overlaps because of the positive correlations that would imply; with independent samples the precision in estimating change is reduced. With no overlaps, the system can still estimate seasonal variations, but with less precision and only at the aggregate level, rather than at the level of individual households.

7.21 Estimating (c) more precisely also improves the precision of (d) and (e). In addition (d) and (e) are affected by the system of rotation between annual samples, i.e. from one year to the next. Here the requirements of the two conflict. Estimates of type (d) will benefit from large overlaps between annual samples, while (e) from non-overlapping samples. Perhaps in most situations, (d) will be considered much more important than (e): implying that there should be maximum overlap between annual samples, at the area and, if possible, even at the household level. In any case, some (small) rotation will be desirable, since fixed samples tend to 'age' and become progressively less representative over time.

7.22 The choice of sample rotation should also take into account operational and cost considerations. The cost of changing sample areas depends, among other things, on the mobility of field workers. New sample areas can be introduced more easily when the interviewers are mobile; sample rotation is more difficult when the pattern is to use fixed, locally recruited interviewers. (Relative advantages and disadvantages of the 'mobile' and 'fixed' systems are well known and are discussed later.) Another factor which affects the choice of sample rotation is the cost of selecting and identifying sample areas, and more importantly, of listing households and dwellings within areas before the final sample can be selected. The more expensive, complex and durable the lists, the greater will be the potential economy in retaining the same sample areas over a longer period.

F. Subsampling

7.23 Given the expected length of a typical PHS interview in its full complexity, it may be worth considering whether some reduction in the length can be achieved by

(a) applying certain parts of the questionnaire or modules to only a sub-sample of households in the survey, and/or

(b) by obtaining individual level information only for a subsample of members in the household.

7.24 It appears fairly clear that there will be little point in introducing (b), i.e. sub-sampling of members within households. Usually households are heterogeneous in terms of age, sex, etc. so that little sampling efficiency is lost due to clustering of individuals within households. The proportion of very big households is often quite small, so that little saving in cost or respondent burden will result from such sub-sampling. At the same time, the complexity of the whole operation will be increased, as would the danger of biased procedures being followed by interviewers in selecting respondents. Of course there can be exceptions depending on the specific circumstances. In some societies in Africa, there are very large 'communal' households or compounds which must be sub-sampled to obtain reasonable interview workloads and "sample takes". Also the response burden affects not only the particular individual interviewed, but the whole household; sub-sampling may therefore reduce this burden. If in such circumstances, sub-sampling is introduced, then it is best first to prepare a list of household members for all households in the sample, and then to select individuals directly from this combined list. Such a procedure will avoid the need to weight individual-level data differentially by household.

7.25 Concerning (b), the application of certain modules to only a sub-sample of households may be desirable in the exceptional case where a particular topic or group has to be studied in much greater depth than it is possible in the survey as a whole. This sort of arrangement may be relevant for example when it is necessary to follow-up the fate of a particularly vulnerable group under structural adjustment (a 'tracer survey'). The cost of any such special arrangement is of course the added complexity, which can be serious given that typical PHS is already expected to be complete in content and operations.

G. Sample Allocation

7.26 Given the SDA objectives to monitor different target groups, it is necessary to ensure that sufficient numbers of observations are obtained in the PHS sample for reliable analysis of each target group of interest. Since the target groups will generally vary in size, the above may require that they are sampled at different rates. Allocation of the total sample size available to different target groups (or analysis domains) so as to produce group-level as well as national-level data with the required precision is an important sample design question.

7.27 To begin with it may be noted that there can be strong advantages of simplicity and convenience in having a 'self-weighting' sample which is allocated proportionately among analysis and sampling domains. With such a system for differential sampling (though that may still be useful for stratification), or to preserve and use sample weights at the analysis stage. In so far as unit variances and costs do not differ greatly among domains, proportionate allocation is also the most efficient scheme for estimation and

analysis at the national level. It can therefore be argued that disproportionate allocation (differing sampling rates) should be introduced only when analysis domains differ considerably in size and/or in the unit variances and costs involved.

7.28 However, despite the possible simplicity and convenience of having a self-weighting sample design, in general many countries may find it necessary to allocate the sample disproportionately, particularly if the target groups of interest vary considerably in size. Given the rather severe constraints against increasing the overall sample size, the smaller among the target groups may achieve adequate sample sizes only on the basis of disproportionate allocation. Over-sampling of the urban sector may be quite common, both because this sector is relatively small in many countries and because it is often more heterogeneous and variable compared to rural areas.

7.29 To apply varying sampling rates is straightforward when the groups to be sampled differentially are defined in terms of geographical criteria and separated into different sets of areas. It is more difficult to do so when the groups are defined in terms of individual characteristics and are mixed within sample areas. Here the relevant information must be collected at the listing stage to screen and stratify the units before sample selection.

VIII. SOME OTHER ASPECTS OF SURVEY DESIGN AND OPERATIONS

A. Questionnaire Development

8.1 One of the most important aspects of survey design is the precise definition of the data to be collected, and the translation of the data requirements and related concepts into detailed questions which the survey respondent can comprehend and answer correctly. Questionnaire design affects all aspects of data quality: including relevance, timeliness and accuracy of the results; it can also have an important effect on survey costs. All this is of utmost importance for the PHS, which in its content will undoubtedly be one of the most comprehensive and complex surveys ever undertaken on a national scale in any of the participating countries. It will be necessary for the SDA project teams, both at the national and international levels, to devote a major part of their survey development efforts towards the design and development of questionnaires which can satisfactorily meet the project objectives. The experience of the Living Standards Survey questionnaire will be relevant and useful in the context of the PHS, but obviously that questionnaire itself needs to be rationalized and improved in several ways. In any case, the objectives of the two survey systems are not identical.

8.2 In developing any complex questionnaire it is necessary to go through a number of stages or steps in a systematic manner. Organizational prerequisites include arrangements for: (a) close consultation between survey designers and users and analysis; (b) team work in technical design which can provide multi-disciplinary inputs required for questionnaire development; and (c) for independent review and evaluation of the instrument.

8.3 The most basic consideration in questionnaire development is the content of the survey. One should always start from the substantive objectives and the end product expected, and work backwards to the actual instruments and procedures required to achieve them. In this process the objectives of the survey may themselves be refined and even revised. Before detailed specifications of survey variables and questions can be made, it is necessary to clarify the underlying concepts. The concepts and definitions must be formulated clearly and in detail, specifying exactly what is included and excluded, and how the definitions may be applied in practice. The next step would be the preparation of a detailed list and description of the "survey variables" before attempting to formulate actual sequences of questions. A survey variable is not necessarily equivalent to single item in the final questionnaire: it is meant to define the micro-level information to be obtained in the survey, while questionnaire items specify the exact form in which that information is to be collected. Frequently, in the interest of obtaining accurate values of survey variables, the questionnaire may call for more detailed information than is actually needed for the final analysis.

8.4 In certain situations insufficient prior knowledge and experience is available to draw-up a reasonable sequence of questions to be tried and tested in the usual way. It becomes necessary to use special 'qualitative'

interviewing methods to gain a better understanding of how and in what form the required information may be collected. Several methods are available, such as qualitative in-depth interviews with specially selected informants; group interviews in which a number of informants participate together as a group; and participant observation studies by highly skilled investigators. It may be necessary to resort to one or another of these methods in developing or improving some more difficult parts of the PHS questionnaire.

8.5 Even when plausible questions can be formulated, the available experience and knowledge may not be sufficient to choose decisively between alternative approaches, and it may be necessary to undertake more or less formal experimentation to scientifically test and compare alternatives. The design and execution of experiments which can yield useful information for unambiguous decisions and choices is a highly technical task requiring specialized knowledge of statistical methodology. Experiments can also be expensive and time consuming. Many experimental tests fail to yield useful information because their objectives are not clearly defined or are too ambitious, and conditions of implementation are insufficiently controlled.

8.6 Once a definite version of the questionnaire is drawn up, it is still necessary to test it - perhaps test it repeatedly - before it becomes acceptable for routine use in the actual survey. the importance of careful review and testing cannot be overemphasized. There are countless examples in survey practice where the failure to test the questionnaire thoroughly resulted in significant and unnecessary damage to the value of the survey. For a complex questionnaire containing many novel features, as the PHS questionnaires would do, the testing can be an iterative process during which an improved version from previous testing is subjected to further testing till a satisfactory product is obtained.

8.7 In a continuing operation like the PHS, no questionnaire can be frozen for ever. While in the interest of retaining comparability over time it may be desirable to minimize the changes introduced into the questionnaire, there are several reasons why it is often neither possible nor desirable to entirely rule out any changes. Firstly, new data needs may emerge (or existing ones discovered). This may frequently happen due to rapid changes under structural adjustment. Secondly, on the basis of information from application in field, it may become obvious that certain aspects of the questionnaire are clearly deficient and must be improved. In a continuing survey it is best to accumulate the changes to be made and introduce them only periodically so as not to constantly disrupt the survey operations.

8.8 A basic issue in formulating questionnaire is the choice of the extent to which the interview is to be "structural". Maximum structuring implies the use of pre-specified and uniform procedures in the conduct of the interview, with little leeway to the interviewer in the choice of the sequence, style or working of questions or in the form and categories for recording and coding the responses. It would require the interviewers to follow the exact wording as specified for each question in the questionnaire, provide them with detailed instructions on how and with whom to conduct the

interview, and specify both to the interviewer and the respondent the exact categories for recording answers to each question. A high degree of structuring can have several advantages: it may help to make results from difficult attitudinal or opinion questions more comparable; it can enhance comparability across survey areas, across survey rounds over time and across interviewers; it can facilitate coding and data entry. On the other hand, maximum structuring and standardization is not the best approach in all circumstances and for all types of questions. There are situations when it is desirable to five the interviewer flexibility in choosing the manner of asking questions and the form of recording answers. For instance, the interviewing conditions, language or respondents' characteristics within the survey may be so variable that no satisfactory standardized procedures can be specified in detail; or if specified, would probably not be adhered to due to practical problems in conducting the interview. Similarly, in a survey with complex subject matter, detailed probing may be necessary during the interview, which requires considerable flexibility and initiative on the interviewers' part. In general, the more skilled, experienced and motivated the interviewers are, the stronger would be the case for flexibility in choosing the manner and form of asking questions during the interview.

8.9 Given these varied considerations, the question is: what would be the appropriate approach to questionnaire design for the PHS? Firstly, it should be noted that the appropriate choice must depend on circumstances. This is specially true in the case of the SDA Project, which is a multi-country undertaking, with considerable variations in circumstances, experiences and capabilities of the countries involved. Secondly, even in a given country survey, the wide content and reporting units involved mean that different topics or different sections of the questionnaire may have to be handled differently depending on the nature of the information being sought. Thirdly, structuring has a number of dimensions, such as wording (and translation) of questions (e.g. verbatim versus the 'schedule' approach); specification of response categories (e.g. closed versus open-ended questions); degree of detail or disaggregation n itemization of the information to be collected; specification of reference periods (e.g. bounded versus unbounded); provisions for cross-checking internal consistency, etc. the appropriate degree of structuring may differ between these different dimensions. Finally, in most circumstances, neither of the extreme solutions (too much standardization or too much flexibility) is likely to be a reasonable choice.

8.10 Before considering the important issue of wording and translation of questions, some remarks may be made on other dimensions of structuring in relation to the PHS. The information on employment, income, household production and consumption, etc. is so closely related (and overlapping to some extent) that there is likely to be a great deal of scope for cross-checking internal consistency of the information. The designers will have to judge from experience as to how much cross-checking should be aimed at. Certainly cross-checking can be useful and reduce errors; but too much checking may result in arbitrary changes being made in the responses obtained, in increased length and complexity of the interview and, what can be even more damaging, in adversely affecting the interview situation.

Concerning the degree of disaggregation experience shows that in order to reduce omissions in reports of consumption and expenditures etc. a great deal of detailed itemization is desirable. In each situation the designers will have to identify and pay more attention to the more important items and less to items which are encountered less frequently - care should be taken to ensure that all target groups in the survey are represented in this exercise. Indiscriminate copying from lists developed elsewhere under dissimilar circumstance should be avoided. Finally concerning coding of response categories, it may be generally desirable to maximize pre-coding: this will facilitate decentralized data entry being recommended for the surveys.

8.11 Specially careful attention needs to be paid to issues relating to question wording and translation in view of the complexity of the information being sought and the complicated language situation in many African countries. It is possible that for the PHS the questionnaire will need to be a mixture of verbatim questions (the wording of which is fully elaborated in the questionnaire), and the more concise schedule or tabular forms (in which only the items to be enumerated are briefly listed). When verbatim questions are used, it is desirable that they are also translated into the most commonly used languages for the interview. In many African countries the number of languages encountered is very large and it will be best to limit the number which are used for recording responses in the field. On the basis of considerable experience gained, especially in the course of the World Fertility survey, it can be proposed that usually it will not be worthwhile to go beyond four or five languages for field application in any one survey. It can of course be extremely useful to develop questionnaire versions in any other important languages as well, even if they are primarily used only for interviewer training. Preparation of glossaries of important terms and question wordings in different languages can also help interviewers during training and field work.

8.12 Concerning question wording, experience shows that usually it is no use to put long questions with elaborate descriptions and reservations into the questionnaire. In most cases, interviewers find such questions too cumbersome: they simply ignore the elaborate reservations when the question is actually put. If important, it is best to break such questions into series of simpler items; if not particularly important, it may be best to simply leave out some of the reservations.

8.13 Often the variety of situations encountered is so large that no single reasonable verbatim version of the question can be specified. In such cases an alternative to verbatim questioning would be to formulate the concept and nature of the information being sought clearly and address it to the interviewer, leaving it to the interviewer to communicate that information in an appropriate way to the respondent.

B. Data Processing

8.14 Timely processing and analysis of the data is a most critical requirement in the implementation of the PHS because of its objective to monitor the rapidly changing situation under structural adjustment. it is hoped that the main findings can be released on a quarterly basis very soon after enumeration of each quarterly sub-sample. This reporting will be supplemented by more detailed reports on annual rounds and series of further analyses and studies, all in a timely manner so as to make the maximum possible impact on policy formulation.

8.15 The experience of the Living Standards Surveys, which dealt with similarly complex survey content, is generally recognized to be very positive in the area of data entry, editing and correction and hence in speedy processing of the data. In this system the 'classical' data entry procedures, whereby data entry occurs centrally after completion of field work, was replaced by decentralized data entry using micro-computers facilities accessible to interviewers working in the field. This system provided a capacity to identify and correct errors while the interview team was still in the sample area. There are several important pre-requisites to the application of this approach: relatively mobile teams of interviewers; multiple data entry facilities each of which remains accessible to and can cater for the requirements of interviewers working in the same general area, and can keep up with the speed of data collection; skills to use these facilities; and precoding of items in the questionnaire. If the questionnaire contains items or verbatim responses requiring coding then either the items must be coded in the field, or left out to be dealt with at a later stage in a more 'conventional' manner. Perhaps interviewers or, more likely, data processing clerks with the data entry team can be trained to code some items in the field, but other more complex items may still have to be left out for subsequent treatment at a more central location.

8.16 On the basis of this positive experience, it is possible to recommend the system of decentralized data entry for the PHS as well. the mode of fieldwork organization can be as described earlier: teams of interviewers making two or more visits to the same area and households, the visits being separated by a specified short interval during which a nearby stations data entry team enter and edit the data for the previous interview sub-round. This can be fed back to the interview team for correction if the team is returning to the sample area.

8.17 With the development of lap-top computers for use by individual interviewers, it may be possible to go even a step further. It would be most desirable to follow-up these developments with urgency and study their feasibility before many countries enter the data collection stage of their PHS. As technology in this field is changing rapidly a constant watch on developments will be essential. If the use of lap-top computers becomes generally feasible, it may have major implications for survey organization and design. The interviewers will be able to check the information for internal consistency during the interview itself; there will be no need to go to a central point for data entry; logistic problems of supplying

interviewers with correct versions of questionnaires in multi-lingual countries may also become simplified. At the same time it is important to keep in view possible limitations in the general applicability of the approach. It needs to be demonstrated clearly that the presence of an unfamiliar mode of recording the information does not adversely affect the atmosphere of the interview. But more seriously perhaps, there can be a danger of interviewers applying inappropriate corrections in case of inconsistencies being found in the reported information.

C. Fieldwork Organization

8.18 The recruitment, training and supervision of interviewers, data processing clerks and other operative staff are obviously major factors in determining the quality (and cost) of the data collected. The requirements, experience and practices, as well as available possibilities, in this respect will vary greatly between countries, and no single model can (or should) be recommended to suit all situations. Some general principles may, however, be stressed. In each country the PHS will be a particular intensive survey system, requiring special arrangements for recruitment and deployment of survey staff. As the survey involves continuous operations, the staff will generally have to be employed on full-time basis. However, the employment does not have to be on a permanent basis, though retaining staff will help in maintaining continuity, improving standards and maximizing returns from investments made in establishing the survey organization. Some high quality international programs of surveys such as the World Fertility Survey have demonstrated beyond doubt that thorough training is the key to data quality. The PHS programs in countries should draw heavily on such experience. Furthermore, in a continuing survey, the staff must be retrained and reassessed periodically, especially when any changes in methods or procedures are introduced.

8.19 The next issue is the mode of organization of fieldwork. In the extreme form, two modes may be distinguished: the use of highly mobile teams of interviewers, working together with field supervisors in the same sample areas and moving together from one area to another as the work is completed; versus the use of fixed enumerators, often recruited locally, each deployed singly in a fixed sample area for an extended period, with the supervisors generally residing in a separate place and visiting the interviewer periodically. Though not necessarily in this extreme form, the two systems are typified by the practices followed in, respectively, some international survey programs in developing countries (e.g. the WFS, DHS, LSS), and that in several African countries, especially in agricultural and other surveys involving physical measurements. Each system has its own merits and shortcomings. The use of mobile teams generally permits better supervision and control of fieldwork and more efficient sample design (in that with mobility, a given number of interviewers can cover a larger number of sample areas). The sample rotation pattern and other aspects of the design can be determined more flexibly. As recent experience shows, the system also permits decentralized data entry and computer editing. The major difficulties of the mobile team approach include the need to provide transport facilities for the use of each team; higher travel costs and costs

of temporary accommodation in sample areas; and possibly also lower rate of work due to the time lost in movement between areas, which can be substantial when all members have to wait to move together till the last one has finished the work. It may also be more difficult to recruit interviewers locally, which can be desirable in certain situations e.g. with shape differences in local customs and languages. In situations where the alternative fixed deployment system is long established, there may be added difficulties and costs involved in changing to the mobile-team system.

8.20 Actually in practice the contrast in travel costs between the two systems is often not as marked as it may first appear. For instance, with mobile teams the amount of travel can be reduced by confining the work of any team to sample areas which are relatively close to each other. Some of the other disadvantages noted above can be usually reduced by reducing the team size. Exceptions can also be made, for example by deploying interviewers individually in some of the more remote or special areas. Occasionally it may be possible for the teams to use public transport. There may not be much difference in travel in any case in urban or other densely populated areas. From the other side, there can be a fair amount of travel involved in the so-called 'fixed' system too. For one thing, supervisory staff still need to be mobile; in fact proper supervision of interviewers stationed individually in sample areas may actually require more travel by supervisors than that required with the alternative system. Also, the 'fixed' enumerator have to be brought in periodically to a central location for retraining. The above qualifications are not intended to deny that in many situations important difference in travel costs between the two systems do exist.

8.21 On balance it appears fairly clear that in general some form of mobile-team approach will be desirable in the PHS because of the need to ensure better quality control and speed of data processing. However, as in the case of other aspects of the SDA project work, the mobile team approach should be applied flexibly according to individual country circumstances, making exceptions in cases where necessary, as for example in certain more remote and sparsely populated areas with difficult travel conditions. There can be scope to vary the mobility required by adjusting team size and allocation of fieldwork. In any case the fact that the fixed deployment approach may be well established in some countries cannot be considered a valid argument for not trying to introduce an alternative system if that is more suitable for meeting the current needs. For some statistical offices in Africa, participation in the SDA Project may actually provide a unique opportunity to break out of the rather inefficient patterns which have grown as a result of severe cuts in operational resources available for field work.

D. Quality Control

8.22 The usefulness of statistical data depends on their quality. this is particularly important in the case of the PHS the explicit objective of which is to provide pertinent policy relevant information. It will therefore be necessary to develop and establish good quality control procedures in each PHS. In this regard, there are some basic principles of general

applicability. A very important principle is that the evaluation of methods and results should always, from the outset, be regarded as an integral part of the planning, design and execution of the survey. It would be a mistaken policy to consider the mere collection of more data as the primary task, and relegate evaluation to a secondary position. Secondly, a balanced attention should be paid to all aspects of data quality: to the relevance of its content to the identified objectives and uses; to its timeliness, i.e. speed and punctuality; and of course to accuracy. The complementary as ell as conflicting requirements of these three aspects should be explicitly recognized. Thirdly, information on quality needs to be accompanied by information on costs, at least on relative costs of alternative choices available. This is essential for improving survey design and procedure - and important requirement in a continuing survey. Fourthly, it should be noted that evaluation of data quality can be demanding on resources and technical skills. It is important therefore to set goals which are feasible and sustainable and to concentrate resources on the most significant issues and problems. Fifth, evaluation of data does not necessarily - and mostly should not - take the form of special (often expensive) field studies; a great deal can be learnt from information routinely collected as a byproduct of survey implementation. Finally, attention should also be paid to the documentation and reporting of information on survey errors in an appropriate form, taking into account different requirements of different types of users.

8.23 Maximum use should be made of the information already available, or obtainable in principle, from the survey itself. Analysis of the information routinely obtained from administration of the survey, substantive analysis of internal consistency and relationships in the data obtained, comparisons between different estimates from 'internal replications' of the survey, etc., can provide valuable indicators on quality of the survey results and on types and sources of errors. Computation of sampling errors is an important example of this since in a survey with properly designed and documented sample, these errors can be estimated on the basis of the survey results themselves. Other sources of evaluation include comparisons with data from external sources where available. In addition re-interviews and other supplementary operations can be undertaken from time to time to identify different types and sources of errors.

8.24 Quality control work has to be undertaken not only at the national but also at the international level in the context of the SDA Project. This will permit pooling of effort and resources for the common use of participating countries. It is important to identify, across the diverse circumstances encountered in countries, components of common PHS methodology which 'work' satisfactorily and those which do not; in the case of unsatisfactory methodology to undertake experimentation and evaluation to identify better procedures; and to organize channels for the wide dissemination of the results of this effort.

8.25 As in the case of some survey development work, it may be useful to consider contracting out some aspects of the quality control and evaluation work on national Permanent Household Surveys to competent and experienced survey organizations or individuals, who may not be otherwise

directly involved in the survey. Independent evaluation is important from the point of view of credibility of the SDA Project and of national survey programs. However, certain aspects of evaluation work require detailed knowledge of the country and the survey so that it cannot be easily given to outsiders who were not involved in the actual survey operations. National sensitivities may also be involved. In addition, self-evaluation - both by the international project team and by the national organizations involved - is as important as independent evaluation.

IX. AN ANALYSIS PLAN

9.1 An essential ingredient in each of the country projects undertaken under the SDA program is an analysis plan. If possible, this plan should be prepared in full consultation with policy makers and researchers within the country, and before the main data collecting exercise is undertaken. In other words, before the survey design (including sampling and questionnaire design) is finalized, some indication is necessary of the types of policy analyses that are to be conducted with the data.

9.2 This analysis plan must not only set out the substantive issues that are to be addressed, it must also identify the institutional arrangements that are to be made. In order to guide both the substantive and institutional aspects of the analysis plan, it is essential that policy makers and country-based technicians are involved in guiding the analysis plan in its early stages. Clearly, it would be most helpful if some of the institutions/individuals in the country concerned 48/ that are to be involved in the data analysis, are involved at this early stage. At the same time as the data analysis plan is drawn up, some attempt should be made in assessing the in-country capacity to undertake the types of analyses proposed. The conclusions of this assessment would obviously have an important bearing for the training component of SDA country activities. In other words, the design of the analysis plan, the identification of the institutions to undertake the analysis and the training program for the various participants in the project, should be considered together. In this way, data analysis within the country by country nationals will be encouraged and enhanced.

9.3 Data analysis under the SDA study will involve three main stages: the first will be a report on the main features of the survey for the year concerned; the second will deal with the complex research problem of tracing the effects of adjustment policies on the households; the final phase will address the issue of policy choices.

A. The First Report: the Micro Socio-Economy

9.4 This first phase of the data analysis of the project is to establish a 'snap-shot' of the prevailing conditions among the households enumerated in the socio-economic survey of households and related communities. This will be similar to the 'first reports' frequently published by statistical organizations, although it must of necessity be

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48/ Although the clear emphasis of the SDA project should be to encourage and facilitate the participation of nationals in the data analysis activities of SDA country projects, it is likely that part of the institution-building components of the project will involve the assistance in data analysis of institutions outside the country concerned. These institutions, however, will only work on country-data analysis in strict collaboration with country-based institutions and departments of government in the country concerned.

focussed on the main concerns of the SDA project - namely the human dimensions of the adjustment process. In other words, this report must feature a poverty profile, a review of the main income and expenditure patterns of the survey, other indicators of household and individual welfare (for example, nutrition, morbidity, etc). The first report should be swiftly executed, in order to provide some early signals of any serious adverse effects on vulnerable groups. In other words, the first report should give a comprehensive but policy-relevant update on the micro-economic units under investigation.

9.5 In other documents prepared under the SDA project, a Prototype Questionnaire and Prototype Analysis Plan (based on the questionnaire) have been proposed, and it not our intention here to repeat this material. We shall focus instead on two features of the first reports that bear emphasis: the measurement of poverty; and the evolution of data analysis under the project.

1. The Nature and Measurement of Poverty

9.6 As poverty and its alleviation is certain to be at the centre stage of the SDA endeavour, the first report of the SDA analysis program must adopt measures of poverty which will be helpful in guiding policy makers and in facilitating links between poverty and the main structural characteristics of the economy, which are themselves likely to be influenced by structural adjustment programs. In any measure of poverty, two broad issues present themselves: first, the establishment of the poverty line; and secondly, the choice of a single index to measure poverty.

9.7 The literature on poverty has been concerned with the respective merits of absolute and relative concepts of poverty (Sen, 1983b reviews much of it). Recent work has questioned the usefulness of absolute poverty, since what constitutes poverty in one society (at one point of time) may not be the same for another society (or the same society at a different time). Whilst Sen (1983b) restates the "absolute" case, he retains much relativity. He distinguishes between the "capabilities" which incomes confer, and the goods and services needed to produce them. Poverty, according to this view, is the absolute absence of certain critical capabilities - especially such essentials as avoiding shame, community participation and self respect. But the bundle of goods required to provide these capabilities varies from place to place and from time to time, and it is in this respect that poverty is relative. If the absolute aspect of poverty is ignored, as Sen (1983:156) puts it, "poverty cannot - simply cannot - be eliminated and an anti-poverty programme can never really be quite successful".

9.8 The debate on whether absolute or relative concepts are appropriate is simply about the appropriate choice of poverty line, and this is certain to be a subject that would need further clarification at each country level. But this is only one, albeit fairly crucial dimension to any measure of poverty. Apart from the selection of the poverty line itself, the degree of poverty will depend on three basic factors:

- the incidence of poverty, as measured by the numbers in the total population living below the poverty line;

- the intensity of poverty, reflected in the extent to which the incomes of the poor lie below the poverty line;

- the degree of inequality among the poor, in that transferring income from the poorest to the better-off poor should raise measured "poverty".

9.9 Any index or measure of poverty should ideally reflect all three of these dimensions. Moreover, for our purposes, we need an index of poverty which can be used to assess the effects of adjustment. Since adjustment frequently entails changing the sectoral composition of output - from non-traded to traded goods, from import competing to exporting sectors, and favouring agriculture, our poverty index must be decomposable across sectors (Kanbur, 1986).

9.10 We propose that the typical presentations of poverty (usually by region in a country) should be supplemented by measures by socio-economic group, with the choice of groups partly determined by the relation each bears to the markets and other elements of the meso-economy. In other words, if the structural adjustment programs feature changes in the price of a particular food (say maize), it would be important to estimate measures of poverty for maize producers and consumers separately from other groups. The measure must therefore be sub-group decomposable.

9.11 A useful index which meets this requirement is suggested by Foster, Greer and Thorbecke (1984). Their class of poverty index takes the following form,

$$PV_{\alpha} = (1/n) \sum_{i=1}^{q} [(Z - Y_i)/Z]_{\alpha} \qquad (1)$$

where Z denotes the poverty line, n the total population and q the number of income earners below the poverty line. Essentially, the index takes the poverty gap of each poor person as a fraction of the poverty line ({Z-Y}/Z), raises it to a power α, and sums over poor units. Not only does this index take into account the incidence and the intensity of poverty, it is also sensitive to the degree of inequality among the poor. This is governed by the value of α, which determines how sensitive the index is to transfers between the poor. For $\alpha>1$, transfers from the poorest to better-off poor groups will increase the measure of poverty.

9.12 This class of poverty measures is flexible in two important respects. First, α is a policy parameter that can be varied to reflect correctly poverty "aversion". If $\alpha=0$, it can be readily shown that (1) simply becomes,

$$PV_{\alpha=0} = q/n = H \qquad (1a)$$

where H is the head-count ratio, ie, the proportion of total income-receiving units below the poverty line. Note, if α=0, it simply means that the measure is entirely indifferent to how poor each poor unit is - it does not matter how far below the poverty line each poor person is. Therefore, with α=0, the index is simply the head-count ratio. Alternatively, with α=1, the poverty index becomes,

$$PV_{\alpha=1} = (1/n) \sum_{i=1}^{q} [(Z-Y_i)/Z] = HI \qquad (1b)$$

where

$$I = '1/Zq) \sum_{i=1}^{q} (Z - Y_i)$$

is the "income-gap" ratio. I is simply the average of the poverty gaps expressed as a fraction of the poverty line. $PV_{\alpha=1}$ or HI therefore takes into account how poor the poor are, and reflects both the incidence of poverty (as reflected in H) and its intensity (as given by I). It also measures the amount of income, under perfect targeting, that needs to be transferred to the poor in order the exactly eradicate poverty. However, the $PV_{\alpha=1}$ measure is insensitive to income distribution among the poor. Transferring income from the poorest unit to a richer (but still poor) unit will leave $PV_{\alpha=1}$ unchanged (as both H and I will be unaffected). For this to be reflected in the index, greater weight has to be given to the poorest income earning units. This can be achieved in this class of poverty indices by assuming values of α in excess of unity. With $\alpha > 1$, a transfer of one dollar from the poorest units to other (better off) poor units will increase the poverty index. In short, the PV_α class of poverty indices suggested by Foster, et al permits the user to specify α, and thereby select an index which reflects his or her aversion to poverty.49/

9.13 This class of poverty indices is flexible also in that it is sub-group decomposable (Kanbur, 1986). The "overall" index of poverty can be shown to comprise the summation of poverty indices among all the sub-groups in the population. If the study population consists of n groups or sectors, then,

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49/ Note also that $PV_{\alpha-1}$ is always greater than PV_α, so that the greater the value of α selected, the higher the poverty index becomes. Clearly, the greater the aversion to poverty, the higher the index of poverty should be.

$$PV_{\alpha} = \sum_{i=1}^{n} x^{i} \, PV_{i,\alpha} \qquad (2)$$

where $PV_{i,\alpha}$ is the poverty index of group i and x_i the population weight of group i ($i = 1,\ldots,n$), $\Sigma x_i = 1$. This decomposition property will prove useful in analyzing poverty changes in the SDA project, since it would be possible to generate both overall indices in each country, and break these indices down for each of the socio-economic groups under consideration.

2. The Evolution of the First Report

9.14 Finally, something should be said of the need to review and revise the first report format as country-based activities under the SDA project continue. There are two basic reasons for this. First, it is unlikely in a project of this complexity that the analysis plan established at the start of the country-based activities will exactly match the needs of policy makers. Some elements of the plan may be found to be of little use to policy makers and policy-based research activities. These would obviously have to be sifted out in the first year or two of operation.50/ Other policy issues may be found to be inadequately addressed in the analysis plan (and even in the questionnaire itself). A decision would need to be taken to either add these to the questionnaire/analysis plan, or to initiate a separate data collection/analysis exercise to address the specific issue of concern.

9.15 Secondly, data analysis in the SDA study will inevitably move from an emphasis on cross section analyses at a point in time, to incorporating more time-series (if not longitudinal) analyses, as more surveys are conducted. Even in the second year of each country project, some analysis can be made of how poverty (and other social dimensions of adjustment) have changed over the year since the previous survey. As time goes on, the statistical significance of this time-series element of data analysis will increase, and less reliance will be needed for cross-section analyses.

B. The Second Report: Meso-economic Links

9.16 This phase of data analysis will be concerned to establish how the outcomes observed by the first phase are related to the adjustment programs. It should be emphasised at the outset that the success of the SDA project will rest crucially on how successful this aspect of the data analysis is handled. If it fails to identify the processes through which adjustment policies affect households, there can be no ground for confident policy prescriptions. For this phase analysis, outside data will need to be

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50/ This would obviously apply also to the questionnaire itself, since there would be little purpose to collecting data that are not needed in policy analysis. in this way, this early sifting process will help contain the size and cost of the data collection exercise.

combined with the SDA household- and community-level data to establish the links between the macro- and micro-economies.

9.17 Much of the previous work on the social dimensions of adjustment has failed to provide a convincing analysis of the effects of structural adjustment. This is because of a general the failure to separate out the effects of the adjustment policies per se from other factors operating on households concurrently, including the effects of the shocks to which the macro-policies are adjusting. For example, the recent work of UNICEF has been explicitly agnostic about whether the deterioration in the welfare indicators is traces has been due to the recession itself or to the adjustment policies that have ensued (see Cornia et al, 1987:). The analysis plan of the SDA project, however, has to attribute causation in its treatment of adjustment-human dimensions links. To achieve this, we would propose that the analysis treats explicitly the conduits which transmit the effects of adjustment policies to the households. We have already reviewed these under the conceptual framework as being markets (both factor and product, official and alternative), and social and economic infrastructure.

9.18 Figure 20 provides a simple schematic presentation of the links which should be the focus of phase two SDA analysis. Here, the process through which changes in adjustment policy instruments (referred to as the 'macro' economy)51/ affect households. The conduits, identified in the 'meso' economy, comprise product and factor markets, and economic and physical infrastructure. Under product markets, the conceptual framework outlined in the previous sections would suggest a disaggregation of at least four sectors of the economy - exportables (X), protected importables (M), unprotected importables (M*) and non-tradables (N). This is because adjustment policies (especially the use of trade and exchange rate instruments) will have predictable effects on the relative prices of these categories. Similarly, labor (L) capital (K) and land Ld) markets should be distinguished, disaggregating rural and urban markets.

9.19 Infrastuctural effects derive from the direct provision of government services. Economic infrastructure should be divided into at least two broad categories: physical infrastructure, which includes roads, communications, irrigation, water control etc.; and other economic services, such as government support and extension services to farmers etc. Finally, the social infrastructure should comprise education and health (including nutrition support) services, and transfers.

9.20 The micro economy (or household sector) is shown to be affected by events in the meso economy in five broad ways: for households owing

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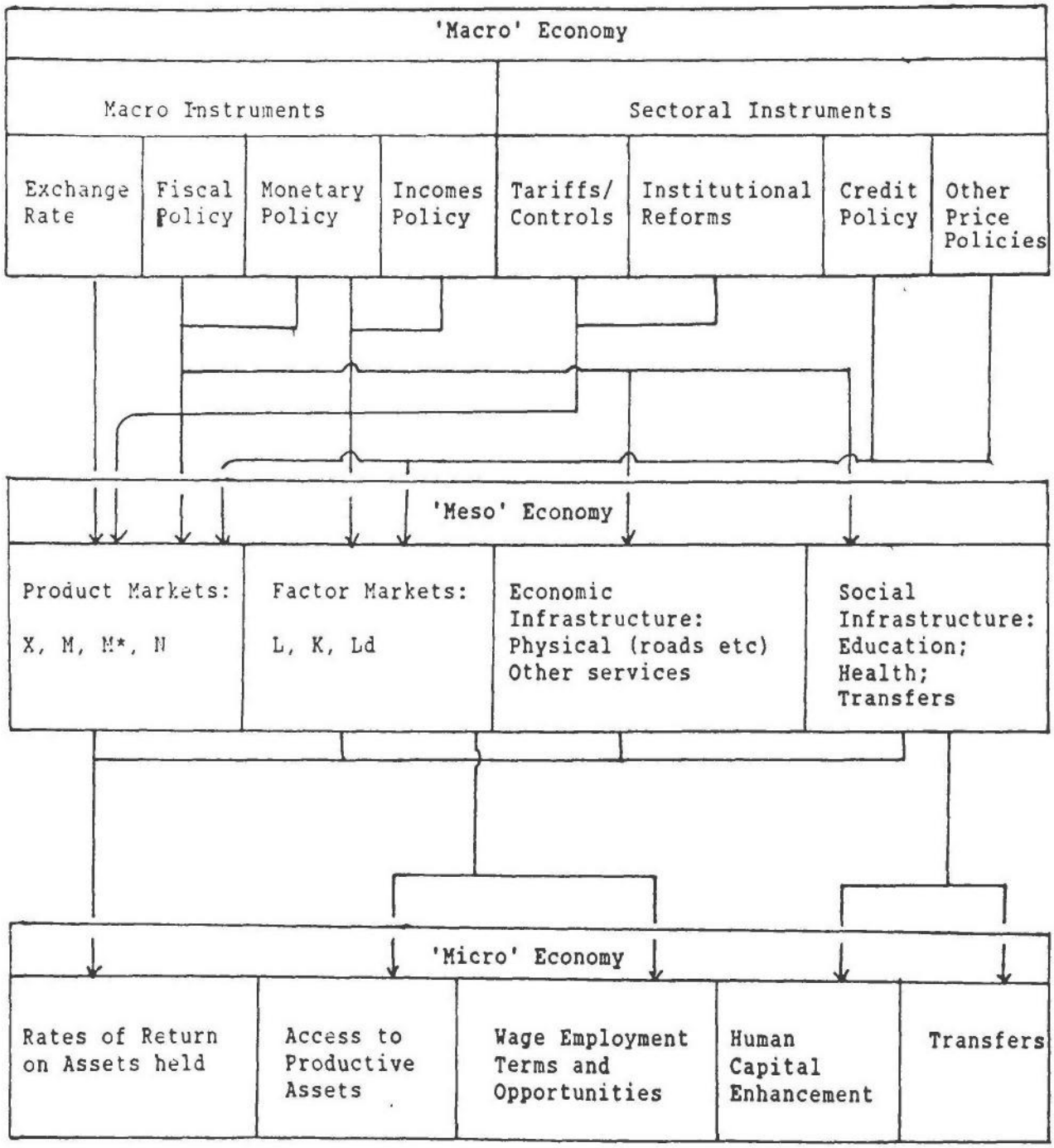
51/ Some of these instruments are not strictly macro-economic, since they frequently are targeted at specific sectors of the economy. This is why the macro instruments are separated from sectoral instruments in the figure.

Figure 20


'Macro' Economy
Macro Instruments
Sectoral Instruments
Exchange Rate
Fiscal Policy
Monetary Policy
Incomes Policy
Tariffs/ Controls
Institutional Reforms
Credit Policy
Other Price Policies
'Meso' Economy
Product Markets:
X, M, M*, N
Factor Markets:
L, K, Ld
Economic Infrastructure:
Physical (roads etc)
Other services
Social Infrastructure:
Education;
Health;
Transfers
'Micro' Economy
Rates of Return on Assets held
Access to Productive Assets
Wage Employment Terms and Opportunities
Human Capital Enhancement
Transfers

productive assets other than labor, their returns to these assets may change as a result of the market and infrastructural adjustments that are occurring during periods of adjustment. It may be also that some households will find their access to productive assets will change, as for example if landholdings are disposed of in order to maintain consumption levels, or if credit becomes increasingly scarce. For households selling labor services outside the household, their incomes can be affected by changes in the terms and opportunities for wage employment. Fourthly, the human capital of household members can be affected by meso-economic changes (either favorably or adversely). Finally, the household's net receipts of transfers may be changed, as for example when government transfer payments are cut under fiscal restraint, or when urban to rural remittances decline as urban wages and employment levels fall.

1. Two-stage Analysis

9.21 The challenge facing data analysis under the SDA project is to establish these links empirically in each of the participating countries. Figure 20 highlights the need for a two-stage methodology. First, the analysis must establish the 'macro-meso' links: that is how the operation of adjustment instruments influences the different elements of the meso economy. The second stage involves analyzing 'meso-micro' links - that is, how the various household groups are affected by the changes induced in markets and infrastructure. We have indicated in Figure 20 (with arrows) where these links may be most important, but this is essentially an empirical matter to be established on a case-by-case basis.

9.22 A couple of illustrations may serve to highlight the significance of this two-stage approach to the data analysis. Take, for example, an adjustment policy which seeks to reduce the fiscal deficit through government expenditure cuts. The macro-meso analysis must translate what is an essential macro-economic instrument into its meso-economic dimensions - that is, which components of government spending have taken the main burden of the cuts. One aspect of this would be to identify the extent to which expenditure on education has been affected by the adjustment policy.52/ Having established how the macro policy has affected expenditure allocations in this way, the analysis must then seek to establish how these expenditure cuts have affected the various household groups. It may be that the education cuts are applied unevenly (either at different levels of education - say affecting mainly tertiary education - or geographically), so that they will have uneven effects on the households. Some households may not have been benefiting from the services that are cut, and therefore are largely unaffected by the meso-economic changes. Others may be profoundly affected. The important point to emphasise here is that proving that adjustment has

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52/ This may not be always as easy as it sounds. Attributing whether a change in expenditure in a particular sector is due to the macro-economic constraints imposed by an adjustment policy, can be quite difficult. In some cases, for example, governments may have embarked on expenditure adjustment in the sector for reasons other than macro-adjustment.

involved cuts in education spending is not sufficient for the purposes of the SDA project. Data analysis must also establish which households have been affected - that is, it must make some attempt at measuring the incidence of the cuts among the households.

9.23 As a second illustration, consider the effects of a policy of import liberalization and exchange rate devaluation. The theory we have reviewed above suggests that this combination of adjustment policy instruments will have significant effects on product markets, raising the relative prices of exportables and non-protected importables, and lowering other importables and non-tradables prices. The first stage analysis must demonstrate empirically these effects on relative product prices. However, these relative price changes will affect households differently, and this would be the subject of the second stage of the data analysis. In the first place, differences in the structure of households and their economic activities will inevitably mean that their incomes (the returns to the assets they hold) will be affected differently. In this case, households producing non-tradables, and unable to switch to exportables will find their incomes falling relative to those who do. Thus the effects of the same changes in relative prices will affect households differently, and this must be established in meso-micro analysis. Moreover, not all households will face these relative price changes. Some may have been obliged to trade in parallel markets, and find little change in the prices they receive and pay following the application of the adjustment instruments. Others may be located in remote regions in which the commodity produced (classified as an exportable at or near the ports of entry) is better regarded as non-tradable. For such producers, there may be little change in the market price. To establish how the market changes induced by adjustment policies filter through to the households, data will be needed on prices in the local product markets, and this is an area of enquiry for which the community-level questionnaire will prove extremely useful.

9.24 The methodology outlined here emphasises the first order effects of adjustment policy, whereby adjustment affects markets and infrastructure and these affect the households. However, responses by households (in increasing the output of some products and reducing that of others, or in changing the supply of factor services) will have second and higher order effects on markets, which have to be assessed. There are methods available to make an assessment of higher order effects (see Braverman..), and these may well prove useful for the analysis where such effects are likely to have some significance (in modifying first order changes).53/ However, the first priority we would suggest is to obtain some empirical indication of first-round effects, possibly accompanied by a qualitative assessment of household responses and higher-order changes.

53/ The Braverman/Hammer multi-market simulation models have the advantage readily available software for use by in-country analysts. For a brief review of the approach and its applications, see Braverman and Hammer (1988).

9.25 The rationale for this two-stage methodology for data analysis stems from one of the fundamental objectives of the SDA project, which is to facilitate the redesign of adjustment programs to maximise beneficial and minimise adverse effects on poorer households. Data analysis must therefore do more than simply establish how the various arguments of the household welfare function are changing, but it must articulate the links between these changes and the adjustment instruments being used.54/

9.26 An important implication of this analysis plan is that the SDA project must inevitably draw on a wide range of data sources, and not simply those data that are derived from the household and community surveys. The need to define which instruments the government has operated on in achieving its adjustment objectives is essential. Thus, a great deal of analysis of the macro-economics of adjustment is called for, before any attempt is made to relate adjustment to household welfare. Although this analysis will clearly depend on the specific circumstances of the country concerned, we would suggest that some minimum macro-economic analysis should be undertaken.

9.27 Any macro-economic framework to be used as a basis for analysing the effects of adjustment policies on poverty must respect three basic macro-economic identities. These are the National Income and Product Accounts (NIPA), which measure the flow of goods and services and incomes in the economy, the Balance of Payments (BP), which measures the flows of current transactions with the rest of the world, and the Monetary Survey (MS),55/ which measures the flow of money creation. The key point to be observed here is that these three sets of accounts are interdependent - any one can be derived from the other two. For simplicity, assume that all borrowing and lending abroad is undertaken by the government. The NIPA identity is given as,

$$C + I + G + (C - M) = C + S + T \qquad (3)$$

where C is consumer expenditure, I is gross private domestic investment, G is 'exhaustive' government spending, X and M are respectively the exports and imports of goods and services, S is gross private saving and T is total tax revenue. GNP measured as aggregate product is given on the left hand side of (3), whilst it is measured as aggregate income on the rhs. Re-arranging gives,

$$S - I = G - T + X - M \qquad (4)$$

54/ One of the limitations of the recent UNICEF work (Cornia et al, 1987) is that is makes recommendations about an alternative approach to adjustment policy, whilst at the same time remaining agnostic about the relative influences of the recession and adjustment in producing adverse outcomes for the vulnerable.

55/ Using IMF terminology

The lhs of (4) gives the net flow of saving from the private sector into the financial markets and the rhs sums the government's demand for deficit finance and the foreign sector's demand for funds to finance its current-account deficit.

9.28 The BP identity is given by,

$$X - M + \dot{L}_{gf} = \dot{R} \qquad (5)$$

where L_{gf} denotes government liabilities abroad, R is the level of foreign exchange reserves and the dot denotes changes in the variable indicated. Here the current account surplus plus government borrowing abroad sum to the change in foreign exchange reserves at the central bank.

9.29 Finally, the MS identity is written as,

$$\dot{B} = \dot{R} + \dot{L}_{gc} \qquad (6)$$

where B is the monetary base and L_{gc} the liabilities of the government to the central bank.

9.30 Notice, the MS identity can be derived from the other two identities. Net saving by the private sector, the lhs of equation (4), can go to additional holdings of money balances (B) or to holdings of government debt (L_{gp}). Similarly, the government deficit (G-T) can be financed by sales of debt to the private sector, the central bank (L_{gc}), or abroad (L_{gf}). Thus for each item in the NIPA identity we can derive a corresponding change in assets and liabilities held by the institutions involved. Thus, equation (4) can be rewritten,

$$(\dot{B} + \dot{L}_{gp}) = (\dot{L}_{gp} + \dot{L}_{gc} + \dot{L}_{gf}) + (\dot{R} - \dot{L}_{gf}) \qquad (5)$$

9.31 It should be obvious also that (5) is equivalent in an accounting sense to the MS identity (6). These accounting relationships form an excellent basis for comparative work on adjustment policies across countries, and we shall explore the implications for the design of the country studies later in the paper. This simple framewok ensures internal consistency in the macro-accounts, whilst the observance of the accounting scheme will facilitate inter-country analyses.

C. The Third Report: Policy Synthesis

9.32 All too frequently, research results are reported proving significant relationships between variables of policy concern, without drawing out their policy implications. In many ways, this is even more challenging than making robust empirical estimates of the underlying behavioral relationships. The SDA project simply cannot indulge in this type of neglect, since its fundamental purpose is to review the social dimensions of current adjustment policies in the participating countries, and to make specific policy recommendations accordingly. Therefore, we place the policy synthesis as an explicit component of the analysis plan, which must follow

the first two phases.56/ This is especially important if current adjustment policies are found to have certain undesirable effects on the human dimension of socio-economic development. This must therefore entail some attempt at counterfactual exercises in order to trace the effects of alternative policies, not only on those human dimensions of concern, but also on the objectives of adjustment itself. In this way, the analysis will shed light on any policy interactions involved.

9.33 The issues that are raised in undertaking this policy synthesis are discussed in the next section (volume 3).

56/ Clearly, little can be concluded by way of policy advice unless some understanding has been gained of how adjustment programs have influenced households, which is why the policy synthesis is placed as the final phase of the analysis program.

Africa Region
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World Bank
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UNITED NATIONS DEVELOPMENT PROGRAMME

REGIONAL PROGRAMME FOR AFRICA: FOURTH CYCLE

Assessment of the Social Dimensions of Structural Adjustment in Sub-Saharan Africa

RAF/86/037/A/01/42

VOLUME THREE

A Policy Framework

January 9 1989

FOREWORD

This document has been prepared by Tony Addison and Lionel Demery (consultants to the World Bank), under the overall guidance of Chris Grootaert and Michel Noel (AF1-SDA Unit). Volume 3 contains, as an annex, a paper on 'Structural Adjustment, Smallholders and the Rural Poor: Background Paper on Conceptual Approach and Methods' prepared as part of an in-kind contribution by the International Fund for Agricultural Development (IFAD) to the SDA project. An initial draft of this document was discussed within the World Bank. This draft is being circulated for comments to Governments, UN organizations and donor agencies participating in the SDA project. It will be discussed at a series of seminars and workshops in Dakar, Arusha and Paris and will be further revised in the light of comments received on these occasions.

Volume 3: A Policy Framework

Contents

X. INTRODUCTION

10.1 The purpose of this volume is to set out the principles on which governments should respond to the findings of the SDA empirical investigations. Up to now we have been mainly concerned with the positive economics of structural adjustment and its social repercussions. We now move on to consider the normative implications of these findings. In other words, whilst we have hitherto been preoccupied with establishing the likely social effects of structural adjustment, we now analyze how governments may wish to respond by way of policy intervention and policy re-assessment.

10.2 It follows therefore that this section takes as given some knowledge of which groups have suffered, and which have gained under structural adjustment. Moreover, it also assumes an understanding of the processes through which these groups have been affected, since without it, policy makers will find it extremely difficult to understand how their policy interventions have made matters worse (or better) for these groups, and to take the necessary remedial action. Given this positive information base, the SDA project can then address meaningfully the policy issues that are raised. Clearly, this section will not be able to discuss in detail the policy options open to governments, since this is essentially an empirical matter, and will depend very much on the specific circumstances of the country in question. But it can offer a framework for such an endeavour, in order to guide policy analysis in the SDA project.

10.3 The main burden of this volume is that SDA data collection and analysis will be of little practical use if they do not collectively and ultimately address policy issues. Unless governments can be given clear policy guidance through the application of the various techniques of positive empirical enquiry reviewed above, the SDA initiative will have fallen short of its stated objectives. Frequently, socio-economic research investigations fall short of providing this policy synthesis, but are contented simply to gain an understanding of how the world works. For SDA purposes, this is a necessary but not sufficient condition. We therefore re-emphasise the conclusion of volume 2, that policy analysis should be an explicit element of the SDA analysis plan.

XI. THE RELATIONSHIP BETWEEN SOCIAL-ACTION PROGRAMS AND ADJUSTMENT PROGRAMS

11.1 Before proceeding to discuss some of the detail of the policy actions presented in this volume it is important to take an overview of one of the most critical issues facing governments, namely the co-ordination of social-action programs (covering social services, employment and poverty issues) with the overall macro- (and micro) policy stance. At the most obvious level finance must be found for such programs. This can be accomplished by raising additional public revenues, by borrowing from outside the country or by concessional assistance from aid donors. Given the constraints on international borrowing faced by most African countries, and their existing debt-service problems, program finance must largely be sought from domestic resources and concessional donor assistance. The importance of raising domestic resource mobilization is discussed further in section XVI, and ultimately improvements in social provisions must be sustained over the long-term by an adequate tax base. But especially in the short- to medium- terms, when domestic resources are particularly limited, and there are a range of competing high-priority needs, the availability of concessional external assistance must play a substantial role in financing social actions. This implies that in the design of their adjustment programs, and the calculation of the required financing, governments and donors need to take full account of social-action programs.

11.2 As an accompaniment to this, it may be possible to adjust public expenditure priorities to make room for social programs by reducing expenditures on other items. The importance of reviewing expenditures in order to identify resource savings is discussed further in section XVI. Particular attention must be paid to raising the cost-effectiveness of all components of public expenditures, not just in the areas covered by social provisions. Improving the cost-effectiveness of public administration and enterprise as a whole may release significant resources for social programs. This is another area where the design of adjustment programs needs to take full account of the recurrent and development expenditure needs of social-action programs.

11.3 In summary, the twin issues of financing social-action programs, and adjusting expenditure priorities, imply that the construction of such programs requires a close co-ordination with the design of the overall adjustment effort. But there is also a third way in which the social dimensions of adjustment enter into the design of adjustment programs. This concerns the strategic design and phasing of the adjustment measures, covering the choice of instruments and the identification of objectives and targets.

11.4 As volume 1 has demonstrated policy changes intended to meet macro-economic objectives have profound welfare implications, these effects being transmitted through the 'meso-economy'. Consequently, policy formulation in such areas as employment promotion, poverty alleviation and social service provision cannot ignore the effects of macro-economic policy change if it is to be successful. For example employment prospects are shaped by the direction of an economy's development, which is itself influenced by the

policy changes enacted under adjustment. A set of policies which attempted to promote employment through encouraging job creation in sectors not favored by adjustment will inevitably fail. Similarly, attempts to alleviate poverty by methods which distort markets will clash with the adjustment objective of raising efficiency, and again will undermine themselves. Finally, the demand for, and supply of, health and education services will be affected by changes in the structure of incomes and employment, so that successful planning in the social sectors must entail due consideration of macro-economic events.

11.5 It is also to be expected that the relationship between social issues and adjustment programs is two-way, so that attention must be paid to the former in the design of the latter. If structural adjustment is to have its intended benefits then resources must be reallocated in the ways envisaged by planners, and within the time-frame that they expect. In the context of the resource-poor economies of Africa, the most important resource is human labor. Thus changing the level and structure of crop production for example necessitates changes in total labor-inputs, and has implications for the quality of those labor inputs (human capital). If human capital is poor (because of nutritional and health deficiencies) or if farmers are unable to adopt new cultivation practices because of low educational attainment, then the structure of output will not adjust in the ways, and at the speed, intended by the designers of the adjustment program. Similarly, constraints within the basic micro-production unit of Africa - the household - may prevent the attainment of macro-output objectives. For instance the required expansion of cultivation may place excessive burdens on females, who may be unable to reduce their time allocations to essential household duties. Likewise the ability of an economy to further exploit its comparative advantages by, for example, developing a competitive industrial sector may be limited by the quality of its labor-power.

11.6 In short, achieving a sustainable balance of payments position and satisfactory growth rests not just on the adjustment of a few policy instruments but also on the many 'micro-adjustments' carried out by households in response to policy changes. It is therefore crucial for macro-policy planners to have a thorough understanding of the ways in which household units marshall their resources, and their capabilities and constraints in the face of economic change. For these reasons actions to raise those capabilities, and to reduce the constraints, should be viewed as an essential component of adjustment programs, if the latter are to be successful.

11.7 Consequently, in determining the strategy and phasing of adjustment measures policy-makers need to pay attention to the social dimensions of their policy changes. This is not only because of governments' concerns for welfare outcomes, but also because, as we have seen, the social dimensions affect the success of the adjustment effort itself, and the possibilities for achieving sustained growth.

XII. GAINERS, LOSERS AND SOCIAL WELFARE

12.1 In order to set out a strategy for dealing with the social dimensions of adjustment we must be clear about the nature of our welfare objectives. Much of orthodox welfare economics is based on a social welfare function of the Pareto type, which means that social welfare is deemed to increase only if at least one individual's utility level rises, and all others' remain the same. Thus, a policy intervention which improved the welfare of some groups without reducing that of others is considered to be preferred given the Pareto criterion. Now we know that most policy interventions are not of this type - the conditional normative form of the Pareto principle (that if one gains and none loses, the change is Pareto preferred) is rarely encountered in practice, and this applies particularly to the types of policy change being implemented under structural adjustment. There are certain to be losers as well as gainers. One therefore simply cannot say that the post-adjustment situation is Pareto preferred to that of the pre-adjustment. This situation is depicted in Figure 21, which plots the welfare levels of gainers (producers of tradables/consumers of non-tradables) and losers (producers of non-tradables/consumers of tradables). The pre-adjustment situation may be at a point such as X, which is Pareto sub-optimal (one individual can gain without others losing). Any movement outward in the north-east quadrant would be Pareto preferred to X (say the position Y). However, it is unlikely that structural adjustment will involve such a movement. Past experience suggests that it is more likely to take the economy to a position such as Z, which, although it may be Pareto efficient, it cannot be said to be preferred to X (since the producers of non-tradables and the consumers of tradables are generally worse off as a result of the policy change).

12.2 One 'solution' to this is the Kaldor-Hicks compensation test, according to which a change is recommended if the gainers can <u>in principle</u> compensate the losers and still remain better off (compared to the situation prior to the change). In terms of Figure 21, this means that having attained a position such as Z, it would be theoretically possible through lump-sum transfers to attain the Y allocation. This criterion, however, requires only that the compensation should be possible in principle - it does not require that the compensation is paid in actual fact. However, this type of logic is seriously flawed when applied to the SDA policy framework, and to much of sub-Saharan Africa.

12.3 Consider a case where the losers from a structural adjustment program are already poor and destitute. In selecting a system of value judgments to make normative decisions about economic policy interventions, it can hardly be maintained that a movement to Z is preferred to X (and that social welfare at Z is higher than X) simply because it is possible in principle to compensate the losers. Suppose that the decline in welfare of the losers is associated with a serious deterioration in their human condition which is totally unconscionable and inconsistent with any notion of human dignity. This possibility (though possible rare in Western Europe and North America) is a very real one for African countries, where many

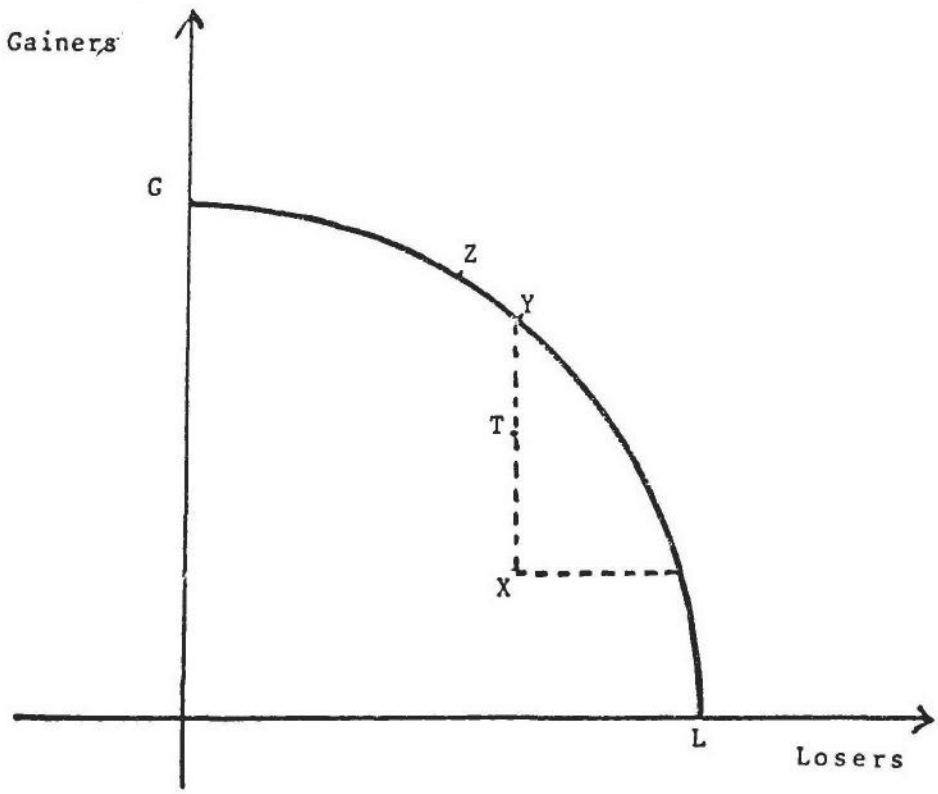

Figure 21

groups exist at or near subsistence. In the context of the SDA project, therefore, application of this criterion would require at the very least that compensation is paid in actual fact. In this way, a policy change which takes the system to Z should be implemented providing ways are found to shift ultimately to Y.1/ The Kaldor-Hicks test and the payment of compensation will only take us so far, however. If the losers from the policy change are relatively wealthy, and the gainers relatively poor, we might reasonably be reluctant to recommend that the poor should compensate the rich. But such a 'reasonable' view is based on an inter-personal comparison of utility - we value more highly the increase in the utility of the poor from their income gain than the utility loss of the wealthy.

12.4 Consequently, many decisions to provide assistance under adjustment rest on more broad based criteria than those of Paretian welfare economics. If the losers are already poor and destitute, so that the prospect of their survival into the future to gain the long run benefits promised by adjustment is in doubt, assistance can be justified on the grounds of need. Using this criterion, then there is much less of a case for assisting the losers if they come from the better-off sections of the community (unless they lose so heavily that they become poor). Likewise if the better-off group owes its relative comfort to the previous policy distortions, then there are no grounds for providing them with assistance on the basis of deserts. Nevertheless, governments often feel compelled to help non-poor losers because of the political power of the latter (which could undermine the whole adjustment effort). Hence assistance is provided on the grounds of political expediency.

12.5 Once the decision has been made to assist a particular group, the issue of the type of assistance to be given becomes crucial, together with the effect of this on both the economy's efficiency and on its growth path. It is this process of how to take the economy from the post-adjustment position attained at Z (which is Pareto optimal) in Figure 21 to Y that is the principle concern of the SDA policy analysis, and of this section of our report. One of the issues that will be raised in the SDA project in considering the alternatives which governments face, is encountered when it is simply impossible to take the system to Y, simply because having attained Z, the only methods of compensation involve some distortions in product or factor markets. This means that the move may have to be from Z to a position such as T, which is Pareto sub-optimal. Since non-distortionary methods of redistributions (such as lump-sum transfers) are rarely ever feasible

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1/ However, even the movement to Y may not be unambiguous. Policy analysts cannot observe or measure utility - they simply use proxies such as real income or expenditure. If the income gains of some groups cause a sense of social outrage and injustice, the utility levels of the others will fall, even though their incomes remain constant. Thus what might appear to be a Pareto-preferred situation from the income/expenditure point of view, may not be strictly preferred when utilities (involving non-economic determinants such as social justice and concepts of fairness) are properly understood (see Nath, 1988).

(especially in the developing countries) it is certain that social welfare will be maximized at a point where the conditions of Pareto optimality are not satisfied. One of the most important challenges facing the SDA program, therefore, is to assess how far governments in sub-Saharan Africa can effect the welfare improvements that are considered socially desirable, without introducing serious distortions.

XIII. THE TRANSITION PERIOD AND 'STEADY STATE' EFFECTS

13.1 The first element of any policy analysis under the SDA project is to establish the time-paths of the incomes (and other welfare indicators) of the selected groups of target households. It is important to establish whether the effects - either beneficial or adverse - of the structural adjustment program for a target group are likely to be temporary, lasting only as the economy moves from one steady-state time path to another, or permanent, in that the gains or losses will continue after the new equilibrium path is attained. The first, which are outcomes in the transition period of adjustment, have probably received more attention in the recent literature than the second, the outcomes under steady state growth. This is understandable given the difficulties that most African countries have had in achieving sustainable growth paths in the 1980s. Both issues, however, must receive attention in the SDA project. It is imperative at the outset of SDA policy analysis to distinguish between these two types of social dimension, since each can require quite different policy interventions.

13.2 It is possible to conceive of a number of possible time paths for the incomes of target groups over both the transition period, and after the steady state is reached. Two of the most straightforward are shown in Figures 22 and 23. These are 'stylised' income time-paths (ITPs) for any target group, beginning with the inception of the adjustment program (at time T_0).2/ Point T_S marks the time at which steady state growth begins to affect the income of the target group. The relationship between the target group's income and time will depend on a number of factors including the size of the changes in the parameters influencing the household economy as well as the response mechanisms of the households concerned. Hence determining when the transition period ends and the steady state effects take over is largely an empirical matter, and will vary with the target group and the circumstances of adjustment.

13.3 The situation shown in Figure 22 is one of the most promising scenarios for the target group's welfare - income increases in the transition period, and continues to grow once the steady state is reached. Such a group may already be engaged in tradables favored by policy shifts for example. However, the scenario in Figure 23 is bleak - the target group loses income in the transition period, which is not recovered over

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2/ We have chosen to show smooth changes in the income time-paths to assist the exposition. In practice such paths may show considerable fluctuation (especially since the effects of policy are often discontinuous). Such fluctuations can create considerable difficulties for observing a trend in income.

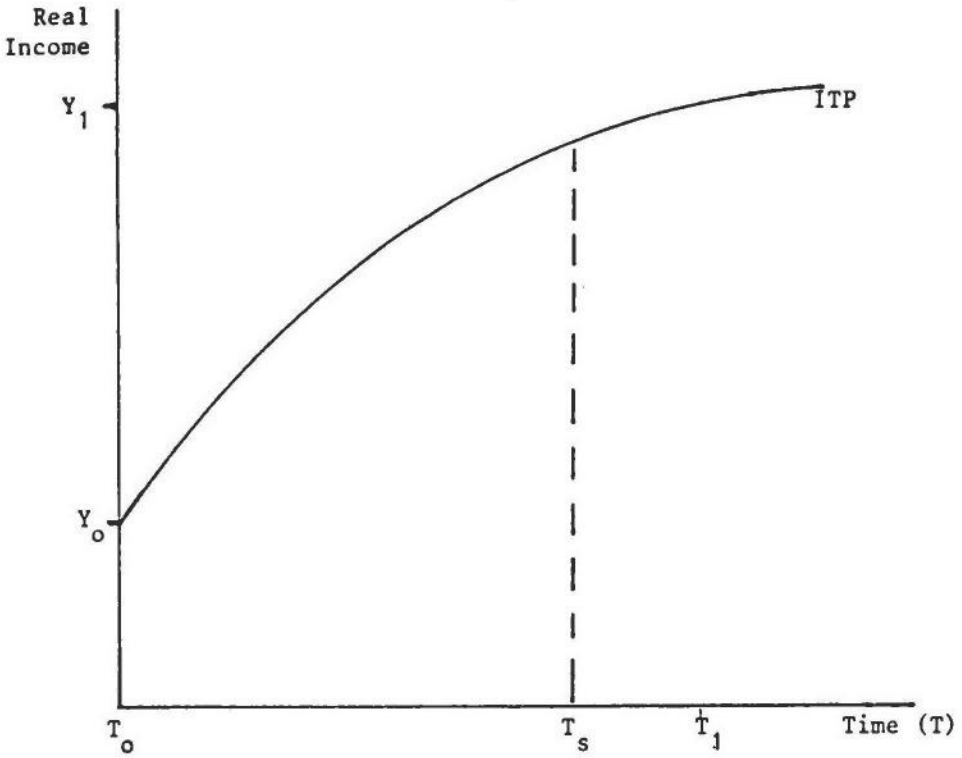

Figure 22

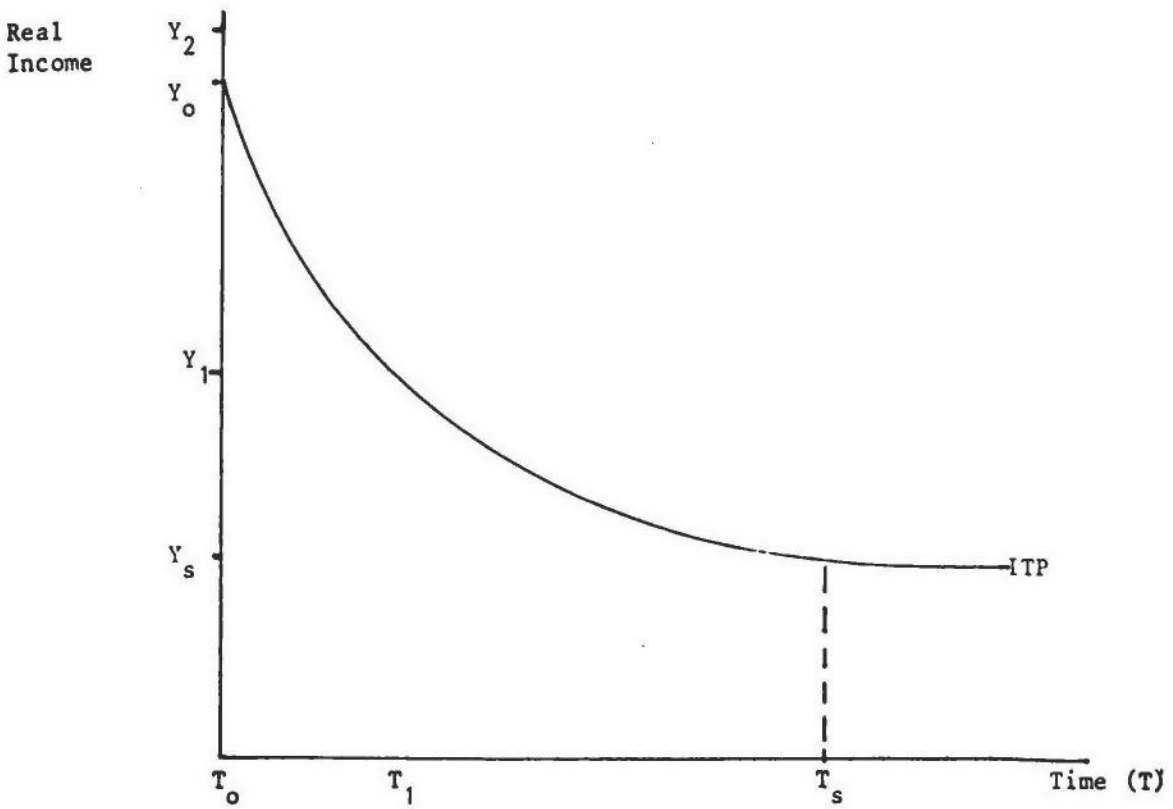

Figure 23

the longer term.3/ For example the group may be in non-tradable activities, the production of which the policy changes seek to discourage. Because of differences in the socio-economic circumstances of target groups they are likely to have different income-time paths, and governments must adapt their assistance accordingly.

13.4 Suppose the government decides to assist a target group facing the Figure 23 scenario. There are broadly two ways it can do this: the first is through a transfer, in cash or kind, intended mainly to affect the recipient's consumption level. These fall in the category of secondary incomes, a classification discussed earlier (in volume 1).4/ The second, are interventions intended to favorably alter the recipient's prospects for employment and self-employment. These affect primary incomes. Naturally, the distinction is not water-tight, for transfers, through altering the household's resources and decisions, can affect its ability to generate primary incomes. But in extreme such transfers can be given without consideration to their primary income effects, although at the other extreme they may be attached to programs with some primary-income generating component (for example food-for-work). In contrast, primary income interventions are specifically intended to operate on the recipient's activities, and not just to alter these as a by-product. The next section considers secondary interventions, while the following section turns to primary interventions.

3/ We emphasize that these are only two possibilities - for example as shown in Figure 22 the rate of growth of the target group's income slows down in the longer term compared to the transition period. There may be scenarios, however, where its income rises at a faster rate in the longer term than in the transition period.

4/ In the case of transfers in kind - food for example - these have to be valued in order to measure their contribution to secondary incomes. This empirical problem does not affect the analysis here.

XIV. SECONDARY INCOME INTERVENTIONS

14.1 Suppose therefore that the government responds to the Figure 23 scenario with a consumption or income transfer. It must first make a decision on the size of the transfer to be given. It may set the transfer in relation to a poverty line, fearing that if the target group's income falls below that level then malnutrition and other life-threatening outcomes may result. For present purposes assume that all the members of the target group have the same income.

14.2 If the target group's income level was just at poverty level preceding adjustment (in which case Y_0 in Figure 23 would be the poverty line income) then the government would be effectively maintaining the target group's income at the pre-adjustment level. As the transition period progressed, and the primary income of the target group gradually fell, the size of the transfer program would have to increase. Eventually, the steady state primary income Y_S would be reached and the transfer program would reach its maximum size. With no other occurrences the government would be committed to maintain the program indefinitely. A second case to consider is where instead of being at Y_0 the poverty line may be at some point below it, say Y_1. In this case the government may wait until the primary income of the target group falls to Y_1 before commencing (at T_1) a program which maintains income at that level (again indefinitely). This situation characterises the 'new poor' - people who were not poor before adjustment began, but who become poor as the policy effects unfold.

14.3 In contrast the target group may already be below the poverty line at the start of adjustment (if for example the poverty line was Y_2). The government could through its transfer program maintain their income at its pre-adjustment level Y_0, so that adjustment, while making them no better off, did not at least make them worse off. But they would still be poor and malnourished, although not as much as before. The government would be open to criticism for having put in place a transfer program, possibly with high administrative costs (in relation to the benefits delivered), which failed to tackle the poverty problem more comprehensively. The government may therefore institute a larger transfer program to raise incomes to Y_2, to deal with both the poverty effects of adjustment and pre-existing poverty. Note that while the pre-adjustment poverty of the target group could be due to 'structural' causes (such as rapid population growth or low-productivity in agriculture) and environmental shocks (such as floods or drought) the period of macro-economic disequilibrium preceding adjustment could also have contributed to the situation. The governments transfer program would therefore be responding to a range of poverty causes, not just those created by adjustment.

14.4 The government may also seek to use a transfer instrument in the case of the Figure 22 scenario. While the prospects for the target group are good, its income at the start of adjustment (Y_0) may still be below the poverty line. Again pre-adjustment events - including those of macro-disequilibrium - may have pushed incomes down to Y_0. Say the poverty line was at Y_1. Then the government could introduce a transfer program to

maintain income at that level until the steady state effects had raised primary income to a level equal to Y_1 (this would occur at time T_1). In this case the size of the transfer program would be progressively reduced as primary incomes rose. This discussion illustrates the important point that while adjustment may have beneficial effects for a target group, a transfer program may still be considered necessary.

14.5 The two scenarios discussed above are clear cut. A third scenario is shown in Figure 24. This is of interest because the income time-path shown reflects the common statement that short-term 'pain' is eventually compensated by long term gains for many target groups. There are strong grounds for expecting such transition costs during periods of adjustment. Real wages, for example, may fall in the short run if workers' consumption is tradables intensive. But if the tradables sector is relatively labor intensive, the real wage will rise over the longer term. Thus real wages may fall in the short run and rise in the longer term. Similarly, short run rigidities may lead to an increase in unemployment during the initial phases of a structural adjustment program. But this may be followed by reductions in unemployment as the policy interventions become effective.

14.6 Again, the government may introduce a transfer program and, as in our two previous scenarios, it must face the question of what duration, and of what size, such assistance should be. One policy rule might be that the consumption/income transfer should last until the long-term benefits of adjustment to the group raise its primary income to a level equal to that prevailing prior to adjustment's inception. In the case of Figure 24 the transfer would have to last from time T_0 to T_1 when the benefits of growth (which began at T_S) finally lead to an income level equivalent to that at T_0. Regarding size, it is often suggested that the transfer should be sufficiently large to maintain, during the transition period, the loser's real income at the level prevailing before adjustment. Given the shape of the income path taken in Figure 24 this implies that the transfer will have to steadily increase in size, and then begin to decline as the growth effects emerge.

14.7 What would be the rationale for such a rule? In the case of a poverty group is might well be that a fall in income below its pre-adjustment level would lead to very serious malnutrition. The criteria for maintaining the group's pre-adjustment income would therefore be one of need. Indeed, without such assistance the target households may be so impaired during the transition period that the benefits to them of sustainable growth will be severely reduced. This will occur as their human capital is reduced - through malnutrition and a withdrawal from education (in order to earn income) - and from the sale of their productive assets to maintain current income. This situation is described in Figure 25, which shows income time-paths for a poverty group. Path abcd is the path maintained in the absence of any transfer in the transition period, and on the assumption that there is no rundown of the group's human or

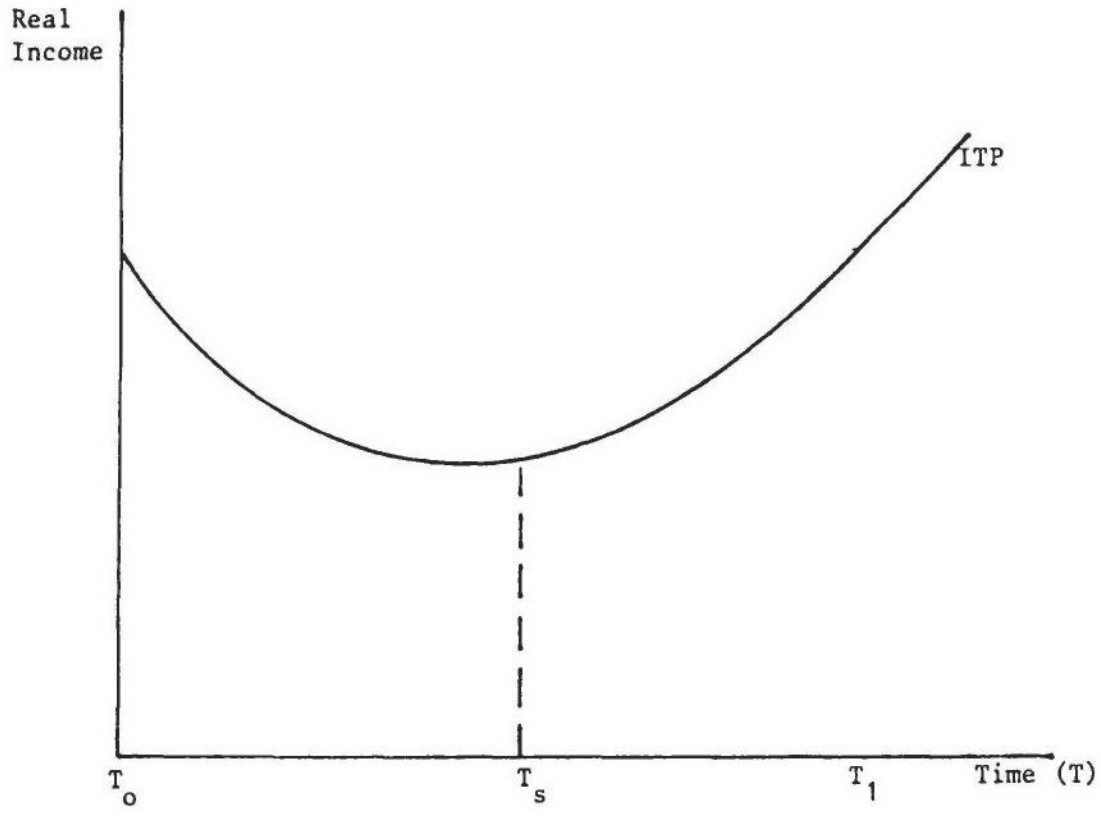

Figure 24

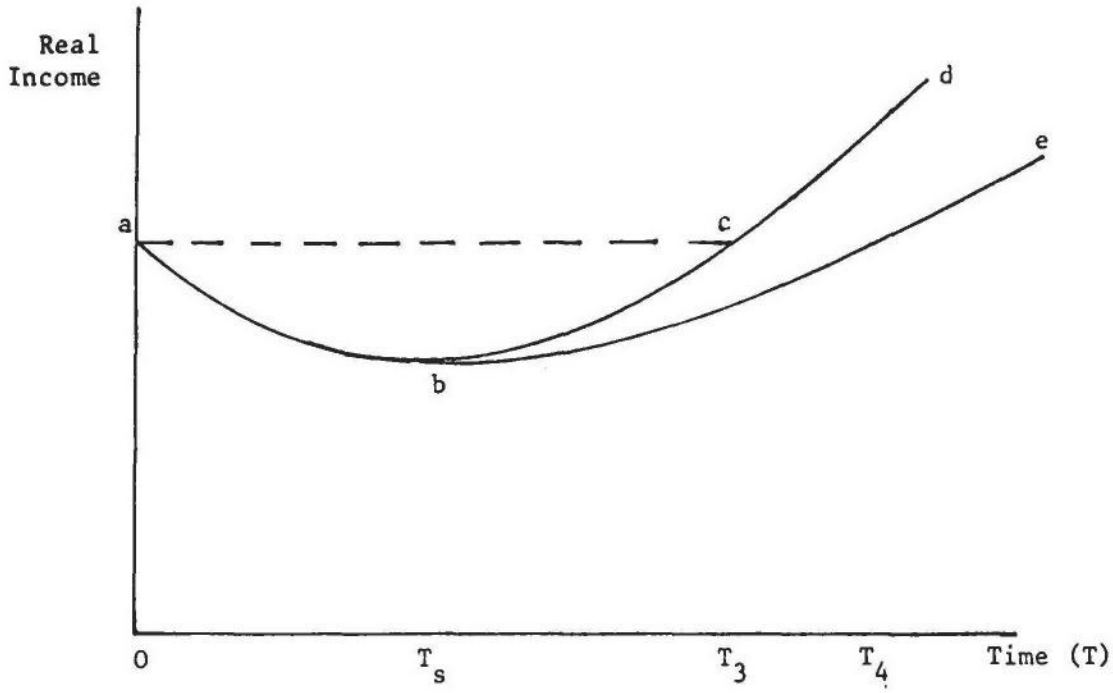

Figure 25

physical capital. When we drop the latter assumption, path abe results. Note that if this occurs then the poverty group does not attain its pre-adjustment income until time T_4 (compared to T_3 in the absence of the capital-loss effect). Also the growth rate of its income, once the steady state effects begin to yield their benefits, is less (the slope of be is less that of bd). A transfer program which is sufficient to maintain the pre-adjustment income through the transition path will thus yield an income time-path of acd for the poverty group.

14.8 In summary we have presented three plausible income time-paths which may face any target group.5/ One problem that may be encountered in all of them is that the government's action in providing assistance in the form of transfers may raise the raise the size of program required. This is because such assistance may change the response mechanisms of recipient groups. For instance, consider the third scenario again, where the target group is only affected adversely by adjustment in the transition period. A particular group may be currently producing non-tradables (as a result presumably of past, pre-adjustment policies), and there may be no technical reason why it should not switch to tradables. This group may experience a short run income loss, but this will be transitory, and will turn into an income gain once their production mix is changed. Similarly, a household's access to employment may fall in the short run, but given a migration response (or given the acquisition of new skills) employment prospects may improve noticeably. When the government provides assistance it may, through this action, increase the length of the transition period because households, now that they are cushioned, have less urgency in changing their resource allocations to gain the steady state benefits, than would occur without the transfer. Because of this effect, the size of the required transfer programme is increased. A practical example of this would be where an urban assistance program leads urban households to delay their return to agricultural activities.

14.9 The probability of such incentive problems arising will increase when an adjustment program diminishes the income to be earned in non-tradables without greatly enhancing the incomes to be gained in tradables. We know (from volume 1) that this is characteristic of programs which rely on compression of domestic demand (which depresses non-tradable prices while leaving tradable prices unaffected) rather than on adjustments in exchange rates and trade policy (which raise tradable prices relative to non-tradables). In this case full compensation of the losers will completely erode their incentive to reallocate resources to tradables and will completely frustrate the process of structural adjustment. In addition the government is committed to a transfer program of indefinite duration. This may fit the experiences of some countries, where urban groups (who predominate in non-tradables) have seen cuts in their incomes but have been

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5/ One income time-path not considered is where the target group's income rises in the transition period (say because it has a skill which becomes in short supply because of adjustments' effects), but falls over the longer term (this is the reverse of the Figure 24 scenario).

compensated through food transfers or generous redundancy payments, and where at the same time little has been done to raise agricultural incentives to encourage a transfer to this sector.

14.10 The crux of the matter is therefore that governments want to help a range of target groups, and income or consumption transfers provide one instrument for giving assistance. But such transfers can affect incentives, thus requiring that the program be run longer than otherwise, and can have adverse effects on the success of structural adjustment itself. A case can therefore be made for 'packaging' assistance to such groups, the package being a combination of transfers and direct measures to encourage the appropriate response to the new incentives installed by the adjustment program. Many of the primary income interventions discussed in the next section can be packaged in such a way.

14.11 In order to effect transfers to those who lose out in the short run, it must be possible not only to identify such groups, but also to effectively target the assistance that is given. It is not our purpose here to rehearse the problems and opportunities that are encountered in targeting (see, for example, World Bank, 1986b; Demery and Addison, 1987), but there are some important considerations which have to be central in any policy analysis undertaken within the SDA project. The first is that there are serious administrative limits to which such transfers can be targeted, especially in the developing countries (Baum and Tolbert, 1985; Besley and Kanbur, 1988). It is now part of the conventional wisdom that transfers effected through subsidies, such as food subsidies, are an inefficient way of transferring income to the poor. Their inefficiency stems from the fact that other non-poor groups gain, often more than the poor themselves, simply because their absolute levels of consumption of food are higher (Pinstrup-Anderson, 1985, Berg, 1987). A number of alternative models have been considered which attempt to increase the degree of targeting without imposing undue administrative burdens on government implementing agencies (Mateus, 1983). These including restricting subsidies to inferior goods, or to product markets in areas where the target group lives (World Bank, 1986b: 40). Where these are not feasible, direct food interventions and other forms of assistance may be required, as for example through food programs supported by food aid, feeding programs through schools and clinics, or the mobilization of cash transfers (World Bank, 1988c). It is worth pointing out in passing that many of the measures taken by governments in dealing with the emergency caused by the recent drought in Africa, can be used also to deal with these transition costs.6/ Certainly, an important part of the SDA policy analysis will be to assess the different forms of transfer in the country, and make recommendations on how it can be achieved efficiently and effectively, without straining the limited administrative capacities.

6/ See for example, the UNICEF cash-transfer program initiated in Ethiopia (UNICEF, 1985).

XV. PRIMARY INCOME INTERVENTIONS

15.1 We have seen that secondary income interventions can play a valuable role in dealing with some of the adverse effects of adjustment. However, these types of intervention have their problems, not least of which are their potentially adverse effects on incentives. Moreover, while they can have strong effects on output through improving labor productivity, they do not attack the problems of low-incomes directly. Accordingly, their duration - and therefore their financing - becomes open ended in many cases.

15.2 It is therefore crucial to see what can be done by way of operating on the primary incomes of target groups. As we have observed, changes occur in those incomes during the transition period. For target groups whose incomes will fall during the transition period, and which will not recover once the steady state effects obtain, the objective of primary income interventions may be to achieve an income time-path of acb (in Figure 26), instead of aa'. The rationale for this objective could be that Y_1 represents a poverty line income, so that they would be prevented from otherwise falling into poverty. This might apply to retrenched public employees, for example. Alternatively, the objective may be to achieve path acd through, for instance, assisting the target group into an activity benefiting from adjustment.

15.3 For groups for whom the ultimate steady-state effects will be beneficial, there may be scope for primary income interventions which shorten the transition period, and speed up the attainment of the steady-state benefits. In terms of figures 22 and 23 this would represent an upward movement of the income time-path so that the steady-state benefits arrive earlier than time T_S. In all these cases, the amount of secondary income assistance needed to achieve any given <u>total</u> income level would be reduced compared to the situation where no primary income intervention was used.

15.4 Figure 27 shows, in the form of a flow diagram, the processes through which the income of a target group can grow.7/ If we begin on the left-hand side of Figure 27 we see that the group's accumulation of physical and human capital feeds into the productivity levels it is able to achieve, and the kinds of activities it is able to enter. These also depend, as shown, on its access to infrastructure and inputs. Total value added depends on the level of output achieved together with the prices of inputs and outputs, shown as the terms of trade which the group faces. Total income is not only derived from self-employment but also from wage employment as well. Transfers may be made to it by other groups, as well as by the state if secondary income interventions are operational. The growth of per capita income is affected by the rate at which the group's numbers increase. Finally, the growth in income is the main determinant of

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7/ This can be regarded as a dynamic version of the flow diagram describing the household economy (Figure 2) in volume 1.

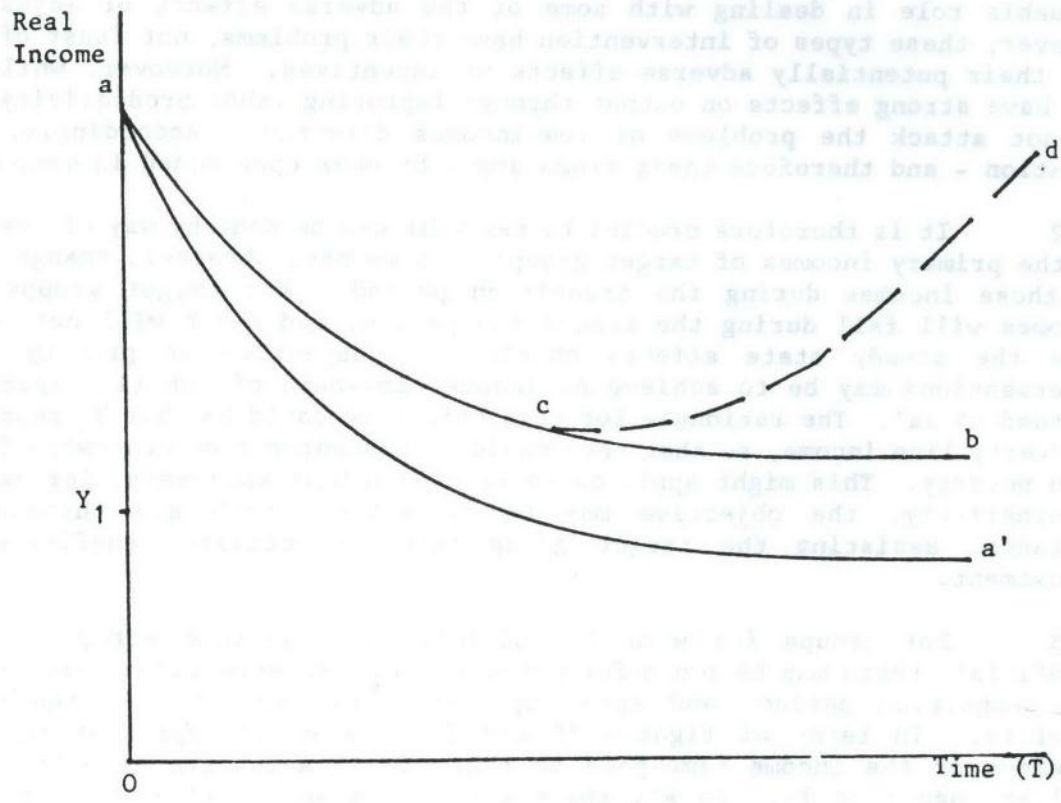

Figure 26

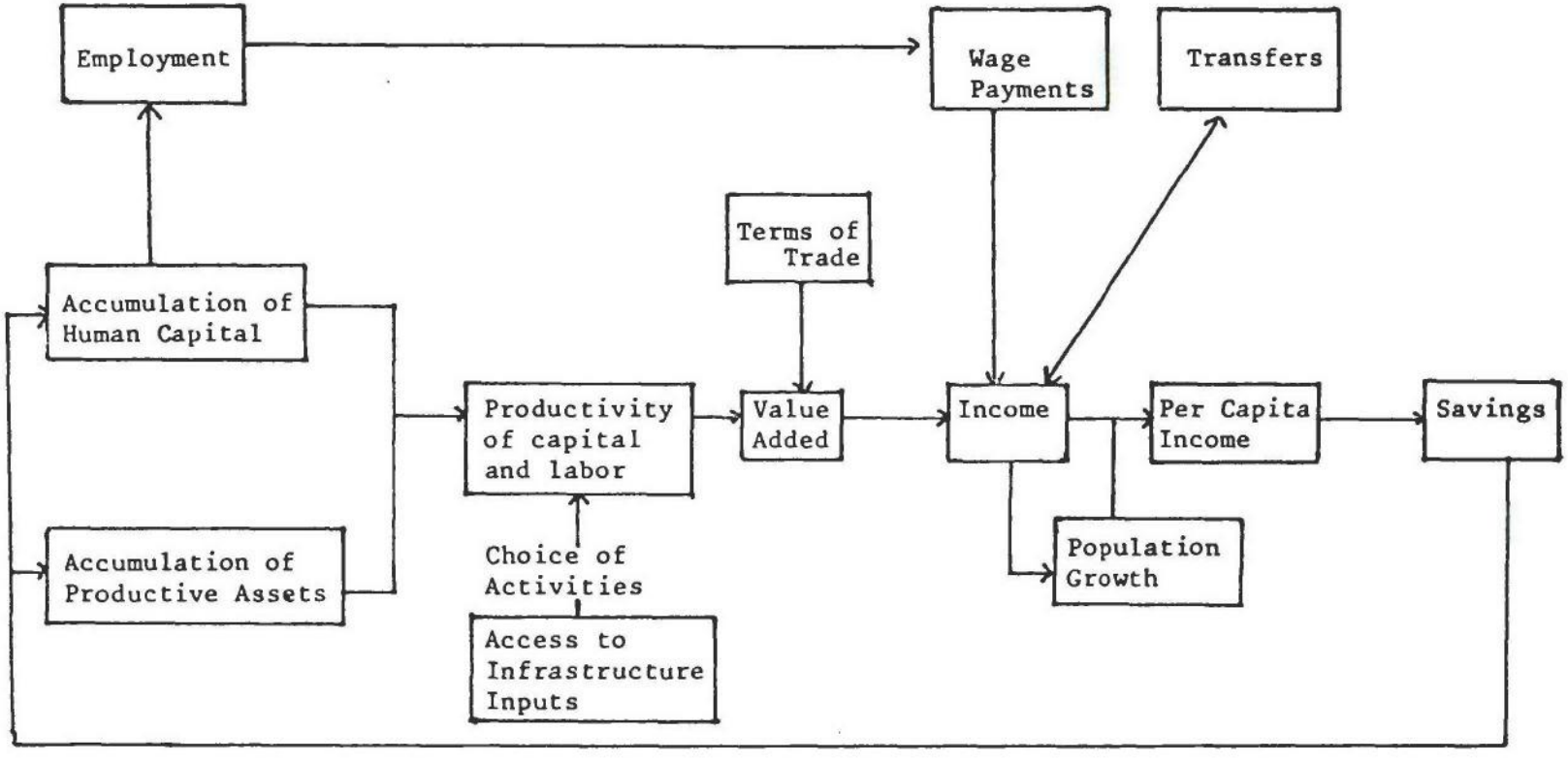

Figure 27 The Growth Process for Target Groups

the growth in savings, and in turn savings are a determinant of the rate at which the group accumulates human and physical capital.

15.5 It is obvious from Figure 27 that there are a range of points at which policy can intervene to affect the growth rate of the target group's primary incomes. The following sections discuss these interventions in more detail by grouping them into five categories:

- Enhancing human capital,
- Raising incomes from self-employment,
- Promoting wage-employment opportunities,
- Restraining population growth,
- Increasing their savings rates.

15.6 Some of these interventions operate indirectly on target groups, while others have more direct effects. We discuss each briefly in turn, and then turn to issues of financing, implementation and phasing. Our focus is mainly on poverty target groups, but others, such as displaced public employees, are discussed at appropriate points.

A. Enhancing Human Capital

15.7 The human capital of a poor household is one of its most precious assets. Indeed, poor families often have little else but their labor endowments. Such households are faced with the difficult task of husbanding their meager resources to meet their needs for food, health care, sanitation and education. But fluctuations in earnings, health and family circumstances all act to constrain their choices. On average illness disrupts normal activities for about one-tenth of peoples' time in developing countries (World Bank, 1984). Not only does this affect their current productivity and incomes but, through being unable to obtain sufficient health care, their human capital deteriorates, and with it their permanent incomes. Children represent major investments for future family earnings, yet these investments are under constant threat from malnutrition and debilitating illnesses. These problems interact; meeting current health needs may require cutting back on investments in education, cutting female education leads to higher child-mortality and morbidity, and withdrawing children from school provides current income at the cost of future incomes.

15.8 For these reasons, ensuring that the poor have access to health care, education and other services that protect and enhance their human capital should be a crucial component of poverty-focused adjustment programs. The participation of poverty groups in the growth process will be enhanced by such interventions, and the growth process itself will suffer if human capital is allowed to deteriorate during adjustment.

15.9 At the same time adjustment requires the protection and enhancement of public expenditures on directly productive sectors and economic services. There exists therefore a trade-off between protecting social programs and transfers on the one hand and crucial economic expenditures on the other, which creates difficult policy choices for governments. A government's room

for maneuver on protecting poverty-focused welfare programs depends on two factors. The first is the scale of the macro-economic disequilibrium preceding adjustment, and therefore the amount of expenditure restraint necessary. We have already discussed the impact of the overall macro-economic framework on social expenditures in volume 1.

15.10 The second factor is the structure of its welfare expenditures pre-adjustment, which will be discussed here. Governments have more room to protect welfare expenditures benefiting poor target groups if the distribution of such expenditures has been weighted to the rich, than if the distribution has been more egalitarian. In the former case expenditures benefiting the better-off can be cut proportionately more or can take all of the cut-back, thus raising the share of the poor. In very unequally distributed systems there may even be room for raising not only the share but the absolute amount of services to the poor, while still achieving sizeable cutbacks in total budgets, through reducing expenditures to the better-off. Major problems arise when countries have a relatively egalitarian structure of welfare provisions prior to adjustment, and fiscal restraint requires that the social budget be cut. However in many African countries there are substantial inequalities in the incidence of welfare expenditures, and consequently there is some room for protecting expenditures on target groups by cutting those benefiting mainly wealthier groups. In the remainder of this section we discuss health and education policy issues as they relate to adjustment.

Health

15.11 Given current budget constraints, together with the demands of public expenditures on essential economic infrastructure, attention must be given to achieving greater cost-effectiveness in public health services. This will enable resources to be released for use in priority programs with high benefits for poverty target groups (World Bank, 1987a, Mosley and Jolly, 1987). At present large expenditures are made on high-cost health services which benefit only a small proportion of the population. Thus a disproportionate share of public health services, together with most private facilities, are located in urban areas, where only about 20% of Africans live (World Bank, 1981: 87).8/

15.12 The reallocation of resources from expensive urban hospitals to rural and urban clinics, the replacement of expensive treatments by cheaper

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8/ To take two examples: 'In Niger about half the government health budget goes to hospital services in urban areas. Another 40 percent is spent on provincial facilities in the main towns, and just 10 percent is spent in rural areas where over 80 percent of the population lives' (World Bank, 1987a :17). In Cote d'Ivoire nearly 60% of the poorest 30% of the population do not contact either a public or private health practitioner at all (Glewwe and de Tray, 1987: Table 9). A few countries - eg. Tanzania - have reduced the share of urban curative care and redistributed the resources into rural preventative care.

and more effective alternatives, an emphasis on basic drugs, and the greater use of paramedics are all ways of delivery better health-care at lower unit-costs. Resource savings can be used for special programs targeted to vulnerable groups - for example the screening of children and mothers from low-income households, appropriate follow-up programs for nutrition and health, health education, and immunization against the most prevalent diseases. Programs in family planning, safe water, sanitation, and health-education should also be expanded. Since much health-care is provided within the household, and usually by women, attention must be given to programs which raise women's resources, educational levels and the time that they have available for such tasks. More widely the achievement of higher household incomes among target groups via income-generating interventions allows them to devote more time and money to the 'production' of family health care and reduces the constraints on access to health care imposed by such factors as transport costs.

15.13 With public health provisions in short supply, priority must be given to increasing the provision of private facilities, both by profit-making enterprises and community-based organizations. This entails reforming any government induced limitations on their sphere of operations. Encouraging the use of private facilities by better-off households will allow more public resources to be allocated to lower income target groups. Similarly the application of user-charges to public provisions will generate more resources for the funding of targeted programs.

Education

15.14 There is a strong relationship between household welfare and educational attainment. For example in Tanzania, one study has shown that education is second only to cattle in determining household income-variation within villages (Collier et al, 1986). In Cote d'Ivoire the educational attainment of the household head is found to have a strong positive correlation with household consumption expenditures (Glewwe, 1987: 18). And in Ghana the risk of food poverty falls as households' education rises (Kyereme and Thorbeke, 1987: 1196). Policy actions which both directly and indirectly affect education will thus have profound effects on present and future welfare.

15.15 However, the education systems of many African countries are currently in a state of fundamental disequilibrium. Fiscal constraints, but also difficulties within the educational system itself, necessitate adjustments in educational policy. Enrollments across the region have stagnated at all levels, but especially at the primary level. The population of pre-school children is projected to grow at 3.3% per annum until 2000, and a growth rate of 2.9% in primary enrollments will not keep pace (World Bank, 1988a, 1-2). This implies a widening of inequalities in educational access. The quality of education has fallen with a deterioration in the supply of inputs (especially books and equipment), and this has been reflected on the output side with the available evidence suggesting a fall in cognitive achievement compared to other developing regions (World Bank, 1988a). Finally, females have generally less access to education than males,

especially at the post-primary levels. These problems have arisen within education systems themselves, and from outside causes: principally fiscal and demographic pressures.

15.16 Wealthier groups are overepresented at all levels of the public education system in Africa. Rough calculations show the children of white-collar workers accumulate ten times as much public education expenditure as do the children of rural workers in Francophone Africa (World Bank, 1986: 16b). These data, while highly aggregative in nature, imply that many governments do have some room for protecting and expanding educational provisions to poverty target groups by releasing resources which currently subsidize wealthier groups. Critically, revitalising the primary education system must be a priority given its benefits to the children of poorer households. A secure supply of recurrent inputs such as educational materials should be established. And this needs to be accompanied by parallel programs of nutrition and health to improve the attendance rates and academic achievement of poor children. Releasing resources for these priority programs implies that there must be increased cost-sharing through the application of user charges in secondary and tertiary education (World Bank, 1988a: 2). The containment of unit costs is also necessary.

15.17 Finally, family decisions to participate in education depend on the opportunity costs (in terms of income foregone) of schooling so that poor households will demand less education than rich ones because the opportunity costs are higher for the poor. Effective interventions to raise the employment and self-employment of poor target groups will have the important additional benefit of raising the educational participation of their children. Moreover the effects of this on 'child-quality' can have important repercussions for fertility, since parents who are not offered opportunities to improve the quality of children, may chose to have a greater quantity (DeTray, 1973, Tomes and Becker, 1976). So again education can have important indirect effects on household welfare.

B. Raising Incomes from Self-Employment

15.18 One of the most powerful means of enhancing the incomes of target groups is to increase the profits of their enterprises. This can be accomplished in the following ways:

- Increase their output and productivity,
- Improve their terms of trade,
- Enhance their participation in high-returns activities.

15.19 These measures should be seen as complementary to each other and mutually self-supporting. However, they will differ between each other in the time scale over which their benefits will occur, and packages of measures will need to be implemented in practice.

Increasing Output and Productivity

15.20 Increasing total output and labor productivity in activities which produce tradables, and in activities which produce essential non-tradables, is crucial if the participation of target groups in adjustment-led growth is to be raised. Increasing productivity raises the profits of enterprises and households, and is associated with an increase in the demand for labor. The poor can then gain from a rise in both their incomes from self-employment, and from an increase in their employment opportunities. Indispensible to their gains from the former, is their access to new productive assets and inputs, since these embody technical progress.

15.21 Policy-makers must accordingly consider interventions to raise the productivity of the poor so that they benefit fully. Raising their human capital through education and health provisions and nutritional support is indispensible to this objective, and has already been discussed. Likewise programs to raise their access to productive assets and inputs are usually necessary. Assets get households on to upward 'income escalators' so that those who already own assets are in the best position to profit once growth begins (Chenery et al, 1973, Stewart, 1975). In many countries the access of the poor to a range of productivity-enhancing inputs is low. This reflects existing systems for marketing rationed inputs which favor - either implicitly or explicitly - wealthier households. Volume 2 has already discussed the most important assets required by household enterprises in farming, informal manufacturing and services, and these may include land, capital equipment, durable goods, and livestock. Information from this data collection exercise can be used to verify the role of productive assets and inputs in the household economies of target groups and appropriate policy interventions can be designed.

15.22 The claims to ownership and control that target groups exercise over their investments will influence their incentives to maintain and improve those assets. Policy reforms which aim to increase that control, through extending property rights for example, can have substantial benefits if properly designed (Chambers, 1988: 3). Protecting the claims of ownership held by the poor is especially important given that the latter have few resources and few channels for redressing grievances. However, Governments must be careful that interventions do not have counterproductive effects through, for example, depressing asset values.

15.23 Improving the ability of the poor to obtain credit can be the key to increasing their productivity, if it is effectively organised. When credit availability is constrained, input levels and factor ratios tend to be sub-optimal and investment lower than it would otherwise be (Feder and Noronha, 1987 and David and Meyer, 1980). However, the difficulties in organising small-scale loan schemes in developing countries are well known: low rates of repayment and the use of loans for purposes other than those agreed are common. In addition the very poor are often excluded because they lack collateral. Furthermore the necessity to restore soundness to financial systems does not favor bold credit experiments during periods of adjustment. Yet achievements are possible. The practice of 'group lending' whereby

individual loans are transacted through a group has had some success, as for example in Bangladesh where the Grameen Bank has eliminated the need for collateral (a requirement which usually excludes the very poor), but has also maintained low default rates (Hossain, 1988). The ILO is looking at the possibility of transferring the Grameen 'model' to the Gambia. In Malawi group lending has been successful (see Schaefer-Kehnert, 1982), although there have been more mixed results in other countries (Desai, 1983). The development of literacy skills is an essential prerequisite for such schemes to be administered through local communities.

15.24 Of special importance is the fact that women's credit use is often low, due to discrimination or a lack of collateral (which may in turn reflect discrimination in other markets). In reducing their accumulation of productive assets, this limits their potential benefits from other policy reforms. In Ethiopia, for instance, the land reform program of 1975 distributed land to the tiller. But because constraints of custom made it difficult for women to get credit (together with agricultural services), their use of land was low, and it was largely distributed to men (World Bank, 1986d: 39). Government programs in the Gambia, Kenya and Tanzania have attempted to improve women's access to credit.

15.25 Increasing the access of target groups to infrastructure can in many cases be as effective as increasing their control of productive assets. The poor are often concentrated in areas which have been by-passed by investments in infrastructure which either supply an important input directly (for example electric power and irrigation), or assist in the distribution of inputs and the sale of output (transport and market networks). This raises their production and marketing costs, and acts as a barrier to them making gains from greater specialization. For example while adjustment programs in Ghana and Kenya have sent out clear signals for the expansion of tradable activities, many of the poorest farmers have faced difficulties in achieving this because of their location (Heller et al, 1988: 20).

15.26 Output recovery is dependent on the development of infrastructure and support services which are often far from sufficient to support rapid output growth. There has been a chronic depletion of the region's transport infrastructure and shortages of inputs for the operation of agricultural support services are prevalent. In rehabilitating these sectors, and in making new investments, policy-makers need to give more weight to actions which assist the poor. Indeed, infrastructural investments may be the principal means of assisting the poor when organising substantial increases in their ownership of productive assets is practically difficult. When the target group is very large, special programs such as credit schemes will be costly in their early stages and will take some time to come on stream. In comparison, infrastructural investment and rehabilitation may reach large numbers of the target group more quickly.

15.27 Finally, the payments made by target groups for using infrastructure also determine their access. Increased cost-recovery is essential for raising public revenues under adjustment, and for saving public resources which can be better used elsewhere (see section XVI below). Bank

experience -for instance in Cote d'Ivoire - has largely shown that user charges for most services can be adjusted to ensure their affordability for low-income groups (Anderson, 1987b: 21). Moreover, cost-reflecting price structures provide resources for the increased provision of such services, substantially above the levels obtaining without such pricing. In the absence of such services poorer people often have to resort to more expensive alternatives (Anderson, 1987b: 21; Churchill, 1987). When user-fees are impractical, recouping project costs from the better-off will occur indirectly if their higher incomes come under a progressive income-tax system. Given the limited coverage of income taxes in SSA, their improvement will facilitate such indirect cost recovery.

15.28 In designing and implementing programs in productive assets, inputs and infrastructure, policy-makers will be assisted by the data collection exercises discussed in volume 2, which aim to provide information on the economic environments in which households with different characteristics operate, and how these are changing over time.

2. The Importance of Agriculture

15.29 The considerations discussed above apply particularly to agriculture which is the main source of tradables in most countries, an important source of essential non-tradables, and which provides work for 70 percent of Africa's labor force. Rapid population growth, reduced rural-to-urban migration, and the encouragement to urban people to take up farming, all imply that agriculture's capacity to absorb more labor - without a fall in average product (and therefore earnings) - must be increased.

15.30 Agricultural production in SSA grew at 2.5 percent a year in the 1960s, at 1.4 percent in the 1970s, and at 1.2 percent over 1980-86.9/ A recent Bank study finds that a 1 percent increase in farm output is associated with a 0.77 percent increase in labor use, at current levels of technology (Hansen, 1984). If output grew at the same rate up to 2000 as it did over 1980-86, then agricultural employment could rise by 0.92 percent a year, if average earnings were maintained at their current (low) level. This compares with a Bank projection of a rise of about 2.7 percent a year in the labor force up to 2000 (World Bank, 1988a: 282). A growth rate in agricultural output of about 3.5 percent a year is therefore needed if average earnings are to remain at their present level. Of course real incomes from agriculture are being increased through shifts in the domestic terms of trade in favor of farming (see below). But the correction of distortions against agriculture is a once and for all effect, and income growth must depend on a sustained increase in output.

15.31 Moreover, a rapid growth in domestic food output must be achieved in many countries if chronic food insecurity is to be reduced, and transitory food insecurity eliminated (World Bank, 1986b). Since food is the main item

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9/ See World Bank (1986d: 29, 1988a: 224).

of production for own-consumption, raising food output is intended to deliver both employment growth and an improvement in nutrition.

15.32 The required increase in agricultural output must be accomplished either through the opening up of new land, or an increase in the productivity of land already in use. Strategies for achieving either of these sources of agricultural growth raise numerous and detailed issues, many of which can only be properly assessed at local levels. Our aim here is simply to indicate the relation of these strategies to the policy issues at hand.

15.33 If new land of sufficient quality can be opened up, then agriculture can absorb increased populations, without large increases in output per head. The discussion of data collection in Volume 2 noted that population densities are generally low, and that many countries are often described as being land abundant (usually in comparisons with South Asia). However, low population densities can be misleading indicators of land availability, and competition for good quality land is increasing. In particular much land is not utilized because it cannot provide even a subsistence living, and to make it economically viable requires complementary investments. So overall there is less land 'abundance' than at first appears. The FAO estimates that only 30 percent of the labor force lives in countries which have unused land upon which yields could equal those on land already cultivated (Higgens et al, 1982).

15.34 If such good quality - but underused - land is present, then it may be feasible to make it available to target groups. But in some cases such land may have been unavailable to target groups because of tribal and cultural differences between them and local people. Alternatively the target group may suffer from discrimination within its own community which prevents access to unused, but good quality, land. Intervening in such communal tenure systems to create rights for target groups can be difficult to achieve, and politically hazardous for governments (Feder and Noronha, 1987). The rights of the target group have to be secured in some way - through the grant of legal title, for example - and compensation perhaps paid to others.

15.35 Alternatively the government may seek to achieve the transfer of land held under legal title, but underused to the target group (for example that held by modern estates). Measures of land reform have, for example, been included in SAL agreements with Kenya, with the intention of giving land rights to squatters (see Demery and Addison, 1987 for a review). In Zimbabwe substantial amounts of land have been redistributed from large commercial farms to smallholders. There is much evidence that small farms tend to have higher productivity than do large farms.10/ This is because they generally apply more household labor, and as a consequence employment

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10/ See for instance World Bank (1981: 51), Cornia (1985).

per hectare is generally greater than that on larger farms.11/ This has been used as a rationale for land reforms which break up larger holdings into smaller units. But attention must be paid to why farms have the particular size that they do so that land tenure reforms do not lead to a fall in productivity, and the fragmentation of land holdings into very small and unproductive units (Shuh, 1978: 313).

15.36 When land tenure interventions are made care must be taken over the rights of women who traditionally have rights to cultivate land for food. In establishing private property rights, men have usually been designated as owners (whether as individuals or as the family head). Women lose their claim to the land when the man disposes of it or when they are widowed or divorced. This has adverse effects on both the woman herself, and on child welfare if she is the main provider. Côte d'Ivoire, Ethiopia, and Kenya have now given women the right to inherit and own property (World Bank, 1986d: 40). In Zimbabwe women have been granted equal rights with men in land ownership (also in agricultural training and credit).

15.37 When good quality, but unused, land is not available in sufficient amount to meet the needs of target groups, then investments (often substantial) will be needed in both the land itself (to raise its quality), in the control of human and animal diseases where these limit land-use, and in the marketing, storage and transport services needed for new areas. Increased output is then achieved through extending the area cultivated, and appropriate technologies need to be provided to achieve this. In countries where land - of either low- or high fertility - is in short supply then the absorption of the agricultural labor force, together with migrants from the towns, must be achieved by an increase in the intensity of land use if average earnings are to be maintained, and then raised. High-yielding varieties, together with irrigation, both of which are associated with labor-intensive cultivation practices, will then be needed for farm incomes to grow, and for the participation of target groups in the farm economy to rise.

15.38 Some countries have already shown how participation in the growth process can be raised in a relatively short period of time, provided that comprehensive packages of assistance are employed. To take only one example, in Zimbabwe smallholders supplied only 5% of marketed maize in 1980. But the subsequent targeting of marketing and support services to them, together with favorable price policies, allowed them to raise their share to 30% by 1983 (Mellor, Delgado and Blackie, 1987: 353). Given the right kind of sectoral interventions, and an appropriate policy environment, similar participatory growth will become feasible in other countries.

3. Improving the Terms of Trade Facing Target Groups

11/ To take one example, in Kenya employment on holdings of less than one-half hectare has been found to be 30 times greater than on holdings over 8 hectares (World Bank, 1981: 51).

15.39 Altering the prices at which target groups buy inputs and sell their output can be an effective way of assisting them. This is particularly the case for rural target groups since severe price discrimination against agriculture has been a major contributor to rural poverty (Shuh, 1978: 318). An example of the beneficial effects on poverty of higher producer prices is to be found in the case of Cote d'Ivoire in the 1980s. Glewwe and de Tray (1987) have traced how many poor households in Cote d'Ivoire have gained from agricultural price policy reforms. Their data show that producer-price increases for coffee, cocoa and oil palm have benefited about a half of the poor in the country. Such price shifts can therefore be a means of achieving both the output objectives of structural adjustment and a reduction in rural poverty.

15.40 However, producer prices should be manipulated for their output effects, and thus for the purposes of meeting adjustment's macro-objectives, rather than for their effect on target groups. Altering the structure of relative prices in a way that helps the target group, but which runs counter to the output objectives of adjustment, will introduce the inefficiencies discussed in section XII. For those groups facing adverse shifts in relative prices under adjustment, assistance through modifying the price shifts would be a 'second best' policy. The 'first best' policy is to assist their move into sectors which are favored by adjustment (see below).

15.41 Similarly, while the rationalization of state marketing systems is generally conducted for its effects on output, raising the efficiency of these organizations can have a major beneficial poverty spin-off. The price that agricultural producers receive is usually derived after the deduction of the costs of the marketing organization. In many countries the growth of official marketing costs has been as important as exchange rate and pricing policy in determining the prices farmers receive (see Harvey, 1988: 221 on Tanzania and Zambia, for example).

15.42 In such cases improving the operations of the marketing system can yield substantial price gains to farm-target groups (aside from other non-price benefits such as better systems of crop collection). Improvements in the operations of agencies selling goods to farmers, and thus a cut in their marketing costs, will benefit farmers' terms of trade from the input price side. Recent studies have indicated that there is considerable scope for a reduction in marketing margins. In food grain markets the average producer price expressed as a percentage of the terminal market price ranges from 35 to 60 percent in Africa, compared to 75 to 90 percent in Asia (Ahmed and Rustagi, 1987: 115). Nearly 30 percent of the difference in margins is due to differences related to the respective efficiencies of marketing organizations in the two regions. Reforms are now having beneficial results to farmers. In Mali, for instance, a restructuring of the marketing system has shifted output and input prices in a direction that benefits farmers (Tuinenburg, 1987: 503). Improving the efficiency of marketing organizations can also eliminate or reduce the potential conflict of interest over higher food prices that exists between poor food producers and poor food consumers. Ahmed and Rustagi (1987) find that reducing the marketing margin by 25 percent would result in a 49 percent increase in farm prices and a 13 percent

fall in food prices, given reasonable assumptions about demand and supply elasticities in their sample of countries.

15.43 For the purpose of assisting agricultural target groups there is a case for achieving as fast a liberalization of the marketing system, and as rapid an adjustment in relative prices, as is operationally feasible. The main constraint on the impact of these benefits is the pace at which marketing organizations can be restructured. In some cases undue haste, and the establishment of new, but unsound marketing structures, would disrupt such vital operations as the efficient collection of produce. Accordingly the welfare benefits of reforms may take some time to emerge if the problems of existing marketing structures are complex.

15.44 At a more general level the reform of the operations of local manufacturing enterprises, together with the competitive spur provided by the liberalization of imported manufactures, will reduce the implicit taxation of agriculture resulting from high-cost local industries. This will benefit large numbers of the rural poor although special problems are obviously created for the smaller number of affected workers. Again the benefits that derive from such exercises will depend on the pace at which the reforms take effect.

15.45 While the reforms discussed above are an essential component of adjustment programs, whether they are concerned with rural poverty or not, there are in addition a number of special interventions which can be made for the purposes of poverty alleviation. Some poverty groups may have only imperfect access to the most favorable markets for selling their output and purchasing inputs, and will accordingly suffer higher marketing margins on both their sales and purchases. Appropriate policy responses will depend on the specifics of the situation. For example, the problem may lie in a government intervention that creates a private or public monopoly in the relevant marketing structure. Greater competition, if it can be achieved, will therefore be one solution. Alternatively, the needs of the target group may warrant the establishment of a special marketing system for them, or the provision of resources and assistance to the group itself to find better market opportunities. Women farmers may receive lower prices than their male counterparts because of poor market access, and can thus merit special help (Henn, 1983: 1050). For example ILO assistance is being provided to women's co-operatives in the Gambia to assist the marketing of food crops, particularly from remoter rural regions to urban markets.

15.46 Alternatively, the market access of the target group may be limited by poor transport and communications. Regional price differences are larger in Africa than Asia. The absolute size of the regional price differential is significantly larger than the marketing margin in many countries (Ahmed and Rustagi, 1987: 109). This indicates that markets are poorly integrated with each other because of underdeveloped transport and communications as well as government restrictions. This affects the degree to which local prices are influenced by adjustment policies, and the degree to which the benefits and costs of price reforms are distributed across the economy. Producers in remoter regions may not benefit as much from the shift of

relative prices from non-tradables to tradables, and appropriate investments in infrastructure will contribute to changing their terms of trade. The role of such investments has already been discussed in detail in the previous section.

4. Enhancing Participation in High-Return activities

15.47 Although the shift in the domestic terms of trade discussed above will raise the incomes of many target groups in tradables, some activities will inevitably offer larger returns than others (because of selectivity in government pricing policies or new market opportunities for example). Other activities will offer lower returns than they did before. Households will of their own accord reallocate their resources to changes in incentive structures but poor households often capture fewer benefits because of the greater constraints under which they operate, and may therefore need special assistance.

15.48 The latter point applies with particular force to agriculture, where poor households' participation in the most profitable cash crops is usually below average. Such participation is a strong determinant of income differences across households in most countries (although the significance of this relationship varies depending on the government pricing policy). In Tanzania, for example, the income of the poorest 50% of the village sample surveyed by Collier et al (1986: 75) were dependent on subsistence crops for 70% of their income - this is double the share for the better-off half. In Cote d'Ivoire approximately 44% of the rural poor cultivate cocoa or coffee, compared to 65% of the rural population as a whole (Glewwe and van der Gaag, 1987: 20). In Kenya the probability of a household being poor falls if it grows tea and coffee - the main export crops (Greer and Thorbecke, 1986). Although cotton is mainly grown by poor households in Cote d'Ivoire, their participation in other, more profitable crops, is lower (Glewwe and de Tray, 1987: 14).

15.49 In summary, raising cash-cropping by farmers offers an important way in which their benefits from adjustment and growth can be increased. In some cases the investments in infrastructure and the improvements in marketing which have been discussed may be adequate enough for target groups to raise their incomes sufficiently. In other cases a more comprehensive package of measures involving extension and the provision of special inputs and services may be needed. Higher cash-cropping may be dependent on access to productive assets being increased in the ways discussed previously. Overall, female-headed households are less likely to cultivate cash crops because the allocation of the necessary land, credit and inputs does not favor women. Altering the product-mix of female target groups will necessitate interventions in the supply of factors of production to them.

15.50 A major constraint on expanding the incomes of target groups in this way is the ecology of the country concerned. This plays a large part in determining whether farmers in a given region are able to cultivate the most profitable cash crops.12/ For instance in many West African countries

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12/ Variations in the climate and ecology of regions are a more important source of household income-inequality than in Asia and Latin America where farming-technologies, together with a much greater use of irrigation, permit a greater regional dispersion of cash-cropping.

there is a marked division between ecological regions in food production and export crop production. In Ghana, for example, cocoa is cultivated in the coastal region, while farmers in the northern savanna derive most of their income from domestic food production. In Côte d'Ivoire maize is the dominant crop in the savanna region and while cotton is an important cash crop, cocoa and coffee are concentrated in other regions. Consequently, it may not be possible to help a poverty target group in a particular region through the expansion of particular cash crops because of ecological constraints leading to prohibitive project costs. In such cases assisting their entry into higher return activities could necessitate relocation, and issues of mobility are discussed later in this section.

15.51 It is crucial that any actions undertaken to raise the incomes of target groups do not have environmental effects which ultimately counteract the initial benefits to them or undermine the agriculture-base - and thus the adjustment effort - as a whole. Policy interventions to alter the livelihoods of rural people must do so in ways that are environmentally sustainable, and which do not raise the target groups's vulnerability to environmental shocks. Consequently if farmers are to take up higher-return crops then they will need assistance through the new varieties with greater resistance to drought, pests and disease.

15.52 Finally, in implementing projects to diversify the product-mixes of target groups, the effect of this on the intra-household distribution of welfare must be considered. The impact of cash-cropping on household nutrition has been much discussed, although rigorous tests are surprisingly few.13/ It is sometimes argued that an increase in the cultivation of non-food cash crops or non-subsistence crops will lead to a deterioration in the nutrition of women and children. This is because the household's factors of production will be reallocated away from home produced food, and cash crop income - which is typically controlled by men - will not be used to purchase more food.14/ There are a number of components to this argument, each of which is susceptible to debate. The first of these is whether cash-crops are indeed substituted for staple foods: intercropping is often undertaken for example (Eicher and Baker, 1982: 214). Second even if cash crops are substituted for home produced foods, it is not yet firmly established that households fail to allocate some of this income to higher food purchases. A recent review of the available studies concludes that when considered as a group they show no clear outcome: cash crops have had positive, neutral and

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13/ Overviews of the debate include Pinstrup-Andersen (1983) and von Braun and Kennedy (1986).

14/ Other potential causes of nutritional deterioration associated with cash cropping include the lumpy nature of payments from some cash-crops, higher prices for purchased foods than the imputed price of home-produced foods (because of the marketing costs of the former), and a reduction in the time allocated to food preparation as women undertake more work in cash-crop fields and as the opportunity cost of time rises with higher crop prices (Pinstrup-Andersen, 1983 and Longhurst, 1988).

negative effects on household nutrition (Longhurst, 1988: 31). One problem with these studies is that most of them failed to control for other household variables - critically income and household size. In addition many of them have only covered the impact effects of introducing cash crops, and have failed to capture longer-term effects. Accordingly the instrument of a multi-topic household survey conducted over successive years, and described in volume 2, offers the opportunity to examine this issue much more rigorously.

15.53 If cash-cropping is found to have deleterious effects on nutrition then interventions will be required to offset the effects, given the importance of expanding such activity from the perspective of adjustment. Interventions may be especially required to cope with the transitional period when there is a long lead time between planting and harvesting some tree crops, and during which the household may suffer nutritional shortfalls, before higher incomes improve the situation (von Braun and Kennedy, 1986).

5. The Potential for Higher-return Informal Manufacturing and Services

15.54 In many ways the prospects for the urban informal sector are the most problematic during both the transition period, when adjustment policies are taking effect, and over the medium-term once adjustment-led growth is established. As we have discussed previously a large proportion of urban informal activities constitute non-tradables, and much activity in the sector - such as trading scarce consumer items - owes its origin to the inappropriate macro-policies discussed in volume 1. Policies which have diminished rural livelihoods have encouraged migration to the towns on the chance of obtaining a better living in the protected formal sectors. Those failing to achieve such better prospects have swelled the numbers in the urban informal sector. Adjustment adversely affects the urban informal sector in several ways including shifting relative prices in favor of tradables and releasing retrenched workers into the urban labor market. While informal activities producing tradables may fare better, they can be adversely affected by trade liberalization - which may provide competition from cheaper foreign products - and the recovery of domestic formal sector enterprises whose products consumers often prefer.
Over the medium term, the shift of resources into agriculture, and the much-increased role of agriculture in driving the growth process, implies that demand patterns will be much more determined by the needs of farmers, than of urban populations.

15.55 However, because of this shift in demand patterns the prospects for rural-based manufacturing and services become much stronger. Once price distortions against agriculture are corrected, a key factor determining the growth rate of domestic demand for the goods and services supplied by non-agricultural producers is the rate at which agricultural output increases. In Asia agricultural growth rates have been sufficiently high, and sustained for long enough periods, to demonstrate this effect (Mellor, 1985). As incomes rise above subsistence, the demand for non-food consumer items increases, and in Asia farmers have typically spent a large proportion of

their additional income on locally-produced non-agricultural goods and services, including textiles, transportation, housing and health services (Hazell and Roell, 1983).

15.56 Given the source of this demand pattern, much of the supply to meet it will come from rural-based enterprises. For Africa it has been calculated that each dollar increase in agricultural income generates about $0.50 in extra rural earnings, most of it in the rural non-farm economy (Haggblade and Hazell, 1988: 10). Many of the goods and services needed by farmers require the supplier to be based in the locality. The maintenance and repair of agricultural equipment is an example of a skill which the farmer needs to call on at short notice. Similarly, much construction work requires knowledge of local materials and requirements. Indeed, much of the supply of these goods and services comes from farm-households themselves, especially in the off-peak seasons for agricultural activity. But as agricultural incomes grow we can expect that some households will become specialists in such non-farm activities, as has been the trend in the Asian countries.

15.57 Such off-farm employment is more important for poorer households than for the wealthy in Botswana, Nigeria and the Gambia. Evidence from Northern Nigeria, Sierra Leone and Malawi shows that off-farm income accounts for 50 percent of total income for the smallest landowners, and under 25 percent for the largest.15/ This suggests that for these countries, policy interventions which either directly or indirectly accelerate such employment growth will benefit the poor (provided that such interventions do not lead to an oversupply of the skills concerned). But in other countries, for instance Lesotho, Tanzania and Uganda, non-farm incomes have been found to be concentrated among wealthier households. Capital requirements determine entry into the activities with the highest returns. In such cases assistance in the form of productive assets and training may be feasible to raise the participation of the poor in such activities, and to allow their entry into higher-return activities. In so far as the human capital of the latter is improved through better educational provision to them, their prospects of lucrative off-farm employment will be enhanced over the longer term.

15.58 Off-farm employment is also a major income source for women, who may dominate some activities: food preparation and processing and domestic services for example (Haggblade and Hazell, 1987: 12). Data are sparse but to take two examples, Ghana and Zambia, women account for over half those employed in non-farm enterprises. Social and religious values strongly influence the characteristics of their participation, since in some cultures they may be confined to activities which can be done in the home.

15.59 The opportunities for informal manufacturers in towns to supply the increase in rural demand will be limited in many cases to rural areas in their immediate vicinity. The improvement of transport networks under adjustment may give them greater scope than before, but the nature of many

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15/ All the data in this section are drawn from the review by Haggblade, Hazell and Brown (1987: 12).

of the goods and services needed by farmers will probably preclude informal urban suppliers. High transport costs to remoter regions also make it difficult for urban suppliers to compete against local producers. Thus if urban informal producers are to gain the higher-returns offered by the rural market, they will need to migrate, and assistance to their mobility can be considered. Given that the mobility issue concerns not just urban informal producers, but other urban groups as well.

6. Encouraging Labour Mobility

15.60 As we saw in volume 1 the effects of relative price changes on incomes will be at their greatest in the short term, during which time no factor mobility is possible. In the longer term, after both capital and labor reallocations are made, individual income changes are not likely to be as large. For example, a shift in relative prices to tradables will hit those in the urban non-tradable sector. But factor mobility (such as return migration to agriculture) would tend to reduce these impact effects.

15.61 Enhancing geographical mobility is especially necessary if urban target groups are to move into agriculture and other rural-based enterprises. However, encouraging the urban poor to take up farming is not the easy solution which it sometimes appears to be. Much will depend on how far the urban poor have retained their village links, whether there is land available for them, and - critically - whether they have any farming skills. Second or third generation urban immigrants can have very weak links with their rural kin, and may have no farming skills at all. Remigration to the country is generally easier in Africa than in other developing regions because of the nature of the urban-rural migration that takes place (which is often circulatory), and the relative abundance of land. Nevertheless there may be substantial difficulties in achieving such migration in some African countries if they are highly urbanized (for example Zambia) and if land-pressure exists (for example Kenya).
Communities are increasingly placing restrictions on the settlement of outsiders. For example in some areas of Ghana and Cameroon outsiders are not allowed to plant cash crops, a high return activity (see Feder and Noronha, 1987: 154).

15.62 Where the urban unemployed lack farming skills, the resources needed to help them establish themselves in farming can be sizeable. Projects to resettle retrenched public employees in farming are now underway in a number of countries. They both mitigate the social costs of adjustment for this group, and contribute to agricultural recovery. For example in Guinea-Bissau, ex-public employees are being established in farm co-operatives producing food. In this case the projects involve substantial land reclamation and infrastructural investments, funded by donors.

15.63 Nevertheless, the costs of this exercise are not small, and conclusions on the benefits of the schemes must await analysis of project rates of return. But the rates of return on these projects will almost certainly be less than agricultural projects selected on economic criteria alone. The problem for policy-makers is justifying such welfare-orientated

projects when other projects will contribute more to meeting the objectives of adjustment itself. To do this they must be clear about their priorities concerning target groups. While the retrenched public employees are from the lowest skill grades, and have low-incomes, they are far from being the poorest and most unskilled in society. Assisting the most destitute in urban societies to relocate to rural areas, and to become self-supporting farmers, will require very carefully designed projects, and will be more costly than projects for people with existing resources. In terms of priorities it may be more justifiable to allocate project resources to the poorest group who need the most help, and assist better-off groups only indirectly through vocational training.

15.64 If such projects are to be implemented then they must take place in the context of an adjustment program that is sending out clear signals that previous policy-discrimination against agriculture is being eliminated. Expectations, as discussed in volume 1 are crucial. People who have viewed farming as an unrewarding activity for years will not rush back to agriculture. In many countries farming has a low social status; young people leave their villages for the towns, and even casual urban employment is preferred because it offers them the taste of something better. Many schemes to reestablish such groups back in their rural areas have failed because policy has been so unfavorable to agriculture, and people sent back to their villages eventually return to the towns. To reverse such sentiments inevitably takes time.

C. Promoting Wage-Employment Opportunities

15.65 While raising the incomes to be derived from self-employment will confer major benefits on target households, increasing their opportunities for wage employment is also important. However, this must be done in ways which support the adjustment program. Employment promotion must largely occur in the private sector of the economy, because past programs for creating employment through the provision of public sector jobs have often been important contributors to fiscal disequilibrium. The current retrenchment of public employees across many countries testifies to the fact that this employment strategy has not been sustainable. Only in special cases will governments be able prioratize resources for the expansion of public employment. Instead their strategies will mainly evolve around methods for influencing labor participation in the private sector so that people can find their own employment opportunities.

1. Reducing Labor Market Rigidities

15.66 Labor is one of the resources that must be reallocated if adjustment is to succeed. It is important therefore that labor markets operate as efficiently as possible. The performance of labor markets is a also a critical determinant of the way in which the costs and benefits of adjustment are distributed across society. Since the labor market acts as clearing house through which human resources are allocated and reallocated, its performance has a direct bearing on the welfare of households. Yet the performance of this key market is usually far from satisfactory. Even before

the economic turbulence of the 1980s, the existence of underemployment, unemployment and wage-rigidities attested to problems in the operation of labor markets in many countries, and these affect both the success of the adjustment program as well as its social impact.

15.67 Some labor market interventions are counterproductive, in that the prospects for labor as a whole are harmed despite the intentions of policy. Minimum wage legislation reduces employment in the formal sector: Bank calculations show that for developing countries as a whole an average 1 percent increase in real wages tends to reduce employment by 0.03 to 0.04 percent, and the effect could well be higher in African countries (World Bank, 1987d: 123). In addition minimum wages reduce wage-differentials between skilled and unskilled workers, thus reducing the incentive to accumulate human capital (Psacharopoulos, 1986: 54). Employee job protection can be so extensive that employers are encouraged to select more capital-intensive techniques because of the difficulty of laying off workers when necessary (Krueger, 1988: 365). The impact that these interventions, have had in creating a segmented labor market are well-known, and need no rehearsing here.

15.68 The effects of real wage flexibility on the employment costs of adjustment can be simply illustrated. Consider a fall in the demand for labor by sectors which are contracting under the adjustment process. Figure 28 shows the labor market which serves such a sector. LS is the labor supply, and LD is the demand for labor preceding adjustment, and the labor market is in equilibrium at wage rate W_1 with employment L_1. Now assume that adjustment leads producers in the sector to cut back on their labor demand, and the schedule shifts to LD'. If real wages are flexible then W_2 will be the new equilibrium wage rate and employment will be L_2. Now suppose that the sector is characterised pre-adjustment by a real wage (say W_3) above the market-clearing level. There is therefore unemployment of L_4-L_3. This is disequilibrium unemployment resulting from a failure of the market to clear. When adjustment occurs, and the labor demand schedule shifts to LD', employment falls to L_5, and disequilibrium unemployment rises to L_4-L_5. If now the government intervenes in the sector to allow wages to be flexible the real wage will fall to W_2 and disequilibrium unemployment will fall to zero. In this case, given the elasticities of demand and supply with respect to the real wage and the size of the demand fall assumed, employment post-adjustment will actually rise (to L_2) above the pre-adjustment (wage-rigidity) level of L_3.

15.69 By reducing labor-market rigidities governments can ease the effects of adjustment on employment. Of course there is a trade-off here between the welfare of those who have been in jobs with protected real wages and those who now gain jobs when wage protection is removed. If the free market wage (W_2) yields an income above the poverty line, then the removal of the labor-market distortion will have achieved a reduction in poverty. Those with previously protected jobs, while they will have lost income, will not have fallen below the poverty line as a result. However, if W_2 is below the poverty line, then the formerly unemployed are still poor, although less so than previously. Moreover, the numbers in poverty have now increased -

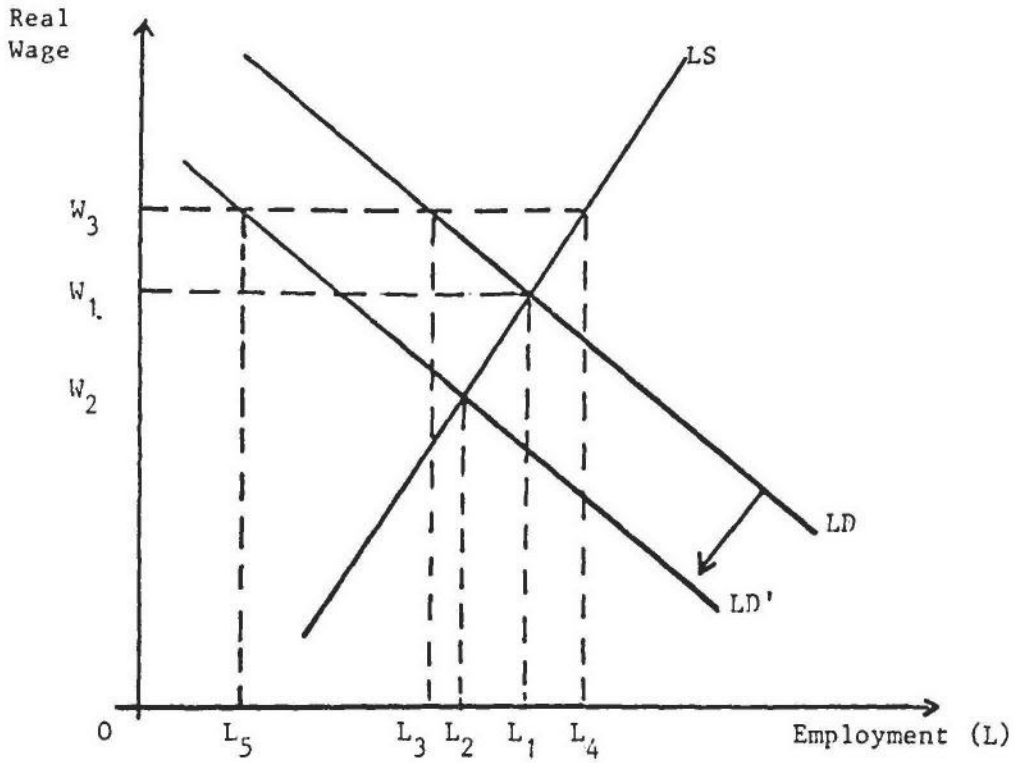

Figure 28

by the number of workers previously having protected jobs. This policy intervention has accordingly increased the size of the target groups.

15.70 The latter outcome is not an argument for abandoning the reform of labor market operations, since keeping the wage-rigidity is a 'second best' way of helping the employed target group, and exacerbates the plight of the unemployed. Assistance of a more positive nature is needed to encourage, in the short-term, a movement of labor into more remunerative occupations (particularly in agriculture) in the ways discussed previously. The best long-term prospects for labor are secured through reestablishing growth, and instituting policy reforms that increase the labor-intensity of growth.

15.71 Even when the labor market clears, so that disequilibrium unemployment is zero, there will still be people who are unemployed because they are changing jobs or seeking their first job. This can be termed 'equilibrium unemployment'.16/ Governments will also be concerned to minimise this unemployment because the people concerned may make claims on government assistance programs, in which case there is a financial cost associated to such unemployment. Establishing systems which distribute information about private sector job opportunities is one way to help. Likewise informing school-leavers about potential employment prospects can reduce unrealistic expectations, and the amount of job search they might otherwise undertake.

2. Public Works Programs

15.72 The attraction of Public Works Programs (PWPs) lies in in their potential to render assistance through employing surplus labor (for food or cash payment), while at the same time creating assets, such as infrastructure, of lasting benefit. Because of this they now have a long-track record as an anti-poverty measure in Asia, and their use is increasing in Africa in the adjustment context (see for example Republic of Ghana, 1987: 5).

15.73 For households for whom adjustment is expected to have positive benefits over the medium- to long- term, but whose welfare is adversely affected in the short term (the Figure 24 scenario discussed above), PWPs can play an important role in tiding them over the interim period. For instance a food-deficit farm household may be hit in the short-term by higher food prices, but its longer term prospects under adjustment may be favorable (if for example its off-farm employment opportunities eventually expand). In such a case a PWP may be sufficient for the interim. Similarly for groups who gain over the short-term as well as the long-term, a PWP may be useful if governments feel that the benefits of adjustment are of insufficient size.

16/ The amount of equilibrium unemployment divided by the numbers participating in the labor market is usually described as the 'natural rate' of unemployment (see Fallon and Verry, 1988: 193).

15.74 In such situations a PWP can potentially benefit all the dimensions of household activity. Most obviously, human capital gains can be made, resulting from both nutritional improvement (either directly through food-for-work or indirectly when a cash stipend is paid) and if the PWP imparts significant skills. Better labor inputs into the household's production process lead to higher output. The latter is further raised if the PWP creates infrastructure and upgrades the quality of the household's productive assets. The relaxation of the household's income constraint provided by the stipend raises profits when more factor services are bought. Finally, the output of the PWP may benefit the household's time allocation - if for example travel time is reduced, thus freeing time for directly productive uses or for the provision of welfare improving services within the home.17/

15.75 A PWP can benefit not only the recipient household, but others as well, through the development of infrastructure which helps all, and a higher labor demand which is associated with higher output. Finally the PWP can contribute to the achievement of adjustment's objectives, through both the implied increase in output, and through a shift in activities to products with higher-returns. The latter will occur where the PWP creates infrastructure which expands the potential for, say, growing a high value crop. The increase in security of the recipient household may reduce the risks it perceives in making its investments.

15.76 However, PWPs are not a lasting solution to the problems of target groups located in sectors contracting, over the longer term, under adjustment. PWP wages have to be low (for reasons discussed below), and mostly do not yield sufficient resources to the household for them to invest in activities with better prospects. If nothing else is done PWPs can end up covering large numbers of people, but conferring very little benefit to each, thus making large demands on public resources almost indefinitely. This is most likely in urban areas, where urban formal and informal employment is set to grow more slowly after adjustment. In such situations the best policy is to assist the mobility of the people affected into rural-based activities. This concern points to locating some PWPs intended for urban target groups in rural areas as an incentive for the latter's geographical mobility, and for providing complementary assistance for the traget group to relocate. Such PWPs would be a way of easing the urban target group back into the rural economy.

15.77 There are a number of issues relating to PWPs per se, which arise irrespective of the precise target group involved. First, PWPs enhance the productivity and value of existing productive assets and, depending on how unequal is the distribution of the latter, their benefits are spread disproportionately (Burki et al, 1976). So the poor, while gaining

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17/ PWPs in Kenya's rift valley have provided many of the benefits cited above (Bezuneh et al, 1988). In this case the benfits of PWP to capital formation have been substantial, as has been the increased demand for labor by recipient households. Their increase in food security has also favored their expansion of higher-return crops.

employment in the construction phase, may not reap large longer-term benefits (unless the demand for labor by wealthier groups rises sharply as a result of the public investment). Although in some cases wealthier households may capture the benefits by influencing project selection, a disproportionate distribution of benefits is often unavoidable and can only be reduced as complementary programs improve the asset base of the poor. Accordingly, recouping program costs through user-charges (if feasible) will mainly be borne by better-off users, and the resultant revenues can finance further PWPs on a 'rolling' basis and the maintenance of completed investments.18/ The latter is often neglected, and maintenance, which is labor intensive, can employ the target group after construction has ended. The public investment may also be such that a lower tariff can be applied to the target group without undue leakage of benefit to the better-off.

15.78 A second issue of recurrent concern is the cost-effectiveness of PWPs (Burki et al, 1976; World Bank, 1986b). Poor project design and appraisel, inadequate links to national infrastructure planning, and makeshift administrative arrangements have created serious problems (Guha, 1986: 116). On average non-labor costs have a higher share in total costs than their Asian counterparts (Stewart, 1987b: 202). Labor supervision is often lax since participants and their supervisors have a joint interest in extending projects which pay by the day. Work motivation is frequently increased when participants see themselves as the ultimate beneficiaries of projects.

15.79 Use of PWPs in Latin America to deal with adjustment-related unemployment has shown the difficulties of helping large numbers of people while maintaining satisfactory cost-effectiveness at the same time (Demery and Addison, 1987). Many of these projects have been directed at non-tradable activities with low returns for either the adjustment effort or for social goals, rather than to tradables, supporting non-tradables or social infrastructure. When this happens the government is effectively financing the re-expansion of unproductive non-tradables contrary to the direction of its adjustment program, and an 'unconditional' transfer will be more cost-effective if projects with higher returns cannot be implemented.

15.80 For these reasons it is crucial that PWPs be properly co-ordinated with on-going sectoral planning, which itself will be changing as adjustment creates new priorities. Having a stock of potential projects may reduce delays and poor design (Stewart, 1987b: 206) but only if such projects remain appropriate once adjustment begins. Expanding rural PWPs (usually initiated to contain famine) is an attractive option, but is no panacea. One of the best PWPs in Africa, the Botswana drought relief program, was sometimes unable to generate enough new projects to keep up with completion rates, and its rapid growth outran the pool of available skilled supervisory-labor (Hay, 1988: 1125). There is a danger that good drought relief PWPs will

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18/ However, wealthier beneficiaries may mobilise politically to limit user-charges, thus tranferring the cost burden elsewhere (see Herring and Edwards, 1983 on PWPs in India, for example).

deteriorate if expanded too far to meet adjustment problems, and one of the failures of PWPs in the past has been an attempt to meet too many objectives (Kinsey, 1987.)

15.81 Setting the level of payments to PWP participants can also be problematic. Wages in the context of PWPs have two dimensions: they are an income flow to the target group, and they establish an incentive to do the work. The higher the wage rate, the larger will be the income for the target group, and the greater their incentive to participate. But, as the wage rate is set closer to the market-wage, the incentive for the target group to find private sector employment falls. And a wage above the market rate encourages others in private employment to join the PWP instead. So while it is sometimes concluded that a market-wage should be paid (see Kinsey, 1987, for instance), paying below this level effectively targets the program to those who need it most (World Bank, 1986b: 38). In practice, however, the nature of the work, which is usually hard manual labor, may effectively discourage 'outsiders' even if a market wage is paid, and especially if they know that the employment is only temporary (Thomas, 1986).

15.82 These problems are heightened when adjustment leads to a fall in market-wages: should the PWP wage be adjusted downwards so that it continues to remain below the market wage? Otherwise, the differential between the PWP wage and the market-wage might eventually reverse itself and people would leave private employment for the PWP. If the market wage has fallen to such an extent that it now delivers an income below poverty level, then one might view a PWP which paid an above market wage as a poverty alleviation instrument. However, it would accomplish this by shifting the composition of employment in the opposite direction to that intended by the overall employment objective of adjustment (less public-, and more private-, employment). Keeping the PWP targeted to the unemployed and underemployed therefore points to downward adjustment of its wage if necessary. The working poor would then need to be helped in some other way.

15.83 The very poor are less attractive to private employers because their productivity is low. Low wages for PWPs can unfortunately reduce the participation of the very poor who, while they would otherwise accept the low payment, are unable to undertake the physically demanding work. This is unfortunate since unemployment is above average among the very poor (Lipton, 1983b). In some cases it may be possible to design projects specifically for them, and pay wages sufficient to provide enough calories, without leaking benefits to others. Alternatively the PWP should be co-ordinated with suitable nutrition interventions (and skill enhancement as well), thus providing a package which puts the very poor on the road to better private employment opportunities.

15.84 The existence of surplus labor - whether seasonal, 'structural', or adjustment-related - justifies the use of PWPs. But for this reason they are less effective for women, unless complementary actions reduce the time constraints imposed by household tasks. In agriculture, for example, PWPs are usually timed for the slack season, thus allowing the participation of farmers, but many female tasks - such as child care and home maintenance -

are not seasonal in nature, so female participation is still constrained. The output of the PWP itself may reduce female time-constraints, but compensatory actions (such as child care facilities) are essential.

3. Sustainable Employment Growth

15.85 For the longer-term governments need to review all aspects of policy to see whether they inhibit employment growth. This applies particularly to trade and tax policies which in many countries have favored the use of capital-intensive production techniques. The effect of overvalued exchange rates in cheapening the cost of imported capital relative to local labor will be reduced as exchange rate adjustments are made. More difficult to reform, because of their pervasiveness, are systems of import protection which have had a similar effect. The structure of protection has served to promote capital intensive industries, which are very import-intensive in their input use, and thus have few 'backward linkages' to the local economy (thereby reducing their employment spin-off for the latter). In contrast, small-scale industries, which are usually more labor-intensive than larger units, have often been harmed by trade protection. In Sierra Leone, for example, large garment producers have been able to import their equipment duty free, while sewing machines -the basic input of small garment manufacturers - have been taxed as a luxury consumer item (Liedholm, 1986: 6). Likewise other policies such as cheap loans for capital purchases and generous tax-allowances depress employment growth. Through these policy reforms governments can lay the basis for a more labor-intensive pattern of wage-employment than has been achieved in the past.

D. Restraining Population Growth

15.86 Poverty and high fertility reinforce each other. Rapid population growth makes it more difficult to raise the per capita incomes of target poverty groups. If complementary factors of production grow at a faster rate than the labor force grows, then the additional people will have more resources to work with and living standards will rise provided these resources are used productively. But Africa's population, which was growing at the very high rate of 2.8 percent annually over 1970-82, is set to grow at 3 percent per year until 2000 (World Bank, 1986d). Although land is relatively abundant compared to other developing regions, we have noted that much unused land requires investments to make it economically viable. So while an extension of the 'land frontier' can help absorb some of the increasing population, a very rapid growth in other complementary resources is needed to achieve a reduction in poverty given current population projections.

15.87 However, while gross domestic investment rose at 8.8 percent over 1965-80, it fell by 9.3 percent over 1980-86 (World Bank, 1988: 228). Moreover incremental capital-output ratios are low, and domestic savings - which provide resources for investment - average 5 percent of GDP. While adjustment programs are now achieving an increase in investment and productivity, the above parameters imply that the maximum population growth rate for sustaining per capita income is well below the current rate.

Without an improvement in savings or productivity the maximum population growth rate for sustaining per capita incomes is estimated to be 1.67 percent a year (World Bank, 1986d: 33). Otherwise returns to labor will diminish, and it will be much harder, and more expensive, to combat poverty, and to raise the per capita availability of social programs.

15.88 Substantial population growth will occur even with a faster decline in fertility. Hence it is crucial that adjustment programs achieve their growth objectives, if standards of living are to be maintained. Many policy reforms will, through their effects on living standards, social services, and the status of women strengthen the demand for smaller families. But it is also important that family planning programs be implemented to accelerate fertility decline, thus easing the tasks that adjustment-led growth has to achieve (World Bank, 1986d).

E. Increasing Savings Rates

15.89 One of the reasons why low-income groups can get left behind in the process of growth is the fact that they have very low savings rates compared to wealthier groups. They therefore have fewer of their own resources to make investments. In the short- to medium- run however, the savings of poor households may be considerably depressed by events preceding adjustment, and by the income effects of adjustment itself if these have been adverse. Target households may have maintained essential current consumption by disaving - running down their holdings of cash and savings held in kind. In so far as this has occurred their ability to generate future income streams through investments is adversely affected, and it may take some time for their savings to recover to previous levels, and then to grow further.

15.90 The policy interventions discussed throughout this third volume are intended to set in motion a process by which not only will the consumption of poor households increase, but through the associated rise in incomes, their savings will rise as well. By raising the returns from investment, and the access and control of poor people over productive assets, the incentive to invest these savings productively is increased. If these policy interventions succeed then poorer households will increasingly participate in the growth process, and generate more resources of their own, thus eventually eliminating their poverty and the need for government assistance.

15.91 Because of incomplete capital markets, many poor households receive lower returns on their savings than wealthier households. This depresses the growth rate of their savings below what it might otherwise be. Moreover, lower returns may induce the poor to save relatively less than wealthier groups, because they are faced with a less attractive price for abstaining from current consumption. Financial liberalization, together with the development of savings opportunities for poorer households are thus helpful to the eventual capital accumulation of the poor. It is, however, important that any such developments take place in an environment of low inflation. Inflation has a more adverse effect on the savings of poor households than

wealthier ones who have greater access to foreign stores of value, and who can thus evade some of the consequence of high domestic inflation. Any policy intervention at the sectoral level to raise savings must therefore take place in the context of appropriate macro-policies.

XVI. FUNDING, IMPLEMENTING AND PHASING POLICY INTERVENTIONS

A. Program Costs and Financing

16.1 The discussion so far has identified a number of ways in which target groups may benefit both from adjustment itself, and from the growth process established by policy reform. Nevertheless, adverse effects will occur as well, and special programs to cope with these effects, and to enhance the participation of target groups in growth, were assessed. A key question is therefore how much these programs will cost, and where the resources to finance them will come from. Obviously this is a question that can only be ultimately answered at the country level, and in the program design stage, but we can still identify the following parameters determining program costs:

- the income time-paths that target groups will face post-adjustment, together with the time-paths of the other dimensions of their welfare such as health and nutritional status. It has been shown that a number of income-time paths may arise, each with different implications for policy,

- the effect of the special policy intervention itself on these time-paths, particularly through incentive effects (both positive and negative),

- the size of the target groups facing each of the different scenarios, and especially the proportion of all the target groups in activities which are not favored by adjustment-led growth,

- the level of income, or the level of any other welfare dimension, that the program is intended to achieve for the different target groups,

- the combination of primary and secondary income interventions chosen, and therefore the administrative costs associated with implementing different policy packages,

16.2 These costs will be spread over time depending on how fast the government wants to achieve the desired benefits, and on the characteristics of the programs concerned: for example whether the costs of implementation arise mainly in the short-run but then fall as time progresses, whether the program will be such that its costs rise over the longer-term, or whether the program will make irregular interventions. The time-distribution of program costs can be as important to policy-makers as the program's total costs, since these programs have to be allowed for in budgets and aid requests, and resources are especially tight in the early years of adjustment.

16.3 This leads us to the issue of raising the resources to meet these program costs. First, a review of existing expenditures should yield some resources. Resources may be released by restructuring existing welfare programs to meet the needs of the target group, and this has already been

discussed in relation to social programs where it is of special importance. The size of the resources so yielded will depend on the extent to which current programs are not directed to the target group. It is worth repeating that in many countries social programs have disproportionately benefited wealthier groups, so that there is some scope for resource savings to be used for programs with higher benefits for poor groups.

16.4 At the same time governments must consider whether they have any flexibility in reallocating public resources from other uses. The rationalization of public administration, the reduction of the burdens of loss-making public enterprises on public revenues, together with the divestiture of selected activities will save resources, some of which can be used for social actions. In this way the reform of public sector operations can make a potentially important contribution to the implementation of poverty-orientated actions, a benefit which would not exist if the latter were implemented outside the framework of an adjustment program.

16.5 However, the size of resources which can be allocated in this way depends on the public sector deficit target which the government must meet to ensure a macro-economic balance, and the priority of obtaining resources to finance crucial investments in support of the adjustment effort. Inevitably there will be competition between poverty-orientated programs and other priority uses. In particular, infrastructure usually needs extensive rehabilitation if the output targets of adjustment are to be met. If most of the resource-savings are directed away from these uses, then adjustment may fail to secure the recovery of growth, and poverty groups while benefiting from the new programs, will be adversely affected by economic stagnation. Given this trade-off, which is potentially large in many countries, it is imperative that resource-savings are made wherever possible in public programs. Governments will face the difficult task of comparing the relative returns on different uses of resource savings. In a number of cases public investment programs, undertaken for the purposes of adjustment, will have strong benefits for target groups. A priority is therefore to identify such programs in order to reduce the trade-off in the use of resource-savings.

16.6 The principles of both targeting welfare measures, and considering the effectiveness of public expenditure programs as a whole are important ones, and have been much emphasised in recent discussions. However, there are limits to which such exercises can release public resources, and situations may occur where the size of the resources needed to finance a program for the target group exceeds the amount of resources released.

16.7 If this is the case then a government will have to seek additional revenues to finance the program. In this they will be assisted by adjustment measures leading to a recovery in the tax base, and policy reforms in the structure of taxation and its administration. Volume 1 discussed the adverse effects that recession and loss of exports has had on tax revenues. The reform of tax systems is attempting to move the structure of taxes away from dependence on trade taxes and towards a greater role for commodity and income taxation.

16.8 If additional revenues are sought from domestic sources then attention must be paid to whether higher levels of taxes, together with changes in their structure, will have potentially adverse effects on the success of adjustment and the recovery of growth. If these effects are large, then the indirect effect of lower growth may offset much of the benefit of the special programs to the target group.

16.9 Taxes on international trade have typically provided the largest source of revenue - accounting for nearly 43 percent of tax revenues in 1982 (Shalizi and Squire, 1987). The dependence of revenues on this source has imposed large costs on the development of agriculture and has contributed to an inefficient industrial base. Raising import duties, and increasing explicit and implicit taxes on agriculture, in order to finance social programs would in the end be counter-productive. Agriculture, which provides the bulk of employment for poor people would suffer, while import taxes have in the past worked to promote capital-intensity, and have discouraged the kind of labor-intensive growth that adjustment should promote.

16.10 Commodity taxes, which presently provide nearly 28 percent of revenues in SSA as a whole, are more desirable than trade taxes since they do not affect the efficiency of production (Anderson, 1987: 9). Under current tax reforms, this source will become an increasingly important contributor to revenues, and thus ultimately to financing social-action programs. However, they require more costly methods of administration and collection, and therefore as a provider of revenues their growth is restrained by the speed at which tax reforms can be implemented. So in the short- medium term they may not be a sufficient source of finance for social projects. In addition large increases in indirect taxes, if imposed on basic goods, may have negative effects on target groups, thus working against the objectives of the programs which these taxes are financing.

16.11 Income taxes, which are levied on either individuals or businesses, presently account for nearly 30 percent of revenues. They offer good prospects for growth under current reforms (IMF, 1981: 26). If properly designed they do not have some of the adverse distributional effects of other forms of taxation. But as with indirect taxes their costs of administration are large especially since incomes have to be correctly estimated, and evasion policed. Again, the effects on the incentives of individuals and enterprises must be considered, since applying 'penal' rates to high income-earners and enterprises in order to finance social programs could have very adverse effects on capital accumulation and growth. The size of these effects may be such that they preclude some types of project, because the costs involved will be so high as to require very large domestic financing, which has in turn counter-productive incentive effects.

16.12 Cost recovery measures as they affect the improvement of target groups' productive assets and human capital have been discussed in relation to infrastructure provisions. Here we are concerned with the revenue implications of cost-recovery. A recent review finds that moderate and achievable increases in cost-recovery would generate extra revenues equal to

about one-fifth to one-third of current public revenues (Anderson, 1987a). Furthermore, these measures can be designed to make them more affordable to low-income groups.

16.13 At present there is little 'hard' evidence on the effects on households, and thus on incentives and disincentives, of alternative tax systems, and cost recovery measures. In calculating where to set their tax rates, policy-makers have few empirical studies to draw on. This affects their ability to estimate the domestic revenues likely to be available to finance, say, a five year program of poverty alleviation. The collection of household data sets of the kind discussed in volume 2 thus has an important role to play in the formulation of policy and in revenue-forecasting exercises. This is one of the reasons why it is important to have data not just on target groups, since it is non-target groups who will provide most of the domestic resources to finance programs. We need to know whether alternative anti-poverty strategies have revenue implications such that their effects on the decisions of non-target groups make financing of some projects impossible from domestic resources.

16.14 Finally, external resources may be used to increase the funding base available to cover the required programs. While external aid can reduce the constraint imposed by limited domestic resources, donors may already be committed to other essential investments supporting the adjustment program, so that there is a trade-off between using finite external resources for poverty programs and for adjustment-related investments. However, in so far as additional external resources are made available by donors, it will be possible to undertake more high yielding, but expensive, poverty-orientated actions.

B. The Implementation of Programs

16.15 The next important issue is how the promotion of social-action programs is to be organized given the demands placed by adjustment on the government's scarce administrative resources. One way is to mobilize the organizational capacities of local communities to undertake project implementation. Local and international NGOs through their work with poor communities provide some of the best vehicles for the difficult task of designing projects for very deprived people. OXFAM, for example, is helping poor communities - both rural and urban - in Africa and elsewhere to take up activities which increase their self-reliance.

16.16 However, programs of this type must take place within a sound framework which stipulates priorities about the sectors in which projects should be located. And the organizations eligible to act as executing agencies must be carefully monitored, since there is an incentive for non-target groups to set up recipient organizations to capture some of the funds for their own purposes. Thus there remains some burden on central government to oversee these programs and the uses to which funds are put. Since these projects usually cut across the domains of several ministries there can be difficulties in organising their co-ordination. To avoid this a special unit

can be set up separate to the ministerial structure, but co-ordinating its activities with the latter when required.

16.17 One model for this comes from outside Africa. In Bolivia, the World Bank and other donors are assisting an Emergency Social Fund which is located in the Office of the President. This finances projects put forward by municipalities, cooperatives, NGOs, and other community organizations. These organizations act as the executing agencies for projects mainly focused on small-scale income-generation for poverty target groups. Alternatively, local government can be an appropriate instrument for overseeing the implementation of projects by community-based organizations, thus reducing the administrative burden on central government. This is being done in Ghana under PAMSCAD. District councils appraise projects proposed by communities, and finance them with donor funds supplied through the Ministry of Finance. The councils themselves report to a small planning unit established in the Ministry of Local Government (Republic of Ghana, 1987: 3). As more social action programs are implemented under adjustment the experience of governments and donors in organizing these will increase, and it is important that lessons are shared across countries.

C. Phasing Programs and the Speed of Implementation

16.18 The various policy interventions discussed through the preceding sections have two time dimensions of importance, (1) the amount of time needed to appraise the intervention, mobilise resources (if required) and implement the necessary actions and (2) the time-scale over which the intervention will yield its benefits. We can divide these time dimensions into three periods: the short-term (one year); the medium-term (three years) and the long-term (three years and beyond).

16.19 In the case of transfer programs, governments may be able to implement these relatively quickly if they have experience in reaching the target groups concerned, the delivery systems already in place, and assistance from donors (for example in the form of food aid for distribution). It is likely that these programs will play a substantial role in the short-term, because a large proportion of the policy actions to raise primary incomes will take time to implement, and their benefits will take time to come on stream. Thus, although a number of programs can be introduced in the short term to improve health (such as vaccination programs), and these will have their effects relatively quickly, the reorientation of social programs will take time since social capital is far from being malleable. The basis of a rural health program can be established in the medium-term, but the orientation of the health service towards poverty groups has implications for health infrastructure and training which require longer time periods to implement. Improvements in education services can be made in the short-term if finance can be found for the provision of basic educational materials, but again the reorientation of programs to poverty groups will need a longer time perspective.

16.20 With regard to assistance designed to improve employment and self-employment prospects, changes in producer prices together with the

application of more labor market flexibility can be undertaken relatively quickly and some of their benefits will be felt in the short-term. The output response to price changes will gradually build up, the size of the response being in part determined by how fast improvements in infrastructure and input availability can be accomplished. Stronger output effects will therefore be registered over the medium-term. Special interventions to raise the access of target groups to productive assets are unlikely to be accomplished in the short-term, but some results should have been achieved by the end of the medium-term. Innovatory programs such as credit for the rural poor will almost certainly not be implemented before the end of the medium-term. For these reasons public works programs will be important sources of primary incomes over the short- and medium- terms until the benefits of more fundamental policy interventions come on stream.

16.21 In short, it is highly likely that transfer programs and public works programs will cover a large proportion of the target groups in the early years of adjustment, but the number of recipients will tail off over the medium term as more beneficial effects of adjustment on primary incomes take effect, and assistance to self-employment becomes effective. Over the longer-term transfer programs should be left covering only small numbers of beneficiaries, those most difficult to reach through primary income interventions, for instance. The coverage of public works programs should also fall as more remunerative opportunities presented themselves, and as migration processes took effect.

16.22 The program phases discussed above will have to be modified in the light of country circumstances and developments. In particular the regularity of rainfall failures together with floods and other natural disasters has caused sometimes catastrophic effects on commumities in many countries. Thus in designing policy interventions care must be taken that assistance provided to cope with adjustment does not increase the vulnerability of target groups to environmental risks. In some cases substantial modifications may have to be made to assistance called for by adjustment in order to ensure that they do not work at cross purposes to programs aiming to reduce environmental risks. Policy-makers will need to search for complementarities between programs dealing with the social impact of adjustment and programs tackling the effects of environmental change. Avoidance of potential conflicts between adjustment-related income projects and environment-related projects may require slowing down the former in some cases. Reliance may then have to be placed on transfer programs for longer than initially planned. If this is the case it is important that assistance is available to finance the extension of the transfer program.

XVII. CONCLUSIONS

18.1 We have emphasized the importance of assisting target groups through the processes that generate their primary incomes, thus allowing the scarce public resources available for transfers to be concentrated on the most needy. Primary income interventions offer the prospect that target groups will achieve a sustainable increase in their living standards, through greater participation in adjustment-led growth, thus eventually reducing their need for assistance. Some income gains can be achieved by the modification of policy changes and projects which would in any case have been undertaken to achieve adjustment and restore growth. Assistance through these means will carry small additional costs. Other primary income interventions are more difficult to implement and are therefore more costly. Resource-savings in public operations, wherever possible, are therefore essential if assistance to target groups is to be maximized.

18.2 Finally, governments must take great care in the selection of the target groups for assistance. In particular they must separate out the needs of poverty target groups from those who, while adversely affected by adjustment, are among the better-off sections of the community. If the largest gains in human welfare are to be made then clearly programs and policies should focus on the former groups, while assistance for the latter should concentrate on preventing them from becoming the 'new poor'. Given finite resources there must inevitably be a trade-off between the needs of target groups, and priorities must be set.

Annex

Structural Adjustment, Smallholders and the Rural Poor:

Background Paper on Conceptual Approach and Methods

A Collaboration Research Project

by

International Fund for Agricultural Development (Africa Division)
Rome, Italy

and

Overseas Development Institute
London, U.K.

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Structural Adjustment, Smallholders and the Rural Poor:

Background Paper on Conceptual Approach and Methods

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

BOP	Balance of Payments
CPI	Consumer Prices Index
FAO	Food and Agriculture Organisation
GDP	Gross Domestic Product
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
ODI	Overseas Development Institute
OECD	Organisation for Economic Cooperation and Development
UNDP	United Nations Development Programme
UNICEF	United Nations Childrens Fund
SDA	Social Dimensions of Adjustment
WPI	Wholesale Prices Index

PREFACE

This paper has been prepared as a collaborative effort by the International Fund for Agricultural Development (IFAD) and the Overseas Development Institute (ODI), as part of an IFAD-sponsored study on the impact of structural adjustment on African smallholder farmers and the rural poor. The study will consist, in part, of five country-level case studies which have been undertaken in Ghana, Kenya, Madagascar, Malawi, and Niger. The present paper was written to summarise the rationale behind the study and to provide a common methodological approach for the research teams in each country, with the view that the results could facilitate comparative analysis of the experiences of the five countries concerned.

The IFAD study has been started on the belief that very little empirical data are currently available on how IFAD's target group, smallholders and the rural poor, are affected by structural adjustment policy measures, whether positively, negatively or neutrally. Filling this information gap would in turn be an useful step in refining and calibrating structural adjustment packages to ensure that smallholders and the rural poor benefit to the maximum extent possible from the changing economic dynamics at the macro and micro level. The five country case studies were launched on this basis in order to reach some empirical findings and policy recommendation using existing data resources.

IFAD's interest in undertaking a study on the impact of structural adjustment on African smallholders and the rural poor goes back a number of years and stems from the explicit recognition that IFAD's lending programme in Sub-Saharan Africa must be congruent with the overall macro-policy environment of the individual countries in which IFAD projects and programmes are designed and implemented. Experience has demonstrated to African governments and donors alike that, unless there is a large measure of convergence between the macro-policy environment and micro-level objectives, then the chances of project and programme sustainability are greatly diminished.

From a policy perspective, there is little doubt that major changes must be made in economic policy and institutional structures if Sub-Saharan Africa is to establish solid and viable foundations for long-term growth in production and income. The question remains as to what measures should be taken and to what extent current adjustment activities satisfy those requirements. At the same time, one should not forget that the problems associated with low production and poverty among the smallholder sector clearly pre-date the advent of structural adjustment lending. These problems are not the result of structural adjustment, but they do exist along side the ongoing adjustment process, with consequences that cannot be ignored.

In this regard, one of IFAD's fundamental concerns has been to clearly understand the distinction between, on the one hand, helping to mitigate the transitional costs of adjustment on vulnerable groups, and, on the other, assuring that the poor can participate during the recovery process. While not discounting the importance of protecting vulnerable groups from undue suffering, IFAD's position is that the actual success of structural adjustment in Sub-Saharan Africa will depend on the potential of the poor to raise their physical and human productivity during the adjustment process, thereby contributing to, and benefitting from, the expected return to economic growth. This is especially pertinent for the rural poor and smallholder sector -- in particular for traditional farmers -- who account for the overwhelming majority of the Region's population and who constitute one of, if not the major sector in the national economies of the Region.

I. BACKGROUND

1. The past fifteen years have been characterised for many developing countries by severe economic turbulence and dislocation. The causes of these problems have been both external and internal, and have brought about a sharp deterioration in living standards for many peoples of sub-Saharan Africa. The external factors include a combination of rapid escalations in the prices of some imports and weak markets for primary commodities, resulting, in some instances, in declining international terms of trade, and, more recently, sharp increases in world interest rates. Internal causes include for many sub-Saharan African countries a devastating drought in the early 1980s and persistent domestic military conflicts.

2. These problems have been reinforced, in many cases, by a heritage of economic policies which have persistently neglected the primary sector, particularly agriculture, thus eroding the export base, plus a tendency towards economic profligacy and mismanagement. Additionally, many countries in the region had accumulated substantial foreign debts which, in the context of rising interest rates and declining export earnings, led to debt crises of overwhelming proportions.

3. In seeking ways out of short term economic insolvency, many countries have found it necessary to solicit the aid of international financial institutions such as the International Monetary Fund and the World Bank. Loans from these organisations have, in these circumstances, been made conditional on economic reform programmes 1/ designed to restore growth and ensure that the conditions which led to the crisis are not repeated. Thus IMF stabilization loans, aimed at restoring a measure of foreign exchange capability, have, in general, been conditional on demand-side reforms related to fiscal and monetary restraint, while World Bank structural adjustment loans have aimed at longer-term supply-side restructuring of the domestic economy.

4. In practice the distinction between reforms associated with stabilization and structural adjustment programmes is not always complete, since objectives and instruments frequently overlap and are, in any case, mutually reinforcing. These recovery programmes are intended to enhance the capacity of countries to cope with unfavourable events, and also to restore sustainable economic growth.

5. At the macro-level, governments have been encouraged to adopt more austere fiscal and monetary policies and to adjust exchange rates. The reforms have also been applied in other areas. Trade policy reform is perhaps the most important example, with countries being encouraged to remove quantitative trade controls and reduce the levels and dispersion of tariff rates. In addition, recovery programmes have included measures intended to liberalize domestic product and factor markets, such as removing distortions in domestic money markets, encouraging private sector involvement in crop marketing, and privatization of state owned enterprises.

1/ The term "recovery programme" will be used throughout the text to refer to the combination of stabilization, structural adjustment and other measures which are introduced to by governments, usually with the aid of external finance, in order to revitalise economic performance in the context of the type of crisis described above.

6. Many developing countries, therefore, have been obliged to undertake major overhauls of their economic strategies and to implement dramatic policy changes designed to improve economic incentives and restructure the economies concerned. Economic recovery programmes seek to reduce the role of the state and promote more efficient allocation of resources, mobilizing them towards more rapid economic growth. For most sub-Saharan African countries, this entails reallocation of resources towards agriculture in general, and to agricultural exports in particular. The assumption is that the agricultural terms of trade will improve as a result of structural adjustment, and that both agricultural output and incomes will increase relative the wider economy.

7. There has been increasing interest in the effects of these policies on the agricultural sectors of developing countries. 2/ It is not yet evident, however, how the reorientation of policies has affected particular agricultural groups, especially smallholders and the rural landless. Since structural adjustment tends to be complex, involving a range of policy instruments across several product and factor markets, it is often difficult to identify the net effect of a programme on specific groups. This is the concern of the IFAD/ODI research initiative.

8. This paper sets out the broad theoretical framework of the research, the major concepts that are to be used and the methods of study to be followed in the case studies. An underlying premise of the approach taken is that the effects on agriculture of macro-economic and trade policies can be as important as specific policies targeted at the sector. Frequently attempts by governments to raise agricultural productivity through, for example, sector-specific investment programmes, can flounder simply because the macro-economic policy stance is unhelpful to the sector.

9. The first concern in section II is to outline the rationale and main objectives of the study. Section III discusses the theoretical issues involved. The concern is firstly with the implications of macroeconomic and sectoral changes on the systems and processes which constitute the macro-micro linkages. This will focus on how the various policy instruments through which governments operate impact upon both product and factor markets, and on the economic and social infrastructure. This theoretical exposition is then extended to discuss the consequences of these linkages for the economic and social wellbeing of rural households.

10. Section IV provides an empirical background to the previous theoretical discussion through a brief review of the main features of farming systems in sub-Saharan Africa and of the main characteristics of smallholder households. The likely implications of these characteristics

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2/ For example, see Mosely and Smith, 1988, Norton, 1987, Sarris, 1987, IFAD, 1988, FAO, 1986, Thomas and Weidemann, 1988, Commander, 1988, Sines et al, 1987. Interest has also been shown recently in the general implications of macro-economic and trade policies for agriculture in developing countries. The World Bank/IFPRI research initiative on the political economy of agricultural pricing policies is an example (see Krueger, Schiff and Valdes, 1984 and Valdes and Pinckney, 1986). Here the concern is with the effects of policies that many consider to have led to the need for structural adjustment (overvalued exchange rates, industrial protection, food and input subsidies etc). See also Tolley et al., 1982 and Timmer, 1986.

for the outcome of policy reforms is examined. Other work currently being undertaken in this field is briefly outlined in section V. Finally, section VI provides guidelines for the five country studies (in Ghana, Kenya, Madagascar, Malawi and Niger), which form the basis for the joint IFAD/ODI research programme.

II. RATIONALE AND OBJECTIVES

11. Smallholder households constitute one of the most significant categories of the population in most countries of sub-Saharan Africa. Their importance is apparent both numerically and economically, and the issue of household food security within this category is central to the concerns both of the International Fund for Agricultural Development (IFAD), and those responsible for implementing government policy. At the same time, however, the design and implementation of economic recovery programmes, often pays little direct attention to the specific problems associated with engendering growth in smallholder agriculture. This relative neglect of specific growth opportunities makes the achievement of more general programme objectives more difficult. In particular the implications of policy reform for household food security, and the response of smallholders to the new range of economic incentives created is critical in determining the feasibility and characteristics of any economic recovery that is to be achieved.

12. By focussing on smallholders the study will inevitably have a poverty focus, and an underlying assumption is that structural adjustment and poverty alleviation need not be inconsistent objectives if the poor, and especially the rural smallholder poor and the landless, participate in the recovery programmes. 3/ This focus therefore serves two purposes: it highlights the contribution that such farmers are likely to make to the overall economic recovery programme; and it directs the research towards the issues of rural poverty alleviation and household food security.

13. A major concern of the studies will be the identification of particular target groups. A smallholder household is defined as a family farming unit, primarily relying on household rather than hired labour, and using traditional technologies. Such units might also sell labour services outside the household. For the purposes of this study, "smallholders" are also to include pastoralist groups. In such cases, "holdings" comprise livestock rather than land. A key characteristic of such households is that they are producing and consuming units. The study will also be concerned with those among the rural poor who are landless or near landless, and derive their livelihood principally through selling their labour services in the rural labour market.

3/ See Demery and Addison, 1987b.

Objectives

14. The objectives of the study are as follows:

(1) To make an assessment of how the target groups in the countries selected have been affected by the adjustment process. This will involve tracing the effects of the initial de-stabilising events which occasioned structural adjustment policies, as well as the effects of the policies themselves.

(2) To indicate those policies which benefit and those which act as a disincentive, or even penalise smallholder production, and to draw policy conclusions from the available evidence. More particularly, the objective is to specify policies which will strengthen the participation of smallholders and other target groups in economic recovery programmes. Consequently the impact of structural adjustment on employment in rural areas is also examined.

(3) To identify important gaps in our current understanding of the interrelationships between smallholder households and the economic environments with which they interact.

(4) To document potential areas where IFAD and other donors can enhance the responsiveness of the target groups to the new opportunities presented by structural adjustment policies.

The Research Approach

15. It is appropriate to begin the discussion of the research possibilities, by reviewing the content of adjustment programmes in sub-Saharan Africa. As a first step, the underlying causes of the external imbalances which have obliged governments to undertake the adjustment-policy reforms can be divided into two broad categories:

(i) External Factors: The most significant of these are deteriorations in the international terms of trade, caused either by escalations in the prices of imports or falling export demand, and rapid increases in the interest rates relevant to foreign borrowing.

(ii) Internal Influences: These include inappropriate domestic policies such as over-expansionary fiscal and monetary policies, overvalued exchange rates and domestic pricing policies that erode the competitive position and earning potential of the agricultural sector, as well as natural disasters such as droughts or floods and civil or military conflicts.

16. These factors have contributed to economic distress in almost all sub-Saharan African countries, although their relative importance varies considerably. 4/ The country studies undertaken in the IFAD/ODI study must

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4/ See Zulu and Nsouli, 1985, and World Bank, 1986a.

catalogue the main de-stabilising events that led up to the adjustment programmes, not only to interpret the adjustment response, but also to evaluate the extent to which the wellbeing of the various target groups deteriorated prior to adjustment.

17. The majority of the recovery programmes introduced in sub-Saharan Africa consist, in varying degrees, of the following components:

- Devaluation of the domestic currency.

- Reduction in aggregate expenditure in order to bring expenditures into line with real resources. Contractionary fiscal and monetary policies are the typical instruments used to achieve this objective.

- Liberalization of domestic product markets, bringing domestic prices into line with world prices. This is frequently accompanied by sectoral policies directed at specific activities and markets. Privatization is a commonly used instrument in this context.

- Trade and exchange liberalization: Many countries of sub-Saharan Africa have tended to respond intiatially to external imbalances by applying import controls, but these have frequently failed to tackle the underlying weaknesses of their economies. Donors have generally preferred some element of trade liberalization in the adjustment package, replacing quantitative controls with tariffs, and reducing the levels and dispersion of tariff rates.

- Financial reforms have frequently entailed allowing domestic interest rates to reflect market conditions by removing subsidies and controls within the banking system. These changes have complex effects on credit markets, which depend on the response of informal credit institutions.

18. As can be appreciated from this list, policies have been applied both at the macro level (fiscal contraction, devaluation, and interest rate policy), and at the sectoral level (changes in import controls and tariffs, and directives to banks in allocating credit to specific sectors). It is also important to bear in mind that adjustment policies have used conventional economic instruments of control, as well as measures designed to change the nature of institutions. Both sets of instruments will influence the various macro-micro linkages, and thereby the target groups.

19. Given the characteristics of reform measures currently being implemented in the region, the principal research problem that this paper addresses can be stated as follows: Economic recovery programmes are conceived primarily in terms of their economy-wide effects, especially on such macro-economic aggregates as the balance of payments, the rate of inflation, and the rate of GDP growth. Moreover, many of the policy instruments that are used in such programmes have an essentially macro-economic profile.

20. The focus of the research is therefore on the extent and nature of the consequent interactions between the target groups and the wider economy, and the research problem is to establish a link between the macro-economy on the one hand, in which the main dimensions of the programmes are conceived, and the micro-economy on the other, more specifically, the economic activities and wellbeing of the target groups. These macro-micro linkages are the key analytical and empirical challenge for the research. They consist of the following:

- Markets provide the most effective link between the macro-economy and individual households, and comprise input delivery systems as well as output marketing processes. They include product as well as factor markets, and care should be taken to distinguish between controlled (official) and parallel markets. Structural adjustments are likely to alter markets in which smallholders trade, either directly through prices (by reducing subsidies and price controls) or indirectly, through changing the "rules" by which markets operate, or through influencing the quantities traded.

- The economic infrastructure is also a significant component of the macro-micro linkage, since its provisions are directly determined by macro-economic policy -- specifically by the level of government spending on physical infrastructure (roads and other forms of communication, and irrigation services), and on other support services (extension, credit and marketing services). Changes in economic infrastructure will condition the effects of market changes on the incomes of individual households. A general increase in commodity prices, for example, will lead to greater relative income growth for households better served by economic infrastructural services, since they will be in a more favourable position to respond to the incentives offered.

- The social infrastructure plays a similar role, in that the government provision of non-market services (health, education, nutrition support and other transfers) can have profound effects on the extent to which households are able to benefit from market opportunities. Since these services are also consumption goods their provision will have a direct effect on the wellbeing of households. This is especially true of health services, which have considerable direct implications for the social income of recipient households.

III. THE IMPLICATIONS OF ECONOMIC REFORM PROGRAMMES: A THEORETICAL OUTLINE

21. In this section a theoretical approach is outlined, describing firstly, the links between macroeconomic changes, and the intervening variables or conduits termed macro-micro linkages through which they act, and secondly, the consequent implications for changes in household activities at the microeconomic level. The presentation is in two parts, outlining first an approach to the macroeconomic impact, before considering the theoretical implications for the individual households.

The Macroeconomic Impact

22. The purpose here is to outline the broad effects of adjustments in macro-economic variables on the institutional and infrastructural processes of the economy, rather than to explain the full complexities of disequilibria and the adjustment responses they invoke. Without a theoretical structure it becomes far more difficult to discern how the operation of macro-policy instruments will affect the intervening variables, particularly to disentangle the effects of adjustment policies from those of the events which precipitated them.

23. The approach is applicable to countries whose trading capacity is too small to influence markets, and centres on the distinction between tradeable and non-tradeable commodities. This distinction is based on whether it is profitable to either import or export a commodity given domestic and world market conditions. Thus a tradeable commodity is defined as one which, in any given circumstance, including subsidy regimes, it would be profitable to trade internationally.

24. Given the small country assumption, the domestic prices of tradeables will be determined primarily by world prices and the rate of exchange, whereas domestic prices of non-tradeables will be determined entirely by domestic demand and supply. Some of the problems of classification are discussed in an appendix, here it is sufficient to note that it may be useful additionally to distinguish between three categories of tradeable, namely exportables, protected importables and unprotected importables.

25. Given the tradeable/non-tradeable distinction, it is possible to trace the relative effects of changing economic conditions on these two categories of commodities. 5/ Assume, for example, that the country has been subject to excessive monetary and fiscal expansion in recent years. This will imply two main consequences: a current account deficit and excess demand for non-tradeables, the latter resulting, through the impact on relative prices, in a resource reallocation from tradeables to non-tradeables. Typically, to restore external balance the government must reduce spending to a level compatible with available resources.

26. If, as is likely to be the case, prices of non-tradeables do not automatically adjust downward, the fiscal contraction would have to be combined with exchange rate depreciation to achieve the desired shifts in relative prices and resource allocation in favour of tradeables.

27. The implications of these adjustments and the way they react on the country's institutional and infrastructural processes can be discussed under the following headings:

- Product Markets
- Factor Markets
- Economic and Social Infrastructures

5/ The recent work of UNICEF (Cornia et.al.1987) is open to criticism in this respect, since it admittedly failed to separate the effects of the recession from those of the adjustment.

58. With regard to the product market of the domestic economy, the consequent shift in relative prices in favour of tradeable commodities will benefit those who produce tradeables and/or consume non-tradeables, relative to those who produce non-tradeables and/or consume tradeables, although the extent of any benefits or disbenefits will be influenced by the degree of resource flexibility and consequent responses to price changes.

29. If the original crisis has been precipitated by disadvantageous movements in the external terms of trade, or if the government has attempted to correct trade imbalances through measures which influence the tariff structure or degree of import controls, the consequent product market effects will be more complex. During the de-stabilization period, for example, terms of trade deterioration would have caused resources to flow from exportables to importables and non-tradeables, while if governments had responded by applying import controls, the flow would be from exportables and non-protected importables to protected importables and non-tradeables. In these circumstances, if trade liberalization is included in the recovery package, these resource flows are likely to be reversed.

30. Hitherto it has been implicitly assumed that all outputs are for final consumption, either in home or foreign markets. Yet many imports are for use as intermediate inputs into domestic production activities. While these imports are not generally subject to import controls, the effect of currency depreciation will be that the prices of these intermediates will rise, adversely affecting value added in activities which use them. On the other hand, prices in sectors producing intermediate goods and services which are non-tradeable (e.g. construction and banking/insurance) are likely to fall relatively. Thus, there are likely to be resource re-allocations in response to changes in value added induced by the new set of relative prices. For example, resources will move towards a tradeable activity which uses non-tradeable inputs rather than one using imported intermediates. 6/

31. The resource re-allocation induced by recovery programmes will also lead to predictable changes in factor markets. In the labour market the effect on the real wage may vary over time. In the short run, with capital and land comparatively immobile, the real product wage will fall in production of tradeables and rise in production of non-tradeables. The effect on the real consumption wage will simply depend on the proportions of tradeables and non-tradeables in workers' consumption. If they consume mainly non-tradeables, their real wage is likely to rise. In the long run, the direction of the real wage change will depend on the relative factor intensities in the two sectors and the extent of unemployment. If the latter is insignificant and production of tradeables is relatively labour intensive, the labour released from the declining non-tradeables sector will be insufficient to meet the increased demand for labour in

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6/ One implication of the presence of intermediate inputs is that the distinction between tradeables and non-tradeables becomes even more complex.

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tradeables, and hence the real wage will rise. The converse also applies, and the argument is appropriate whether the adjustment measures in question involve currency depreciation or trade liberalization. 7/

32. In many contexts, however, unemployment is likely to become a significant problem. Production of non-tradeables and (if there is a trade liberalization element in the programme) protected importables may contract rapidly. The decline in employment may be particularly severe if the government is itself a major employer prior to adjustment, and is required to reduce its recurrent expenditures. At the same time, the expansion in production of tradeables may be subject to lags. 8/ Real-wage resistance in the labour market will also enhance the level of unemployment.

33. The short term effects of recovery programmes on labour markets are, therefore, unlikely to be confined to changes in relative factor prices. Quantities will also be influenced, and it is possible that suppliers of labour services may face quantity constraints in the market. In the long term, if adjustment succeeds in engendering sustainable growth based on comparative advantage, the employment prospects may be significantly improved.

34. The fiscal contraction required to restore equilibrium may reduce the resources available for the provision of economic and social infrastructure. Cuts in economic infrastructure, for example, may counteract the favourable relative price effects enjoyed by producers of tradeables, especially in rural areas where access to input and output markets is a key factor governing economic returns. Similarly cuts in health and education spending may reduce the "social wage" even if the market wage is favourably affected. In addition, institutional changes are often regarded as an essential ingredient of recovery programmes.

35. In particular, privatization of economic support services previously provided by the state can have a profound impact on market performance and activity, depending on the degree of competition which results in the newly established or expanded private sector, and the extent to which the latter is willing and able to respond to new opportunities. Both the prices obtained in particular markets, and the degree of access on the part of producers may be affected.

Implications for the Micro-Economy

36. Having reviewed how macro-economic and sectoral policies implemented under recovery programmes are likely to influence key macro-micro

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7/ For further discussion of some of these issues see Edwards, 1988

8/ A common additional feature is the growth of the informal sector. This may simply be a manifestation of resource unemployment or underemployment, although it might also reflect a response by the informal sector to the new incentives created by adjustment policies. Further research is needed into this issue.

linkages, it is necessary to consider how these in turn will affect the microeconomy. The purpose here is to document the theoretical implications of the changes discussed above for individual households. 9/

37. The distinguishing characteristic of most African smallholder households is that they are units of both production and consumption. There will therefore be an interaction between decisions governing these two facets of households' activity in the process of utility maximization. The analytical distinction between tradeables and non-tradeables again premises the discussion. For any hypothetical household the primary production decision will concern the allocation of household labour time.

38. Assuming, in the short term, access to a fixed quantity of land and necessary capital inputs, labour can be allocated to farm production or some other, wage earning activity. 10/ In the context of diminishing marginal returns, a rational decision would be to use household labour in farm production up to the point where the reward from wage labour exceeded that from the farm. The division of household labour time, therefore, will be dependent on relative prices and wage rates. Consumption decisions revolve around the proportion of commodities produced to be retained for household consumption or sold in order to facilitate purchases of other goods and services. It is reasonable to assume that in the short term consumer preferences remain constant, and such decisions will be determined by the relative prices of production and consumption goods.

39. The short term effect of adjustment policies on individual households, therefore, will be mediated primarily through changes in relative prices. Households producing tradeable commodities, for which prices will have risen, are likely to expand production and reduce their reliance on the sale of labour. For non-tradeable commodity producers, or producers of other goods and services for which prices may have fallen, such as protected importables, the response is likely to be the opposite. Consumption profiles are also likely to change in response to price movements, and it can be assumed that a household will experience benefits or disbenefits according to the extent to which tradeables and non-tradeables feature in its consumption pattern.

40. The final outcome for any household will be unambiguous only to the extent that those producing tradeables and consuming non-tradeables will be advantaged, while those producing non-tradeables and consuming tradeables disadvantaged. For the majority of households producing and consuming a mixture of tradeables and non-tradeables the final outcome will be more complex, depending on the relative prices and quantities of each category of commodity in both production and consumption profiles.

41. In the medium to long term structural adjustment will have more complex effects on smallholder households than those engendered by relative price changes. Changes in capital and land allocations, and in the provision of social and economic infrastructural services will all

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9/ For formal presentations of farm household models, see Barnum and Squire, 1979, Singh et al., 1986 and Ellis, 1988.

10/ This ignores the important issue of time allocation to other necessary household activity generically responsible for household reproduction. For further discussion of these issues see Ellis, 1988.

impact on the productivity of different activities, and therefore on production and consumption profiles. Although the influence of these various changes may often be contradictory, it may nevertheless be of greater importance than the relative price movements.

42. The complexities involved in attempting to understand the impact of changes in macro-micro linkages, can be addressed by adopting a framework such as that outlined below. 11/ This traces changes in household activity under the following headings:

- Rates of Return on Asset Holdings
- Access to Productive Assets
- The Terms and Opportunities for Off-Farm Employment
- Human Capital
- Income and Consumption Transfers.

43. Clearly, changes in relative prices will have an important bearing on the rates of return households obtain, and this is likely to be the outcome most amenable to quantitative assessment. At the same time the implications and responses arising from these induced relative price changes may be extremely complex, and be particularly influenced by the production characteristics of the households, since much will depend on the particular combination of exportables, importables and non-tradeables they are engaged in producing.

44. Households may shift production away from some commodities into other more favoured crops, and adjust their use of inputs, thereby affecting productivity. In the medium term the ability of households to make quantitative responses to relative price changes will be an important determinant of rates of return. Their responses will depend on the technological constraints they face and on their access to other productive assets and to human capital, as well as their expectations concerning the permanence of new price trends.

45. Economic recovery programmes may also have substantial influence on households' access to productive assets. These influences may be indirect, through the influence of the price mechanism on the profitability of given asset holdings, or direct through the specific elements of the programme, such as land reform, modifications to delivery systems and changes in the availability of credit, both institutional and informal. In most cases, changes in access are likely to be experienced in the medium term, but it is to be expected that macro-economic adjustments, together with changes in institutional structures will have a profound influence on asset access and disposal.

46. Structural adjustment will also have an effect on labour markets, both in terms of wage levels and employment opportunities, and therefore on households' access to productive employment. Given that, in the short term, it may take some time for expansion in the tradeables sector to have any impact on the labour market, while the decline in non-tradeable production may be more immediate, the initial implications for rural labour markets may be adverse. If unemployment increases households may be limited by the level of labour services sold in the market, possibly reducing income earning capacity and counteracting any favourable price effects. To the

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11/ This framework follows that outlined in Demery and Addison 1987b.

extent that the profitability of labour-using activities rises as a result of recovery programmes, any undesirable consequences will be reversed. Those households most dependent on income from wage labour, particularly those which are landless or near landless, will be the most sensitive to any changes in labour market conditions.

47. Much of the literature on the undesirable consequences of structural adjustment has focussed on the reduced provision by governments of social services, particularly health and education. 12/ Any deterioration in the social infrastructure will undoubtedly affect the development of human capital within rural households. There is both theoretical and empirical support for the view that farm household productivity and incomes may suffer if the human capital of its members declines, and that allocative efficiency and productivity will benefit if it is enhanced. 13/ While the influence of any changes in human capital provision will be felt more in the medium to long term, any changes in income and consumption transfers will have a more immediate impact on household income and activity. These may be in the form of changes in government transfers, through for example food subsidies and other support schemes, or private remittance income received in cash or kind.

IV. ADJUSTMENT PROBLEMS IN SUB-SAHARAN AFRICA

48. In this chapter the theoretical discussion of the previous chapter will be set in the context of sub-Saharan Africa, and the implications relevant for interpretation of theoretical issues highlighted and discussed. The discussion will first review the dominant features of farming systems in the region, followed by an attempt to define what is usually understood as a smallholder in this context. The main characteristics of smallholder households will be outlined together with a discussion of how these characteristics are likely to influence smallholder responses to adjustment policies.

Farming Systems in Sub-Saharan Africa

49. Farming systems in sub-Saharan Africa are extremely diverse, reflecting farmers' response to the myriad of micro-climates, and the distillation of agricultural knowledge accumulated over many centuries. It is possible, however, to highlight those features which most typify the the range of conditions in which smallholder agriculture is currently practiced in the sub-continent.

50. While there are many exceptions including pockets of irrigated and mechanised production, it remains true that farming systems are generally characterised by technologies which are rain-fed and dependent on hand tools. Even in regions where livestock production is common, such as the Sahel, there has little been integration until recent years, of livestock and crop farming. Where integration has occurred the use of animals as sources of farm energy is rare. The very limited use of animal traction in

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12/ For example Cornia et al., 1987.

13/ Jamison and Moock, 1984, Jamison and Lau, 1982, Moock, 1981 and Huffman, 1977.

the region is explainable by both the frequent separate ethnic identities of livestock and crop producers, and the widespread problem of trypanosomiasis.

51. The integration of animal and crop farming systems, which has begun to occur in the sahelian zone, is largely a response to the severe droughts which have affected the region over the past fifteen years, causing the sedenterisation of many pastoralists. Traditionally livestock keeping throughout sub-saharan Africa has been the province of pastoralists rather than crop farmers, livestock keeping by the latter tending to be an adjunct to the main occupation, animals serving as a store of wealth rather than a source of income.

52. Traditionally farming systems have involved the practice of shifting cultivation. Uniquely suited to the ecology of much of the sub-continent, where soils tend to be fragile and acidic, and, in tropical areas, easily made subject to leaching and erosion, shifting cultivation systems are dependent on suitable periods of fallow. Thus a major problem, contingent on rising populations, is the steady reduction, or in some cases elimination, of fallow periods and consequent rapid declines in soil fertility and stability. Being land extensive, the system does not adapt easily to intensification. At the same time, the preponderance of mixed cropping plus the highly fragile nature of many soils, means that agricultural chemicals, even if available, are less than the panacea they have proved elsewhere.

53. Some form of mixed cropping rather than pure stand cultivation predominates in much of the region, both as a risk averting device and a means of avoiding leaching and erosion through the use of cover crops. Inevitably such mixtures vary according to the local ecology, from dryland mixtures involving, for example, millet, sorghum and beans in the sahel, to mixtures based on root crops and plantains in the more humid parts of equatorial Africa. In south and central areas of the region, where both aridity and humidity are less, maize is the predominant staple, and is traditionally grown with a variety of pulses in mixed stands.

54. The above broad outline of farming systems is concerned exclusively with food production and it is worth stressing that in come countries smallholders are involved in the production of a wide range of non-food crops, the bulk of which are for export. In general, however, such farming activities are confined to plantations and large estates, or to farms operating on a scale which would exclude them from the smallholder category as defined below. A further caveat to the above discussion is that farming systems will frequently be characterised by a separation of activities between men and women. Such gender specific demarcation of roles requires women to produce the households' subsistence needs, while men are responsible for land clearing and the primary cash needs of the household, either through production of crops for sale, or through wage labour. 14/

14/ For further discussion of gender roles in African agriculture, see Ellis, 1988.

Defining the Smallholder Population

55. Any discussion concerned with the activities of smallholders and the rural poor, must address the problem of defining these target sectors of the population. The literature which addresses this issue, usually adopts criteria based on the size of landholding. In the African context, however, and in the wide variety of farming systems that obtain in the region, our principal concern is to identify that part of the rural population engaged in agricultural production whose incomes are low relative to the average. In land scarce agricultures, landholding size often serves as a relevant and easily identifiable proxy for income. In sub-Saharan Africa, however, although there are pockets of land scarcity 15/, the major constraint to production is not access to land, but the availability of labour. Any useful definition must therefore take account of this overriding constraint to household income.

56. Agricultural production methods in sub-Saharan Africa are, in general, characterised by labour intensive technologies, with little use of either labour augmenting equipment or agricultural chemicals. Attempts at implanting the "green revolution" technologies which have proved so successful in raising productivity in other continents have so far proved less successful in the agronomic and institutional environment of sub-Saharan Africa.

57. In the circumstances of relatively inflexible factor proportions, and unhindered access to land, the quantity of labour available to the household will be the primary determinant of farm income. Frequently, however, there will be sections of the rural population which lack straightforward access to land. This access may be denied to households on the basis of ethnic origin or, alternatively, the composition of the household itself may render it unable to utilise land without the assistance of outside labour. Thus, in many cases both the possibility and the necessity for hiring outside labour exists, and consequently the opportunity to augment household income through hiring or selling labour. A relevant criterion in differentiating smallholders from other sections of the farming population, therefore, is the proportion of household labour to total labour used in production. In most cases the employment of outside labour will involve the payment of wages, in cash or kind, in advance of harvest. The poorer smallholders will neither have the reserves from which to pay wages on a substantial scale, nor access to credit facilities at rates of interest which make such investments worthwhile.

15/ Landlessness is emerging as a serious problem in Kenya (Collier and Lal, 1986) and Malawi (Ghai and Radwan, 1983). Even traditional land tenure systems in Africa (in which the community allocates lands to individuals) are becoming less equitable (Feder and Noronha, 1987). Greer and Thorbecke, 1986, have established a robust negative relationship between holding size and poverty in Kenya.

16/ This is particularly common in the case of female headed households, where the absence of adult male household members invokes the necessity of hiring labour for specific tasks such as land clearing.

58. In defining the smallholder population, therefore, a first criterion will be that relating to the type of labour used in production. Two further observations are in order. Firstly, because factor proportions are generally unchanging, and total labour use will largely determine holding area, there will be a close correlation between farm size and the proportion of household to total labour, assuming a general uniformity in household size and structure. Secondly, although all households may, in some contexts, need to hire some labour for specific tasks, it will be the case that smallholder households will be more disposed to supplement income through selling labour, rather than through labour hire. What is relevant when defining a smallholder household, therefore, is the net quantity of labour hired, labour sold offsetting that employed.

Smallholder Characteristics

59. Given the current level of development of marketing infrastructures in sub-Saharan Africa and the problems often experienced by smallholders in accessing these institutions, it is reasonable to assume that the farming activities of the majority of smallholders will be geared towards subsistence production. It is apparent, however, that few subsistence-orientated households will be entirely self-sufficient with regard to all household requirements, and that for the great majority consequent cash needs will invoke the necessity of selling either produce or labour.

60. An important dimension of smallholder activity in sub-Saharan Africa, relates to the objectives informing household decision making. Most theoretical models of agricultural production assume that rational decision making will be based on profit maximising criteria. The responses to market signals anticipated to the kind of macroeconomic changes discussed in the previous chapter are of this order. The consensus of opinion, however, points to the likelihood that in contexts such as those typical of agricultural production in sub-Saharan Africa, decision makers are concerned, not with maximization of profits, but with the security of household survival, a paramount feature of which will be the ability to sustain household food security. Implicit in this conclusion is the notion that smallholders will be risk averters, and that their market responses will reflect this. 17/

61. It will not always follow, therefore, that an increase or decrease in producer prices will engender a concomitant change in supply. For some smallholders the principal orientation will be towards ensuring household food supply. An increase in output price facilitates the satisfaction of minimum cash needs through a reduced level of sales, and the possibility of an enhanced application of household labour towards the provision of food requirements. Such a response is possible whether cash sales take the form of food or non-food crops, and will be most likely where current marketing institutions or past market performance lead the household decision maker to regard any involvement in the cash economy beyond that minimally necessary, as entailing greater risk than that associated with farm production. These "perverse" responses will be most common among smallholders who have been forced to sacrifice household food consumption in order to satisfy cash requirements.

17/ For a discussion of the rationality of risk avoidance in peasant decision making, see Ellis. 1988.

62. Apart from the likelihood of a muted short-term price response, a further outcome of farmers' risk averse behaviour is a reticence in adopting productivity raising innovations, even though higher prices would justify investments in farm working capital, thus inhibiting longer term price response. A typical example is the use of chemical fertilisers, where a high variance in possible production outcomes leads the risk minimising option to preclude the use of purchased inputs, even though an assessment of an "average" outcome would make such investments worthwhile.

63. The same argument applies to cropping pattern innovations. Attempts to promote production of, for example, export crops, are likely to achieve only limited results if the principal smallholder objective is to maximise household food security. The risk minimising option may still be through household food production rather than farm sales of newly profitable commodities. The influence of farmers' assessment of future market activity will be crucial in this respect, but risk aversion implies conservative perceptions, and clearly the closer a household is to the margin of survival, the greater will be the subjective assessment of risk.

64. It is not only the characteristics of households per se which can modify the expected impact of adjustment policies in sub-Saharan Africa. The prior nature of the macro-micro linkages through which households interact with the wider economy will also have a profound influence. Whether or not the price changes themselves reach the farmers depends to a large extent on the nature of rural marketing institutions. If local traders have monopsonistic powers, it is unlikely that farmers will receive the full benefit of whatever crop price increases have been induced. Thus, if marketing activity is privatized under an adjustment programme, and if the private sector is slow to respond to new trading opportunities, the tendency for rural crop markets to remain monopsonistic (with a private monopsony replacing the previous state monopsony) might prevent the incentive effects of adjustment from reaching rural producing units. Similar considerations apply in the marketing arrangements for input purchases.

65. In some countries of sub-Saharan Africa these problems can be particularly acute. Often local trading is the domain of particular ethnic groups or some other section of the population. Even where this is not the case most sales are of very small quantities and often take place after the produce has been headloaded for many miles. This severely reduces the bargaining power of producers.

66. Similar arguments apply to input sales, where the low unit value of transactions, coupled with physical problems of supplying many villages, makes the possibilities for competitive trading limited. The likelihood is that the communication of price changes will be unevenly experienced. It may be that farm-gate prices increases in areas close to the main markets or ports, but remain unchanged in other areas. An interesting example is provided in the case of Zaire. 18/ In some parts of the country the absence of competition amongst traders (which itself was the result of privatization measures under adjustment) meant that producers did not gain the price increases which were enjoyed elsewhere in the country.

18/ Thomas, 1989.

67. An important additional factor affecting rates of return of smallholders during adjustment is the physical infrastructure with which they are served. In a recent assessment of how adjustment has affected agriculture in Zaire, it was observed that liberalization policies increased foodcrop production and traditional farm incomes where "traditional farmers have access to main roads or agricultural feeder roads that are in reasonable repair, or are located in close proximity to urban areas" 19/. Others also emphasise the point that relative prices alone will fail to raise returns and incomes in smallholder production if at the same time, adjustment involves major cutbacks in rural infrastructure development. Increased real output prices, in favouring farmers better served by physical infrastructure, may widen income differentials in rural areas if, as is the case in many countries of the region, the majority of the rural poor are located in areas badly served by roads or other forms of communication. 20/

68. Smallholder responses may also be constrained by the structure of credit markets. In general, these households do not have access to institutional credit. Monetary restraint will push up interest rates making informal rates even higher and often prohibitive. Of course, the consequences will depend on the network established by the formal banking system in rural areas, the effect of interest rate increases on the supply of investible funds and the degree to which institutional and informal credit are substitutes 21/, but in many countries the impact of adjustment policies is likely to reinforce the existing dichotomy between formal and informal markets and further reduce the long term access of smallholders to productive assets.

69. A related issue concerns the provision of consumer goods. A frequently occurring problem in the region is the absence of consumer goods in rural markets. These act as an incentive to producers to market production. Where these are unavailable or otherwise inaccessible, market response to higher output prices will be reduced. The impact of adjustment in this respect may be mixed. To the extent that these commodities are imported or manufactured domestically using imported inputs, exchange rate depreciation will result in increased prices. On the other hand, the enhanced availability of imported consumer items as a result of improved export sales can provide a powerful incentive. In Ghana, for example, the disincentive effect of higher consumer prices has been partly offset by an improvement in supplies.

70. Similar caution is appropriate in evaluating the consequences of changes in government spending on the social infrastructure. Passing on the increased costs of providing health and educational services following from currency depreciation, or otherwise reducing government provision may not have any consequences for smallholders if they were previously unable to access such services.

19/ Sines, et al., 1987, p.25

20/ See Thomas, 1989, Mosley and Smith, 1988, and Demery and Addison, 1987a.

21/ Buffie, 1984.

V. RELATED STUDIES

71. Before setting out guidance for the country case studies, it is necessary to review briefly other research initiatives on the subject of adjustment and poverty which are currently under consideration. These are summarised as follows:

- the World Bank project on the Social Dimensions of Adjustment (SDA) is an ambitious attempt to monitor the effects on poverty (especially rural poverty) in sub-Saharan Africa. The programme, which is funded jointly by the Bank, UNDP, African Development Bank and bilateral donors, seeks to strengthen the capacity of governments to monitor the social aspects of adjustment. It will assist governments in setting up major household surveys targeted at low-income groups. Comprehensive field instruments for assessing levels of living among developing-country households are currently under development. The results of the exercise are planned to feed directly into the design of adjustment programmes, in order to maximise the benefits of structural adjustment to the rural poor. To date, about 25 African countries are participating in the project. Research work in Côte d'Ivoire and Ghana is already producing some results, although the programme is expected to continue for some time in the future. The important feature of this work is that surveys will be held annually, thus generating time-series data, some of them longitudinal in nature. Since the SDA project is focussed specifically on the social aspects of adjustment, it will complement the research being undertaken in the IFAD/ODI study.

- The OECD Development Centre is implementing an inter-country comparative study on the effects of structural adjustment on income distribution and employment, though with no particular emphasis on Africa. In general, the research programme will feature the use of SAM-based models, and will include country studies on Chile, Ecuador, Indonesia, Malaysia, Côte d'Ivoire, Egypt, Ghana and Morocco.

- UNICEF continues to assist countries in monitoring the effects of adjustment on the welfare of mothers and children. Its recent publication (Cornia et al, 1987) summarises the results of case studies into these effects of adjustment in Botswana, Brazil, Chile, Ghana, Jamaica, Peru, Philippines, South Korea, Sri Lanka and Zimbabwe.

- The IMF has also initiated a series of case studies into poverty and adjustment interactions. A recent publication on the subject (Heller et al, 1988) features the effects of fiscal policy on poverty, but does not deal with the special problems in examining the effects of adjustment in rural areas.

- Cornell University (Division of Nutritional Sciences) is conducting a study into the effects of adjustment on nutrition.

VI. COUNTRY CASE-STUDY GUIDELINES

72. This section provides some guidelines to country case-study collaborators. As guidelines, these are not necessarily meant to be followed strictly, but rather to ensure that the various studies are broadly consistent in their approaches. There is an obvious need for a general agreement among all concerned over the objectives of the country studies. These may be listed as:

(a) To trace the principal causes of internal and external disequilibria in the economy, i.e. those factors which led to de-stabilization.

(b) To analyse the nature of the adjustment responses and in particular to assess the relative importance of financing, stabilization (i.e., short-run macro adjustments) and structural adjustment (longer-run switching and institutional changes).

(c) To establish the implications of adjustment policies for key relative prices and other non-price determinants of smallholder production.

(d) To identify the main smallholder groups to be studied, and to document their principal social, demographic and economic characteristics.

(e) To trace how these groups have been affected by the various external and internal influences that have engendered economic crises, and to report on the coping mechanisms that they employ.

(f) To identify the main determinants of the economic welfare of such groups and to trace how these are influenced by adjustment policy interventions, and to establish the processes through which these changes have occurred, i.e. through changes in rates of return, access to assets, employment prospects and human capital accumulation. The case studies will probably give greatest emphasis to how incomes have been affected by the changing structure of economic incentives brought about by adjustment, and to assess how "flexible" or "mobile" the groups are in responding to these changes. In this way, the study should identify both short and long-run effects of adjustment policies on smallholder production and incomes.

(g) To recommend additional policies which might enhance the productive capacity of the poverty groups. This would involve identifying those key components of existing packages that have had significant effects, as well as identifying potential policy instruments not previously including in recovery programmes.

(h) To identify areas of selected intervention by governments which would enhance the capacity of smallholders to respond to adjustment incentives, including investment opportunities involving donor support.

Study Outlines

73. The general approach proposed for the case studies is as follows: Each study must give greatest emphasis to a review and assessment of the economic characteristics of the target groups selected. What can be achieved here will depend critically on the available data. As has been noted, the data are likely to be sparse, so that a major contribution of the research will be to synthesise the available information from disparate sources, and to present a consistent picture of how these groups have fared over the recent past (say from 1979 onwards). This in itself is certain to be a useful (and difficult) undertaking, and should receive the highest priority from the research collaborators.

74. This is not simply a study of smallholder behaviour, however, but is meant to throw light upon how adjustment policies have affected these groups. For this, there has to be some analysis of the adjustment processes that have been set in motion, and some attempt to relate these to the observed changes in the economic performance of the target groups. Specifically, logic would dictate that the studies make some attempt at forging two important links:

- First, a link between the macro-micro linkages and the adjustment programme. In what ways have the adjustment programmes influenced the markets in which the target groups trade? How have relative prices changed? Have adjustment programmes meant major changes in the provisions of economic and social infrastructure services, and have these changes been effected in areas inhabited by the target groups? Has adjustment meant cuts in human-capital enhancing expenditures?

- Secondly, a link between the living standards of the target groups and macro-micro linkages. Specifically, the markets in which they trade and the economic and social infrastructure to which they have access. For example, if income levels appear to be increasing, is this because output/input prices have improved, off-farm income opportunities are better, or remittance income has increased? For this, information will be required on the main socio-economic characteristics of smallholder households, if possible based on farm budget data.

75. The main interactions to be identified in the case studies in each of these two stages are illustrated in Figure 20.22/ Needless to say, the studies will not be expected to provide rigorous statistical tests of these interactions, but the links outlined above should be the organising framework of the empirical work that is undertaken.

22/ Figure 20 appears in volume 2.

76. It is proposed that each study consists of the following broad sections:

1) Introduction and Background

2) Economic Overview:

This section will describe the main economic characteristics of the country concerned, and establish what were the main crisis generating events which necessitated the process of policy reform.

3) The Economic Reform Programmes:

This is to be a mainly descriptive account of the adjustment/reform programmes implemented by the government. Care should be taken to identify the roles played by both bilateral and multilateral donors in the design of the programmes. It is suggested that the section be sub-divided as follows:

-Macro-economic reforms:

* policy objectives
* instruments
* constraints

-Agricultural Sector Reforms.

4) The Impact of Changes in Macro-Micro Linkages

The purpose of this section is to make an assessment of how the main elements of the conduit systems have been affected by the reform programmes. As can be appreciated from Figure 1, the processes involved here are extremely complex, and it would be quite unrealistic within the time and resource constraints of the project to expect much in the way of rigorous statistical estimation. However, unless an attempt is made to relate the main changes in macro-micro linkages to the reform programme, the project will not succeed in isolating the effects of the policy instruments per se.

The material in this section would best be organised under the following main headings:

- product markets

- factor markets

- economic infrastructure:
  . sector support services
  . physical infrastructure

- social infrastructure
  . health
  . education
  . other services

Product Markets: Tracing how the reform programmes have influenced the product and factor markets is certain to be more complex than in the case of the economic and social infrastructure, and to require more analytical approaches.

At the very least, four broad classes of commodities will need to be distinguished:

- exportables
- protected importables
- unprotected importables
- non-tradeables

Since adjustment is more likely to change relative prices between these categories than within them, the first challenge is to establish which products belong in each category. This is certain to be country specific. Attempts should then be made to construct relative price series from available data.

The main challenge for the research will be to establish the extent to which movements in these series are due to adjustment policies, in particular to trade and exchange policies.

Whatever can be achieved in this respect depends essentially on the data. For instance, if actual price series can be obtained, and the various relative price indices computed, it may be possible to make some assessment of the role played by exchange-rate and tariff policies on domestic prices. Exchange and tariff rates could be applied to world price series for the various commodities to derive estimates of the extent to which the actual movement in the domestic price series is due to world price movements, exchange or tariff rate adjustments or other factors. This approach is not appropriate if import controls are applied, since it would then be difficult to estimate what the effect might be on the domestic price. (In cases where only tariffs are applied, this method has been used to estimate domestic price shifts. 23/)

Factor Markets: Phase I of the country studies should review two main areas: labour and credit markets. It is likely to be more difficult to demonstrate the effects of adjustment per se on the former, since it is also likely to be influenced by the general effects of the recession and other influences on the economic system. A contractionary fiscal and monetary policy will invariably induce some

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23/ See, for example, Collier, 1988.

increases in unemployment, in some cases emanating directly from cuts in public-sector employment. Transitional unemployment may also arise, due to the contraction in other non-tradeables and the slow response of tradeables employment. Still the country studies will probably be constrained by available data.

Data on the credit market, which may be more readily available, can be related directly to elements of the reform programme. Points to look for include changes in the terms of rural credit (i.e. in interest rates), and in its availability. In a repressed financial market, reductions in credit availability from the formal banking system will lead to both shortages of credit and increases in interest rates in the informal credit market. If more fundamental reforms are introduced, removing interest rate controls and subsidies in the formal sector, it may be that both the supply and terms of credit may be improved in rural markets.

Infrastructure: The discussion of the infrastructural effects, including those of changes in institutional arrangements and support services, is likely to be descriptive and should show how changes in aggregate expenditure under the constraints of adjustment have been allocated across various items. An attempt might be made to decompose any change in the balance of trade into the different components of aggregate absorption, namely private and public consumption and private and public investment. This exercise may be feasible from the published national accounts. This should show the main expenditure adjustments undertaken, especially the burden borne by public expenditure. For most African countries, the adjustment in public expenditure is likely to be significant. Obviously the country studies would also need to trace how public expenditure cuts have been applied, paying particular attention to the effects on spending on physical infrastructure, rural support services, health and education.

Developing the arguments outlined in previous sections will depend critically on the data available in each country. The following is a list of some of the more important series that should be sought:

- *Balance of payments, and its financing (latter to distinguish between concessional and private finance);
- Balance of payments national accounts identities;
- *government budget deficit;
- monetary aggregates;
- *price indices (CPI, WPI and other useful indices);
- *external terms of trade, both net barter and income;

- *agricultural terms of trade;

- *nominal and real effective exchange rates, the latter possibly to be made available from IMF through IFAD;

- changes in trade policy (in tariffs, import controls etc.);

- changes in taxation and expenditure patterns;

- *movements in key relative prices;
-observed shifts in the sectoral composition of GDP.

This is intended to be neither an exhaustive nor a compulsory list of variables. Bearing in mind the objectives of the study, we have marked with an asterisk those variables which should receive greater priority.

5) Smallholders and the Rural poor: the Groups Selected

This section of the report ought to be divided into the following sub-sections:

- The Rural Population

- An Overview of IFAD Target Groups

- Identification of groups for the Study:

  Here, researchers must clearly identify at the outset which of the various socio-economic groups in the rural sector are to be considered as target groups for the study. Three broad groups may be identified:

  . smallholders - that is small scale crop producers
  . pastoralists and nomads
  . the rural landless and near landless

  The definition of what constitutes a "small" holding will inevitably be somewhat arbitrary, and must be decided for each country. The smallholder groups selected should generally rely on low levels of technology and predominantly on household labour. It is to be expected that some groups will augment household production income with income from wage-labour. Within these groups there may be sub-divisions which are important given the individual country context. For instance, researchers may wish to identify female-headed households as a separate category for analysis.

- Profiles of Target Households:

  In many respects, this is one of the most critical sections of the paper. Unless the characteristics of the target groups are well understood, it will be impossible to make any assessment of how they are affected by the

policy changes. Data sources will probably constrain what can be included here, although it is important for researchers to tap a number of sources in building up a composite picture of the groups selected. For example, some information (particularly on cropping patterns) will be available from agricultural censuses. It may also be possible to build up an economic profile of the groups through the use of farm budgets derived from farm management surveys.

Although much will depend on data availability in the country concerned, the following data should be sought:

- . *demographic characteristics
- . *land holdings, including any data on the access to irrigation facilities
- . *major crops produced, reported under the above
- . classification, and the proportion of output (by crop)
- . which is market-directed; again if possible, whether
- . output is sold in official or parallel markets
- . *use of traditional and non-traditional inputs
- . *non-farm employment by households members
- . *income profile of household
- . *consumption profile
- . if available, labour time-use data
- . use of formal and informal credit
- . health indicators
- . education status of household members
- . *any relevant data on the structure of the rural economy (eg. derived from an agricultural census).

6) <u>The Impact on Smallholders and the Rural Poor</u>

This section will be concerned with establishing how the target groups have been affected by the recovery programme. It should be divided into the following sub-sections:

- access to productive assets
- rates of return on productive assets
- employment opportunities
- human capital
- income and consumption transfers.
- household consumption and food security

The essential hypotheses that are to be tested in this section include the following:

(a) Have the relative prices faced by smallholders (which may differ from those operating in markets at large) increased the net returns they derive from productive assets? If not, is this because the reforms have favoured other products, or is it due to a failure of relative price signals to filter through to the groups concerned? In resolving these questions, researchers may wish first to calculate the potential effects on farm returns, by applying the price series on outputs and input derived in section 4 to whatever farm budget data are available. These calculations should then be modified to take into account any deviations in the actual prices faced by the target groups from those operating in markets at large, especially if such groups are obliged to purchase and sell in parallel markets. To assess how these returns have changed real incomes, data on consumption patterns will be needed, since the net effect of these changes on the household economy will depend on their consumption patterns.

(b) If the relative price signals are favourable, have the target groups responded positively, in terms of increased output, changes in product mix, changes in input use and technology? If not, are there other constraints (such as physical infrastructure, availability of inputs, incentive goods, credit and other support services) which the reforms have adversely affected?

(c) To what extent are target households dependent on wage income for th eir livelihoods, and how have they been affected by labour market changes? Real wage series will need to be computed, using price indices based as near as possible on consumption weights of the target groups. For this, information will be needed on the consumption patterns of the target groups (as in (a) above).

(d) Is there evidence of any deterioration in the human capital of household members in each of the target groups? Indicators such aschild and infant mortality and morbidity, nutritional status, educational attainment etc. may be available to monitor these human resource effects. However, it must be acknowledged that some of the macro-micro interactions involving human capital changes will take some time to manifest themselves, and it is unlikely, given the recent history of adjustment programmes, that many of the micro effects will be observed.

(e) What has been the impact of the recovery programme on the consumption profiles of the target households? Given the changes in product and factor market activity, what are the implications for household food security? Although detailed information may be difficult to acquire at this stage of the research, it is appropriate to make some hypotheses concerning target group food security.

7) Policy Synthesis

Objectives: The paper must establish what are the main policy objectives being followed by the government, and how these have evolved through the periods of de-stabilization and adjustment. These may be divided into growth-related and distribution-related objectives.

Policy Frameworks: Here the collaborators must review the broad framework of the government's economic and social policy, and attempt to review which of the various elements of the reform programmes have been the most damaging (or beneficial) to the target groups. Alternatives should then be considered.

Investment Strategies: The implications of the policy alternatives for the investment strategies of government should then be reviewed, particularly bearing in mind the types of instruments that governments (with donor support) could effectively implement. Some lessons for donor policy could also be drawn here.

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