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ECONOMIC DEVELOPMENT AND THE ENVIRONMENT

BY

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I welcome the opportunity to address this distinguished gathering today because the subject matter before us is of great, growing and universal importance.

Ultimately, the issue of economic development and the environment represents our belated awakening to the fact that we live on what Kenneth Boulding has called, in that very appropriate phrase, our spaceship earth. As in all spaceships, sustained life requires that an extremely careful balance be maintained between the capability of the vehicle to support life and the demands made by the inhabitants of the craft. Until recently, those demands have been well within the capability of the ship. This is not to say that the

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earth has been totally generous; nor is it to deny the recurrent advent of local ecological crises. But the idea that the earth as a whole may be over-taxed in certain areas or that the costs of continued growth need to be weighed more carefully than ever before is one that is new to our time. It is an idea that all development assistance agencies, such as the World Bank Group and SIDA, must be concerned with, for, in essence, it touches the very quality of life itself.

And yet, having said this, one must also be cognizant of the very real dichotomy that discussions of environment provoke in the world. We must be ever conscious of the fact that while ecology is emerging as an issue of priority in developed countries it does not command nearly the same amount of attention or concern in the developing nations of Africa, Asia and Latin America. And understandably so. Dwelling on quality of life and environment may seem an almost luxurious preoccupation indeed for societies afflicted

with widespread malnutrition, rampant disease, high infant mortality, low life expectancy, high illiteracy levels, endemic unemployment, severely skewed distributions of per capita income. Add to this litany of travail the widening gap in material advances between developed and developing countries and you can easily appreciate the dichotomy.

On every count the contrast in values, in interest, in priorities, in capacities between developed and developing countries is marked. And in matters dealing with the environment it is, if anything, even more marked. The new-found concern of the developed countries for the environment, the self-flagellation being inflicted as a reaction to material advances, the guilt complex setting in following an examination of the distribution inequities accompanying successful materialism -- these strike no resonant chord in the developing world. And, in fact, this implicit negative reaction among certain vocal groups in the developed countries to successful

materialism makes their motives suspect to the Third World's desperately poor struggling to build economic and social systems that will enable them to share in the fruits of such materialism. The fact that some conservationists and ardent environmentalists flavor their arguments and warnings in terms that suggest that economic development is an unworthy goal, and that parties to it should be suspect as to their motives and "ecological morality," -- this fans the flames of defensive hostility throughout the developing world.

If the dialogue between the worlds of the "haves" and "have nots" about such matters is to be at all productive, it must be based upon a frank and honest recognition that there is little or no semblance between the viewpoints on both sides, and that solutions to the world's environmental problems must be complementary to and not at the expense of efforts to advance the economic and social development

of the developing countries. Environmental pollution, environmental degradation, environmental quality -- these terms take on the aspects of luxuries and have an abstract ring about them to people whose immediate concerns are food, housing, employment, medical care and education. To these people and their countries they must expand their economies and modernize their societal institutions. They must provide themselves with an opportunity to build more productive and rewarding lives. The question is not one of economic and social development vs. the environment. It is rather how can this development proceed in ways minimally disruptive to the environment and creative of life styles promising of fulfillment.

President Julius Nyerere of Tanzania perhaps best summed up the interest of the developing countries when he remarked recently: "Personally I have no wish ever to see a wild animal, but if they bring in money which can be used for development, then they must be looked after."

In its own distinct way, the World Bank Group strives to serve the basic goal of economic development without ecological disruption. It has greatly increased its activities in recent years. One measure of the increase is financial: commitments for high-priority projects in the developing countries have increased from $1 billion in 1968 to $2.3 billion in 1970. Over the five years through 1973, they are expected to total $12 billion, or more than double the figure for the previous five years. But the Bank Group's goals are not merely financial or quantitative; they are also qualitative. For it is the improvement of the human condition, not of statistical abstractions, that is the object of our endeavors.

In expanding our activities, we are attaching particular importance to the promotion of agriculture, education and family planning. This ordering of priorities is dictated by the fact that we live in a world where a third to a half of mankind suffers from

hunger or malnutrition; where 800 million illiterates have been bypassed by educational systems that remain both inadequate and out of tune with manpower needs; and where the population explosion has become one of the greatest threats to the economic and social progress of the human race.

Our experience -- not only in these sectors, but over the whole range of our activities -- has already underlined for us the need for a better understanding of the social implications of economic change. That need will grow, as we grapple in the years ahead with problems of urbanization, unemployment, industrialization, land reform, health, and income distribution, and the environment. We know that, for a long time to come, in field after field we will have more questions than answers. Speaking recently to the UN Economic and Social Council, the Bank's President, Robert McNamara, stated:

"The problem facing development finance institutions, including the World Bank, is

whether and how we can help the developing countries to avoid or mitigate some of the damage economic development can do to the environment, without at the same time slowing down the pace of economic progress. It is clear that the costs resulting from adverse environmental change can be tremendous .... witness, for example, the harm to human life that some water-storage projects in Africa and Asia already have done by encouraging water-borne diseases -- to say nothing of the implications of the rising use of pesticides throughout the developing world .... It is equally clear that, in many cases, a small investment in prevention could be worth many times over what would have to be expended to repair the damage."

To this end, the Bank Group is taking steps to assure that projects financed by it do not have

seriously adverse environmental and health consequences or, if they are likely to have such consequences, that measures are taken to avoid or to mitigate them. Indeed, the President and the Bank Group's top management have already initiated changes that will ensure to every extent possible, a consideration of the environmental, health and related social consequences of development projects proposed for financing.

The policy of the World Bank Group regarding the environmental consequences of the activities for which it makes loans can be simply stated as follows.

It is the policy of the World Bank Group to pursue its economic development objectives with a careful and studied regard for the consequences to the environment and to the health and well-being of affected peoples.

This policy statement should leave no doubt in anyone's mind that the Bank fully intends to press forward with its primary job of assisting the developing

countries achieve a higher standard of living and economic growth. At the same time, this statement should leave no doubt that the Bank does not intend that its activities should knowingly contribute to short-term economic gains at the price of long-term human ecological misery. Exploitation of natural and human resources are the necessary ingredients of economic development. Both can and do have profound and lasting effects on the environment and on people. You are all too familiar with the many examples around the world of environmental alteration and manipulation carried out in connection with development schemes that have had unexpected and unwelcomed consequences. Yet all of us here know that economic development cannot proceed without its impact on the naturally occurring environment, and on the psyche and soma of man. How then to achieve this development in a way that does not threaten ecological systems and the life supporting interrelationships of man to these systems? How to achieve economic

growth with minimal disruption to the environment, with minimal adverse effect on the physical and mental health of people, with minimal dysfunctional effects on the social processes by which people conduct their affairs, govern themselves and seek happiness with their fellow man?

We in the World Bank Group like to think and, indeed, we are convinced that environmental quality, human health, and social well-being need not be sacrificed or unduly injured, let alone irreversibly altered, as a result of economic development activities. And, we seek to convince our member developing countries that ecologically-oriented planning appropriately combined with socio-cultural awareness and sensitivity is a necessary prerequisite of project identification, design and implementation. And, not surprisingly, we are finding much sympathy for this approach on the part of many of the developing countries whom we serve. While they rightfully and expectedly seek to share in

the fruits of technology and industrialization, in expanded agriculture and improved yields, they are becoming increasingly aware of the unwanted consequences that can attend these efforts. And, increasingly, they are seeking advice and assistance in ways to avoid or mitigate adverse consequences while at the same time moving forward towards their respective economic and social goals.

Let me briefly cite two recent examples. An African country presently without industry sought to have a nickel-copper smelter built with the aid of World Bank funds. An examination of the plans revealed that air pollution controls were inadequate to prevent the possibility of a serious threat to the health and well-being of peoples in the area and their livestock. This is a country without any previous experience with industrial air pollution, and possessing no pollution control legislation or air quality standards.

Working with the Borrower and the government we were able to provide for adequate controls and supplied suggested legislation for their consideration. The result has been the enactment of control legislation, the expected promulgation of air quality standards, and a simultaneous surveillance and monitoring system. In addition to air pollution controls, we have been able to bring about a satisfactory handling of both solid and liquid wastes, and the handling of occupational health and safety problems. This has been a most satisfactory experience.

A South American country plans to build a large marine terminal to load iron ore brought by rail from mines inland. Earlier studies by the government had designated the project area for industrial development. Studies by the Borrower on alternate port sites had resulted in the selection of the project location, principally as one suited to the handling of large combination ore/oil carriers of the three-hundred to

five-hundred thousand ton class and larger. Because of concern for the effects of the project on the estuarine ecology, it was decided to send a multi-disciplinary team of experts to study the possible environmental impacts. The recommendations stemming out of this study have resulted in the necessary environmental safeguards being built into the project. I might add that these safeguards represent an additional cost to the Borrower along with invoking a continuing responsibility for being alert to the environmental aspects of his activities.

It should be recognized that some developing countries are apprehensive about the likely effects of the developed countries' new-found concern for the environment. They see this concern manifesting itself in ways frustrating to their development. Trade effects, including loss of competitive advantages, non-tariff trade barriers, increased costs of goods to developing countries, technology transfers requiring environmental safeguards -- these and others have been

cited as possibilities in the future. This is, perhaps, not the forum to comment at any length on these aspects, for they are being carefully explored by expert working parties preparing for the 1972 UN Conference on the Human Environment. The developing countries will also find, on the other hand, the developed countries wanting to aid and assist them in efforts to combat the trend toward global environmental degradation. And, as the developing countries themselves come increasingly to recognize that ecologically unsound development projects are not without their social costs which can fall heavily on treasuries least prepared to absorb them, they, hopefully, will see the long-range value of incorporating safeguard measures early on in their planning.

What then is the World Bank Group currently doing to ensure that environmental and health considerations are incorporated into its development activities? It recently established a new post of

Environmental Adviser to generally oversee these and related aspects. In brief, the Environmental Adviser has responsibility for:

(1) Reviewing all projects being processed for Bank Group financing with a view to identifying those which, if carried out, would be likely to have important environmental and health effects.

(2) Advising as to the nature and scope of studies and investigations that should be made in connection with these projects in order to assure that appropriate measures would be taken to preclude or minimize any seriously adverse effects.

(3) Helping the Borrower and the member country where appropriate, design the studies and to identify and recruit specialists needed to carry them out, or, in some cases, have the Bank carry out such studies.

(4) Monitoring the projects to ascertain the adequacy of environmental safeguards and what further action, if any, might be required.

(5) Maintaining close liaison with other development finance institutions, UN agencies, and the scientific and technical community on a broad range of subject matter relating to the environment and health.

It must be recognized that projects are often years in the making and as a result hundreds of them are coming out of the "project pipeline" each year. As an interim measure for some time to come, these projects are being evaluated for their environmental and health impacts literally at the "eleventh hour". While some are subjected to a desk review, not a few are the object of field studies by Bank staff and consultants employed especially for such purposes. The substantive diversity of projects financed by the

Bank Group and the spectrum of geographic, topographic, climatic and cultural settings for these projects, preclude the assembling in-house of the variety of professional disciplines needed for these evaluations. Hence, we intend to make maximum use of consultants assembled into the appropriate multi-disciplinary mix required to meet the unique needs and requirements of each project. Similarly, the terms of reference which describes the nature and dimensions of the studies to be conducted are carefully tailored to fit each project. More often than not an "ecological reconnaissance" is carried out initially in order to determine the likely nature and dimensions of the problems, if any, to be expected with a view to subsequently conducting in-depth studies that may be indicated. The results of both types of studies are carefully considered by the Borrower, the member country government, and the Bank in the preparations for negotiating the loan. They are also considered by the Bank's Loan Committee when it must consider

the proposed project for final negotiations leading up to the actual loan. Finally, they are considered by the Bank's Board of Executive Directors who must authorize the loan. But, the Bank's concern does not stop here. It is anxious to ensure the installation and implementation of the necessary safeguards which have been incorporated into a project. This it does through missions sent to the project site during the construction and operation stages.

Obviously, taking an "eleventh hour" look at projects which are approaching the final loan stage is not the best approach for many reasons. Thus, the Bank is seeking to move the entire evaluation process upstream in the flow of project activities. This it intends to do through a forthcoming in-house study using consultants to determine the strategic points and organizational and procedural mechanisms for accomplishing it. Institutionalizing the processes for bringing about environmental impact evaluations is currently a high-priority item in the Bank Group.

As the environmental impact evaluations become a fixed part of Bank operations, the need for criteria and guidelines against which to assess projects becomes an ever-important necessity. Personnel in the Bank as well as the host of officials in the public and private sectors with whom they deal, need to know the criteria by which the environmental and health aspects will be evaluated. To date, only general guidelines have been furnished, but the spectrum of projects financed by the Bank requires the development of more specific guidelines. Accordingly, the Bank expects to prepare a handbook of criteria to meet its needs. It is to be hoped that preparation of such a handbook might be accomplished with the active advice of several international economic development agencies and developing countries. Uniform criteria and guides could help ensure a more equitable application of the evaluative process by these agencies -- something to be desired on the part of the developing countries.

In addition, the Bank's Environmental Adviser has been called upon to consult with the governments of developing countries regarding their environmental problems. This presents an opportunity not only to help solve some immediate pressing problems, but also to acquaint government officials and others of the importance and necessity of ecologically-directed planning and thinking to their development activities. Such an exchange of views can do much to create understanding and trust. With increased awareness and concern for environmental matters comes a desire to do something positive about them.

The Bank is also considering some possible limited steps to assist developing countries develop ecological and environmental health curricula in their educational institutions. Training of environmental specialists such as air and water pollution control technicians, water treatment plant operators, etc., is also under preliminary consideration.

To sum up the Bank's current and planned activities relating to the environment:

1. It now has a stated policy that economic development activities will include a careful and studied regard for the consequences to the environment and human health.
2. It has established an office of the Environmental Adviser to oversee the Bank's activities in these matters.
3. Projects under active consideration for loans are being subjected to a final appraisal of their environmental and related consequences. Recommendations stemming out of this evaluation are being considered in the appraisal and final negotiations leading up to the loan at the highest levels in the Bank.

4. Some general criteria and guidelines for assessing the environmental impact of projects have been developed for use by Bank staff.
5. In the conduct of its ecological reconnaissance type and in-depth environmental studies, maximum use is being made of consultants from around the world. These are constituted into multi-disciplinary teams acting under tailored terms of reference prepared by the Environmental Adviser.
6. Some ancillary activities have included consulting with the governments of developing countries, at their request, on environmental problems and issues; consideration of steps toward helping some countries develop appropriate curricula and training for environmental specialists; cooperative efforts to develop methodologies for identifying and quantifying social costs attributable to

economic projects have been stimulated; and, developing the necessary contacts and relationships with institutions and individuals important to the Bank's environmental endeavors is a continuing activity.

7. Close and active cooperation with the Secretariat, UN Conference on the Human Environment, has been maintained. The Bank has been particularly active in the agenda preparations especially as they relate to the item on the environment and developing countries.

Future plans call for:

1. Studies aimed at institutionalizing the evaluative processes within the Bank's established organizational and procedural patterns. To be most useful, environmental studies should be carried out at an early stage of a project's development. Useful background information and data relating

to the environment and health aspects of a developing country could also be gathered at the time of economic missions and pre-investment studies. Thought is being given to expanding these activities to include them.

2. Studies directed toward the provision of a handbook of environmental and related criteria to guide project development. If such criteria could enjoy acceptance by the principal lending agencies leading subsequently to their uniform application, the advantages to these institutions and the developing countries would seem obvious.

In conclusion, it would seem that development finance institutions, public and private, when looking to the decade ahead, will ignore at their peril the consequences of their activities on the human environment as more and more they are held accountable for their environment-affecting acts. Increasingly, these

acts will be the subject of post audits and reviews by organizations and groups bent upon playing the role of "ecological watchdog". Further, development finance institutions will find themselves called upon to fund new types of projects -- projects designed to rehabilitate and clean up urban chaos and associated environmental pollution -- pollution of lakes, rivers, estuaries and fijords; pollution of the air over densely populated urban and industrial areas where disturbing clinical signs may begin to reveal themselves; pollution of valuable urban lands by growing mountains of solid wastes; and toxic substances that slowly and insidiously take their toll of wild animals and birds; and, pollution of the human organism, if you will, the effects of which we can expect to be reflected in changing morbidity and mortality statistics.

Further, no country and no peoples are exempt from the current effects and ultimate consequences of threats to the bio-spheric integrity of the planet, such as global pollution of the oceans, large-scale

atmospheric and climatic changes, or the worldwide effects of persistent and pervasive pesticides. It follows, too, that in the decades ahead most of the pollution, and hence most of the threat to the global ecosystem, will be where industrial and agricultural pollution remain uncontrolled and where most of the people are -- and that will be in the developing world. Should this trend be clearly apparent at the turn of the century, it could become an increasing source of friction and contention -- something which the world is hardly in need.

Some encouraging signs are apparent, however. The planned UN Conference on the Human Environment could well prove to be a turning point for international cooperation in averting what in some quarters is viewed as an approaching "crisis". The International Biological Program is offering new hope for an early understanding of the structure and functions of ecosystems and, hence, the development of a capability for predicting the consequences of alterations and

disturbances to them. The proposed global network for environmental monitoring will give us the tools for measuring changes, and allow for surveillance over critical elements and factors. And, ecological research is, itself, on the upswing but still deserving of greater support, for as Marston Bates so correctly prophesized a decade ago ".... ecology may well be the most important of the sciences from the viewpoint of long-term human survival ...."

Ecologically speaking, 1980 is the day after tomorrow .... the year 2000 is next week .... and if we truly intend to become responsible trustees of the planet, we must better understand how it functions and the effects of our tampering.

Winston Churchill reminded us that first we shape our buildings and then our buildings shape us. What the shape of the environment will be none of us is prophet enough to say. But we need no crystal ball to tell us that what we do or fail to do now will shape that future and reciprocally, the future

Copy sent to Mr. Goodman

THE ENVIRONMENT AND DEVELOPMENT

— By

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I am honored to have been invited to join you today and to discuss what surely is one of the most complex and troublesome issues of our time -- the Environment and Development.

Like most momentous matters, unfortunately this one too has, in the public discussions certainly, tended to generate some popular myths which need to be dispensed with straight away.

To begin with, environmental problems are not new. In the sixteenth century, Spanish explorers noted that smoke from Indian campfires hung in the air of the Los Angeles basin, trapped by what is now called the inversion layer. And before the first century, B.C., the drinking waters of Rome were becoming polluted.

Second, contrary to much current conventional wisdom, all environmental problems are not the result of development or affluence. There are many countries -- non-affluent in an economic sense -- where pollution problems are critical and threaten health and general well-being.

Finally, pollution knows no ideological barriers. It is found almost everywhere, regardless of political or social patterns.

What is new about pollution is the problem of pollution. Many unpleasant phenomena -- poverty, genetic defects, hurricanes -- have existed

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forever without being considered problems. They are, or were, considered to be facts of life. Like gravity and death, they simply had to be adjusted to. Phenomena generally become problems only when it begins to appear that something can and should be done about them.

Consider, for example, this rather instructive quotation from "The Scientific American" magazine of July 1899. It reads in part:

> "The improvement in city conditions by the general adoption of the motor car can hardly be over-estimated. Streets clean, dustless and odorless, with light rubber-tired vehicles moving swiftly and noiselessly over their smooth expanse, would eliminate a greater part of the nervousness, distraction and strain of modern motropolitan life."

Can you imagine such a sanguine assessment from Scientific American, or any other publication, today? What has happened in the interim, of course -- or, to put it more accurately, in the last few years -- is that pollution, including pollution caused by automobiles, has evolved into the problem stage.

This little historical excursion is not intended to minimize our environmental problems. Far from it. These problems are enormous and threaten to become worse. But I fear that what have been lacking in most discussions are some perspective and, more importantly, a cold dash of realism. Man cannot entirely wipe out pollution. Man, however, can ostensibly choose the quality of environment or level of pollution he desires if he is willing to pay for it. Air is free; clean air is not. Although the economics of the problem will not be the sole consideration affecting man's choice of environmental quality, it certainly is a necessary ingredient in evaluating alternative measures for achieving various levels of pollution.

And a central aspect of this economic ingredient is a very fundamental concept -- a cornerstone, really, in economics -- and that is the idea of margin-

alism. It says, in effect, that the optimum level of any economic activity is reached at the point where marginal cost -- or the cost of expanding or reducing the activity by a small amount -- equals marginal benefit, or the benefit derived from expanding or reducing the activity by that amount. Further expansion would cost more than it is worth, and reduction in the activity would reduce benefits more than it would save costs. The net gain from the activity is said to be maximized at this point.

The application of marginalism to questions of pollution and environment is simple enough conceptually. The difficult part lies in estimating the cost and benefits functions. And that difficulty is compounded when environmental problems collide with developmental priorities. For developing nations particularly, the whole issue is fraught with potential peril. Their commanding priority is growth-economic development. And they often view environmental concerns -- particularly the shrill, scare-raising variety -- as irritating diversions, or worse, as a possible evolving excuse to stop aiding the development process elsewhere. There is indeed a real danger here -- one that none of us, especially those from industrial countries, should overlook or even underestimate.

The general policy of the World Bank Group regarding environmental implications of its lending activities is to pursue economic development objectives first and foremost -- but with a careful and studied consideration for the consequences to the environment and to the health and well-being of affected peoples.

The problem, as we see it, is whether and how we can help the developing countries to avoid or mitigate some of the damage that economic development can do to the environment, without at the same time slowing down the pace of economic progress.

Actually, the Bank Group has long been concerned about environmental consequences in certain sectors. In appraising prospective hydro projects, for instance, Bank specialists have considered impact on watersheds, on downstream users, on water flows generally. In irrigation efforts, the Bank has long been aware of the problems of waterlogging and salinity and has attempted to design projects to avoid these undesirable consequences.

More recently the Bank has established an office to foresee, to the extent possible, the environmental consequences of proposed development projects. This office, which I head, reviews all projects being processed with a view to identifying those which, if carried out, would likely have important environmental and health effects. It also provides advice on the nature and scope of studies and investigations that should be made in connection with these projects.

For example, a country presently without much industry came up with a proposal for Bank financial assistance to help build a mineral smelter. An examination of the plans revealed that air pollution controls were inadequate to prevent the possibility of a serious threat to the health and well-being of peoples in the area as well as their livestock. Working with the government and the prospective borrower, the Bank suggested a set of acceptable controls and, in addition, recommended new legislation. The result has been the enactment of control legislation and the incorporation of environmental and health safeguards into the project.

One of the Bank's member countries is planning a large marine terminal to load ore brought by rail from inland mines. The terminal would also accommodate huge combination ore/oil tankers of the 300,000 to 500,000 ton class and larger. Because of the concern for effects on the estuarine ecology, it was decided to send a multi-disciplinary team -- an estuary oceanographer, a marine ecologist, a fisheries specialist, and a shellfish expert -- to study the

possible environment impact. As a result of their work, necessary environmental safeguards are being considered for incorporation into the project.

I should emphasize that we are still feeling our way at the Bank on this problem. The unanswered questions are legion; sometimes we do not even know the right questions. But we have made a start. For instance, we have developed an interim check list of questions to be considered in appraising projects involving construction of dams, irrigation systems, roads and sewerage systems, mines and petrochemical industries. These include such queries as:

In proposed irrigation systems: Will changes in water velocities, temperatures and depth result in a more favorable environment for disease-bearing organisms? Will the new water patterns create new disposal areas -- either directly through dumping or indirectly through runoff -- for sewage, garbage or other refuse?

Or, in proposed dam projects: What undesirable vegetative consequences will accompany reservoir development? How fast will siltation occur and how will sediment buildup be handled? What physical and biological alterations will occur in receiving river, estuary, ocean or lake?

Or in proposed sewerage projects: Has the site for the sewage treatment plant be selected so as to provide maximum compatibility with land-use plans and human welfare? Will gases, insects and disease vectors be a problem? Have provisions for future expansion been taken into account if the sewage load increases?

These are just a few of the questions we are now attempting to build into the early thinking and deliberations involved in project preparation. Other check lists are in preparation for municipal water systems, power generation and transmission, smelting operations, pulp and paper industries, other

chemical plants, port and harbor development. It is intended in due course to incorporate these check lists in a handbook on environmental and health criteria to be used in the preparation and appraisal of projects.

It should be pointed out that projects are often years in the making and hundreds of them flow out of the pipeline each year. As an interim measure -- and for some time to come -- these projects are being evaluated for their environmental and health impacts literally at the "eleventh hour." While some are subjected to a desk review, not a few are the object of field studies by Bank staff and consultants employed especially for such purposes. The diversity of projects financed by the Bank Group and the spectrum of geographic, topographic, climatic and cultural settings for these projects, preclude the assembling, inside the Bank, of the variety of professional disciplines needed for these thorough evaluations. Consequently, we intend to make maximum use of consultants, invariably working in inter-disciplinary teams, to strike at the unique needs and problems of each project.

Similarly, the terms of reference that describe the nature and dimensions of the studies to be conducted are carefully tailored for each project. Usually an ecological reconnaissance is carried out first, in order to determine the likely nature and dimensions of the problem, if any. Both the initial reconnaissance and any additional in-depth study are considered by the borrower, the member government, and the Bank in the preparation for negotiating the loan. They are also considered by the Bank's Loan Committee when it considers the proposed project for final negotiations. Finally, the ecological studies are considered by the Bank's Board of Executive Directors who must authorize the loan.

The Bank's concern does not stop at this point, however. It is anxious to ensure the installation and implementation of the necessary safe-

guards which may have been incorporated. This is achieved through missions sent to the project site during construction and operation stages.

I want to emphasize again that we in the Bank Group have just made a start in this field. One obvious shortcoming with what I have just described is the "eleventh hour," or last minute, nature of our review procedures. This is not the best approach for many reasons. As a result, we are trying to move the entire evaluation process to an earlier stage in the project cycle. This we plan to do after a study that will isolate the really strategic points in the project cycle and suggest, as well, the organizational and procedural mechanisms needed for accommodating an earlier intervention from the environmental side. Institutionalizing the processes for bringing about environmental evaluations is currently a high-priority item in the Bank Group and as environmental evaluations become a fixed part of Bank operations, the need for criteria and guidelines against which to assess projects becomes an ever-important necessity -- both for Bank personnel as well as the host of officials in the public and private sectors with whom the Bank deals. This is why we are placing such importance on the environmental handbook I mentioned earlier.

There are other aspects to the Bank's environmental operations but, for now, I will stop with this general overview, hoping that we can deal with the other facets in our discussions.

At the root of most discussions about environment and development, I suspect, is a rather basic question: Given the limited alternatives that nature allows without rebelling, how can we best further human enjoyment of life -- for all peoples? The answer is, in part, by making intelligent marginal decisions on the basis of costs and benefits. Pollution control is for lots of things -- for good health, for beauty, and for safeguarding our life-supporting ecological systems. But so are many other things -- like good and reliable

food supplies, adequate housing, relevant education. The question is not which of these desirable things we should have, but rather what combination is most desirable. It is a question that every society asks itself, given its particular needs and priorities. And it is a question for which we all seek a realistic framework for decision-making.

V

LEE
M. MAC
MAY 28, 1971

Draft of Part V for the consideration of the Panel of Experts on Development and Environment (Geneva, 1-12 June 1971)

INTERNATIONAL ASPECTS OF ENVIRONMENTAL CONCERN

1. We have discussed in the earlier part of our Report the changing nature of environmental issues in the development process and environmental policies relevant for different stages of development. We believe that the developing countries cannot afford to either neglect the environmental problems or to treat environment as a free resource as the presently developed countries did in their initial stages of development. The character of these problems, of course, is quite different in the developing countries and the priority given to them in resource allocations is a critical issue but what is important is that the long-term costs of environmental problems are fully understood and reflected in the current planning policies of the developing world.

2. Even if the developing countries were to regard environmental problems as an irrelevant irritant, they can hardly remain indifferent to, or be unaffected by, the growing concern of the developed countries with these problems. Inevitably, the environmental concern will cast its shadow on all international economic relations, particularly between the developed and developing countries. One can perceive these international implications only a little dimly at this stage: much more thought and research work is needed before the outlines become any clearer. But it is important that we try to anticipate the adverse implications for international economic relations on the one hand and the great opportunities which may open up on the other, and then go on to suggest policy measures and institutional

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arrangements which could reduce the former and maximize the latter. There is, in fact, no other choice if the impending confrontation between the developed and the developing countries is to be avoided.

3. There are growing fears in the developing world that the current environmental concern in the developed countries will affect them adversely in the fields of trade, aid and transfer of technology. Some of these fears may be no more than the inherent fears of the weak in any confrontation with the stronger members of the international community. But some are well-founded and deserve careful examination.

4. There is a fear that the insistence of the developed countries on rigorous environmental standards of products exchanged in international trade may well give rise to a "neo-protectionism". Many of the developed countries will loathe to see their exports suffering if prices rise as environmental standards are enforced; they can successfully argue that imports from the developing countries based on less rigorous environmental standards should either be taxed or banned. The import-competing sectors and organized lobbies are likely to join in this outcry. Agricultural products may be the first to suffer: meat, dairy products, cereals, etc. Some industrial products, notably chemicals, may fare no better. And from specifics, the argument can quickly go on to a general level. Why be liberal in admitting the products of the developing countries if they are the outgrowth of a "sweated environment"? The humanitarian concern for environment can far too easily become a selfish argument for greater protectionism. The developing countries still confront the argument of "sweated labour": the argument of "sweated environment" will be equally fallacious but even harder to beat.

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5. There is a fear that excessive preoccupation with environmental problems will lead to a diminution of aid resources from the developed countries. Since there is an increasing concern in the developed countries about the deteriorating quality of life and more attention is likely to be given to their own problems of slums, pockets of poverty and poor public services, it is argued that this may divert resources from foreign assistance to domestic needs. In a more exaggerated form, the fear is that the concern for environment may become a priority unto itself in the developed countries, like space exploration in the 1960's, and take away resources badly needed for other purposes. Since there has been a progressive weakening of the will in the developed world for giving away foreign assistance to the developing countries, anxiety on this score is not entirely unfounded.

6. There is also a fear that excessive concern for environmental standards may distort aid priorities and project appraisal by the donors. To the extent that aid priorities are influenced by, and are an extension of, the current concerns in the developed countries, it is inevitable that they will respond to the growing environmental concern. The donors may well believe that projects meant for environmental improvement should claim a fairly high priority in the developing countries while the latter may give these projects a much lower priority in the context of their own competing needs. Again, development projects may be held up because of their presumed impact on environment as seems to have happened in the case of some recent hydroelectric projects in Kenya and Uganda. These projects may also become more expensive if high environmental standards are insisted upon. By their very nature, environmental diseconomies are very difficult to measure or

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quantify and there can be greatly different judgements on the time period over which they may occur and the priority that should be attached to their elimination or reduction in the current designs of the projects. There is a fear as such that there may be serious distortions in the allocation of aid funds to various projects and even greater delays in the processing of projects in view of the growing environmental concern in the developed countries and its unthinking extension to the context of the developing countries.

7. There is also a fear that transfer of technology from the developed to the developing regions may become even more inappropriate than it is at present. It has often been argued that capital intensive technology is currently exported to the developing countries under tied loans while intermediate technology suited to the factor proportions in the developing countries is simply not available. Nor is there much improvisation going on in the developing countries themselves to adapt the Western technology to their own needs. The future technological developments in the developed countries are likely to concentrate on non-pollutive features built into various plants and processes. These developments are likely to be shaped by the environmental problems faced by the advanced countries. It is obvious that some of this non-pollutive technology would be grossly inappropriate for the developing countries which stand at vastly different stages of development and require different kinds of environmental controls. There are no definite estimates at present as to how costly the non-pollutive technology might be. But if it is sufficiently more expensive than the present technology, its export to developing countries under tied credits will further reduce the real content of foreign assistance.

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8. All these are legitimate fears. But they can be greatly exaggerated. In any case, the best strategy for the developing countries is to articulate them fully and to seek opportunities to turn the environmental concern in the developed countries to their own advantage. There are sufficient opportunities to make such a strategy succeed.

9. There is, first of all, a prospect that the global concern for environment, since environment is indivisible, may reawaken the concern for elimination of poverty all over the globe. There is at least a chance that the legislatures in the developed world may be more, not less, forthcoming in their allocations for foreign assistance as they face up to the problem of deteriorating quality of life at home in the midst of obvious affluence. This opportunity must be seized. For this, the environmental problem has to be placed in its proper perspective both in the developed and the developing countries. It should not be presented as a pollution problem in the developed world and a poverty problem in the developing countries : instead it should be treated as a problem of the most efficient synthesis of the developmental and environmental concerns at different stages of social transition.

10. The environmental concern can also be utilized for greater support for projects and programmes in the social sectors. Traditionally, the aid giving agencies have tended to frown upon such projects and programmes for their presumed low rate of return, at least in the short run. But investment in human resources is now catching the imagination of the donors. Programmes in nutrition, public health, water supply and other social services are beginning to be regarded favourably. Here is another opportunity that can be capitalized on.

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11. The developing countries must also make careful projections of the kind of exports which will be affected adversely by higher environmental standards in the developed countries. As noted earlier, this may include a number of agricultural products. Efforts should be made from now on to enforce at least certain minimum environmental standards in those industries primarily meant for exports. The increase in costs can be passed on to the consumers in the developed countries as a price for higher environmental standards. At the same time, the developing countries should seek both formal and informal understanding with their major trading partners in the developed world that environmental concern will not be allowed to be used as "neo-protectionism" by interested lobbies. There must be greater international recognition of the fact that developing countries are still much below tolerable levels of pollution in many industries so that their expansion of some of these so-called pollutive industries and the export of their products is only a confirmation of the principle of international division of labour. This is not an easy lesson to drive home but at least the effort must be made.

12. In fact, the growing concern for environment could well lead to a better geographical distribution of industires. This may happen if the higher costs of environmental standards in the developed countries make it more profitable for some industries to move their expansion plans to the developing countries and increasingly service their markets abroad from some regional locations in the developing world. It may also happen as a result of conscious government policies in the developing countries aimed at encouraging the inflow of capital into the so-called pollutive industries. One can even envision some form of "agreed specialisation" between the developed and

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developing countries whereby certain industries, particularly chemicals, are increasingly located in the developing world as it can absorb a much greater impact on its environment. All these ideas about better geographical distribution of industries will succeed only if they result in a greater flow of resources to the developing world and not merely a change in the content of a fixed amount of foreign investment. The developing countries may be willing to tolerate a higher level of pollution if it also means a higher level of development; otherwise, substitution of more polluted for less polluted industries will be no net gain from their point of view except in the level of pollution.

13. Another opportunity may arise for the developing countries if research devoted to recycling of raw materials and use of wastes can come up with significant cost-reductions and savings in resource use. Unfortunately, one always thinks of higher costs in regard to future technological developments because ideas of pollution control have dominated the field. But the environmental concern goes far beyond that and embraces all aspects of better resource management. Developing countries can be the major beneficiaries of any techniques which are developed and made available to them for more efficient management of their natural resources.

14. There may well be other opportunities. If there is a growing concern about the pollutive effects of synthetics industries, the present rate of substitution for natural resources of the developing countries may at least tend to slow down. If there is a universal concern for global environmental problems, additional financial resources may become available from the developed world to combat these problems at an earlier stage in the developing countries. The main strategy should be to seize these opportunities, to

enlarge their scope and to build upon them the edifice of more beneficial international economic relations. Attitudes of isolationism and indifference will hardly help in a world drawn increasingly closer: the developing countries must articulate their own interests and make arrangements to protect them in the changing pattern of trade, aid and technology.

15. One of the major hopes for harmonising the interests of the developed and the developing world may lie in the setting up of a Special International Fund for Environmental Policies. The Fund can be established by the advanced countries contributing a certain part of their foreign assistance to it, preferably in addition to their normal assistance. The Fund should be devoted mainly to research on environmental problems in the developing countries, compensation for any adverse implications for the trade of these countries in the short-run, and financing of any major increases in the costs of development projects because of higher environmental standards. The willingness to set up such a Fund will be a concrete assurance to the developing countries that they will not, as always, be hurt by the prospective changes in the pattern of international economic relations.

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May 28, 1971

ECONOMIC DEVELOPMENT AND THE ENVIRONMENT

By

James A. Lee, Ph.D

The current concern with the human environment giving rise, in part, to the United Nations Conference in 1972, comes at a time when the energies, efforts, and resources of the developing countries are being harnessed as never before to achieve their respective development goals. There is a compelling urgency to the Third World's development objectives which have also been recently endorsed by the United Nations in its proposals for the Second Development Decade. While to a large extent the concern with environmental issues has arisen out of the problems experienced by the industrially advanced countries, the developing countries are not, of course, unconcerned with or even immune from these problems. However, the environmental issues of the developing countries are essentially of two kinds: namely, the

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problems of rural and urban poverty manifested by poor housing, nutrition, water supplies, sanitation, and rampant disease; and, the problems that tend to accompany the very process of development itself. The former affect the greater mass of mankind and clamor for attention - they are seen as problems that can only be overcome by the process of development itself. However, as the development process moves ahead at an accelerated pace under the pressure of easing urgent social and human problems accompanying poverty, the dangers from environmental problems associated with the development process become greater.

The process of agricultural growth and change, for example, can involve construction of irrigation and drainage systems, clearing of forests, use of fertilizers and pesticides, and the creation of new human settlements. All these processes and others associated with them have environmental implications.

Industrialization results in the release of pollutents to the environment, environmental problems attendent to the extraction and processing of raw materials, and the growth of related urban and trade centers.

Indeed, the growth of the entire economic infrastructure of transport and communications has implications for the environment, and for human health and well-being.

Exploitation of both natural and human resources is a necessary ingredient of economic development. It can and does have profound and lasting effects on the environment and on people. You perhaps better than most, are familiar with examples around the world of environmental alteration and manipulation carried out in connection with development schemes that have had unwelcome and, sometimes, unexpected consequences. Yet all of us here know that economic development cannot

proceed without its impact on the naturally occurring environment, and on the psyche and soma of man. But developing countries and their peoples believe that they must expand their economies and modernize their societal institutions; that they must provide themselves with an opportunity to build more productive and rewarding lives. The question cannot be viewed as one of economic and social development versus the environment. It is rather how this development can proceed in ways minimally disruptive to the environment and in ways promising of individual self-fulfillment and social harmony.

Both the developed and developing countries alike, in their own respective ways, are beginning to realize that they stand face to face with the finiteness of the biosphere - their only habitat. And, too, they are realizing there is no choice other than to husband and manage by some means the

bio-physical resources that sustain them, comprehending, albeit slowly, the implications of the interrelatedness of their life-supporting ecological systems, the built environment, human societies, and individual welfare. The linkages and interdependences of ecological systems comprising the global biosphere now coming to light suggest that all nations must take an interest in protecting the integrity of these life-supporting systems. Practices which give rise to regional and global environmental problems clearly call for amelioration in the best interests of all the nations concerned.

And yet, having said this, one must also be cognizant of the very real dichotomy that discussions of environment problems and issues provoke throughout the world. We must ever be conscious of the fact that while ecological concerns are emerging as issues of high

priority in developed countries, particularly the United States, they do not command nearly the same amount of attention in the Third World. And, understandably so. Dwelling on the quality of life and environment may seem an almost luxurious preoccupation indeed for societies afflicted with widespread malnutrition and disease, high infant mortality, low life expectancy, high illiteracy levels, endemic unemployment, and severely skewed distributions of per capita income. Add to this litany of travail the widening gap both absolutely and relatively in material advances between developed and developing countries and you can easily appreciate the dichotomy.

On every count the contrast in values, in interest, in priorities, in capacities between developed and developing countries is marked. And, in matters dealing with the environment, its use and protection, it is, if anything, even more marked.

The new-found concern of the developed countries for the environment strikes no resonant chord in much of the still developing world.

If the dialogue between the worlds of the "haves" and the "have nots" about such matters is to be at all productive, it must be based upon a frank and honest recognition that the viewpoints on both sides are different, and that solutions to the world's environmental problems must be complementary to and not at the expense of efforts to advance the economic and social development of the Third World nations.

In the preparations currently underway for the 1972 United Nations Conference on The Human Environment, regional environment/development seminars have recently been concluded in Bangkok, Addis Ababa, Mexico City and Beirut. Those seminars had the benefit of a report of a meeting of development planning experts at Founex, Switzerland, which

has been cited as an "historic turning point in the development-environment dialogue." This report makes clear that the issue of the human environment is and ought to be of great importance to developing countries and that it must be regarded as an integral aspect of their own development process. The seminars, in fact, addressed themselves to three basic elements in the report which has been seen as being in the interest of the developing countries. These, in brief, are:

1. That the developing countries share with the entire community of nations a common interest in preserving and utilizing for the benefit of all mankind that portion of the earth's environment - the oceans and the atmosphere above them - which lies outside the jurisdiction of any nation, and that they must join in common action to protect it;

2. That the developing countries will be greatly affected by the actions taken by the more industrialized countries in dealing with their environmental problems and that such actions present both new opportunities and new risks to which developing countries must be prepared to respond;

3. That the developing countries themselves have serious environmental problems; many of them related to poverty and underdevelopment, and that international cooperation is needed to enable them to deal with these problems and to build into their own development process measures which will tend to prevent unnecessary abuse and degradation of their environment.

Thus, a major challenge faces the developing countries: they are attempting to find ways to achieve at an accelerated rate their own social and economic goals and to avoid, hopefully, at the same time, the social costs of environmental degradation. Concern for the environment is coming to be viewed therefore, as an integral part of the development process. This is especially so because, under the conditions prevailing in developing countries, any additional cost involved in improving the quality of the environment could only be envisaged in the context of accelerated growth. Only with great difficulty can resources be diverted from the urgent needs of development. The problems should not be viewed, however, exclusively in terms of a trade-off between the rate of growth and environment-oriented actions. The situation prevailing in most developing countries is such that preventive action may be taken now at only a part of the cost which would be incurred later on. The trade-off is, in these cases, between

short-term economic effects and long-term development - a problem constantly faced by development planners.

The regional U.N. seminars about which I have spoken have also made it clear that the formulation of environmental goals, as indeed the formulation of economic and social policies in general, is seen by the developing countries as coming within their sovereign competence. Each country indicated that it must find its own solutions in the light of its own problems and within the framework of its own political, social and cultural values.

While it is important that environmental policies are integrated with development planning and regarded as a part of the overall framework of economic and social planning, it should be stressed that concern about the environment is only another dimension of the problem of development in the developing countries, it is not viewed by them as something separate and apart from their development efforts. The objective is, rather, to regard the

safeguarding and improvement of the environment as a part of the multiple goals in a development plan. The developing countries have certain inherent advantages in integrating environmental a d developmental policies. Most of them are already so committed to planning that the imposition or acceptance of social controls is nothing new for them. They are also making a fresh start in many fields and can thus anticipate environmental effects and provide for them in their current planning. The overriding constraint in the developing countries is, of course, money, the lack of which necessitates fairly sharp choices between various objectives of planning. Since environmental improvement can be regarded only as one of the multiple objectives of planning, its priority in relation to other objectives will be determined by each society in the light of its own urgent economic and social problems and its own stage of development. Basically, this is a question of alternative uses of resources within the framework of comprehensive economic and social planning.

Parallel to the integration of environmental goals with development policies at the macro level, the developing countries must also turn to the micro level to devise appropriate techniques for guides for including environmental factors in the appraisal of their development projects. Application of adequate criteria and procedures to project design and appraisal presupposes a better knowledge of the environmental, health, and socio-cultural impacts of development projects. While all of us here today would be the first to recognize and admit the inadequacies and shortcomings of predicting accurately the full range of consequences attendant to development schemes, sufficient information, data, experience, and expertise do presently exist so that "reasonable" predictions can be made about the consequences of environmental alteration and manipulation. Knowledge of the structure and function of ecosystems,

while still at a relatively rudimentary level, is being developed owing, in part, to the efforts of the International Biological Program. Disease problems attributable to development are becoming both better known and understood, and measures for their prevention or mitigation are being developed. Socio-cultural impacts are perhaps less well understood, but the increasing participation of social scientists in the planning, appraisal, conduct, and auditing of development activities is an encouraging sign.

It is, however, not within the present state-of-the-art to make available definitive criteria-type guidelines which provide firm directives to development planners on how to plan, design, construct, operate and evaluate in such a way that potential environmental, health, and socio-cultural consequences and remedial measures are identified and costed out, and proper values assigned to benefits in cost/benefit analyses.

Guides to environmental considerations presently being used and under development would seem to represent a way to reach the stated goals of developing nations; namely, the pursuit of economic development in a manner that is minimally disruptive of life-supporting ecological systems, with minimal adverse effects on the physical and mental health of affected peoples, and with minimal dysfunctional effects on the socio-cultural processes by which peoples conduct their inter-personal and inter-group affairs and seek happiness with their fellow man. Environmental considerations, whatever form they may take, should to the extent possible ensure that environmental quality, human health, and social well-being need not be sacrificed or unduly injured, let alone irreversibly altered, as a result of economic development activities. Further these considerations should, through their very existence and application, point the way toward

bringing about increased awareness of development-associated environmental problems in the developing countries, the marshalling of the necessary resources and expertise to study such problems, the stimulation of the need for appropriate research and training, and the encouragement of exchanges of information and experiences between countries.

THE CONCERN OF DEVELOPMENT FINANCE FOR HEALTH IN DEVELOPING COUNTRIES - SOME VIEWS

by

James A. Lee, Ph.D., M.Ph.

The current concern with the human environment giving rise, in part, to the United Nations Conference in 1972, comes at a time when the energies, efforts, and resources of the developing countries are being harnessed as never before to achieve their respective development goals. There is a compelling urgency to the Third World's development objectives which recently were strongly endorsed by the United Nations in its proposals for the Second Development Decade. Economic development by its very nature involves the exploitation of both natural and human resources. It can and does have profound and lasting effects on the environment and on people. Thus, it is not entirely unexpected that as development proceeds

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at an ever quickening pace, there is an increasing concern about the adequacy of health provisions and safeguards in many major areas of development. Although one of the expressed primary objectives of the Second Development Decade is the improvement of levels of health--such improvements are coming slowly when they come at all. The unfortunate result is that large numbers of people--something approaching the majority of the world's peoples, in fact--are either without health care at all or receive a level of care that hardly suffices to meet their needs. The reasons are many and complex, and a comprehensive review of them is beyond the scope of this paper.

One of the principal obstacles to providing better health care is, of course, the scarcity of resources. And, in considering ways to make increased resources available, there emerges a debate over the place and role of health in the efforts of countries to advance their economic and social development. Yet, as one looks at the efforts of developing countries to

expand their economies and modernize their social institutions there is no doubting that health programs are necessary to meet human needs. At times they are seen as absolutely essential to the development of disease-ridden areas; while at other times they are needed to permit the successful implementation of development schemes. Thus, for example, areas in which onchocerciasis is endemic present great obstacles for human settlement and development; and, the construction of irrigation schemes in or near areas harboring schistosomiasis pose the threat of increased distribution of the snail vector and, hence, the disease itself.

On the other hand, there is great uncertainty over the priority to be accorded health measures in development programs owing, in large measure, to doubts expressed about their real contribution to economic development. Health, not unlike education, has had a low priority in development planning in the still developing countries. The physical elements of national

growth such as transportation, communications, power, and industry have been accorded overriding importance, for they have been viewed as the essential contributory elements of development. Only very recently has there been any indication of a change in the philosophy which which has stressed physical investments as the principal vehicle of development.

But it is, after all, the goal of all human endeavor to improve the quality of human life--and education and health are essential to the attainment of that goal. And, education and health would seem vital to the sustained, vigorous utilization of physical investments which, when taken collectively, make for a life situation promising of individual self-fulfillment and social harmony.

Development planners also have long been concerned (and not without some justification) about the effects of improved health care on population growth. There can be no doubt that programs of public health

have added to the rate of population growth by reducing mortality at both ends of the life continuum. Further, population growth, which in places has approached the "explosive", is and can be damaging to the economy and severely limits the possibilities of improving the living standards and well-being of the people. At the same time, denial of health care to achieve population control is everywhere morally unacceptable. Permitting high mortality through inadequate health care fails to recognize the root cause of too rapid population growth. Improved health is a prerequisite to reducing fertility. A high infant mortality rate contributes to the cultural imperative for having large families. Only through the provision of health care services which reach into a community to alleviate suffering and pain and thereby promote trust and confidence, can reduced fertility through the necessary behavioral and cultural changes become a reality.

In order to compete successfully for resources earmarked for development, advocates of public health will need to establish at least a qualitative case for economic benefits of such expenditures. In particular, they must face squarely the issues of over-population and unemployment as they relate to improved public health.

By way of example, the World Bank Group, has largely accepted in principle the argument that resources should be invested in proper nutrition for infants and juveniles. The arguments favoring such investments are: the expectation of a short-range increase in productivity of the education system; a long-range increase in productivity, intelligence, and initiative of the work force; an anti-natalist effect as parents gain confidence in government health services, and, in the long run, realize that their offspring are more likely to survive to look after them in their old age. None of these arguments are firmly established

empirically, but such evidence on the retarding effects of mal- and under-nutrition as there is at hand would seem to suggest not waiting until all the experimental evidence is in.

Furthermore, the Bank Group's interest in nutrition carries forward its philosophy that it is important to give proper weight to investment in both capital and human resources. It is likely that approaches similar to that used by proponents favoring the support of projects involving nutritional improvement by the international development community, can and will be taken by those advocating support of action to control at least some of the debilitating diseases. Emphasis would, of necessity, have to be placed on attacking those priority health problems which most adversely affect the economy where these can be identified. Arguments will, of course, be advanced as to the wisdom of putting support behind such measures in the absence of clear evidence as to their demonstrated efficacy in aiding economic growth. It is my personal

view that research along these lines should be continued and expanded while, at the same time, measures for disease control are instituted--especially in those instances where the realization of economic and social objectives appear threatened by debilitating diseases. Long-range economic growth and social progress are hard to visualize in the absence of some investment in research into the socio-economic effects of disease. Further, such research should in part relate to the effects of communicable disease control, maternal and child health, water supply and wastes disposal, environmental control of the vectors of water-borne diseases, health standards for dwellings, and occupational environments.

In a recent series of informal WHO/World Bank seminars devoted to the economic aspects of parasitic diseases, and attended by health administrators and economists, it was found that the disciplinary approaches of the two groups to health services and disease control were, to some extent, at variance.

Differences were, however, narrowed through discussion and health specialists and economists alike agreed that major development decisions should not be taken on the sole consideration of economi benefits--in the traditional interpretation of that term. A complete appraisal and evaluation of development plans and activities should take into account their direct and indirect effects. The economists tended to agree that health programs are not only consumption expenses--but that they can improve labor productivity and thereby contribute to a realization of other investments. Of equal, or greater importance perhaps, some health programs were seen by the economists as an investment on the basis that it is often less expensive to prevent adverse consequences to human well-being stemming from development schemes than to later attempt remedial measures in often uncontrollable situations. Health administrators, on the other hand, admitted that an approach to disease control and improved health based

solely on narrow humanitarian reasons was not making sufficient resources available.

One outgrowth of these seminars was a week-long meeting in October 1971 in Geneva of an expanded multidisciplined group which examined new approaches toward cost/benefit analyses of parasitic diseases and their control through the application of systems techniques. The group concluded that it was possible to construct a complex of statistical and econometric models; the former dealing with the disease entity per se and its transmission, the latter with levels of control and benefit/cost ratios. The group recommended to WHO that these techniques should be researched and tested on the control of one parasitic disease. Such new methods of analysing the various mixes of environmental control and clinical treatment raise the prospect that an optimal blend can be established. If this effort is carried forward and proves successful, WHO may subsequently wish to consider expanded use of the

techniques of statistics and operations research in the planning and budgeting of its parasitic disease programs. The idea was stressed by the group that different levels of control of a disease can be obtained for different opportunity costs and the problem is to purposefully pick the level to which the disease should be controlled. Ideally this should be done by measuring the economic and social benefits generated and to set them against the opportunity cost required to obtain and maintain the level where benefits equal costs. Admittedly, this is very difficult to achieve in practice and a more pragmatic approach is needed.

It was stated earlier that health expenditures are being viewed increasingly as real investments on the basis that it is easier and less expensive to prevent the health hazards accompanying development than to later remedy their consequences. In its own way, the World Bank Group is also undertaking such an approach in connection with the development projects it finances. Projects in the making are examined for

their possible environmental, health, and socio-cultural impacts. Identification and analysis of these potential problems often involves field studies by multidisciplined teams operating under carefully tailored terms of reference. As a consequence, health problems attributable to the construction, presence and/or operation of a project are identified, and solutions for their control or mitigation are sought. By way of example, an irrigation project in a West African country was examined in the field for its effect on schistosomiasis. Opportunities for conducting a vector control program in combination with increased support for health care of the affected populace were identified and made an integral part of the project, including its loan provisions.

Large-scale construction projects require the assemblage of a big work force recruited from many locations and quartered near the project site often for many years. The opportunity exists for the introduction

and establishment of new disease entities and/or, conversely, the distribution of diseases to new areas by returning workers and their families. Workers and their families have seldom been subjected to pre-employment screening for disease, and periodic examinations were but infrequently carried out during the course of the construction period. In making some recent loans for hydro-power dam projects, the World Bank, again by way of example, has made possible the provision of such clinical examinations and facilities. Cooperative arrangements with local health agencies have been urged upon the project sponsors as an important step in controlling potential disease problems.

In conclusion, it would seem that health should not be considered in isolation from other elements of the development process. Socio-economic development by its very nature includes improvement in health and there is no aspect of the economy, be it agriculture, industry, etc., which does not have a health component.

Health should not be viewed as an entity separate and apart from other socio-economic, institutional and policy factors in the development process--and these factors should not disregard the health component if real economic and social progress is to be made.

Development planners and economists have more and more come to take an ecologic view of development--a holistic look, if you will--that sees development within a total economic and social framework. Economic changes because they are requisite to the success of development, have resulted in development being conceived principally in economic terms. But, development has as its objectives the securing of social goals--an opportunity for life styles promising of self-fulfillment, improved living conditions, diversity of opportunity, access to the benefits of science and technology, and, not the least, an improved level of personal and community health. Economic development is the engine, the instrument for achieving social goals and its success, or lack of it, will be

measured by these and other social indicators, including health.

In any serious cost/benefit analysis of health programs, the reciprocal interaction of health with other elements of the development process must be recognized. Just as health is affected by socio-economic conditions, so also does it affect them for better or worse. Looking solely at the benefits to the remainder of the development process flowing from health programs fails to recognize this reciprocity.

If, on the other hand, health programs are to become the object of serious cost/benefit analyses for purposes of assigning them both a place and priority within the development process, their real contributions and effectiveness in reaching development objectives must be assessed.

The difficulties experienced by the World Bank Group in measuring the benefits of its investments in public water supply, for example, stems, in part,

from the absence of adequate data on the state of public health in many of the countries. Attempting to measure the benefits of improved public health on the overall economy of these countries will present similar problems of data deficiency on an expanded scale.

Finally, if proposed greater public health expenditures are ever to be justified on economic grounds, priorities will have to be established among the competing claims for such expenditures, according to the economic significance of the claims and of the measures to be employed -- thus, a plea for the gathering of basic statistics as a fundamental and important use of public health funds <u>now</u>, as an investment, as it were, in the securing and wise use of possible future funds from the international development community.

(See "Miscellaneous" for overlay)

ENVIRONMENTAL CONSIDERATIONS IN DEVELOPMENT FINANCE

by

James A. Lee, Ph.D.

The current concern with the human environment giving rise, in part, to the United Nations Conference in 1972, comes at a time when the energies, efforts, and resources of the developing countries are being harnessed as never before to achieve their respective development objectives.

The compelling urgency of the Third World's development efforts found endorsement in the United Nations proposals for the Second Development Decade. While to a large extent the concern with environmental issues has arisen out of the problems experienced by the industrially advanced countries, the developing countries are not unconcerned with or even immune from these problems. It was with this general thinking in mind that the U.N. Preparatory Committee for the Second Development Decade unanimously decided to include in the strategy for the Decade the following statement which was accepted by the General Assembly.

> "Governments will intensify national and international efforts to arrest the deterioration of the human environment and to take measures towards its improvement and to promote activities that will help to maintain the ecological balance on which human survival depends."

The General Assembly in a recent resolution on the matter of the human environment (2657/XXV/) further affirmed that environmental policies

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should be considered in the context of economic and social development, taking into account the special needs of development in developing countries.

It may be recalled that the General Assembly in its earlier resolutions on the human environment (2398/XXIII/ and 2581/XXIV/), which were unanimously adopted, underlined the importance of taking environmental factors into account in the planning for economic and social development. This thought was expressed in the former resolution when the Assembly emphasized the collective views of its members that increased attention to the environmental problems is essential for sound economic and social development. It further hoped that the developing countries would, through appropriate international cooperation, derive particular benefit from the mobilization of knowledge and experience about the problems of the human environment so that those very problems might be avoided. In its resolution (2581/XXIV/) the Assembly reaffirmed this latter point when it endorsed the main purpose of the Conference on the Human Environment as a practical means to encourage, and to provide guidelines for, action by governments and international organizations to protect and improve the human environment, and to remedy and prevent its impairment by means of international cooperation.

Developing countries have an obvious and vital stake in environmental problems which affect the biosphere, themselves, and their economic relations with the developed countries. Developing countries would clearly wish to avoid, insofar as it is possible and feasible, the development patterns of the industrialized countries which have been responsible for the great concern over environmental matters in the richer nations. The environmental problems of the developing countries are essentially of two

kinds. Firstly, they consist of problems of rural and urban poverty characterized by poor housing, nutrition, water supplies, sanitation, and disease. Under these conditions in which the bio-physical environment exhibits the ravages of long years of mismanagement, not merely the "quality" of life, but life itself is endangered, for the environment itself often exhibits an inability to renew its life-supporting capabilities. Secondly, environmental problems that tend to accompany the very processes of development itself. The former affect the greater mass of mankind and clamor for attention - they are seen as problems that can only be overcome through development. However, as the development process moves ahead at an accelerated pace under the pressure of easing urgent social problems, the hazards and threats to the environment and health associated with the development process become greater.

The process of agricultural growth and change, for example, can involve construction of irrigation and drainage systems, clearing of forests, adoption of monoculture practices involving use of fertilizers and pesticides, creation of new disease transmission routes, and establishment of human settlement patterns. All these processes and others associated with them have environmental and health implications.

Industrialization results in the release of pollutants to the environment, in environmental problems attendant to the extraction and processing of raw materials, and the growth of related urban trade centers.

Indeed, the growth of the entire economic infrastructure of transport and communications has implications for the environment, and for human health and well-being.

Urbanization, while a global phenomena, is a serious and growing problem for many developing countries. Population growth when not accompanied by adequate economic development, gives rise to unemployment of formidable dimensions, further impoverishing the rural environment and swelling the drift to the cities, thereby intensifying human problems of the gravest nature. The population pressures that have so adversely affected rural land use patterns which increasingly impinge on the cities, have, in the absence of adequate land-use planning, industrial pollution control, provision for water supplies and sewage disposal, and adequate housing, become intolerable to the psyche and soma of its inhabitants.

Exploitation of both natural and human resources is a necessary ingredient of economic development. It can and does have profound and lasting effects on the naturally occurring environment, its biota, and on people. Increasingly, we read of "ecological boomerangs" occurring in connection with development schemes in which unwelcomed and, sometimes, unexpected consequences have arisen. Yet, economic development cannot proceed without its impact on man and nature. And, the developing countries and their peoples have made it clear that they must expand their economies and modernize their social institutions; they must provide themselves with an opportunity to build more productive and rewarding lives. Clearly, economic development calls for the continued export of technology from the developed to the developing countries. This export is already of significant proportions. At the same time, however, the environmental record of the developed countries in reaping quick economic benefits only to comprehend later the greater and more lasting social

costs attributable to premature application of new technology, should be noted. The question cannot be viewed, however, as one of economic and social development versus the environment. It is rather how this development can proceed in ways minimally disruptive to the environment and in ways promising of individual self-fulfillment and social progress.

Both the developed and developing countries alike, in their own respective ways, are beginning to realize they stand face to face with the finiteness of the biosphere - their only habitat. And, too, they are realizing there is no choice other than to husband and manage by some means the bio-physical resources that sustain them. This realization comes as nations begin to comprehend, albeit too slowly perhaps, the implications of the interrelatedness of their life-supporting ecological systems, the man-made environment, human societies and individual welfare. The linkages and interdependences now coming to light of ecological systems comprising the global biosphere suggest that <u>all</u> nations must take an interest in protecting the integrity of these life-supporting systems. Practices which give rise to regional and global environmental problems clearly call for corrective action in the best interests of <u>all</u> the nations concerned.

And yet, having this in mind, one must also be cognizant of the very real dichotomy that discussions of environmental problems and issues provoke throughout the world. One must ever be conscious of the fact that while ecological concerns are emerging as issues of high priority in developed countries, particularly in the United States, they do not command nearly the same amount of attention in the Third World. And understandably so. Dwelling on the "quality" of life and environment may seem an almost

luxurious preoccupation indeed for societies afflicted with widespread malnutrition and disease, high infant mortality, low life expectancy, high illiteracy levels, endemic unemployment, and severely skewed distributions of per capita income. Add to this litany of travail, the widening gap, both absolutely and relatively, in material advances between developed and developing countries, and one can easily appreciate the dichotomy.

On every count, the contrast in values, in interest, in priorities, in capacities between developed and developing countries is marked. And, in matters dealing with the environment, its use and protection, the contrast is, if anything, even more marked. The new-found concern of the developed countries for the environment strikes no resonant chord in much of the still developing world.

If the dialogue between the worlds of the "haves" and the "have nots" about such matters is to be at all productive, it must be based upon a frank and honest recognition that the viewpoints on both sides are different, and that solutions to the world's environmental problems must be complementary to and not at the expense of efforts to advance the economic and social development of the Third World nations.

In the preparations currently underway for the 1972 United Nations Conference on The Human Environment, regional environment/development seminars have recently been concluded in Bangkok, Addis Ababa, Mexico City and Beirut. Those seminars had the benefit of a report of an earlier meeting of development planning experts at Founex, Switzerland, which has been cited as an "historic turning point in the development-environment dialogue." This report makes clear that the issue of the human environment is and ought to be of great importance to developing countries and that it must be re-

garded as an integral aspect of their own development process. The seminars, in fact, addressed themselves to three basic elements in the report which have been seen as being in the interest of the developing countries. These, in brief, are:

1. That the developing countries share with the entire community of nations a common interest in preserving and utilizing for the benefit of all mankind that portion of the earth's environment - the oceans and the atmosphere above them, which lies outside the jurisdiction of any nation, and that they must join in common action to protect it;
2. That the developing countries will be greatly affected by the actions taken by the more industrialized countries in dealing with their environmental problems, and that such actions present both new opportunities and new risks to which developing countries must be prepared to respond;
3. That the developing countries themselves have serious environmental problems; many of them related to poverty and underdevelopment, and that international cooperation is needed to enable them to deal with these problems and to build into their own development processes measures which will tend to prevent unnecessary abuse and degradation of their environment.

Thus, a major challenge faces the developing countries: they are attempting to find ways to achieve, at an accelerated rate, their own social and economic goals and to avoid, as far as possible, the social costs of environmental degradation. Concern for the environment is coming to be viewed therefore, as an integral part of the development process. This is

especially so because, under the conditions prevailing in developing countries, any additional costs involved in improving the quality of the environment can only be envisaged in the context of accelerated growth. Only with great difficulty can resources be diverted from the urgent needs of development. The problems should not be viewed, however, exclusively in terms of a trade-off between the rate of growth and environment-oriented actions. The situation prevailing in most developing countries is such that preventive action may be taken now at only a part of the cost which would be incurred later on. The trade-off - in such cases, between short-term economic effects and long-term development - is one that is constantly faced by development planners.

The regional U.N. seminars on the human environment have also made it clear that the formulation of environmental goals, as indeed the formulation of economic and social policies in general, is seen by the developing countries as coming within their sovereign competence. Each country indicated that it must find its own solutions in the light of its own problems and within the framework of its own political, social and cultural values.

While it is important that environmental policies are integrated with development planning and are regarded as a part of the overall framework of economic and social planning, it should be stressed that concern about the environment is only another dimension of the problem of development in the developing countries. It is not viewed by them as something separate and apart from their development efforts. The objective is, rather, to regard the safeguarding and improvement of the environment as a part of the multiple goals in a development plan. The developing coun-

tries have certain inherent advantages in integrating environmental and developmental policies. Most of them are already so committed to planning that the imposition or acceptance of social controls is nothing new for them. They are also making a fresh start in many fields and can thus anticipate environmental effects and provide for them in their current planning. The overriding constraint in the developing countries is, of course, money, the lack of which necessitates fairly sharp choices between various objectives of planning. Since environmental improvement can be regarded only as one of the multiple objectives of planning, its priority in relation to other objectives will be determined by each society in the light of its own urgent economic and social problems and its own stage of development. Basically, this is a question of alternative uses of resources within the framework of comprehensive economic and social planning.

Parallel to the integration of environmental goals with development policies at the macro level, the developing countries must also turn to the micro level to devise appropriate techniques and guides for including environmental factors in the appraisal of their development projects. Application of adequate criteria and procedures to project design and appraisal presupposes a better knowledge of the environmental, health, and socio-cultural impacts of development projects. While environmental experts would be the first to recognize and admit the inadequacies and shortcomings of predicting accurately the full range of consequences attendant to development schemes, sufficient information, data, experience, and expertise do presently exist so that "reasonable" predictions can be made about the consequences of environmental alteration and manipulation. Knowledge of the structure and function of ecosystems, while still at a relatively rudimen-

tary level, is being developed due, in part, to the efforts of the International Biological Program. Disease problems attributable to development are becoming both better known and understood, and measures for their prevention or mitigation are being developed. Socio-cultural impacts are perhaps less well understood, but the increasing participation of social scientists in the planning, appraisal, conduct, and auditing of development activities is an encouraging sign.

It would seem, however, that it is not within the present state-of-the-art to make available definitive guidelines which would provide firm directives to development planners on how to plan, design, construct, operate and evaluate projects in such a way as to ensure that all potential environmental, health, and socio-cultural consequences and remedial measures are identified and costed out, and proper values assigned to benefits in cost/benefit analyses.

Guides to environmental considerations presently being used and under development would seem to represent, in part, a way to reach the stated goals of developing nations; namely, the pursuit of economic development in a manner that is minimally disruptive to life-supporting ecological systems, with minimal adverse effects on the physical and mental health of affected peoples, and with minimal dysfunctional effects on the socio-cultural processes by which peoples conduct their inter-personal and inter-group affairs. Environmental considerations, whatever form they may take, should, to the extent possible, ensure that environmental quality, human health, and social well-being need not be sacrificed or unduly injured, let alone irreversibly altered, as a result of economic development. Further, these considerations should, by their very existence and appli-

cation, point the way toward bringing about increased awareness of development-associated environmental problems in the developing countries, the marshalling of the necessary resources and expertise to study such problems, the stimulation of the need for appropriate research and training, and the encouragement of exchanges of information and experience between countries.

Purposeful and systematic evaluation of the impacts of development activities on the environment, and on public health and social well-being is a rather recent innovation in direct response to the growing concern over threats to the very survival of man. This is not to imply that all economic development activities in the past proceeded in the absence of any such evaluations. However, it has only been within the past several years that development planners and their institutions have been alerted to the necessity of carrying out "pre-project" evaluations in something of a systematic manner. Most of these activities have been centered in the developed countries where new legislation has imposed restrictions or activities potentially damaging to the environment and health. In the United States, for example, the Environmental Quality Act of 1969 provides for an accounting of probable environmental impacts of Federally-financed projects in advance of and as a prerequisite to their implementation. Environmental impact statements are prepared by the project sponsor and subjected to review by interested agencies at the Federal, State, and local governmental levels.

More recently, economic development institutions such as the World Bank, the Swedish International Development Authority, the U.S. Agency for International Development, and the United Nations Development Programme, among others, have indicated their intention to include environmental considerations in the planning and appraisal of projects prepared or submitted to them for financing.

In its own distinct way, the World Bank, by way of example, has striven to serve the basic goal of economic development without undue adverse consequences to the environment. It has greatly increased its activities in recent years. One measure of its increased activities is in its financial commitments for high priority projects in the developing countries which have risen from $1 billion in 1968 to $2.3 billion in 1970. In the five years from 1968 to 1973, Bank commitments are expected to total $12 billion, or more than double the figure for the previous five years. But the Bank Group's goals are not merely financial or quantitative; they are also qualitative. For it is the improvement of the human condition, not of statistical abstractions, that is the object of its endeavors.

In expanding its activities, the World Bank attaches particular importance to the promotion of agriculture, education, and family planning. This ordering of priorities is dictated by the fact that one-third to one-half of mankind suffers from hunger or malnutrition; that eight hundred million illiterates have been by-passed by educational systems that remain both inadequate and out of tune with manpower needs; and, that the population explosion has become one of the greatest threats to the economic and social progress of the human race.

The World Bank's stated experience - not only in these sectors, but over the entire range of its activities - has underlined for it the need for an improved understanding of the social and environmental implications of economic change. That need will grow as the Bank grapples in the years ahead with the growing problems of urbanization, unemployment, industrialization, land reform, health, income distribution, and threats to the environment.

Speaking to the U.N. Economic and Social Council in 1970 the Bank's President, Robert McNamara, stated:

> "The problem facing development finance institutions, including the World Bank, is whether and how we can help the developing countries to avoid or mitigate some of the damage economic development can do to the environment, without at the same time slowing down the pace of economic progress. It is clear that the costs resulting from adverse environmental change can be tremendous .... witness, for example, the harm to human life that some water-storage projects in Africa and Asia already have done by encouraging water-borne diseases - to say nothing of the implications of the rising use of pesticides throughout the developing world .... It is equally clear that, in many cases, a small investment in prevention could be worth many times over what would have to be expended to repair the damage."

To this end, the Bank Group is taking steps to assure that projects financed by it do not have seriously adverse environmental and health consequences or, if they are likely to have such consequences, that measures are taken to avoid or to mitigate them. Indeed, the President and the Bank Group's top management have already initiated changes that will ensure to every extent possible, a consideration of the environmental, health and related social consequences of development projects proposed for financing.

The policy of the World Bank Group regarding the environmental consequences of the activities for which it makes loans, simply stated, is to pursue its economic development objectives with a careful and studied regard for the consequences to the environment and to the health and well-being of affected peoples.

This policy statement is intended to leave no doubt that the Bank fully intends to press forward with its primary job of assisting the developing countries achieve a higher standard of living and economic growth. At the same time, the statement is also intended to leave no doubt that the Bank does not intend that its activities should knowingly contribute to short-term economic gains at the price of long-term human ecological misery.

Bank-financed projects that might have adverse consequences to the environment or health are reviewed and studied (including appropriate field investigations) with a view to identifying the nature and dimensions of problems, and to providing for their solution. Similarly, opportunities for environmental enhancement are sought out, for often such benefits can be incorporated without significant alteration to the project's intended purpose. Environmental safeguards deemed necessary are considered by the borrower, the member government, and the Bank in the preparations for negotiating the loan, and finally, by the Bank's Loan Committee and Board of Directors who must authorize the loan. When environmental provisions are incorporated into the project, their costs are included in the terms of the loan.

The World Bank Group is of the firm opinion that environmental quality, human health, and social well-being need not be sacrificed or unduly injured, let alone irreversibly altered, as a result of economic development activities. And, it seeks to convince its developing member countries that ecologically-oriented planning, appropriately combined with socio-cultural awareness and sensitivity, is a necessary prerequisite of project identification, design and implementation. And, not surprisingly, it is finding much sympathy for this approach on the part of many of the

developing countries whom it serves. While these countries rightfully and expectedly seek to share in the fruits of technology and industrialization, in expanded agriculture and improved yields, they are becoming increasingly aware of the unwanted consequences that can attend these efforts. And, increasingly, they are seeking advice and assistance in ways to avoid or mitigate adverse consequences, while at the same time moving forward towards their respective economic and social goals.

In conclusion, it would seem that looking ahead into the 1970's, financial institutions, public and private, will ignore at their peril the consequences on the human environment of their operations. More and more they will be held accountable for the environment-affecting activities which they finance and for which, increasingly, they play a major role in the preparation and execution. Further, it is not unreasonable to expect that development finance institutions will find themselves called upon to fund new types of projects - projects designed to rehabilitate and clean up urban chaos and associated environmental pollution - pollution of lakes, rivers, estuaries and fijords; pollution of the air over densely populated urban and industrial areas where disturbing clinical signs are beginning to reveal themselves; pollution of valuable urban lands from growing mountains of solid wastes; toxic substances that slowly and insidiously take their toll of wild animals and birds; and, pollution of the human organism, the effects of which can be expected to be reflected in changing morbidity and mortality statistics.

Further, no country and no peoples are exempt from the current effects and ultimate consequences of threats to the bio-spheric integrity of the planet, from dangers such as global pollution of the oceans, large-

scale atmospheric and climatic changes, or the worldwide effects of persistent and pervasive biocides.

Some encouraging signs are apparent, however. The forthcoming U.N. Conference on The Human Environment could prove to be a turning point for international cooperation in averting what in some quarters is viewed as an approaching "crisis". The International Biological Program is offering new hope for an early understanding of the structure and functions of ecosystems and, hence, the development of a capability for predicting the consequences of alterations and disturbances to them. The proposal for a global network for environmental monitoring could provide the tools for measuring changes, and allow for surveillance over critical elements and factors. And though ecological research is, itself, on the upswing, it is still deserving of greater support, for as Marston Bates so correctly prophesized a decade ago ".... ecology may well be the most important of the sciences from the viewpoint of long-term human survival ...."

Ecologically speaking, 1980 is the day after tomorrow .... the year 2000 is next week .... and if we truly intend to become responsible trustees of the biosphere, we must better understand how it functions and what the effects of our tampering might bring.

Development finance institutions are becoming aware that the global challenge—the survival of mankind—must be met by resolving the basic conflict between man's creativity and destructiveness. The issue of the environment provides a new imperative, a new opportunity, a new mandate to measure development assistance in terms other than growth of output - for man himself is the ultimate measure.

Vital Issues

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WORLD ENVIRONMENT:
It Is Imperilled – What Needs To Be Done?

by James A. Lee

(Dr. Lee is the Environmental Adviser for the World Bank)

The morning commuter drives on the freeway to work. Somewhere in front of him lies the crowded, bustling city, but he cannot see it, so dense is the smog that hangs in the air. The commuter breathes – and coughs; his eyes tear. It is the beginning of another day.

The boy stands on the bank of the slow-moving river, sweating slightly in the hot tropical sun. He urinates into the water; his stream is red with blood. It hurts but the boy does not think of it for, after all, it has always hurt and his urine has been red for as long as he can remember.

The commuter and the boy share few things in the world. Nonetheless, they do share this: though the former may become a victim to emphysema, and the latter is already a victim to schistosomiasis (snail fever), they are both casualties of their environmental relationships – the one to a highly urbanized, industrial environment, the other to a still primitive rural one.

The oft-heard "crisis of the environment" is in reality a symphony of woes. It includes industrial pollution, water pollution, problems of health, and the mismanagement of the earth's resources, to name but a very few.

But environmental problems are not new. Examples abound in ancient history of premature deaths of, and irreversible injuries to, civilizations which mismanaged their environments. One can think of the civilizations in the valley of the Tigris and Euphrates Rivers, whose irrigation works became useless when filled with brine; the Greeks, who, from urban overcrowding, died horribly and perhaps unnecessarily from epidemics of plague; the Romans, who managed to pollute their drinking water, and who denuded the nearby hills of forests in order to build ships – and thereby ended the continued utility of much of their land. And in this country: in the Sixteenth Century, Spanish explorers noted that smoke from Indian campfires hung heavily in the air of the Los Angeles basin, trapped by what is now called the inversion layer.

But the environmental problems of an earlier day generally posed a threat only to those living in the immediate area. The Babylonians, and not the Persians and not the Cretans, were affected by the decay of their once life-giving irrigation

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system. Urban overcrowding in ancient Greece may ultimately have proved to be a boon to Western civilization, for that particular problem gave rise to a then unique phenomenon: the Hellenic immigrant, colonizing and civilizing much of the untamed Mediterranean world. And the smokey valleys of the Los Angeles basin were of no concern whatsoever to the Nez Perce and Blackfeet tribes who lived in what is now the State of Washington.

But today, our mistakes, our mismanagement of what nature has given us, affect us all, in every corner of the world. Raymond F. Dasmann, in the April, 1969, number of VITAL ISSUES, wrote: "We exist in a world in which our actions today have consequences that can endure over thousands of years, and in which all things are interrelated in ways we have yet to fully explore."

He went on to say that "Mankind has grown accustomed over the years to life in a large world inhabited by relatively few people. Under such circumstances, a man's worth was often measured by the degree to which he could change a wild and often hostile environment. Today, when the world is small and people are everywhere, we need new ways to measure worth and progress. Credit should go mostly to those who can achieve significant gains in human welfare with a minimum of disturbance to natural environments."

The earth's rapidly increasing population is, indeed, an important part of the story, and explains to a great extent why yesterday's local environmental problems have escalated to become today's global environmental crises. At this moment, there are probably slightly more than three billion, seven hundred million people living on this planet. Even if, somehow, by the year 2000 in the developed countries, and by the year 2020 in the still developing countries, a zero population growth rate becomes a reality, the world would have a total population, in the latter year, of more than 11 billion persons!

But population increases are not the complete answer to the question: Why are we now, all of us, and all of a sudden, faced with a growing threat to our global biosphere? Modern technology must also, it seems, take part of the blame. Not necessarily the modern technology that one usually associates with the pollution of the environment: the smoke from stacks of the steel mill and the chemical factory, or the exhaust fumes from the tens of millions of cars that traverse our highways. The smoke and the fumes we see and smell are, in part, the results of waste, of inefficient use, and part of the answer to the problems of such pollutants is to make technology better, not necessarily to end it. The technology that we truly must fear is the technology that contributes environmental hazards that cannot be eliminated through better management and more efficient use – ocean pollution, for example, whose effects are not only cumulative, but are also threateningly irreversible.

DDT has played a noble role in ridding the earth of dread diseases (malaria) and in increasing yields of crops. But we now know (and we didn't before) that DDT is not only long-lasting and pervasive, but also can be concentrated in and is even transferrable from organism to organism. DDT and other related chlorinated hydrocarbons have been found in the tissues of fishes of the deep sea and penguins in Antarctica, and both environments are far, far removed from areas in the world where such chemicals are used. The effect on the biota of the oceans of these and other chemicals can be speculated upon but their true impact is unknown.

The developing nations of the world are in a race against time to provide food enough to feed their teeming populations. New wheat and rice strains, engines of the "Green Revolution," are helping to end the immediate fear of famine in many parts of the underdeveloped world. But such new strains of grain can also be very vulnerable to disease and pests and, to date, effective DDT substitutes having the same cost-effectiveness remain to be found. Until they are, much of the still developing world will continue to rely on it for its known benefits even at the risk it entails to other life forms.

Though the consequences of environmental problems affect us all, affect the poor nations as well as the very richest, the problems facing the rich and poor are different.

The environmental issues facing the developing countries are essentially of two kinds: problems associated with rural and urban poverty, and which are manifested by poor housing, malnutrition, polluted water supplies, poor sanitation and rampant disease; and the problems that tend to accompany the very process of development itself. The former affect the greater mass of mankind and clamor for attention – they are seen as problems that can only be overcome by development. However, as the development process moves ahead at an accelerated pace under the pressure of easing urgent social and human needs which accompany poverty, the dangers and threats from environmental changes associated with the development process become greater.

Amid the outcries against continued degradation of the environment, degradation which can accompany economic growth, it is perhaps not altogether surprising to learn that leaders of the developing world do not always share this voiced concern. Talk about the quality of life to leaders of a country whose citizens earn on the average less than $100 per year often lands on deaf ears. Pointing to pollution from automobile exhausts to a leader whose country has almost no paved roads borders on the irrelevant. Arguing for safeguards against blight to scenery and the preservation of aesthetic values to leaders of countries where high unemployment is endemic, disease rampant, and the population bursting at the seams, is more likely to be viewed as a luxurious preoccupation.

The developing countries see also an implied threat in the voiced concern of the developed world over environmental issues. The threat takes the form of possible trade restrictions of many kinds. For example, if industrial firms in the developed countries are required to spend millions of dollars on pollution control equipment to meet increasingly stringent environmental quality standards, the price of their products can be expected to rise. If factories in the still developing countries producing the same goods are not required to install such equipment, the price of their goods will most likely be less. The spectre of both tariff and non-tariff trade barriers is thus raised if developed countries are pressured to consider restrictions on the importation of goods produced in "environmental sweat shops." Or, a developed country which bans the use of certain pesticides on agricultural products might consider a ban on the importation of products from countries where such pesticides are still being used.

So, if the dialogue between the worlds of the "haves" and the "have nots" about environmental matters is to be at all

productive, it must be based upon a frank and honest recognition that the viewpoints on both sides are different, and that solutions to the world's environmental problems must be complementary to and not at the expense of efforts to advance the economic and social development of the Third World nations.

SOVEREIGNTY – AND THE ENVIRONMENT

Every nation places utmost importance on its sovereign right to manage its internal affairs, including those of the environment. Any suggestion of intrusion, no matter how well intended, on this sovereign competence to develop in ways and along lines a country chooses, is not a matter to be taken lightly. Empathetic help in avoiding the mistakes which the developed countries have made will, in most instances, be welcomed *provided* the volume and tempo of economic and social development is not retarded.

The world family of nations is coming to realize more and more that the issue cannot and must not become one of development versus the environment. It must be rather how development can proceed in ways minimally disruptive to the life-supporting ecological systems upon which all countries and peoples depend.

The rising crescendo of voices in the developed countries directed at "rampant development – ravaged environment" reflects a belated awakening to and understanding of the threats posed to these systems. The evidence continues to mount that the assimilative capacity of many of the world's ecosystems is being severely tested, and doubters of this are becoming fewer each year. Importantly, policy-and decision-makers in developed and developing countries alike are becoming aware of the truth of an old saying . . . "an ounce of prevention is worth a pound of cure." The concept of "finiteness" in the biosphere's capacity to absorb insults is now emerging as a fact to be fully reckoned with and ignored only at great peril by those making decisions about economic growth.

It may be, therefore, that the following statement, from the 1970 Report of Critical Environmental Problems, sponsored by the Massachusetts Institute of Technology, was too pessimistic: "Perhaps joint or parallel action between the rich and the poor on the environmental front cannot realistically be expected."

WORLD CONFERENCE ON "SPACESHIP EARTH"

We all shall know more of this after June, 1972, the date scheduled for the United Nations Conference on the Human Environment, to be held in Stockholm, Sweden.

To that city are expected to come representatives from 130 nations and several dozen international organizations to discuss the problems faced by the "Spaceship Earth." During the 12 days of the Conference, the participants will be asked to deal with the environmental implications of development, the problems of urbanization, the management of natural resources, and to identify – as well as devise methods to both forestall and control – widespread environmental hazards.

"There has never been such a planet-wide gathering before," Claire Sterling, the *Washington Post's* environmental writer, wrote recently. And she may be right. Heading the gathering will be Maurice F. Strong, Secretary-General for the Conference, a 43-year-old Canadian, former head of his government's foreign aid agency, and now orchestrator of the Conference's many dress rehearsals, which, by conference time, should have resulted in 900 pages of official documentation, including 70 national reports, and a book-length study on the state of the world environment.

"We will not fulfill the mandate of the General Assembly," said Mr. Strong recently, "if mere survival is the sole inspiration of our work. If it is, we will have failed. For the over-reaching challenge before us is not only to save ourselves, but to do so by resolving the fundamental conflict between man's creativity and destructiveness – a conflict that can be resolved in our favor only if we reassert control over the quality of life."

TIME AND THE MEANS FOR ACTION

No one knows for sure what the outcome of the Stockholm Conference may be. All efforts are being made, however, to see to it that it will result in plans for action based upon the knowledge and information at hand, and not merely calls for further study. Surely the times now call for more than rhetoric.

The World Bank – its full name is the International Bank for Reconstruction and Development – has in its own way been attempting to reconcile the sometimes different urgencies of development and environmental protection. The World Bank, whose membership now consists of 117 countries throughout the world, has played an important role in the preparations for the Conference; it has helped formulate the agenda, its staff members have written papers on the interrelationships between development and the environment for the Conference's 27-nation preparatory committee, and its professionals have met frequently with government delegations and specialized agencies of the United Nations participating in the Conference.

It is not known, of course, what the Conference presages for the World Bank as an institution, but because of its history and its unique role and position in the international development arena, it could find itself with new and important environmental responsibilities.

The World Bank is, of course, an international finance agency which lends money for productive projects that are expected to lead to economic growth in its less developed member countries. In the past quarter of a century (the Bank began operations in 1946), the Bank has loaned more than $2 billion to 28 African countries, almost $5 billion to 16 Asian countries, and about $4.5 billion to countries in the Western Hemisphere. Bank loans are made at almost commercial rates for its money must be raised in the capital markets of the world. An affiliate of the Bank, the International Development Association (IDA is an affiliate really on paper, for the officers and staff of the Bank serve in the same capacity with the IDA), makes credits on concessionary terms – interest free and with a 50-year repayment period – to the poorer of the developing members of the Bank. Generally, IDA credits are made to those countries whose per capita Gross National Product is less than $300.

Today, as in the past, the basic function of the World Bank Group – the Bank, IDA, and also the International Finance Corporation (which lends solely to the private sector) –

remains that of preparing and financing economic development projects in the developing countries of the world.

At the same time, it is also the policy of the Bank Group that careful and studied attention must be given, in the planning and implementation of development projects it finances, to their environmental, health, and socio-cultural consequences. Though the Bank has in the past always concerned itself with the environmental effects of its developmental activities, systematic procedures to identify and examine those effects were but infrequently used. More importantly, in the past, techniques to prevent and/or mitigate adverse environmental consequences had, in many instances, not yet been devised.

Thus, the World Bank Group is trying, along with its borrowers and member countries, to ensure that projects it finances do not have serious and adverse long-term environmental and health repercussions. Projects in preparation are examined for these possible consequences and, when necessary, studies are conducted in the field to determine the nature and dimensions of the problems and the means for their prevention or mitigation. In addition, Bank staff members, in cooperation with the borrowers and member country governments, examine jointly the environmental implications of projects, and decide upon the appropriate steps to be taken.

To be sure, the World Bank Group is not the only international finance institution to be concerned with the environmental aspects of economic development. And, it is equally certain that it alone cannot solve all the problems growing out of the development process. Not only does it not have all the answers, but in matters of environment and health, it is still seeking to ask the right questions.

One thing, however, is certain. As long as the still-developing countries seek to escape the imprisoning chains of poverty, the World Bank Group will help. And where these activities are likely to incur problems for the environment, and for public health and well-being, the Bank Group will be there to help also.

There is much cause for optimism. The developing countries have certain inherent advantages in integrating environmental and developmental policies that today's advanced nations did not have one hundred and more years ago. Most of the world's developing countries are fortunately already so committed to planning that the imposition or acceptance of social controls is nothing new to them. The poorer nations are also making fresh starts in many fields, and can thus anticipate environmental effects and provide for them in their current planning.

Today's shrinking world is beginning to share a global concern for the problems of the environment. As the dimensions of these problems increase, as their dangers increase, and their effects become acutely felt – that concern will become one of marked apprehension and uncertainty.

Ecologically speaking, 1980 is the day after tomorrow . . . the year 2000 is next week . . . and if we, all of us, truly intend to become responsible stewards of the planet, we must be prepared to understand better the results of our tampering and to act with determination on that knowledge.

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COMING: "Secret Government" versus Government of, by, and for.

ECONOMIC DEVELOPMENT IN THE THIRD WORLD: SOME IMPLICATIONS FOR ENVIRONMENT AND HEALTH

by

James A. Lee

The current concern with the human environment giving rise to the United Nations Conference in June 1972 in Stockholm, comes at a time when the energies, efforts, and resources of the developing countries are being harnessed as never before to achieve their respective development goals. There is a compelling urgency to the Third World's development objectives which have also been recently endorsed by the United Nations in its proposals for the Second Development Decade. While to a very large extent the concern with environmental issues has arisen out of the problems experienced by the industrially advanced countries, the developing countries are not, of course, unconcerned with or even immune from these problems.

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However, the environmental issues of the developing countries are essentially of two kinds: namely, the problems of rural and urban poverty as manifested by poor housing, nutrition, water supplies, sanitation, and rampant disease; and, the problems that tend to accompany the very process of development. The former affect the greater mass of mankind and clamor for attention -- they are seen by the developing countries as problems that can only be overcome by the process of development itself. However, as the development process moves ahead at an increasing pace under the pressure of easing urgent social and human problems accompanying poverty, the dangers from environmental and health problems associated with it become greater.

The process of agricultural growth and change, for example, can involve construction of irrigation and drainage systems, clearing of forests and settling of new lands, use of fertilizers and pesticides, and the creation of new human settlements.

All these processes and others associated with them have environmental and health implications.

Industrialization results in the release of pollutants to the environment, the creation of environmental problems attendant to the extraction and processing of raw materials, and the growth of related urban and trade centers.

Indeed, the growth of the entire economic infrastructure of transportation and communications has implications for the environment, and for human health and well-being

Exploitation of both natural and human resources is a necessary ingredient of economic development. It can and does have profound and lasting effects on the environment and on people. Some of you are familiar with examples around the world of environmental alteration and manipulation carried out in connection with development schemes that have had unexpected and, sometimes, unwelcome

consequences. Yet all of us here know that economic development cannot proceed without making an impact on the naturally occurring environment, and on the psyche and soma of man. But -- developing countries and their peoples are determined that they must expand their economies and modernize their societal institutions; they must provide themselves with an opportunity to build more productive and rewarding lives.

The poorer countries of the world have made their choice for development. It is part of their unfinished revolution. They are determined to achieve a better life for themselves and their children. The only questions would seem to be -- how fast, by what means, and at what cost to themselves and to the world can development be achieved.

The issue cannot be viewed as one of economic and social development versus the environment. It is rather how this development can proceed in ways minimally disruptive to the environment and

in ways promising of individual self-fulfillment and social harmony.

Both the developed and developing countries alike, in their own respective ways, are beginning to realize that they stand face to face with the finiteness of the biosphere -- their only habitat. And, too, they are realizing there is no choice other than to husband and manage by some means the bio-physical resources that sustain them, while comprehending, albeit slowly, the implications of the interrelatedness of their life-supporting ecological systems, the built environment, human societies, and individual welfare. The linkages and interdependences of ecological systems that comprise the global biosphere are now coming to light and they suggest that all nations must take an interest in protecting the integrity of these life-supporting systems. Practices which give rise to regional and global environmental problems clearly call for amelioration in the best interests of all nations concerned.

These are the reasons why most of the nations of the world will gather at Stockholm -- this is what Stockholm is all about.

And yet, having said this, one must also be cognizant of the very real dichotomy of views that discussions of environmental problems and issues provoke throughout the world. We should be conscious of the fact that while ecological concerns are emerging as issues of high priority in developed countries, particularly in the United States, they do not command nearly the same amount of attention in the Third World. And, understandably so. Dwelling on the quality of life and environment may seem an almost luxurious preoccupation indeed for societies afflicted with widespread malnutrition and disease, high infant mortality, low life expectancy, high illiteracy levels, endemic unemployment, and severely skewed distributions of per capita income. Add to this litany of travail the widening gap, both absolut-

ly and relatively, in material advances between developed and developing countries and you can easily appreciate the dichotomy.

On every count the contrast in values, in interests, in priorities, in capacities between developed and developing countries is marked. And, in matters dealing with the use and protection of the environment, it is, if anything, even more marked. The new-found concern of the developed countries for the environment strikes no resonant chord in much of the still developing world.

If the dialogue between the worlds of the "haves" and the "have nots" about such matters is to be at all productive, it must be based upon a frank and honest recognition that the viewpoints on both sides are different. The developing countries are determined that solutions to the world's environmental problems must be complementary to, and not at the expense of, efforts to advance the economic and social development of the Third World.

Preparations during the past two years for the U.N. Conference on the Human Environment have caused Third World countries to examine their environmental problems; most, perhaps, for the first time. This examination has served primarily to reinforce their commitment to development. It has, hopefully, also served to provide new dimensions to the development process itself. In the past, there has been a tendency to equate the goal of development with the more narrowly conceived objective of economic growth as measured by the rise in gross national product. It is usually recognized today that high rates of economic growth, necessary and essential as they seemingly are, do not by themselves guarantee the easing of pressing social and human problems. Indeed, in many countries, high growth rates have been accompanied by increasing unemployment, rising disparities in income, both between groups and between regions, and the deterior-

ation of social and cultural conditions. Developing countries are beginning to place a new emphasis on the attainment of social and cultural goals as part of the developing process. The recognition of environmental and associated health issues in Third World countries is an encouraging aspect of this widening of the development concept. It is seen as part of a more integrated approach to the development objective.

As the development pace quickens, it is not entirely unexpected that there is a growing concern about the adequacy of health provisions and safeguards in many developing countries. Although one of the expressed primary objectives of the Second Development Decade is the improvement of health -- such improvements are coming slowly when they come at all. The unfortunate result is that large numbers of people -- something approaching the majority of the world's peoples, in fact -- are

either without health care at all or receive a level of care that hardly suffices to meet their needs. The reasons are many and complex, and a comprehensive review of them is beyond the scope of this presentation.

One of the principal obstacles to providing better health care is, of course, the scarcity of money. And, in considering ways to make increased funds available, there emerges a debate over the place and role of health in the efforts by countries to advance their economic and social development. Yet, as one looks at the efforts of developing countries to expand their economies and modernize their social institutions, there is no doubt that health programs are necessary to meet human needs. At times they are seen as absolutely essential to the development of disease-ridden areas; while at other times they are needed to permit the successful implementation of development schemes.

Thus, for example, areas of endemic onchocerciasis (river blindness) present great obstacles for human settlement and development; and, the construction of irrigation and hydroelectric power schemes in or near areas harboring schistosomiasis (bilharzia) pose the threat of increased distribution of the snail vector and, hence, the disease itself.

On the other hand, there is great uncertainty over the priority to be accorded health measures in development programs, owing, in large measure, to doubts expressed about their real contribution to economic development. Health, not unlike education, has received a low priority in development planning in the still developing countries. The physical elements of national growth such as transportation, communications, power, and industry have been accorded overriding importance, for they have been viewed as the essential contributory elements of development. Only very recently

has there been any indication of a change in the philosophy which has stressed physical investments as the principal vehicle of development.

But it is, after all, the goal of all human endeavor to improve the quality of human life. Education and health are essential to the attainment of that goal. And, education and health would seem vital to the sustained, vigorous utilization of those physical investments which make for a life situation promising of individual self-fulfillment and social harmony.

Development planners have also long been concerned (and not without some justification) about the effects of improved health care on population growth. There can be no doubt that programs of public health have added to the rate of population growth by reducing infant mortality. Further, population growth, which in places has approached the "explosive" is and can be damaging to the

economy and severely limits the possibilities of improving the living standards and well-being of the people.

The Pearson Commission report[1/] on international development reveals, for example, that as a consequence of 20 years of development assistance, annual economic growth rates in many of the developing countries have exceeded the 5% target. Unfortunately, the high rate of population growth has held down that per capita rate of increase to about 2.5% per year. In fact, two-thirds of the Third World's population resides in countries where the per capita income has grown at less than 2% per year.

It is a fact, however, that a denial of health care to achieve population control is today everywhere morally unacceptable. Permitting high mortality through inadequate health care fails to recognize the root cause of too rapid population

growth. Improved health is a prerequisite to reducing fertility. A high infant mortality rate contributes to the cultural imperative for having large families. Only through the provision of health care services which reach into the family to alleviate suffering and pain, and thereby promote trust and confidence in such services, can reduced fertility through the necessary behavioral and cultural changes become a reality.

But -- on the average, less than 10% of the population in developing countries has ready access to personal health care services. The corollary is that up to 90% of developing populations are without an effective system through which general health services, nutrition, and family planning can be delivered.

In order to compete successfully for resources earmarked for development, advocates of public health will need to establish at least a

qualitative case for the economic benefits of such expenditures. And, in particular, they must face squarely the issues of over-population and endemic unemployment as they relate to improved public health.

For the foreseeable future, resources in many of the developing countries will be desperately limited, and this limitation will directly affect the investments to be made in the health sector. Further, present trends in the flow of official development assistance from the developed to the developing countries suggest that there will be no substantial increase in money earmarked for the health sector.

One authority has written that ".... the significance (of this) is that health planners must rely on low level budgets and can expect no great increase in funds in the short term. To obtain further resources the administrator must look to the other sectors in the development program and present plans for the involvement of the health sector in the

major development projects. If such resources cannot be obtained for the expansion of health services to meet the needs and demands of the major development programs, then the present limited provision for the health budget will be taxed heavily and instead of any true development in the health scene for the general public, there may well result in some cases a reduction of services and a lowering of standards of health. The health administrator is therefore faced with taking an active interest in all the projects of the truly economic sector of the development program."2/

Encouragingly, there are some signs that health expenditures are being viewed increasingly as real investments, and that health administrators are belatedly realizing that an approach to disease control and improved levels of health, based solely on humanitarian reasons, has not and will not cause sufficient resources to be made available. Develop-

economists are beginning to see health programs as not only consumption expenses, but rather, as investments which by improving labor productivity, thereby contribute to a greater realization of other investments. Of equal, or greater importance, perhaps, some health efforts are seen by economists as an investment on the basis that it is often less expensive to prevent adverse consequences to human well-being stemming from development schemes than to later attempt remedial measures in often uncontrollable situations. The presence and operation of development projects are often not without their threats to public health. Identification and analysis of potential problems during the formulation of a project permits solutions to be incorporated into the project's design and execution.

Health should, therefore, not be considered in isolation from other elements of the

development process. Socio-economic development by its very nature suggests improvement in health. There is no aspect of the economy, be it agriculture, industry, etc., which does not have a health component. Health should not be viewed as an entity separate and apart from other socio-economic, institutional and policy factors in the development process -- and these factors should not disregard the health component if real economic and social progress is to be made.

Development planners and economists are increasingly taking an ecologic view of development -- a holistic look, if you will -- that sees development within a total economic and social framework. Economic changes, because they are requisite to the success of development, have long resulted in development being conceived principally in economic terms. But, in addition, development has as its objectives the securing of social goals -- an opportunity for life styles promising of self-fulfillment,

improved living conditions, diversity of opportunity, access to the benefits of science and technology, and, not the least, an improved level of personal and community health. Economic development is the engine, the instrument for achieving social goals; and, its success, or lack of it, will be measured by these and other social indicators -- including health. Health cannot be disregarded in any social calculus of development -- it is both an instrument for and a product of development. To the health ecologist, the status of man at any given time on the health-disease continuum is the ecologic resultant of his changing environmental relationships -- the adaptive struggle to achieve a modus vivendi in the face of changes in his total environment. Development brings change and change is, itself, intrinsically disruptive. Too often, the reciprocal interaction of health with other elements of development has gone unrecognized. Just as health is

affected by development, so also does it affect development for better or for worse. Looking solely at the benefits to the development process which flow from health programs fails to recognize this reciprocity.

And, so on the eve of the Stockholm Conference, the first global gathering to consider the future and fate of our small world and its peoples, we have briefly examined only a small part of the environmental and health issues reflected by the countries to be represented at its conference tables.

The developed countries observe the environmental wounds they have inflicted on the air, water, soil, and other life forms, and read in them a portent of the future in store for man if corrective actions are not soon taken. And, recognizing belatedly that everything is <u>indeed</u> connected to everything else they realize that

remedial actions on a global scale will be required. From such macro possibilities as the demise of the oceans to such micro revelations that changes are, in fact, occurring in the plankton forms that act as a barometer of greater physico-chemical alterations, the developed countries sense that a breakdown in our natural systems could, indeed, occur. In some quarters, there is even an urgent feeling that limits must be placed on growth in the world system. Either bring the world into economic equilibrium by imposing limits on population and the production of material goods it is said, or human survival may be at stake.

But -- to the many developing countries comprising over two-thirds of the world's population, survival is already at stake. The poorer countries believe that it is life itself and not its quality which is at stake. At the heart of their concern is not the quality of the environment, as perceived

through the eyes of the industrially advanced countries, but rather how the environment can better contribute to a satisfaction of their pressing human needs and aspirations. The threat most clearly seen by the developing countries does not stem from their abuse of the environment, but rather by past and present actions of the developed countries. They see in the developed countries' newfound concern for the environment, a many faceted threat to their own development.

As the delegates from the rich and poor countries alike debate the environmental issues at Stockholm, what of health? What importance is being attached to it at this historic gathering? As an agenda item it is not to be found. And -- not entirely unexpected, perhaps, because health is still not widely understood in terms of human ecology -- neither is it included in most discussions of the environment. Even among those who would seek to

prevent further destruction and deterioration of the air, water, soil and biotic resources, there still persists and lingers the habit of man to set himself apart from the environment. Render unto the environment that which is the environment's -- render unto man that which is man's -- and, after all, health is man-centered.

In a developing world in which children under five years account for only 20% of the population, but for more than 60% of the deaths, in a developing world in which two-thirds of children who have escaped death will live on, stunted in growth and mind by malnutrition, in a developing world in which hundreds of millions of people are faced with such day-to-day deprivations that no statistics on morbidity and mortality can hardly describe their plight, health is the outcome of the struggle between two ecological universes, the internal environment of man and the external environment to which he relates.

Thus, the Third World very clearly sees environmental problems in terms of man. Improvement in the individual lives of the great masses is, after all, what development is all about, and development is seen by them as the only solution to their environmental dilemma

To these people there is no such thing as environmental apartheid. Environmental problems are man problems, including health, or more likely -- its absence.

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Vital Issues

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THE STOCKHOLM CONFERENCE ON THE HUMAN ENVIRONMENT

Has a Start Been Made by the World's Family of Nations to Protect the Seriously Endangered Ecological Systems That Sustain All life?

by James A. Lee

(Dr. Lee is the Environmental Adviser to the World Bank)

Ask anyone who was there — at the U.N. Conference on the Human Environment in Stockholm — if it was a success or a failure and you're likely to receive the puzzling reply of "yes." The Stockholm Conference — it has been referred to in some quarters as "Woodstockholm" — was many things and it had a different meaning for nearly everyone of the thousands who officially participated or engaged in the many related fringe-type activities.

While weary enviro-politicos painstakingly hammered out committee reports and resolutions mainly through endless debates over minor word changes, the unofficial daily *Conference Eco* provided something of an overview of happenings and events. Typical of the responses from delegates, when asked about progress and accomplishments, was "I just don't know, I am involved in only one part of this thing and rely on other delegates and the newspapers for a rundown on what's happening." With three major committees and the plenary sessions running concurrently, delegates could only get a glimpse of the big picture. And at any given time during the ten-day event, the big picture looked more like an artist's paint-testing board. Even with the final rap of the gavel declaring the Conference ended sine die, no one was certain just what had been done, what had been accomplished, if, indeed, anything. Some called it a happening, others were more generous, and a few were unkind in their comments. But, whatever it was it marked the beginning of a long uncertain journey for the world's family of nations. It attempted to provide a first-blush answer to the question: Can the nations of the world work to protect the seriously endangered ecological systems that sustain all life?

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On the face of it the Stockholm Conference would seem to indicate that the family of nations will endeavor to work toward that end. But, as with any master plan, the special appeals to set aside this or that aspect of the plan, and to grant waivers and exceptions, were already in evidence before the delegates went home. And this, too, was not unexpected, for nations view the global environmental issues from their own perspective.

The most significant differences occurred between the developed and developing countries. Some among the former were the first to sound a note of warning that something was amiss with the biosphere. One of these, Sweden, suggested in 1968 that a U.N. conference be held to examine the threat. Thus, initially at least, the conference was called in response to the mounting dangers in the highly industrialized countries.

But this all was to be changed as the numerically greater developing countries became actively involved in the preparations for the conference. These countries saw their environmental problems as being markedly different — problems of rural and urban poverty for which, they contended, only continued and expanded economic growth held a solution. And, they saw or suspected that the developed countries' new-found concern for the environment was a potential threat to their own economic development. The threat takes many forms, particularly trade restrictions of many kinds, including both tariff and non-tariff trade barriers. To combat pollution and related problems at home the developed countries might further reduce the already dwindling flow of funds for economic development to the developing world. To the poor countries of the world this latter possibility was viewed as being a graver threat than air and water pollution, DDT, or vanishing wildlife.

These differences were strikingly apparent at Stockholm but fortunately they did not cause the Conference to founder as had been earlier predicted. Both groups of nations came to know each other's point of view and, if not always agreeing to its validity, were able to engage in a productive political debate, though not always of high quality.

The absence of the Soviet Union and several of its allies was unfortunate. These nations have important environmental problems, and individually and collectively they are needed in all future efforts to protect the global environment. It is to be hoped and expected that they will not be alienated from active participation in future U.N. and associated endeavors relating to the environment.

That the work of the Conference Preparatory Committee during the 18 months preceding Stockholm was well done, was borne out by the relatively expeditious manner in which decisions were reached in three major areas:

(a) Recommendation for an Action Plan to tackle the global environmental threats through a combination of governments and international organizations.

(b) A resolution calling for the establishment of new United Nations machinery, including a voluntary Environmental Fund to support international action on global problems.

(c) A Declaration on the Human Environment containing a set of principles designed to guide nations toward a safer environment.

Commenting on these major decisions which took the form of 106 recommendations, the Secretary-General of the Conference, Maurice F. Strong, of Canada, declared:

"We have taken the first steps on a new journey of hope for the future of mankind. The fundamental task of the Stockholm Conference has been to take the political decisions that will enable the community of nations to act together in a manner consistent with the earth's physical interdependence."

COOPERATION — OR COMPETITION?

But — will the increasing awareness and concern for the future of the biosphere publicly evidenced at Stockholm give rise to a new era of international cooperation? Or, in the face of increasing competition for resources, food, and living space, will national interests prevail, and hoped-for international cooperation give way to nation actions that can only increase the burdens on the already stressed global ecosystems?

One possible answer to these questions came within weeks after the final rap of the gavel at Stockholm.

Whales — those great mammals that once roamed the world's oceans in immense herds — are reliably reported to be on the danger list. Without an opposing vote the Stockholm delegates adopted a recommendation calling for a ten-year moratorium on commercial whaling.

But this romantic and much applauded action was to be short-lived. Meeting in London in mid-summer the affected whaling nations turned their backs on Stockholm and continued to sharpen their harpoons for the coming hunts on the diminishing stocks.

Yet, looking realistically at the situation facing the majority of the world's nations (and the majority of the world's peoples), one must reasonably expect perceived national needs and interests to dominate their actions affecting the environment.

Taking a candid appraisal of the state of these nations and their peoples, World Bank President Robert McNamara told the delegates at Stockholm:

"Hunger and malnutrition are sapping energy, stunting bodies, and slowing minds.

Illiteracy is locking out learning, and paralyzing opportunity.

Unemployment is not only robbing men of the minimal means to make their way, but leaving their pride broken and their ambition atrophied.

Wholly preventable diseases are injuring infants, killing children, and aging adults long before their time.

In sum, hundreds of millions of individual human lives — with all their inherent potential — are being threatened, narrowed, eroded, shortened, and finally terminated by a pervasive poverty that degrades and destroys all that it touches.

The picture is not exaggerated. Throughout the developing world the estimates are that well over a billion human beings are hungry or malnourished. There are a 100 million more adult illiterates than there were two decades ago. Under-employment and unemployment entrap roughly one out of every five in the labor force. Infant and child mortality is four times greater than it is in the affluent world, and life expectancy is 40% shorter. To alleviate pain and arrest disease, there are in some developing countries fewer than one doctor for every 50,000 people — compared to one per 700 in the United States.

These facts are neither pleasant nor comfortable. But they are facts. They symbolize the lives of three-quarters of the human race . . . And, above all (we must) realize that human degradation is the most dangerous pollutant there is."

When national interests prevail (and they will) that seemingly strike a blow at the environment, people may well say the "Spirit of Stockholm" was only idealistic

rhetoric — that actions speak louder than words. But — national interests will prevail in a world of sovereign states and to expect otherwise is to be naive about political realities. However, the "Spirit of Stockholm" has and is continuing to reshape thinking about economic goals and ecological tolerances in many parts of the world. The trend toward biospheric degradation set in motion long ago will not be reversed overnight. The nature and dimension of international cooperation required to reverse this trend are both new and staggering, and will surely test the political will of nations and the utility of institutions to accomplish.

The point was well made by the Swedish Prime Minister, Olaf Palme, in his opening address to the Stockholm Conference. Said the Prime Minister:

"The history of international cooperation has always been a careful balancing act between national independence and international interdependence. How much national sovereignty are we in each instance prepared to give up in the interest of interdependence and international solidarity? In the field of environment the case is in some important respects more simple. The air we breathe is not the property of any one nation — we share it. The big oceans are not divided by national frontiers — they are our common property. What is asked of us is not to relinquish our national sovereignty but to use it to further the common good. It is to abide by certain agreed international rules in order to safeguard our common property, to leave something for us and future generations to share.

If we manage our own national environment in a sensible way we are not only contributing to the well-being of our own people, we are giving proof of international solidarity. This simple fact is giving a new dimension to the concept of national sovereignty, and to the common work for peace. In the field of human environment there is no individual future, neither for human beings nor for nations. Our future is common. We must share it together. We must shape it together."

HIGHLIGHTS OF ACHIEVEMENT

Realizing the sacredness of national sovereignty and national competence to develop the environment and its resources along lines and in the direction that each nation chooses, what was really accomplished at Stockholm?

In brief, the highlights of Conference achievements included:

- Recommended unanimously the creation in the U.N. of a permanent high level environmental unit to coordinate U.N. environmental activities, and a U.N. Environment Fund expected to be funded at $100 million over the first 5 years. (The U.S. has pledged up to $40 million on a matching basis.)
- Urged completion in 1972 of a global convention to restrict ocean dumping.
- Recommended steps to minimize release of such dangerous pollutants as heavy metals and organochlorines into the environment.
- Recommended a global "Earthwatch" program to be coordinated by the U.N. to monitor and assess environmental trends in atmosphere, oceans, land, and human health.
- Called for early completion of conservation conventions, including the World Heritage Trust for natural and cultural treasures and a convention restricting international trade in endangered species.
- Called for world programs to collect and safeguard the world's immense variety of plant and animal genetic resources on which stability of ecosystems and future breeding stocks depend.
- Urged strengthening of the International Whaling Convention and a 10-year moratorium on commercial whaling.
- Recommended creation of an Environmental Referral Service to speed exchange of environmental know-how among all countries.
- Urged steps to prevent national environmental actions from creating trade barriers against exports of developing countries.
- Recommended higher priority for environmental values in international development assistance, e.g., more emphasis on conservation, land use planning, and quality of human settlements.
- Urged greater emphasis on population policy and accelerated aid to family planning in countries where population growth threatens environment and development goals.
- Issued a Declaration on the Human Environment containing important new principles to guide international environmental action, including Principle 21 that states are responsible to avoid damaging the environment of other states or of the international realm.

BUT WHAT'S AHEAD?

On the face of it, this was no small accomplishment and seemingly represents a significant breakthrough to action — or does it? From Stockholm the recommendations must go to the U.N. General Assembly for formal consideration by national governments. And, even if approved wholly or in part, nations will not even then be legally bound by them. But, before finding their way onto the agenda of the General Assembly, the manifold and diverse recommendations must be packaged into a coherent whole, a rational plan for consideration by the delegates. With its own budget in a precarious state and with big nations, particularly the U.S., showing a disinclination to increase their support of the U.N., the delegates may experience difficulty in translating the "Spirit of Stockholm" into a more tangible form; namely, effective, coordinated, international action on problems of high priority. The General Assembly will be called upon to authorize

establishment of an environmental unit, a Secretariat to coordinate such activities within the U.N., and to administer a hoped-for Environment Fund expected to be $100 million over the first five years. With the host U.N. Specialized Agencies already having environmental responsibilities, and national governments apprehensive of the role to be played by any new U.N. machinery, the momentum of Stockholm may be slowed if not immobilized. Slated as a "non-operating Secretariat," the new environmental unit would, if created, need to operate through the U.N. agencies — no simple feat in itself. And, what of the Environment

Fund to be created through voluntary contributions from the more affluent countries — will their legislatures be as generous with the pocketbook as were the delegates with their pledges? In the months since the Conference nations have had a chance to digest its results, to assess them and analyze their implications in light of their own interests, to ponder what economic and political effects the called-for commitments will have, and finally, to formulate the position and posture they will adopt within the General Assembly.

THE MEANING OF STOCKHOLM

Regardless of the outcome in the buildings alongside the East River, Stockholm made one fact inescapably clear to all. And that is, man's global home is in trouble and serious doubters of this are becoming fewer by the day. Those who declared that environmental concerns were only a fad which would soon pass on, have themselves been given something of a glimpse into the ecological crystal ball. And, while it remains cloudy as to the specifics and timing of coming events, it reflects mounting evidence that forces are in motion of such magnitude as will profoundly alter the future destiny of the planet.

What Stockholm has really meant to all peoples was expertly summed up by India's Prime Minister, Indira Gandhi, in the closing hours of the Conference:

"Life is one and the world is one, and all these questions are inter-linked. The population explosion, poverty, ignorance and disease, the pollution of our surroundings, the stockpiling of nuclear weapons and biological and chemical agents of destruction are all parts of a vicious circle. Each is important and urgent but dealing with them one by one would be wasted effort . . .

"We must re-evaluate the fundamentals on which our respective civic societies are based and the ideals by which they are sustained. If there is to be a change of heart, it is not an organization or a country — no matter how well intentioned — which can achieve it. While each country must deal with that aspect of the problem which is most relevant to it, it is obvious that all countries must unite in an overall endeavor. There is no alternative to a cooperative approach on global scale to the entire spectrum of our problems.

"It has been my experience that people who are cross purposes with nature are cynical about mankind and ill-at-ease with themselves. Modern man must re-establish an unbroken link with nature and with life. He must again learn to invoke the energy of growing things to recognize, as did the ancients in India centuries ago, that one can take from the Earth and the atmosphere only so much as one puts back into them. In their hymn to Earth, the sages of the Atharva Veda chanted: I quote —

'What of thee I dig out, let that quickly grow over.
'Let me not hit thy vitals, or thy heart.
'So can man himself be vital and of good heart and conscious of his responsibility'."

Ask anyone who was there — at the U.N. Conference on the Human Environment in Stockholm, June 1972 — what it presages for the future and you're likely to receive the reply . . . "I really don't know — yet." But he or she will quickly add . . . "but I am proud to have been there for it was an historic event in which I was privileged to play even a small part."

And clutching their black brief case stamped with its one-earth emblem, *Stockholm-1972,* the unmistakable evidence of their participation, they will probably move on about their own business of keeping alive the "Spirit of Stockholm." The global dimensions of our environmental problems are too big, too complex for any one person to comprehend, let alone solve. But what are global-wide problems if they are not the sum total of individual, smaller problems — problems of the neighborhood, the city, the state — and these problem can be understood and solved. Taking them one by one and united in the overall endeavor by the common bond of survival — the expectations of Stockholm can be fulfilled — not today, not tomorrow, but, hopefully, in time.

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DEVELOPMENT AND ENVIRONMENT: A POST-STOCKHOLM ASSESSMENT

BY

JAMES A. LEE

THE FINAL RAP OF THE GAVEL DECLARING SINE DIE THE CLOSING OF THE UNITED NATIONS CONFERENCE ON THE HUMAN ENVIRONMENT IN STOCKHOLM JUST ABOUT SIX MONTHS AGO, MARKED AN HISTORIC "FIRST" FOR THE WORLD'S FAMILY OF NATIONS. THREE AND ONE-HALF YEARS OF DISCUSSION AND NEGOTIATION ARE TO BE FOUND IN THE MOUNTAIN OF DOCUMENTS BEQUEATHED BY THE CONFERENCE PREPARATORY PROCESS. THOSE PREPARATORY ACTIVITIES HAVE BEEN LIKENED TO MARSHALL McLUHAN'S MEDIUM WHICH, IMPERCEPTIBLY, ITSELF BECOMES THE MESSAGE. AND, FOR MANY OF US WHO PARTICIPATED IN THOSE LONG MONTHS OF PREPARATION LEADING TO THE SWEDISH CAPITAL, WE CAME TO FEEL THAT IN THE VERY PROCESS ITSELF WAS A POLICY FOR THE WORLD ENVIRONMENT BEING SHAPED. STOCKHOLM AND ALL THAT LED UP TO IT WAS, IN FACT, A FIRST IN SEVERAL WAYS. IN 1968, NOBODY REALLY THOUGHT THAT SWEDEN'S LONE CALL FOR A U.N. CONFERENCE TO DEAL WITH PROBLEMS OF POLLUTION AND SUCH THINGS WOULD BE TAKEN SERIOUSLY. AND, EVEN IF THE U.N. DID DECIDE TO HAVE A CONFERENCE, IT WOULD BE LIKE SO MANY OTHERS, FILLED WITH LAUDABLE RHETORIC BUT RESULTING IN PREDICTABLE MINIMALISM. BUT FROM THE START, THE ROAD TO STOCKHOLM REVEALED MANY SURPRISES FOR THE POLITICIANS AND SAVANTS WISE IN THE WAYS OF INTER-NATIONAL AFFAIRS AND THE U.N. AT EVERY TURN OF THAT ROAD WAS HEARD CALLS ON THE CONSCIENCE OF MAN TO GIVE GREATER CONSIDERATION TO THE QUALITY OF LIFE, TO DEVISE A NEW "MORAL ECOLOGY," TO PROTECT THE EARTH -- MAN'S ONLY HOME -- FROM HIS MISUSE AND ABUSE AND, TO PRESERVE IT BOTH FROM HUMAN IGNORANCE AND,

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PREPARED FOR DELIVERY AT THE COLUMBIA UNIVERSITY SEMINARS ON POLLUTION AND WATER RESOURCES, WASHINGTON D.C., DECEMBER 13, 1972.

FROM TECHNOLOGICAL POWER OPERATING IN THE ABSENCE OF ADEQUATE KNOWLEDGE AS TO ITS CONSEQUENCES FOR THE BIOSPHERE. WAS THIS FOR REAL? COULD THERE POSSIBLY BE IN THESE EXPRESSIONS OF GROWING CONCERN FOR THE ENVIRONMENT THE GERMINAL SEED, PERHAPS EVEN THE FETAL HEARTBEATS OF A NEW LIFE, A NEW HOPE FOR THE UNITED NATIONS?

WITH INCREASING CLARITY AND ELOQUENCE THE CASE FOR GREATER ENVIRONMENTAL AWARENESS AND CONCERN WAS BEING MADE IN THE FLOW OF NATIONAL REPORTS FROM MORE THAN 70 STATES -- A REQUIREMENT OF THE PREPARATORY PROCESS. HERE TAKING SHAPE WAS THE UNMISTAKABLE RECORD, AN OUTPOURING OF THE VISIBLE CONDITIONS AND ALARMING FACTS OF THE WORLD'S 20TH CENTURY DILEMMA, COUNTRY BY COUNTRY, REGION BY REGION. THIS HARD, FIRST BLUSH LOOK AT THE CONDITION OF THE WORLD'S PEOPLES AND THEIR AMBIENT PROVIDED EVIDENCE THAT THE PRESENT SCALE AND TREND OF RESOURCE USE, HABITS OF WASTE AND ENVIRONMENTAL DESTRUCTION, GOALS OF MATERIAL GROWTH AND PROGRESS, WHEN PLACED IN THE CONTEXT OF A POPULATION GROWING AT AN EXPONENTIAL RATE, WAS SETTING THE SCENE FOR A RECKONING. MAYBE, JUST MAYBE, THIS WAS THE ISSUE, THE PERVASIVE THREAT THAT COULD BREATHE NEW LIFE INTO A SEEMINGLY TIRED AND DISPIRITED INSTITUTION, WHOSE BIRTH BARELY A QUARTER CENTURY BEFORE WAS HAILED AS THE SALVATION OF ALL MANKIND. BUT, WOULD THE U.N. BE UP TO MEETING THIS NEW CHALLENGE, THIS NEW, AND PERHAPS, LAST CHANCE FOR ITS SURVIVAL AS A VIABLE, MEANINGFUL INSTITUTION?

IT WAS IN THIS REGARD THAT STOCKHOLM MAY HAVE PROVED TO BE ANOTHER FIRST. BRIAN JOHNSON[1] HAS LIKENED MOST U.N. CONFERENCES TO MARC ANTONY'S FUNERAL ORATION. THE EVIL THEY DO LIVES AFTER THEM, THE GOOD IS OFT INTERRED WITH THEIR DOCUMENTS. BUT, IN THE DOCUMENTS, IN THE PROCESS OF PREPARING FOR STOCKHOLM, <u>WAS</u> THE POLICY FOR FUTURE ACTION. AND, IT DID NOT CALL JUST FOR NEW INTERNATIONAL MACHINERY (ALTHOUGH SUCH WAS NECESSARILY TO BE CREATED)

BUT RATHER IT GENERATED A NEW AND UNFAMILIAR PRESSURE ON GOVERNMENTS TO MOVE WITH CONVICTION AND ALACRITY TOWARDS EASING THE THREAT TO THE GLOBAL ENVIRONMENT.

THIS NEW AND UNDOUBTEDLY UNCOMFORTABLE PRESSURE ON GOVERNMENTS WITHIN THE U.N. SYSTEM IMPLIES THAT THE MERE APPEARANCE OF CONCERN, ACTION, AND REFORM WILL NO LONGER SUFFICE IN A WORLD OF REALITY WHERE THE STAKES AT WORST MAY BE SURVIVAL AND AT BEST THE EROSION OVER TIME OF ESSENTIAL LIFE-SUPPORTING ECOLOGICAL SYSTEMS. THUS, IT WAS THAT AT STOCKHOLM,[2] THE NATIONS ".... HAVING CONSIDERED THE NEED FOR A COMMON OUTLOOK AND FOR COMMON PRINCIPLES TO INSPIRE AND GUIDE THE PEOPLES OF THE WORLD IN THE PRESERVATION AND ENHANCEMENT OF THE HUMAN ENVIRONMENT ...." PROCLAIMED A DECLARATION ON THE HUMAN ENVIRONMENT. IT READS, IN PART, AS FOLLOWS:

(ENVIRONMENTAL RIGHTS)

> . MAN IS BOTH CREATURE AND MOULDER OF HIS ENVIRONMENT, WHICH GIVES HIM PHYSICAL SUSTENANCE AND AFFORDS HIM THE OPPORTUNITY FOR INTELLECTUAL, MORAL, SOCIAL AND SPIRITUAL GROWTH. IN THE LONG AND TORTUOUS EVOLUTION OF THE HUMAN RACE ON THIS PLANET A STAGE HAS BEEN REACHED WHEN, THROUGH THE RAPID ACCELERATION OF SCIENCE AND TECHNOLOGY, MAN HAS ACQUIRED THE POWER TO TRANSFORM HIS ENVIRONMENT IN COUNTLESS WAYS AND ON AN UNPRECEDENTED SCALE. BOTH ASPECTS OF MAN'S ENVIRONMENT, THE NATURAL AND THE MAN-MADE, ARE ESSENTIAL TO HIS WELL-BEING AND TO THE ENJOYMENT OF BASIC HUMAN RIGHTS -- EVEN THE RIGHT TO LIFE ITSELF.

(World Responsibility)

. The protection and improvement of the human environment is a major issue which affects the well-being of peoples and economic development throughout the world; it is the urgent desire of the peoples of the whole world and the duty of all Governments.

(Role of Technology)

. Man has constantly to sum up experience and go on discovering, inventing, creating and advancing. In our time, man's capability to transform his surroundings, if used wisely, can bring to all peoples the benefits of development and the opportunity to enhance the quality of life. Wrongly or heedlessly applied, the same power can do incalculable harm to human beings and the human environment. We see around us growing evidence of man-made harm in many regions of the earth: dangerous levels of pollution in water, air, earth and living beings; major and undesirable disturbances to the ecological balance of the biosphere; destruction and depletion of irreplaceable resources; and gross deficiencies harmful to the physical, mental and social health of man, in the man-made environment, particularly in the living and working environment.

(The Still-Developing World)

. In the developing countries most of the environmental problems are caused by underdevelopment. Millions continue to live far below the minimum levels required

FOR A DECENT HUMAN EXISTENCE, DEPRIVED OF ADEQUATE FOOD AND CLOTHING, SHELTER AND EDUCATION, HEALTH AND SANITATION. THEREFORE, THE DEVELOPING COUNTRIES MUST DIRECT THEIR EFFORTS TO DEVELOPMENT, BEARING IN MIND THEIR PRIORITIES AND THE NEED TO SAFEGUARD AND IMPROVE THE ENVIRONMENT. FOR THE SAME PURPOSE, THE INDUSTRIALIZED COUNTRIES SHOULD MAKE EFFORTS TO REDUCE THE GAP BETWEEN THEMSELVES AND THE DEVELOPING COUNTRIES. IN THE INDUSTRIALIZED COUNTRIES, ENVIRONMENTAL PROBLEMS ARE GENERALLY RELATED TO INDUSTRIALIZATION AND TECHNOLOGICAL DEVELOPMENT.

(POPULATION)

. THE NATURAL GROWTH OF POPULATION CONTINUOUSLY PRESENTS PROBLEMS FOR THE PRESERVATION OF THE ENVIRONMENT, AND ADEQUATE POLICIES AND MEASURES SHOULD BE ADOPTED, AS APPROPRIATE, TO FACE THESE PROBLEMS. OF ALL THINGS IN THE WORLD, PEOPLE ARE THE MOST PRECIOUS. IT IS THE PEOPLE THAT PROPEL SOCIAL PROGRESS, CREATE SOCIAL WEALTH, DEVELOP SCIENCE AND TECHNOLOGY AND, THROUGH THEIR HARD WORK, CONTINUOUSLY TRANSFORM THE HUMAN ENVIRONMENT. ALONG WITH SOCIAL PROGRESS AND THE ADVANCE OF PRODUCTION, SCIENCE AND TECHNOLOGY, THE CAPABILITY OF MAN TO IMPROVE THE ENVIRONMENT INCREASES WITH EACH PASSING DAY.

(ENVIRONMENTAL GOALS)

. A POINT HAS BEEN REACHED IN HISTORY WHEN WE MUST SHAPE OUR ACTIONS THROUGHOUT THE WORLD WITH A MORE PRUDENT CARE FOR THEIR ENVIRONMENTAL CONSEQUENCES. THROUGH IGNORANCE OR

INDIFFERENCE WE CAN DO MASSIVE AND IRREVERSIBLE HARM TO THE EARTHLY ENVIRONMENT ON WHICH OUR LIFE AND WELL-BEING DEPEND. CONVERSELY, THROUGH FULLER KNOWLEDGE AND WISER ACTION, WE CAN ACHIEVE FOR OURSELVES AND OUR POSTERITY A BETTER LIFE IN AN ENVIRONMENT MORE IN KEEPING WITH HUMAN NEEDS AND HOPES. THERE ARE BROAD VISTAS FOR THE ENHANCEMENT OF ENVIRONMENTAL QUALITY AND THE CREATION OF A GOOD LIFE. WHAT IS NEEDED IS AN ENTHUSIASTIC BUT CALM STATE OF MIND AND INTENSE BUT ORDERLY WORK. FOR THE PURPOSE OF ATTAINING FREEDOM IN THE WORLD OF NATURE, MAN MUST USE KNOWLEDGE TO BUILD, IN COLLABORATION WITH NATURE, A BETTER ENVIRONMENT. TO DEFEND AND IMPROVE THE HUMAN ENVIRONMENT FOR PRESENT AND FUTURE GENERATIONS HAS BECOME AN IMPERATIVE GOAL FOR MANKIND -- A GOAL TO BE PURSUED TOGETHER WITH, AND IN HARMONY WITH, THE ESTABLISHED AND FUNDAMENTAL GOALS OF PEACE AND OF WORLD-WIDE ECONOMIC AND SOCIAL DEVELOPMENT.

(INTERNATIONAL ACTION)

. TO ACHIEVE THIS ENVIRONMENTAL GOAL WILL DEMAND THE ACCEPTANCE OF RESPONSIBILITY BY CITIZENS AND COMMUNITIES AND BY ENTERPRISES AND INSTITUTIONS AT EVERY LEVEL, ALL SHARING EQUITABLY IN COMMON EFFORTS. INDIVIDUALS IN ALL WALKS OF LIFE AS WELL AS ORGANIZATIONS IN MANY FIELDS, BY THEIR VALUES AND THE SUM OF THEIR ACTIONS, WILL SHAPE THE WORLD ENVIRONMENT OF THE FUTURE. LOCAL AND NATIONAL GOVERNMENTS WILL BEAR THE GREATEST BURDEN FOR LARGE-SCALE ENVIRONMENTAL POLICY AND ACTION WITHIN THEIR JURISDICTIONS. INTERNATIONAL COOPERATION IS ALSO NEEDED IN ORDER TO RAISE

> RESOURCES TO SUPPORT THE DEVELOPING COUNTRIES IN CARRYING OUT THEIR RESPONSIBILITIES IN THIS FIELD. A GROWING CLASS OF ENVIRONMENTAL PROBLEMS, BECAUSE THEY ARE REGIONAL OR GLOBAL IN EXTENT OR BECAUSE THEY AFFECT THE COMMON INTERNATIONAL REALM, WILL REQUIRE EXTENSIVE CO-OPERATION AMONG NATIONS AND ACTION BY INTERNATIONAL ORGANIZATIONS IN THE COMMON INTEREST. THE CONFERENCE CALLS UPON GOVERNMENTS AND PEOPLES TO EXERT COMMON EFFORTS FOR THE PRESERVATION AND IMPROVEMENT OF THE HUMAN ENVIRONMENT, FOR THE BENEFIT OF ALL THE PEOPLE AND FOR THEIR POSTERITY.

AND, SO IT WAS, THAT THE MAJORITY OF THE WORLD'S NATIONS, WITH THESE WORDS, RESOLVED TO GO FORTH IN THE "NEW SPIRIT OF STOCKHOLM" TO ".... RE-EVALUATE THE FUNDAMENTALS ON WHICH (THEIR) RESPECTIVE CIVIC SOCIETIES ARE BASED AND THE IDEALS BY WHICH THEY ARE SUSTAINED."[3].

BUT -- WHAT OF THE DEVELOPING COUNTRIES WHERE:[4].

- HUNGER AND MALNUTRITION ARE SAPPING ENERGY, STUNTING BODIES, AND SLOWING MINDS.
- ILLITERACY IS LOCKING OUT LEARNING AND PARALYZING OPPORTUNITY.
- UNEMPLOYMENT IS NOT ONLY ROBBING MEN OF THE MINIMAL MEANS TO MAKE THEIR WAY, BUT LEAVING THEIR PRIDE BROKEN AND THEIR AMBITION ATROPHIED.
- WHOLLY PREVENTABLE DISEASES ARE INJURING INFANTS, KILLING CHILDREN AND AGING ADULTS LONG BEFORE THEIR TIME.
- HUNDREDS OF MILLIONS OF INDIVIDUAL HUMAN LIVES -- WITH ALL THEIR INHERENT POTENTIAL -- ARE BEING THREATENED, NARROWED, ERODED, SHORTENED, AND FINALLY TERMINATED BY A PERVASIVE

, POVERTY THAT DEGRADES AND DESTROYS ALL THAT IT TOUCHES.

WHAT OF THE STILL DEVELOPING WORLD WHERE TENS OF MILLIONS OF PEOPLE ARE LIVING AT LEVELS OF DEPRIVATION THAT SIMPLY CANNOT BE RECONCILED WITH ANY RATIONAL DEFINITION OF HUMAN DECENCY? POOR HOUSING, POOR SANITATION, AND WATER SUPPLIES, MALNUTRITION, RAMPANT DISEASE, ENDEMIC UNEMPLOYMENT, INCREASING ILLITERACY, EXPLOSIVE POPULATION GROWTH -- THESE AND MORE CHARACTERIZE THE PLIGHT OF THE MAJORITY OF THE WORLD'S POPULATION. THE POVERTY -- THE CRUEL, SENSELESS, CURABLE POVERTY -- THAT SHAPES AND LIMITS THESE LIVES CAN ONLY BE OVERCOME BY DEVELOPMENT. DEVELOPMENT CANNOT BE STOPPED. DEVELOPMENT SHOULD NOT BE STOPPED. BUT, DEVELOPMENT IN AND OF ITSELF IS NOT WITHOUT ITS OWN THREATS TO THE ENVIRONMENT AND TO THE VERY PEOPLE IT SEEKS TO BENEFIT. EXPLOITATION OF BOTH NATURAL AND HUMAN RESOURCES ARE THE NECESSARY INGREDIENTS OF ECONOMIC DEVELOPMENT. DEVELOPMENT CAN AND DOES HAVE PROFOUND AND LASTING EFFECTS ON THE ENVIRONMENT AND ON PEOPLE. THERE IS NO NEED TO CHRONICLE THE EVIDENCES OF GROWING THREATS TO THE ENVIRONMENT TO THIS AUDIENCE. YOU, PERHAPS, MORE THAN MOST ARE ALL TOO FAMILIAR WITH EXAMPLES AROUND THE WORLD OF ENVIRONMENTAL ALTERATION AND MANIPULATION CARRIED OUT IN CONNECTION WITH DEVELOPMENT SCHEMES THAT HAVE HAD UNWELCOMED AND, TOO OFTEN, UNEXPECTED UNTOWARD CONSEQUENCES. YET ALL OF US HERE KNOW THAT ECONOMIC DEVELOPMENT CANNOT PROCEED WITHOUT MAKING AN IMPACT ON THE NATURALLY OCCURRING ENVIRONMENT, AND ON THE PSYCHE AND SOMA OF MAN. THE DILEMMA IT POSES IS THIS, NAMELY;[4] "... THE ACHIEVEMENT OF A LEVEL OF LIFE IN ACCORD WITH FUNDAMENTAL HUMAN DIGNITY FOR THE WORLD'S TWO AND THREE-QUARTER BILLION POOR IS SIMPLY NOT POSSIBLE WITHOUT THE CONTINUED ECONOMIC GROWTH OF THE DEVELOPING COUNTRIES, AND THE DEVELOPED NATIONS AS WELL." BUT ECONOMIC GROWTH <u>NOT</u> ON THE PATTERN OF THE PAST THAT HAS LARGELY IGNORED THE THREATS POSED TO ENVIRONMENT AND PEOPLE ALIKE, THREATS THAT HAVE NOW BECOME SO SERIOUS AS TO TAKE THE WORLD FAMILY OF NATIONS TO STOCKHOLM.

"THE QUESTION," 4. SAID THE PRESIDENT OF THE WORLD BANK TO THE DELEGATES ASSEMBLED IN SWEDEN'S NEW PARLIAMENT BUILDING, "IS NOT WHETHER THERE SHOULD BE CONTINUED ECONOMIC GROWTH. THERE MUST BE. NOR IS THE QUESTION WHETHER THE IMPACT ON THE ENVIRONMENT MUST BE RESPECTED. IT HAS TO BE. NOR -- LEAST OF ALL -- IS IT A QUESTION OF WHETHER THESE TWO CONSIDERATIONS ARE INTERLOCKED. THEY ARE." "THE SOLUTION OF THE DILEMMA," HE CONTINUED, "REVOLVES CLEARLY NOT ABOUT WHETHER, BUT ABOUT HOW."

THE PORTENT FORESHADOWED BY STOCKHOLM FOR THE DEVELOPING PEOPLES OF THE WORLD MIGHT WELL BE SEEN BY THEM AS A FEARSOME PROSPECT. FOR ON TOP OF ALL THEIR MISERY AND DISADVANTAGES COMES THE HINT OF A SUGGESTION THAT THE POOR SLOW (OR EVEN STOP) THEIR EFFORTS AT DEVELOPMENT AND THEREBY PRESERVE THE ALREADY DISPROPORTIONATE PATTERNS OF CONSUMPTION BETWEEN RICH AND POOR. THE POOR HAVE EVERY RIGHT TO BE INDIGNANT AND ALARMED OVER SUCH A PROSPECT.

THE DEVELOPING COUNTRIES AND THEIR PEOPLES ARE DETERMINED THAT THEY MUST EXPAND THEIR ECONOMIES AND MODERNIZE THEIR SOCIETAL INSTITUTIONS; THEY MUST PROVIDE THEMSELVES WITH AN OPPORTUNITY TO BUILD MORE PRODUCTIVE AND REWARDING LIVES.

THE POORER COUNTRIES OF THE WORLD HAVE MADE THEIR CHOICE FOR DEVELOPMENT. IT IS PART OF THEIR UNFINISHED REVOLUTION. THEY ARE DETERMINED TO ACHIEVE A BETTER LIFE FOR THEIR PEOPLES. THE ONLY QUESTION WOULD SEEM TO BE -- HOW FAST, BY WHAT MEANS, AND AT WHAT COST TO THEMSELVES AND THE WORLD CAN DEVELOPMENT BE ACHIEVED.

THE ISSUE AS I SEE IT CANNOT, MUST NOT, BE VIEWED AS ONE OF ECONOMIC AND SOCIAL DEVELOPMENT VERSUS THE ENVIRONMENT. IT IS RATHER HOW THIS DEVELOPMENT CAN PROCEED IN WAYS MINIMALLY DISRUPTIVE TO THE ENVIRONMENT, AND IN WAYS MAXIMALLY PROMISING OF MORE EQUITABLE DISTRIBUTION OF THE FRUITS OF SUCH DEVELOPMENT, INDIVIDUAL SELF-FULFILLMENT, AND SOCIAL HARMONY.

SINCE STOCKHOLM BOTH THE DEVELOPED AND DEVELOPING COUNTRIES ALIKE, IN THEIR OWN RESPECTIVE WAYS, REALIZE THAT THEY INDIVIDUALLY AND COLLECTIVELY STAND FACE TO FACE WITH THE FINITENESS OF THE BIOSPHERE -- THEIR ONLY HOME -- THE FINITENESS OF ITS ABILITY TO CLEANSE ITSELF OF THE TORRENT OF WASTES POURED INTO IT, TO HEAL THE SCARS INFLICTED BY USE, MISUSE, AND ABUSE, TO GIVE OF ITS BOUNTY OF RENEWABLE AND NON-RENEWABLE RESOURCES, TO SUPPORT WITH ANY MEASURE OF DIGNITY THE INCREASING HORDES OF HUMAN LIVES DESPERATE TO EXTRACT EVERY LAST DROP OF SUSTENANCE FOR THEIR VERY SURVIVAL. THE WONDER OF IT ALL IS, THAT IN THE LIGHT OF NEW KNOWLEDGE REGARDING THE LINKAGES AND INTERDEPENDENCES OF ECOLOGICAL SYSTEMS THAT COMPRISE THE GLOBAL BIOSPHERE UPON WHICH ALL LIFE DEPENDS -- THAT THE BIOSPHERE HAS SUCH RESILIENCY AND POWERS OF RECUPERATION. PERHAPS IT IS THAT VERY QUALITY, ITS SEEMINGLY UNLIMITED ASSIMILATIVE AND REGENERATIVE CAPACITY, THAT CAN LURE US BEYOND ITS TRUE BOUNDS OF TOLERANCES, LEAD US OVER THE THRESHOLD OF IRREVERSIBILITY.

HAVING SAID THIS, HOWEVER, ONE MUST ALSO BE COGNIZANT OF THE VERY REAL DICHOTOMY OF VIEWS THAT DISCUSSIONS OF ENVIRONMENTAL PROBLEMS AND ISSUES PROVOKE THROUGHOUT THE WORLD. WE SHOULD BE EVER CONSCIOUS OF THE FACT THAT WHILE ECOLOGICAL CONCERNS HAVE AND CONTINUE TO EMERGE AS ISSUES OF HIGH PRIORITY IN DEVELOPED COUNTRIES (PARTICULARLY IN THE UNITED STATES) THEY DO NOT COMMAND NEARLY THE SAME AMOUNT OF ATTENTION IN THE THIRD WORLD. AND, UNDERSTANDABLY SO.

ON EVERY COUNT, THE CONTRAST IN VALUES, IN INTERESTS, IN PRIORITIES, IN CAPACITIES, BETWEEN DEVELOPED AND DEVELOPING COUNTRIES IS MARKED. IN MATTERS DEALING WITH THE ENVIRONMENT IT IS, IF ANYTHING, EVEN MORE MARKED. THE NEW-FOUND CONCERN OF THE DEVELOPED COUNTRIES FOR THE ENVIRONMENT STRIKES NO RESONANT CHORD IN MUCH OF THE STILL DEVELOPING WORLD.

IF THE DIALOGUE BETWEEN THE "HAVES" AND THE "HAVE NOTS" ABOUT SUCH MATTERS IS TO BE AT ALL PRODUCTIVE, IT MUST BE BASED UPON A FRANK AND HONEST RECOGNITION THAT SOLUTIONS TO THE WORLD'S ENVIRONMENTAL PROBLEMS MUST BE COMPLEMENTARY TO, AND NOT AT THE EXPENSE OF, EFFORTS TO ADVANCE THE ECONOMIC AND SOCIAL DEVELOPMENT OF THE THIRD WORLD.

THE PREPARATIONS FOR STOCKHOLM CAUSED MANY OF THE DEVELOPING COUNTRIES (AND, I SUSPECT, NOT A FEW OF THE DEVELOPED ONES) TO EXAMINE, OFTEN FOR THE FIRST TIME, THE NATURE AND DIMENSIONS OF THEIR OWN ENVIRONMENTAL PROBLEMS. THIS EXAMINATION HAS, NOT UNEXPECTEDLY, SERVED TO REINFORCE THEIR COMMITMENT TO DEVELOPMENT. SOMEWHAT UNEXPECTEDLY, PERHAPS, (TO ME AT LEAST), THIS EXAMINATION ALSO SERVED TO PROVIDE NEW DIMENSIONS TO THE DEVELOPMENT PROCESS ITSELF.

IN THE PAST, THERE HAS BEEN A TENDENCY TO EQUATE THE GOAL OF DEVELOPMENT WITH THE MORE NARROWLY CONCEIVED OBJECTIVE OF ECONOMIC GROWTH AS MEASURED BY THE RISE IN GROSS NATIONAL PRODUCT. IT IS BEING INCREASINGLY RECOGNIZED TODAY THAT HIGH RATES OF ECONOMIC GROWTH DO NOT, BY THEMSELVES, GUARANTEE THE EASING OF PRESSING SOCIAL AND HUMAN PROBLEMS. INDEED, IN MANY COUNTRIES, HIGH GROWTH RATES HAVE BEEN ACCOMPANIED BY INCREASING UNEMPLOYMENT, RISING DISPARITIES IN INCOME, BOTH BETWEEN GROUPS AND BETWEEN REGIONS, AND THE DETERIORATION OF SOCIAL, CULTURAL, AND ENVIRONMENTAL CONDITIONS.

BUT, EVEN A CURSORY EXAMINATION OF THE NATIONAL REPORTS PREPARED BY THE DEVELOPING COUNTRIES FOR STOCKHOLM REVEALS AN ENCOURAGING SIGN. MORE AND MORE THEY ARE BEGINNING TO PLACE AN INCREASED EMPHASIS ON THE ATTAINMENT OF SOCIAL AND CULTURAL GOALS AS PART OF THE DEVELOPING PROCESS. THE RECOGNITION OF ENVIRONMENTAL AND ASSOCIATED HEALTH ISSUES BY THIRD WORLD COUNTRIES IS TO ME A PARTICULARLY ENCOURAGING ASPECT OF THIS BROADENING OF THE DEVELOPMENT CONCEPT.

How then can the international community -- developed and developing alike -- best proceed?

First, by recognizing that economic growth -- which the developing countries so desperately require -- must NOT, of necessity, involve an unacceptable burden on their environment, their neighbor's or that of the world.

Second, by recognizing that the relatively wealthy developed countries can afford to absorb increasing domestic environmental costs and at the same time provide greater development assistance to the poorer countries.

If developed and developing countries alike fail in the twin objectives of advancing the development of the latter while preserving the integrity of their common environment, it will not be because of ignorance as to the consequences or technological weakness, as inexact or inadequate as both are accused of being. Rather, it will stem from failures of political will and social responsibility.

What reason have we to believe that the international community will not fail in this regard? For one thing, the trend of concessionary aid flow from the rich to the poor is not encouraging, thus contributing to the widening gap between them. Secondly, financial support for the U.N. and its specialized agencies is being weakened, suggesting that some governments have become disenamoured with it in many respects.

Thirdly, the voiced concern of some developed countries over the recent decision by the U.N.'s Second Committee to place the new Environment Secretariat in Nairobi could suggest on their part a waning enthusiasm for its potential utility in combatting global problems, particularly those of developed country origin and concern.

Fourthly, the use to be made of the proposed Environmental Fund (for which the United States has pledged 40 percent of a $100 million target over

A FIVE-YEAR PERIOD) IS NOT YET SUFFICIENTLY DETAILED TO ALLAY SOME DEVELOPED COUNTRY APPREHENSIONS ON THIS MATTER.

AND, YET, THERE IS CAUSE FOR OPTIMISM. THE RECENTLY CONCLUDED CONFERENCE IN LONDON ON MARINE POLLUTION RESULTED IN AGREEMENT ON A CONVENTION TO WHICH THE PRINCIPAL MARITIME NATIONS HAVE SUBSCRIBED. THE TREATY OF OSLO ON POLLUTION OF THE BALTIC SUGGESTS SOME RELIEF FROM SHIP AND LAND SOURCES IN THE RIPARIAN STATES.

THE PRINCIPAL BILATERAL AND MULTILATERAL LENDING AGENCIES RECENTLY CONCLUDED A SUCCESSFUL SEMINAR ON PROVIDING FOR ENVIRONMENTAL CONSIDERATIONS IN DEVELOPMENT PROJECTS WHICH THEY ARE FINANCING.

THESE AND OTHER MOVEMENTS ON THE INTERNATIONAL FRONT SUGGEST THAT SUCH PROBINGS WILL INITIATE A "BREAKTHROUGH TO ACTION" OF THE KIND ENVISIONED AT STOCKHOLM.

THE CHALLENGE BEYOND STOCKHOLM WAS APTLY PHRASED BY PRIME MINISTER INDIRA GHANDI:

"IT IS CLEAR," SAID THE PRIME MINISTER, "THAT THE ENVIRONMENTAL CRISIS WHICH IS CONFRONTING THE WORLD, WILL PROFOUNDLY ALTER THE FUTURE DESTINY OF OUR PLANET. NO ONE AMONG US, WHATEVER OUR STATUS, STRENGTH OR CIRCUMSTANCES, CAN REMAIN UNAFFECTED. THE PROCESS OF CHANGE CHALLENGES PRESENT INTERNATIONAL POLICIES. WILL THE GROWING AWARENESS OF, 'ONE EARTH' AND 'ONE ENVIRONMENT' GUIDE US TO THE CONCEPT OF 'ONE HUMANITY'? WILL THERE BE A MORE EQUITABLE SHARING OF ENVIRONMENTAL COSTS AND GREATER INTERNATIONAL INTEREST IN THE ACCELERATED PROGRESS OF THE LESS DEVELOPED WORLD? OR WILL IT REMAIN CONFINED TO A NARROW CONCERN, BASED ON EXCLUSIVE SELF-SUFFICIENCY?"

WE ARE STILL TOO CLOSE TO STOCKHOLM TO KNOW WHAT THE ANSWERS WILL BE -- ONLY TIME WILL TELL. AND, TIME IS SOMETHING WE CANNOT HAVE TOO MUCH OF

IF WE ARE TO BECOME TRULY RESPONSIBLE STEWARDS OF THIS BEAUTIFUL, SOLITARY, FRAGILE SPHERE BEING SEEN TONIGHT BY THREE AS IT RISES ABOVE THE HORIZON OF THE MOON. THE LAST TIME IN THIS CENTURY, SAY SOME, EXAMINING THE FUTURE OF SPACE EXPLORATION. THE LAST TIME FOREVER, PERHAPS, SAY OTHERS EXAMINING ONLY THE FUTURE.

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ENVIRONMENTAL CONSIDERATIONS IN DEVELOPMENT FINANCE

James A. Lee

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The current concern with the human environment, which has given rise, in part, to the United Nations Conference on the Human Environment in 1972, comes at a time when the energies, efforts, and resources of the developing countries are being harnessed as never before to achieve their respective development objectives. The compelling urgency of the third world's development efforts found endorsement in the proposals for the Second United Nations Development Decade (DD II). While to a large extent the concern with environmental issues has arisen out of the problems experienced by the industrially advanced countries, the developing countries are not unconcerned with or even immune from these problems. It was with this general thinking in mind that the Preparatory Committee for the Second United Nations Development Decade unanimously decided to include in the strategy for the decade the following statement which was accepted by the General Assembly: "Governments will intensify national and international efforts to arrest the deterioration of the human environment and to take measures towards its improvement and to promote activities that will help to maintain the ecological balance on which human survival depends."[1] The General Assembly in a recent resolution on the matter of the human environment further affirmed that environmental policies should be considered in the context of economic and social development, with account taken of the special needs of development in developing countries.[2]

It may be recalled that the General Assembly in its earlier resolutions on the human environment,[3] which were unanimously adopted, underlined the importance of taking environmental factors into account

[1] See General Assembly Resolution 2626 (XXV) of October 24, 1970.
[2] See General Assembly Resolution 2657 (XXV) of December 7, 1970.
[3] See General Assembly Resolutions 2398 (XXIII) of December 3, 1968, and 2581 (XXIV) of December 15, 1969.

in planning for economic and social development. General Assembly Resolution 2398 (XXIII) emphasized the collective views of its members that increased attention to environmental problems is essential for sound economic and social development. It further expressed the hope that the developing countries would, through appropriate international cooperation, derive particular benefit from the mobilization of knowledge and experience about the problems of the human environment so that those very problems might be avoided. In resolution 2581 (XXIV) the assembly reaffirmed this latter point by endorsing the main purpose of the Conference on the Human Environment as a practical means to encourage, and to provide guidelines for, action by governments and international organizations to protect and improve the human environment and to remedy and prevent its impairment by means of international cooperation.

Developing countries have an obvious and vital stake in environmental problems which affect the biosphere, themselves, and their economic relations with the developed countries. They would clearly wish to avoid, insofar as it is possible and feasible, the development patterns of the industrialized countries which have been responsible for the great concern over environmental matters in the richer states. The environmental problems of the developing countries are essentially of two kinds. First, there are the problems of rural and urban poverty characterized by poor housing, nutrition, water supplies, sanitation, and disease. Under these conditions in which the biophysical environment exhibits the ravages of long years of mismanagement not merely the "quality" of life but life itself is endangered for the environment often exhibits an inability to renew its life-supporting capabilities. Second, there are the environmental problems that tend to accompany the very processes of development itself. Rural and urban poverty affect the greater mass of mankind and clamor for attention; they are seen as problems that can only be overcome through development. However, as the development process moves ahead at an accelerated pace under the pressure of easing urgent social problems, the hazards and threats to the environment and health associated with the development process become greater.

The process of agricultural growth and change, for example, can involve construction of irrigation and drainage systems, clearing of forests, adoption of monoculture practices involving use of fertilizers and pesticides, creation of new disease-transmission routes, and establishment of human settlement patterns. All these processes and others associated with them have environmental and health implications. Industrialization results in the release of pollutants to the environment and in other environmental problems attendant on the extraction and processing of raw materials and the growth of related urban trade centers. Indeed, the growth of the entire economic infrastructure of

transport and communications has implications for the environment and for human health and well-being.

Urbanization, while a global phenomenon, is a serious and growing problem for many developing countries. Population growth, when not accompanied by adequate economic development, gives rise to unemployment of formidable dimensions which further impoverishes the rural environment and swells the drift to the cities, thereby intensifying human problems of the gravest nature. In the absence of adequate land use planning, industrial pollution control, provision for water supplies and sewage disposal, and adequate housing the population pressures that have produced unfavorable rural land use patterns impinging increasingly on the cities have become intolerable to the psyche and soma of the inhabitants.

Exploitation of both natural and human resources is a necessary ingredient of economic development. It can and does have profound and lasting effects on the naturally occurring environment, on its biota, and on people. Increasingly we read of "ecological boomerangs" occurring in connection with development schemes in which unwelcomed and, sometimes, unexpected consequences have arisen. Yet, economic development cannot proceed without disruptions for man and nature. The developing countries and their peoples have made it clear that they *must* expand their economies and modernize their social institutions; they *must* provide themselves with an opportunity to build more productive and rewarding lives. Clearly, economic development calls for the continued export of technology from the developed to the developing countries. This export is already of significant proportions. At the same time, however, the environmental record of the developed countries in reaping quick economic benefits only to comprehend later the greater and more lasting social costs attributable to premature application of new technology should be noted. But the question cannot be viewed as one of economic and social development versus the environment. Rather, we must ask how this development can proceed in ways minimally disruptive to the environment and in ways promising of individual self-fulfillment and social progress.

Both the developed and developing countries, in their respective ways, are beginning to realize they stand face to face with the finiteness of the biosphere, their only habitat. They are also realizing that there is no choice other than to husband and manage by some means the biophysical resources that sustain them. This realization comes as states begin to comprehend, albeit too slowly perhaps, the implications of the interrelatedness of their life-supporting ecological systems, the man-made environment, human societies, and individual welfare. The linkages and interdependences of ecological systems comprising the global biosphere that are now coming to light suggest that *all* states must take an interest in protecting the integrity of these life-

supporting systems. Practices which give rise to regional and global environmental problems clearly call for corrective action in the best interests of *all* the states concerned.

Yet, having this in mind, one must also be cognizant of the very real dichotomy that discussions of environmental problems and issues provoke throughout the world. One must ever be conscious of the fact that while ecological concerns are emerging as issues of high priority in developed countries, particularly in the United States, they do not command nearly the same amount of attention in the third world — and understandably so. Dwelling on the "quality" of life and environment may seem an almost luxurious preoccupation indeed for societies afflicted with widespread malnutrition and disease, high infant mortality, low life expectancy, high illiteracy levels, endemic unemployment, and severely skewed distributions of per capita income. If one adds to this litany of travail the widening gap, both absolutely and relatively, in material advances between developed and developing countries, it is easy to appreciate the dichotomy.

On every count the contrast in values, in interests, in priorities, and in capacities between developed and developing countries is marked. In matters affecting the environment, its use and protection, the contrast is, if anything, even more marked. The new-found concern of the developed countries for the environment strikes no resonant chord in much of the still developing world. If the dialogue between the worlds of the "haves" and the "have nots" about such matters is to be at all productive, it must be based on a frank and honest recognition that the viewpoints on both sides are different and that solutions to the world's environmental problems must be complementary to and not at the expense of efforts to advance the economic and social development of third-world countries.

In the preparations currently under way for the 1972 United Nations Conference on the Human Environment regional environment–development seminars have recently been concluded in Bangkok, Addis Ababa, Mexico City, and Beirut. Those seminars had the benefit of a report of an earlier meeting of development planning experts at Founex, Switzerland.[4] This report makes clear that the issue of the human environment is and ought to be of great importance to developing countries and that it must be regarded as an integral aspect of their own development process. The seminars, in fact, addressed themselves

[4] *Development and Environment,* Report submitted by a panel of experts convened by the secretary-general of the United Nations Conference on the Human Environment, Founex, Switz., June 4-12, 1971. (Mimeographed.) This report was described as a "historic turning point in the development-environment dialogue" by Maurice Strong, secretary-general of the conference, in a statement to the Preparatory Committee for the Conference on the Human Environment at its third session, September 13, 1971.

to three basic elements in the report which are of interest to developing countries. These are, in brief:

1) Developing countries share with the entire community of states a common interest in preserving and utilizing for the benefit of all mankind that portion of the earth's environment — the oceans and the atmosphere above them — which lies outside the jurisdiction of any state, and they must join in common action to protect it;

2) developing countries will be greatly affected by the actions taken by the more industrialized countries in dealing with their environmental problems, and such actions present both new opportunities and new risks to which developing countries must be prepared to respond;

3) developing countries themselves have serious environmental problems, many of them related to poverty and underdevelopment, and international cooperation is needed to enable them to deal with these problems and to build into their own development processes measures which will tend to prevent unnecessary abuse and degradation of their environment.

Thus, a major challenge faces developing countries: They are attempting to find ways to achieve their own social and economic goals at an accelerated rate and to avoid, as far as possible, the social costs of environmental degradation. Concern for the environment is coming to be viewed, therefore, as an integral part of the development process. This is especially so because, under the conditions prevailing in developing countries, any additional costs involved in improving the quality of the environment can only be envisaged in the context of accelerated growth. Only with great difficulty can resources be diverted from the urgent needs of development. The problems should not be viewed, however, exclusively in terms of a tradeoff between the rate of growth and environment-oriented actions. The situation prevailing in most developing countries is such that preventive action may be taken now at only a part of the cost which would be incurred later on. This type of tradeoff — between short-term economic effects and long-term development — is one that is constantly faced by development planners.

The regional UN seminars on the human environment have also made it clear that the formulation of environmental goals, as indeed the formulation of economic and social policies in general, is seen by the developing countries as coming within their sovereign competence. Each country indicated that it must find its own solutions in the light of its own problems and within the framework of its own political, social, and cultural values.

While it is important that environmental policies are integrated with development planning and are regarded as a part of the overall framework of economic and social planning, it should be stressed that

concern about the environment is only another dimension of the problem of development in developing countries. It is not viewed by them as something separate and apart from their development efforts. The objective is, rather, to regard the safeguarding and improvement of the environment as a part of the multiple goals in a development plan. Developing countries have certain inherent advantages in intgrating environmental and developmental policies. Most of them are already so committed to planning that the imposition or acceptance of social controls is nothing new for them. They are also making a fresh start in many fields and can thus anticipate environmental effects and provide for them in their current planning. The overriding constraint in developing countries is, of course, money, the lack of which necessitates fairly sharp choices between various objectives of planning. Since environmental improvement can be regarded as only one of the multiple objectives of planning, its priority in relation to other objectives will be determined by each society in the light of its own urgent economic and social problems and its own stage of development. Basically, this is a question of alternative uses of resources within the framework of comprehensive economic and social planning.

Parallel to the integration of environmental goals with developmental policies at the macro level developing countries must also turn to the micro level to devise appropriate techniques and guides for including environmental factors in the appraisal of their development projects. Application of adequate criteria and procedures to project design and appraisal presupposes a better knowledge of the environmental, health, and sociocultural impacts of development projects. While environmental experts would be the first to recognize and admit the inadequacies and shortcomings of predicting accurately the full range of consequences attendant on development schemes, sufficient information, data, experience, and expertise do presently exist so that "reasonable" predictions can be made about the consequences of environmental alteration and manipulation. Knowledge of the structure and function of ecosystems, while still at a relatively rudimentary level, is being developed due, in part, to the efforts of the International Biological Program (IBP). Disease problems attributable to development are becoming both better known and understood, and measures for their prevention or mitigation are being developed. Sociocultural impacts are perhaps less well understood, but the increasing participation of social scientists in the planning, appraisal, conduct, and auditing of development activities is an encouraging sign.

It would seem, however, that it is not within the present state of the art to make available definitive guidelines which would provide firm directives to development planners on how to plan, design, con-

struct, operate, and evaluate projects in such a way as to ensure that all potential environmental, health, and sociocultural consequences and remedial measures are identified and costed out and proper values assigned to benefits in cost-benefit analyses. Guides to environmental considerations presently being used and under development would seem to represent, in part, a way to reach the stated goals of developing countries, namely, the pursuit of economic development in a manner that is minimally disruptive to life-supporting ecological systems, with minimal adverse effects on the physical and mental health of affected peoples and with minimal dysfunctional effects on the sociocultural processes by which peoples conduct their interpersonal and intergroup affairs. Whatever form they may take, environmental considerations should, to the extent possible, ensure that environmental quality, human health, and social well-being need not be sacrificed or unduly injured, let alone irreversibly altered, as a result of economic development. Further, these considerations should, by their very existence and application, point the way toward bringing about increased awareness of development-associated environmental problems in developing countries, the marshaling of the necessary resources and expertise to study such problems, the stimulation of the need for appropriate research and training, and the encouragement of exchanges of information and experience between countries.

Purposeful and systematic evaluation of the impact of development activities on the environment and on public health and social well-being is a rather recent innovation in direct response to the growing concern over threats to the very survival of man. This is not to imply that all economic development activities in the past proceeded in the absence of any such evaluations. However, it has only been within the past several years that development planners and their institutions have been alerted to the necessity of carrying out "preproject" evaluations in something of a systematic manner. Most of these activities have been centered in the developed countries in which new legislation has imposed restrictions on activities potentially damaging to the environment and health. In the United States, for example, the Environmental Quality Act of 1969 provides for an accounting of probable environmental impacts of federally financed projects in advance of and as a prerequisite to their implementation. Environmental impact statements are prepared by the project sponsor and subjected to review by interested agencies at the federal, state, and local governmental levels. More recently economic development institutions such as the IBRD, the Swedish International Development Authority, the United States Agency for International Development (AID), and the United Nations Development Program (UNDP), among others, have indicated their intention to include environmental considerations

in the planning and appraisal of projects prepared by or submitted to them for financing.

In its own distinct way the IBRD, by way of example, has striven to serve the basic goal of economic development without undue adverse consequences to the environment. It has greatly increased its activities in recent years. One measure of this increase is the financial commitments of the World Bank Group for high-priority projects in developing countries, which have risen from $1 billion in 1968 to $2.3 billion in 1970.[5] In the five years from 1968 to 1973 commitments are expected to total $12 billion, or more than double the figure for the previous five years. But the World Bank Group's goals are not merely financial or quantitative; they are also qualitative. For it is the improvement of the human condition, not of statistical abstractions, that is the object of its endeavors.

In expanding its activities the IBRD attaches particular importance to the promotion of agriculture, education, and family planning. This ordering of priorities is dictated by the facts that one-third to one-half of mankind suffers from hunger or malnutrition, that 800 million illiterates have been bypassed by educational systems that remain both inadequate and out of tune with manpower needs, and that the population explosion has become one of the greatest threats to the economic and social progress of the human race. The experience of the IBRD — not only in these sectors but also over the entire range of its activities — has underlined for it the need for an improved understanding of the social and environmental implications of economic change. That need will increase as the bank grapples in the years ahead with the growing problems of urbanization, unemployment, industrialization, land reform, health, income distribution, and threats to the environment.

Speaking to the UN Economic and Social Council (ECOSOC) in 1970, IBRD President Robert McNamara stated:

> The problem facing development finance institutions, including the World Bank, is whether and how we can help the developing countries to avoid or mitigate some of the damage economic development can do to the environment, without at the same time slowing down the pace of economic progress. It is clear that the costs resulting from adverse environmental change can be tremendous . . . witness, for example, the harm to human life that some water-storage projects in Africa and Asia already have done by encouraging water-borne diseases — to say nothing of the implications of the rising use of pesticides throughout the develop-

[5] International Bank for Reconstruction and Development and International Development Association, *Annual Report 1970* (Washington, 1970), p. 5.

> ing world. . . . It is equally clear that, in many cases, a small investment in prevention could be worth many times over what would have to be expended to repair the damage.[6]

To this end the World Bank Group is taking steps to assure that projects financed by it do not have seriously adverse environmental and health consequences or, if they are likely to have such consequences, that measures are taken to avoid or to mitigate them. Indeed, the president and the World Bank Group's top management have already initiated changes that will ensure to every extent possible a consideration of the environmental, health, and related social consequences of development projects proposed for financing.

The policy of the World Bank Group regarding the environmental consequences of the activities for which it makes loans, simply stated, is to pursue its economic development objectives with a careful and studied regard for the consequences to the environment and to the health and well-being of affected peoples. This policy statement is intended to leave no doubt that the bank fully intends to press forward with its primary job of assisting developing countries to achieve a higher standard of living and economic growth. At the same time the statement is also designed to leave no doubt that the bank does not intend that its activities should knowingly contribute to short-term economic gains at the price of long-term human ecological misery.

Bank-financed projects that might have adverse consequences for the environment or health are reviewed and studied (including appropriate field investigations) with a view to identifying the nature and dimensions of problems and providing for their solution. Similarly, opportunities for environmental enhancement are sought out for often such benefits can be incorporated without significant alteration of the project's intended purpose. Environmental safeguards deemed necessary are considered by the borrower, the member government, and the bank in the preparations for negotiating the loan and, finally, by the bank's Loan Committee and Board of Directors which must authorize the loan. When environmental provisions are incorporated into the project, their costs are included in the terms of the loan.

The World Bank Group is of the opinion that environmental quality, human health, and social well-being need not be sacrificed or unduly injured, let alone irreversibly altered, as a result of economic development activities. It seeks to convince its developing member countries that ecologically oriented planning, appropriately combined with sociocultural awareness and sensitivity, is a necessary prerequisite of project identification, design, and implementation. Not surprisingly, it is finding much sympathy for this approach on the part of

[6] See UN Document E/SR. 1730.

many of the developing countries which it serves. While these countries rightfully and predictably seek to share in the fruits of technology and industrialization, in expanded agriculture and improved yields, they are becoming more aware of the unwanted consequences that can attend these efforts. Increasingly, they are seeking advice and assistance on ways to avoid or mitigate these adverse consequences while at the same time moving forward toward their respective economic and social goals.

It would seem that looking ahead into the 1970s financial institutions, public and private, will ignore at their peril the consequences of their operations for the human environment. More and more they will be held accountable for the environment-affecting activities whose financing they provide and in whose preparation and execution they increasingly play a major role. Further, it is not unreasonable to expect that development finance institutions will find themselves called upon to fund new types of projects designed to rehabilitate and clean up urban chaos and associated environmental pollution: pollution of lakes, rivers, estuaries, and fjords; pollution of the air over densely populated urban and industrial areas where disturbing clinical signs are beginning to reveal themselves; pollution of valuable urban lands from growing mountains of solid wastes; pollution from toxic substances that slowly and insidiously take their toll of wild animals and birds; and pollution of the human organism, the effects of which can be expected to be reflected in changing morbidity and mortality statistics.

Further, no country and no people are exempt from the current effects and ultimate consequences of threats to the biospheric integrity of the planet, from dangers such as global pollution of the oceans, large-scale atmospheric and climatic changes, or the worldwide effects of persistent and pervasive biocides. Some encouraging signs are apparent, however. The forthcoming UN Conference on the Human Environment could prove to be a turning point for international cooperation in averting what in some quarters is viewed as an approaching "crisis." The International Biological Program is offering new hope for an early understanding of the structure and functions of ecosystems and, hence, the development of a capability for predicting the consequences of alterations and disturbances to them. The proposal for a global network for environmental monitoring could provide the tools for measuring changes and allow for surveillance over critical elements and factors. Though ecological research is, itself, on the upswing, it is still deserving of greater support for, as Marston Bates so correctly prophesized a decade ago, "ecology may well be the most

important of the sciences from the viewpoint of long-term human survival."[7]

Ecologically speaking, 1980 is the day after tomorrow . . . the year 2000 is next week . . . and if we truly intend to become responsible trustees of the biosphere, we must better understand how it functions and what the effects of our tampering might be. Development finance institutions are becoming aware that the global challenge — the survival of mankind — must be met by resolving the basic conflict between man's creativity and his destructiveness. The issue of the environment provides a new imperative, a new opportunity, a new mandate to measure development assistance in terms other than growth of output — for man himself is the ultimate measure.

[7] Marston Bates, "Man and Other Pests," *Nation,* October 6, 1962 (Vol. 195, No. 10), p. 202.

FORM NO. 75
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REMARKS

Doris - This is for your records - not to be given out.

Alice N.

From James A. Lee

Not to be given out -

ENVIRONMENTAL CONCERNS OF A GLOBAL NEIGHBORHOOD

- SOME REMARKS -

JAMES A. LEE

I AM PLEASED TO HAVE THE OPPORTUNITY TO PARTICIPATE IN THIS INTERNATIONAL CONCERNS CONFERENCE. THIS CONFERENCE, AND THE CONCERNS THAT HAVE CAUSED ALL OF YOU TO ASSEMBLE HERE ARE OF IMMENSE MOMENT -- FOR WHILE DAILY OUR EYES AND EARS ARE FILLED WITH THE EXPEDIENCIES OF THE PRESENT -- IT IS THESE AND RELATED ISSUES TO WHICH YOU ARE TODAY ADDRESSING YOURSELVES THAT WILL SHAPE AND MOULD THE FUTURE. FOR WHAT WE ARE EXAMINING TODAY IS THE JOINT NECESSITY FOR CONTINUED GLOBAL-WIDE ECONOMIC DEVELOPMENT AND PRESERVATION OF THE ENVIRONMENT. AND LET ME SAY AT THE OUTSET THAT WHILE THE ISSUES BEFORE YOU ARE SERIOUS I BELIEVE THEY ARE NOT BEYOND SOLUTION.

IN RECENT YEARS THERE HAS BEEN A RISING CRESCENDO OF PROPHETIC WARNINGS ABOUT THE HUMAN ENVIRONMENT -- SOME REASONED AND FORCEFUL, SOME SHRILL AND EXAGGERATED, SOME CAUTIOUSLY HOPEFUL, SOME DEEPLY PESSIMISTIC. WE HAVE BEEN TOLD THAT OUR AIR, WATER, SOIL AND LIVING SPACE ARE SERIOUSLY DETERIORATING IN A WAY WHICH THREATENS THE QUALITY OF HUMAN EXISTENCE, AND WHICH MAY THREATEN THE FUTURE OF HUMAN LIFE ITSELF. THERE ARE FAMILIAR ELEMENTS IN THE WARNINGS. MEN HAVE OFTEN BEEN CAUTIONED THAT THEIR USE OF NATURAL RESOURCES LIKE TIMBER, OR THEIR OWN FERTILITY AND INCREASE, WOULD

PREPARED FOR PRESENTATION AT THE INTERNATIONAL CONCERNS CONFERENCE, ATLANTA, GEORGIA, MAY 9, 1973.

SOONER OR LATER BRING UNACCEPTABLE CONSEQUENCES. NOW THERE IS A NEW SENSE OF URGENCY, CAUSED NOT BY NEW FACTORS BUT BY A NEW COMBINATION OF FACTORS ON A WORLD-WIDE SCALE; CONTINUED MASSIVE INCREASES IN POPULATION, EVER-INCREASING INDUSTRIAL EXPANSION WITH ITS APPETITE FOR RAW MATERIALS, AND A HIGH DEGREE OF WORLD ECONOMIC INTERDEPENDENCE WHICH, WITH MODERN COMMUNICATIONS TECHNIQUES, HAS CREATED A NEW SENSITIVITY TO THE NEEDS OF POOR COUNTRIES. SUDDENLY IT APPEARS TO MANY PEOPLE, WITH FRIGHTENING INTENSITY, THAT WE ARE PUSHING AGAINST THE LIMITS OF A FINITE WORLD, THAT IN ALL LIKELIHOOD SOMETHING VITAL WILL, BEFORE LONG, GIVE WAY, AND THAT THE TRAUMATIC REASSESSMENTS WHICH WILL THEN BE FORCED UPON US WILL BE FULL OF POSSIBILITIES FOR TRAGEDY.

IT WAS NEARLY ONE YEAR AGO THAT I SAT IN THE NEW PARLIAMENT BUILDING IN STOCKHOLM AND HEARD THE FINAL RAP OF THE GAVEL DECLARING SINE DIE THE CLOSING OF THE U.N. CONFERENCE ON THE HUMAN ENVIRONMENT -- AN HISTORIC FIRST FOR THE WORLD'S FAMILY OF NATIONS. BUT BEFORE THE GAVEL SOUNDED TO SEND THE DELEGATES BACK TO THEIR RESPECTIVE COUNTRIES, I LISTENED CAREFULLY TO THE WORDS OF INDIA'S PRIME MINISTER INDIRA GHANDI, AS SHE SOUNDED THE CHALLENGE THAT LAY BEYOND STOCKHOLM:

> "IT IS CLEAR," SAID THE PRIME MINISTER, "THAT THE ENVIRONMENTAL CRISIS WHICH IS CONFRONTING THE WORLD WILL PROFOUNDLY ALTER THE FUTURE DESTINY OF OUR PLANET. NO ONE AMONG US -- WHATEVER OUR STATUS, STRENGTH, OR CIRCUMSTANCES, CAN REMAIN UNFAFFECTED. THE PROCESS OF CHANGE CHALLENGES PRESENT INTERNATIONAL POLICIES. WILL THE GROWING AWARENESS OF 'ONE EARTH' AND 'ONE ENVIRONMENT' GUIDE US TO THE CONCEPT OF 'ONE HUMANITY'?

WILL THERE BE A MORE EQUITABLE SHARING OF ENVIRONMENTAL COSTS AND GREATER INTERNATIONAL INTEREST IN THE ACCELERATED PROGRESS OF THE LESS DEVELOPED WORLD? OR -- WILL IT REMAIN CONFINED TO A NARROW CONCERN BASED ON EXCLUSIVE SELF-SUFFICIENCY?"

AND, MY MIND RACED BACK OVER THE MOUNTAIN OF UNPLEASANT FACTS THAT I AND OTHERS HAD BEEN GRAPPLING WITH DURING THE TWO YEARS OF PREPARATION FOR THE CONFERENCE. (THE FACTS OF WHICH I SPEAK CHARACTERIZE THE LIVES OF THREE-QUARTERS OF THE HUMAN RACE, THE MAJORITY OF THE WORLD'S PEOPLES.) THEY ARE NEITHER PLEASANT NOR COMFORTABLE -- BUT THEY ARE THE FACTS. AND, THESE FACTS POSE A DILEMMA FOR OUR EFFORTS TO PROTECT THE BIOSPHERE -- OUR ONLY HOME.

THE DILEMMA IS THIS: THE ACHIEVEMENT OF A LEVEL OF LIFE IN ACCORD WITH FUNDAMENTAL HUMAN DIGNITY FOR THE WORLD'S TWO-AND-THREE QUARTER BILLION POOR IS SIMPLY NOT POSSIBLE WITHOUT CONTINUED AND ACCELERATED ECONOMIC GROWTH OF THE DEVELOPING NATIONS -- AND THE DEVELOPED NATIONS AS WELL.

BUT ECONOMIC GROWTH ON THE PATTERN OF THE PAST -- AND MOST PARTICULARLY THAT EXPERIENCED IN THE ALREADY HIGHLY INDUSTRIALIZED WEALTHY NATIONS -- POSES AN UNDENIABLE THREAT TO THE ENVIRONMENT AND TO THE HEALTH AND WELL-BEING OF MAN.

AND, LET THERE BE NO DOUBT ABOUT IT: THE THREAT IS REAL -- IT BECOMES MORE SO EACH DAY. PEOPLE DO DIE FROM THE MISUSE OF MANKIND'S RESOURCES, AND THE "BALANCE OF NATURE" IS BEING UPSET, SLOWLY IN SOME PLACES, AND AT FRIGHTENING SPEEDS ELSEWHERE. WHEN RIVERS ARE SO POLLUTED

WITH CHEMICALS THAT PHOTOGRAPHIC FILM CAN BE DEVELOPED IN THE WATER, THAT THREAT IS REAL.

THE QUESTION, IT SEEMS TO ME, IS NOT WHETHER THERE SHOULD BE CONTINUED ECONOMIC GROWTH -- THERE MUST BE. NOR IS THE QUESTION WHETHER THE IMPACT ON THE ENVIRONMENT MUST BE RESPECTED -- IT HAS TO BE. NOR -- LEAST OF ALL -- IS IT A QUESTION OF WHETHER THESE TWO CONSIDERATIONS ARE INTERLOCKED -- THEY ARE.

THE ISSUE CANNOT -- MUST NOT -- BE VIEWED AS ONE OF ECONOMIC DEVELOPMENT VERSUS THE ENVIRONMENT. THE SOLUTION OF THE DILEMMA REVOLVES CLEARLY NOT ABOUT WHETHER -- BUT ABOUT HOW -- HOW THIS DEVELOPMENT CAN PROCEED IN WAYS MINIMALLY DISRUPTIVE TO THE LIFE-SUPPORTING ECOLOGICAL SYSTEMS UPON WHICH ALL COUNTRIES AND ALL PEOPLES DEPEND.

LET US LOOK FOR JUST A MOMENT AT THE PLIGHT OF THE HUNDREDS OF MILLIONS OF THE WORLD'S PEOPLES, WHO ARE LIVING AT LEVELS OF DEPRIVATION THAT SIMPLY CANNOT BE RECONCILED WITH ANY RATIONAL DEFINITION OF HUMAN DECENCY.

THROUGHOUT THE DEVELOPING NATIONS:

. HUNGER AND MALNUTRITION ARE SAPPING ENERGY, STUNTING BODIES, AND SLOWING MINDS.

. ILLITERACY IS LOCKING OUT LEARNING AND PARALYZING OPPORTUNITY.

. UNEMPLOYMENT IS NOT ONLY ROBBING MEN AND WOMEN OF THE MINIMAL MEANS TO MAKE THEIR WAY, BUT LEAVING THEIR PRIDE BROKEN AND THEIR AMBITION ATROPHIED.

. WHOLLY PREVENTABLE DISEASES ARE INJURING INFANTS, KILLING CHILDREN AND AGING ADULTS LONG BEFORE THEIR TIME.

. HUNDREDS OF MILLIONS OF INDIVIDUAL HUMAN LIVES -- WITH ALL THEIR INHERENT POTENTIAL -- ARE BEING THREATENED, NARROWED, ERODED, SHORTENED, AND FINALLY TERMINATED BY A PERVASIVE POVERTY THAT DEGRADES AND DESTROYS ALL THAT IT TOUCHES.

THE PICTURE IS NOT EXAGGERATED. THROUGHOUT THE DEVELOPING WORLD THE ESTIMATES ARE THAT WELL OVER A BILLION HUMAN BEINGS ARE HUNGRY OR MALNOURISHED. THERE ARE 100 MILLION MORE ADULT ILLITERATES THAN THERE WERE TWO DECADES AGO. UNDER-EMPLOYMENT AND UNEMPLOYMENT ENTRAP ROUGHLY ONE OUT OF EVERY FIVE IN THE LABOR FORCE. INFANT AND CHILD MORTALITY IS FOUR TIMES GREATER THAN IT IS IN THE AFFLUENT WORLD, AND LIFE EXPECTANCY IS 40% SHORTER. TO ALLEVIATE PAIN AND ARREST DISEASE, THERE ARE IN SOME DEVELOPING COUNTRIES FEWER THAN ONE DOCTOR FOR EVERY 50,000 PEOPLE -- COMPARED TO ONE PER 700 IN THE UNITED STATES.

POOR HOUSING, POOR SANITATION AND WATER SUPPLIES, MALNUTRITION, RAMPANT DISEASE, ENDEMIC UNEMPLOYMENT, INCREASING ILLITERACY, EXPLOSIVE POPULATION GROWTH -- THESE AND MORE CHARACTERIZE THE PLIGHT OF THE MAJORITY OF THE WORLD'S POPULATION. THE POVERTY -- THE CRUEL, SENSELESS, CURABLE POVERTY THAT SHAPES AND LIMITS THESE LIVES CAN ONLY BE OVERCOME BY DEVELOPMENT. DEVELOPMENT CANNOT BE STOPPED. DEVELOPMENT SHOULD NOT BE STOPPED. BUT, DEVELOPMENT IN AND OF ITSELF IS NOT WITHOUT ITS OWN THREATS TO THE ENVIRONMENT AND TO THE VERY PEOPLE IT SEEKS TO BENEFIT. EXPLOITATION OF BOTH NATURAL AND HUMAN RESOURCES ARE THE NECESSARY INGREDIENTS OF ECONOMIC DEVELOPMENT. DEVELOPMENT CAN AND DOES HAVE PROFOUND

AND LASTING EFFECTS ON THE ENVIRONMENT AND ON PEOPLE. THERE IS NO NEED TO CHRONICLE THE EVIDENCES OF GROWING THREATS TO THE ENVIRONMENT TO THIS AUDIENCE. MANY OF YOU ARE ALL TOO FAMILIAR WITH EXAMPLES AROUND YOUR STATE, IN THIS COUNTRY, AND AROUND THE WORLD OF ENVIRONMENTAL ALTERATION AND MANIPULATION CARRIED OUT IN CONNECTION WITH DEVELOPMENT SCHEMES THAT HAVE HAD UNWELCOMED AND, TOO OFTEN, UNEXPECTED UNTOWARD CONSEQUENCES. YET ALL OF US HERE KNOW THAT ECONOMIC DEVELOPMENT CANNOT PROCEED WITHOUT MAKING AN IMPACT ON THE NATURALLY OCCURRING ENVIRONMENT, AND ON THE PSYCHE AND SOMA OF MAN.

AS WE NOW KNOW WELL ENOUGH, IT IS ALSO AT THIS POINT THAT IRREVERSIBLE INJURY TO THE ENVIRONMENT CAN TAKE PLACE. IF NATURE IS ABUSED BEYOND LIMITS, ITS REVENGE IS INEVITABLE.

IF POOR NATIONS ARE FACED WITH THE PROBLEM OF GROWTH WITHIN ACCEPTABLE ENVIRONMENTAL LIMITS, THE RICH NATIONS ARE CLEARLY CAUGHT UP IN IT EVEN MORE SERIOUSLY. WE MET IN STOCKHOLM AND ARE MEETING IN THIS CONFERENCE IN ATLANTA LARGELY BECAUSE THE EVIDENCE IS NOW OVERWHELMING THAT ROUGHLY A CENTURY OF RAPID ECONOMIC EXPANSION HAS GRADUALLY CONTRIBUTED TO A CUMULATIVELY MONSTROUS ASSAULT ON THE QUALITY OF LIFE AND THE ENVIRONMENT IN THE DEVELOPED COUNTRIES.

MEASURED AGAINST THE CRITERION OF WORLD NEED, MANY OF THE CURRENT CONSUMPTION HABITS OF THE DEVELOPED COUNTRIES ARE FRIVOLOUS AND WASTEFUL. THEY USE UP RESOURCES FOR PURPOSES WHICH ARE CLEARLY UNESSENTIAL WHEN SET AGAINST THE UNMET NEEDS OF THE DEVELOPING COUNTRIES. THIS UNDERLINES THE NEED TO RECONSIDER THE MEANING OF HUMAN LIFE AND COMMUNITY.

SOCIETIES, HEEDLESS OF RESPONSIBILITY TOWARD OTHER MEN AND FUTURE GENERATIONS, HAVE MEASURED THEIR SUCCESS IN TERMS OF HIGH CONSUMPTION AND GROWTH IN THE GROSS NATIONAL PRODUCT; BUT THE DANGEROUS INADEQUACY OF SUCH CRITERIA BECOMES INCREASINGLY EVIDENT. ECONOMIC DEVELOPMENT, TO A DEGREE, IS A NECESSITY FOR HUMAN LIBERATION; PURSUED EXCESSIVELY OR MADE AN IDEAL, IT CAN BE ENSLAVING.

BUT -- DEVELOPING COUNTRIES ALSO HAVE AN OBVIOUS AND VITAL STAKE IN ENVIRONMENTAL PROBLEMS WHICH AFFECT THEMSELVES, THEIR ECONOMIC RELATIONS WITH THE DEVELOPED COUNTRIES, AND THE BIOSPHERE. DEVELOPING COUNTRIES WOULD CLEARLY WISH TO AVOID, INSOFAR AS IT IS POSSIBLE AND FEASIBLE, THE DEVELOPMENT PATTERNS OF THE INDUSTRIALIZED COUNTRIES WHICH HAVE BEEN RESPONSIBLE FOR THE GREAT CONCERN OVER ENVIRONMENTAL MATTERS IN THESE RICHER NATIONS. THE ENVIRONMENTAL PROBLEMS OF THE DEVELOPING COUNTRIES ARE ESSENTIALLY OF TWO KINDS. FIRSTLY, THEY CONSIST OF PROBLEMS OF RURAL AND URBAN POVERTY. UNDER THESE CONDITIONS IN WHICH THE BIO-PHYSICAL ENVIRONMENT MAY EXHIBIT THE RAVAGES OF LONG YEARS OF MISMANAGEMENT, NOT MERELY THE "QUALITY" OF LIFE, BUT LIFE ITSELF IS ENDANGERED, FOR ENVIRONMENTS WHEN SEVERELY ABUSED OFTEN EXHIBIT AN INABILITY TO RENEW THEIR LIFE-SUPPORTING CAPABILITIES. AND, SECONDLY, THE ENVIRONMENTAL PROBLEMS THAT TEND TO ACCOMPANY THE VERY PROCESSES OF DEVELOPMENT ITSELF. THE FORMER, THAT IS TO SAY, POVERTY, AFFECT THE GREATER MASS OF MANKIND AND CLAMOR FOR ATTENTION -- THEY ARE SEEN AS PROBLEMS THAT CAN ONLY BE OVERCOME THROUGH DEVELOPMENT. HOWEVER, AS THE DEVELOPMENT PROCESS MOVES AHEAD

AT AN INCREASING PACE UNDER THE PRESSURE OF EASING URGENT SOCIAL PROBLEMS, THE HAZARDS AND THREATS TO THE ENVIRONMENT AND HEALTH ASSOCIATED WITH THE DEVELOPMENT PROCESS BECOME GREATER.

THE PROCESS OF AGRICULTURAL GROWTH AND CHANGE, FOR EXAMPLE, CAN INVOLVE CONSTRUCTION OF IRRIGATION AND DRAINAGE SYSTEMS, CLEARING OF FORESTS, ADOPTION OF MONOCULTURE PRACTICES INVOLVING USE OF FERTILIZERS AND PESTICIDES, CREATION OF NEW DISEASE TRANSMISSION ROUTES, AND ESTABLISHMENT OF HUMAN SETTLEMENT PATTERNS. ALL THESE PROCESSES AND OTHERS ASSOCIATED WITH THEM HAVE ENVIRONMENTAL AND HEALTH IMPLICATIONS.

INDUSTRIALIZATION RESULTS IN THE RELEASE OF POLLUTANTS TO THE ENVIRONMENT, IN ENVIRONMENTAL PROBLEMS ATTENDANT TO THE EXTRACTION AND PROCESSING OF RAW MATERIALS, AND THE GROWTH OF RELATED URBAN TRADE CENTERS.

INDEED, THE GROWTH OF THE ENTIRE ECONOMIC INFRASTRUCTURE OF TRANSPORT AND COMMUNICATIONS HAS IMPLICATIONS FOR THE ENVIRONMENT, AND FOR HUMAN HEALTH AND WELL-BEING.

URBANIZATION, WHILE A GLOBAL PHENOMENON, IS A PARTICULARLY SERIOUS AND GROWING PROBLEM FOR MANY DEVELOPING COUNTRIES. POPULATION GROWTH WHEN NOT ACCOMPANIED BY ADEQUATE ECONOMIC DEVELOPMENT, GIVES RISE TO UNEMPLOYMENT OF FORMIDABLE DIMENSIONS -- FURTHER IMPOVERISHING THE RURAL ENVIRONMENT AND SWELLING THE DRIFT TO THE CITIES, THEREBY INTENSIFYING HUMAN PROBLEMS OF THE GRAVEST NATURE. THE POPULATION PRESSURES THAT HAVE SO ADVERSELY AFFECTED RURAL LAND-USE PATTERNS AND WHICH NOW INCREASINGLY IMPINGE ON THE CITIES HAVE, IN THE ABSENCE OF

ADEQUATE LAND-USE PLANNING, INDUSTRIAL POLLUTION CONTROL, PROVISION FOR WATER SUPPLIES AND SEWAGE DISPOSAL, AND ADEQUATE HOUSING, GIVEN RISE TO CONDITIONS INTOLERABLE TO THE INHABITANTS.

AND, LET ME SPEAK BRIEFLY TO THE MATTER OF POPULATION GROWTH. THE STEEPLY RISING GROWTH OF WORLD POPULATION POSES A HOST OF URGENT PROBLEMS. WHILE EXPERTS DISAGREE ON HOW MANY PEOPLE THE EARTH CAN SUPPORT, ALL ARE AGREED THAT THERE IS AN UPPER LIMIT. IT FOLLOWS THAT OVERALL POPULATION GROWTH MUST INEVITABLY STOP AT SOME POINT. WHATEVER THIS LIMIT MAY BE, WE ARE IN NO DOUBT THAT WE ARE APPROACHING THE CRITICAL POINT FAR TOO RAPIDLY FOR COMPLACENCY.

PRESSURE ON LIMITED RESOURCES IS INTENSIFYING BOTH BECAUSE OF GREATER NUMBERS AND BECAUSE THE RATE OF USE BY EACH PERSON IS INCREASING. THE NUMBER OF PEOPLE THE PLANET OR ANY AREA CAN SUSTAIN DEPENDS PARTLY ON HOW MUCH THEY CONSUME AND POLLUTE. POPULATION GROWTH IN INDUSTRIALIZED SOCIETIES, WHERE PER CAPITA RATES OF CONSUMPTION AND POLLUTION ARE HIGH, IS NO LESS URGENT AN ISSUE THAN IN DEVELOPING COUNTRIES.

RAPID POPULATION GROWTH IN THE DEVELOPING COUNTRIES EATS UP THEIR ECONOMIC PROGRESS, CRUELLY FRUSTRATING THEIR HOPES FOR DEVELOPMENT. POPULATION GROWTH IN THE DEVELOPED COUNTRIES MULTIPLIES THEIR ALREADY DISPROPORTIONATE CONSUMPTION OF THE WORLD'S RESOURCES, FURTHER FRUSTRATING THE HOPES OF THE DEVELOPING COUNTRIES FOR A BETTER SHARE.

POPULATION GROWTH, TOGETHER WITH MIGRATION FROM RURAL AREAS, CONTRIBUTES TO THE ACCUMULATION OF PEOPLE IN CITIES IN EVER MORE CROWDED

CONDITIONS. BEYOND A CERTAIN POINT, THE EFFECTS OF SUCH DENSITY OF HUMAN BEINGS APPEAR TO BE MAINLY ADVERSE AND IT BECOMES INCREASINGLY DIFFICULT TO SUPPLY THE PUBLIC SERVICES REQUIRED BY URBAN AGGLOMERATIONS. THE MULTIPLICATION OF URBAN PROBLEMS IN OUR TIME OFFERS DRAMATIC EVIDENCE OF THE NEED TO LIMIT POPULATION.

AS I SAID EARLIER, EXPLOITATION OF BOTH NATURAL AND HUMAN RESOURCES IS A NECESSARY INGREDIENT OF ECONOMIC DEVELOPMENT. DEVELOPMENT DOES HAVE PROFOUND AND LASTING EFFECTS ON THE NATURALLY OCCURRING ENVIRONMENT, ITS BIOTA, AND ON PEOPLE. INCREASINGLY, WE READ OF "ECOLOGICAL BOOMERANGS" OCCURRING IN CONNECTION WITH DEVELOPMENT SCHEMES IN WHICH UNWELCOMED AND, SOMETIMES, UNEXPECTED CONSEQUENCES HAVE ARISEN. YET, ECONOMIC DEVELOPMENT CANNOT PROCEED WITHOUT ITS IMPACT ON MAN AND NATURE. AND, THE DEVELOPING COUNTRIES AND THEIR PEOPLES HAVE MADE IT CLEAR THAT THEY MUST DEVELOP, THEY MUST EXPAND THEIR ECONOMIES AND MODERNIZE THEIR SOCIAL INSTITUTIONS; THEY MUST PROVIDE THEMSELVES WITH AN OPPORTUNITY TO BUILD MORE PRODUCTIVE AND REWARDING LIVES. CLEARLY, ECONOMIC DEVELOPMENT CALLS FOR THE CONTINUED EXPORT OF TECHNOLOGY FROM THE DEVELOPED TO THE DEVELOPING COUNTRIES. THIS EXPORT IS ALREADY OF SIGNIFICANT PROPORTIONS. AT THE SAME TIME, HOWEVER, THE ENVIRONMENTAL RECORD OF THE DEVELOPED COUNTRIES IN REAPING QUICK ECONOMIC BENEFITS ONLY TO COMPREHEND LATER THE GREATER AND MORE LASTING SOCIAL COSTS ATTRIBUTABLE TO PREMATURE APPLICATION OF NEW TECHNOLOGY, SHOULD BE NOTED, AND IS BEING NOTED BY DEVELOPING COUNTRIES.

WITH THE ADVENT OF THE STOCKHOLM CONFERENCE, BOTH THE DEVELOPED AND DEVELOPING COUNTRIES ALIKE, IN THEIR OWN RESPECTIVE WAYS, ARE BEGINNING

TO REALIZE THEY STAND FACE TO FACE WITH THE FINITENESS OF THE BIOSPHERE -- THEIR ONLY HABITAT. AND, TOO, THEY ARE REALIZING THERE IS NO CHOICE OTHER THAN TO HUSBAND AND MANAGE BY SOME MEANS THE BIOPHYSICAL RESOURCES THAT SUSTAIN THEM. THIS REALIZATION COMES AS NATIONS BEGIN TO COMPREHEND, ALBEIT TOO SLOWLY PERHAPS, THE IMPLICATIONS OF THE INTERRELATEDNESS OF THEIR LIFE-SUPPORTING ECOLOGICAL SYSTEMS, THE MAN-MADE ENVIRONMENT, HUMAN SOCIETIES AND INDIVIDUAL WELFARE. THE LINKAGES AND INTERDEPENDENCES OF ECOLOGICAL SYSTEMS COMPRISING THE GLOBAL BIOSPHERE NOW COMING TO LIGHT SUGGEST THAT ALL NATIONS MUST TAKE AN INTEREST IN PROTECTING THE INTEGRITY OF THESE LIFE-SUPPORTING SYSTEMS. PRACTICES WHICH GIVE RISE TO REGIONAL AND GLOBAL ENVIRONMENTAL PROBLEMS CLEARLY CALL FOR CORRECTIVE ACTION IN THE BEST INTERESTS OF ALL THE NATIONS CONCERNED.

AND YET, HAVING THIS IN MIND, ONE MUST ALSO BE COGNIZANT OF THE VERY REAL DICHOTOMY THAT DISCUSSIONS OF ENVIRONMENTAL PROBLEMS AND ISSUES PROVOKE THROUGHOUT THE WORLD. ONE MUST EVER BE CONSCIOUS OF THE FACT THAT WHILE ECOLOGICAL CONCERNS ARE EMERGING AS ISSUES OF HIGH PRIORITY IN DEVELOPED COUNTRIES, PARTICULARLY IN THE UNITED STATES, THEY DO NOT COMMAND NEARLY THE SAME AMOUNT OF ATTENTION IN THE THIRD WORLD. AND UNDERSTANDABLY SO. DWELLING ON THE "QUALITY" OF LIFE AND ENVIRONMENT MAY SEEM AN ALMOST LUXURIOUS PREOCCUPATION INDEED FOR SOCIETIES AFFLICTED WITH WIDESPREAD MALNUTRITION AND DISEASE, HIGH INFANT MORTALITY, LOW LIFE EXPECTANCY, HIGH ILLITERACY LEVELS, ENDEMIC UNEMPLOYMENT, AND SEVERELY SKEWED DISTRIBUTIONS OF PER CAPITA INCOME. ADD TO THIS LITANY OF TRAVAIL, THE WIDENING GAP, BOTH ABSOLUTELY AND

RELATIVELY, IN MATERIAL ADVANCES BETWEEN DEVELOPED AND DEVELOPING COUNTRIES, AND ONE CAN EASILY APPRECIATE THE DICHOTOMY.

ON EVERY COUNT, THE CONTRAST IN VALUES, IN INTEREST, IN PRIORITIES, IN CAPACITIES BETWEEN DEVELOPED AND DEVELOPING COUNTRIES IS MARKED. AND, IN MATTERS DEALING WITH THE ENVIRONMENT, ITS USE AND PROTECTION, THE CONTRAST IS, IF ANYTHING, EVEN MORE MARKED. THE NEW-FOUND CONCERN OF THE DEVELOPED COUNTRIES FOR THE ENVIRONMENT STRIKES NO RESONANT CHORD IN MUCH OF THE STILL DEVELOPING WORLD.

IF THE DIALOGUE BETWEEN THE WORLDS OF THE "HAVES" AND THE "HAVE NOTS" ABOUT SUCH MATTERS IS TO BE AT ALL PRODUCTIVE, IT MUST BE BASED UPON A FRANK AND HONEST RECOGNITION THAT THE VIEWPOINTS ON BOTH SIDES ARE DIFFERENT, AND THAT SOLUTIONS TO THE WORLD'S ENVIRONMENTAL PROBLEMS MUST BE <u>COMPLEMENTARY TO</u> AND <u>NOT AT THE EXPENSE OF</u> EFFORTS TO ADVANCE THE ECONOMIC AND SOCIAL DEVELOPMENT OF THE THIRD WORLD NATIONS.

HOW THEN CAN WE BEST PROCEED -- RICH AND POOR ALIKE -- TO ENSURE THAT VALID ENVIRONMENTAL CONSIDERATIONS NEED NOT DENY THE ADVANCE IN ECONOMIC DEVELOPMENT THE LESS PRIVILEGED COUNTRIES SO DESPARATELY REQUIRE?

IT IS CLEAR THAT IN ENVIRONMENTAL MATTERS THE DEVELOPING COUNTRIES ENJOY ONE OF THE VERY FEW ADVANTAGES OF BEING LATE-COMERS IN THE DEVELOPMENT PROCESS: THEY ARE IN A POSITION TO AVOID SOME OF THE MORE COSTLY AND NEEDLESS MISTAKES THE DEVELOPED COUNTRIES MADE IN THE PAST.

NOW WHAT DOES THAT IMPLY?

TO BEGIN WITH, WHAT IT DOES NOT IMPLY IS THAT LATE-COMERS TO THE DEVELOPMENT PROCESS MUST FOREGO INDUSTRIALIZATION AND TECHNOLOGICAL ADVANCE.

THAT WOULD SIMPLY MEAN STAGNATION. IT IS EASY ENOUGH FOR THE WEALTHY TO ROMANTICIZE ABOUT THE SUPPOSED CHARM OF PRE-TECHNOLOGICAL SOCIETY. BUT THE PLAIN FACT IS THAT THERE WAS NOTHING PRETTY AT ALL ABOUT THE SQUALID POVERTY WHICH THE COMMON MAN -- IN WHAT ARE NOW THE AFFLUENT NATIONS -- HAD TO ENDURE IN THE PRE-TECHNOLOGICAL PERIOD. FOR THE VAST MAJORITY IT WAS A LIFE OF DESTITUTION AND DISEASE. NO ONE WANTS TO GO BACK TO THAT.

ANYONE IN DOUBT HAS ONLY TO EXAMINE POVERTY IN THE DEVELOPING COUNTRIES TODAY. THE DEPRIVATION IS APPALLING BY ANY ACCEPTABLE STANDARDS OF HUMAN DECENCY.

IT IS NOT SURPRISING, THEN, THAT THOSE WHO CALL FOR A SLOWING DOWN OR A COMPLETE HALT TO ECONOMIC GROWTH TEND TO BE THOSE WHO ARE ALREADY AMPLY PROVIDED WITH THE ADVANTAGES WHICH THAT VERY GROWTH HAD MADE POSSIBLE.

WHAT I MEAN BY THE ENVIRONMENTAL ADVANTAGE OF THE LATE-COMERS TO THE DEVELOPMENT PROCESS IS THAT THEY CAN FAR MORE EASILY AND INEXPENSIVELY BUILD INTO THEIR DEVELOPMENT ENDEAVORS THE PRACTICAL PREVENTATIVE MEASURES NECESSARY TO AVOID THE ECOLOGICAL DAMAGE THE DEVELOPED WORLD HAS ALREADY SUFFERED.

AS THE AFFLUENT NATIONS CONTINUE TO TAKE THEIR ENVIRONMENTAL PROBLEMS MORE SERIOUSLY, THEY ARE GOING TO DISCOVER A WHOLE NEW RANGE OF TECHNOLOGY TO ABATE AND AVOID ECOLOGICAL DANGERS. THE LESS-PRIVILEGED COUNTRIES CAN ADOPT, IF THEY WILL, THESE TECHNICAL ADVANCES TO THEIR OWN NEEDS.

THE DANGER THAT WE WILL FAIL TO ACHIEVE THE TWIN OBJECTIVES OF ADVANCING THE DEVELOPMENT OF THE LESS-PRIVILEGED NATIONS WHILE, AT THE SAME TIME, PRESERVING THE INTEGRITY OF THE ENVIRONMENT STEMS NOT FROM TECHNOLOGICAL WEAKNESSES BUT FROM POTENTIAL FAILURES OF POLITICAL WILL AND SOCIAL RESPONSIBILITY.

ECOLOGICAL CONSIDERATIONS HAVE MADE US ALL AWARE OF THE INTER-DEPENDENCIES OF OUR WORLD. WE HAVE COME TO SEE OUR PLANET IN THE WORDS OF KENNETH BOULDING AS "SPACESHIP EARTH". BUT WHAT WE MUST NOT FORGET IS THAT ONE-QUARTER OF ITS PASSENGERS HAVE LUXURIOUS FIRST-CLASS ACCOMMO-DATIONS AND THE REMAINING THREE-QUARTERS ARE TRAVELING IN STEERAGE. THIS DOES NOT MAKE FOR A HAPPY SHIP -- OR A SECURE ONE. ALL THE LESS SO WHEN THE STEERAGE PASSENGERS REALIZE THAT THERE ARE AT HAND THE MEANS TO MAKE THE ACCOMMODATIONS MORE REASONABLE FOR EVERYONE.

HAVE WE THE POLITICAL AND SOCIAL AWARENESS TO GIVE MORE ATTEN-TION TO THE PRESENT LIVING CONDITIONS OF THE OVERWHELMING MAJORITY OF THE TRAVELERS?

THERE SHOULD BE NO QUESTION ABOUT WHETHER THE WEALTHY COUNTRIES CAN AFFORD TO COMBINE RISING DOMESTIC ENVIRONMENTAL PROTECTION COSTS WITH INCREASED DEVELOPMENT ASSISTANCE FOR THE DEVELOPING COUNTRIES.

IT IS CLEAR THAT THEY CAN.

THE CONTINUED GROWTH OF THEIR GROSS NATIONAL PRODUCT WILL PRO-VIDE THEM BY THE END OF THE DECADE WITH AN ADDITIONAL ONE THOUSAND BILLION DOLLARS PER ANNUM.

THE SUGGESTION THAT THE RICH COUNTRIES CANNOT SPARE FOR THE POOR COUNTRIES THE MINISCULE PERCENTAGE OF THAT INCREMENTAL INCOME NECESSARY TO

RAISE CONCESSIONARY AID FROM ITS PRESENT LEVEL OF .35% OF GNP TO THE UNITED NATIONS TARGET OF .7% IS SIMPLY BEYOND CREDENCE.

HOWEVER, THE WEALTHY NATIONS MAY NOT, IN FACT, MEET THAT TARGET. AND THEY MAY DELAY DISMANTLING THE DISCRIMINATORY BARRIERS TO A MORE JUST AND MUTUALLY ADVANTAGEOUS FLOW OF TRADE. BUT IF THE RICH DO REFUSE GREATER TRADE AND AID TO THE POOR, IT WILL HAVE NOTHING TO DO WITH A DISINTERESTED AND UNIVERSAL REVERENCE FOR THE ENVIRONMENT. IT WILL BE BECAUSE OF A PROVINCIAL RESPONSE TO THE PRESSURES OF SPECIAL INTERESTS.

WHAT, THEN, MUST BE DONE TO RECONCILE OUR MANDATE TO ASSIST IN THE ECONOMIC ADVANCE OF THE DEVELOPING COUNTRIES WITH OUR RESPONSIBILITY TO PRESERVE AND ENHANCE THE ENVIRONMENT.

IN THE VIEW OF THE PRESIDENT OF MY INSTITUTION, THE WORLD BANK, THERE ARE FIVE ESSENTIAL REQUIREMENTS. WE MUST:

- RECOGNIZE THAT ECONOMIC GROWTH IN THE DEVELOPING COUNTRIES IS ESSENTIAL IF THEY ARE TO DEAL WITH THEIR HUMAN PROBLEMS.
- ACT ON THE EVIDENCE THAT SUCH GROWTH, IF PROPERLY PLANNED, NEED NOT CAUSE UNACCEPTABLE ECOLOGICAL PENALTIES.
- ASSIST THE DEVELOPING COUNTRIES IN THEIR CHOICE OF A PATTERN OF GROWTH WHICH WILL YIELD A COMBINATION OF HIGH ECONOMIC GAIN WITH MINIMAL ENVIRONMENTAL RISK.
- PROVIDE THE EXTERNAL SUPPORT REQUIRED FOR THAT ECONOMIC ADVANCE BY MOVING MORE RAPIDLY TOWARD MEETING THE UNITED NATIONS CONCESSIONARY AID TARGET OF .7% OF GNP, AND BY DISMANTLING AND DISCARDING INEQUITABLE TRADE BARRIERS WHICH RESTRICT EXPORTS FROM POORER COUNTRIES.

. AND, ABOVE ALL, REALIZE THAT HUMAN DEGRADATION IS THE MOST DANGEROUS POLLUTANT THERE IS.

THE ONE POLLUTION THAT THREATENS ABOVE ALL OTHERS TO DESTROY THE ENVIRONMENT, TO DESTROY HEALTH, TO DESTROY THE VERY ESSENCE AND SPIRIT OF MAN, IS THE PERMANENT CONDITION OF POVERTY.

IN A WORLD SO BESET BY HUMAN DEPRIVATION AND MISERY OUR CLEAR AND UNMISTAKABLE DUTY IS TO FACE UP TO MASS POVERTY FOR WHAT IT REALLY IS -- CRUEL, SENSELESS, CURABLE -- AND SET ABOUT PROVIDING A THRESHHOLD OF HUMAN DIGNITY AND DECENCY WHICH IS ACHIEVABLE. AND, ACHIEVABLE <u>NOT</u> AT THE PRICE OF A BANKRUPT ENVIRONMENT, FOR I AM CONFIDENT THAT WE <u>CAN COMBINE</u> GREATER SUPPORT FOR THE DEVELOPMENT PROCESS WITH OUR RESPONSIBILITY TO PROTECT AND ENHANCE THE ONLY ENVIRONMENT ANY OF US POSSESS -- RICH AND POOR ALIKE.

ECONOMIC DEVELOPMENT IN THE THIRD WORLD: SOME IMPLICATIONS FOR HEALTH

BY

DR. JAMES A. LEE

I am very pleased to have this opportunity to participate in these deliberations. This conference, attended as it is by the leaders in tropical medicine from around the world, is a forum well suited to examining some of the implications for health arising out of economic development activities in the emerging nations.

The State of Development

Our conference comes at a time when there is increasing concern over threats, actual and perceived, to the global environment. It was this concern, in fact, that took the world's family of nations to Stockholm a little over a year ago for the first United Nations Conference on the Human Environment. Since that historic meeting we have witnessed the creation of a new U.N. environmental organization and increased activity on the environmental front.

Our conference also comes at a time when the energies, efforts, and resources of the developing countries are being harnessed as never before to achieve their respective development goals. There is a compelling urgency to the Third World's development objectives as can be clearly seen by the proposals for the Second Development Decade endorsed by the United Nations. The widening gap between the developed and developing countries is becoming a central issue of major importance in international relations.

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The developing countries, many of them having recently gained emancipation from foreign rule, are expressing a growing political consciousness and experiencing internal demands for more rapid modernization and progress. And, yet, our conference comes also at a time when international support for development in the emerging nations is flagging. The rich nations of the world are still failing to raise concessionary aid from its present level of 0.35% of GNP to the United Nations target of .7%. That they may not in fact meet that target would seem to be simply beyond credence given the miniscule percentage of that incremental income necessary to reach the concessionary aid target.

Our conference comes too at a time when the international monetary system is in a crisis, and the climate is heavy with disillusion and uncertainty. It comes at a time when certain resources are exhibiting some early signs of short supply, thereby constituting a new element of anxiety in relations between the developed and developing worlds.

An examination of the trends with respect to the transfer of financial resources to the developing countries has important implications for health in these countries. Simply stated, it seems probable that resources available for development will not reach the levels so desperately needed by the developing countries, at least not in the near future, while inflation and monetary uncertainties will further diminish the present net flow of external resources. Thus, with resources ranging from limited in some countries, to desperately limited in others exhibiting poor economic growth rates, investments in the health sector can be expected to show little improvement.

And, certainly, as one examines the health picture in many of the developing countries it provides no cause for optimism. The unfortunate fact is that large numbers of people -- something approaching the majority of the world's peoples, in fact -- are either without health care at all or receive a level of care that hardly suffices to meet their needs. You, better than most, are keenly aware of the nature and dimensions of the health problems and needs throughout the developing tropical world, and there certainly is no need to chronicle them to this audience.

A candid appraisal of the overall state of development throughout most of the developing world reveals it to be unacceptable -- unacceptable because hundreds of millions of people continue to live at levels of deprivation that simply cannot be reconciled with any rational definition of human decency.

Throughout the developing nations:

- Hunger and malnutrition are sapping energy, stunting bodies, and slowing minds.
- Illiteracy continues to lock out learning, and is paralyzing opportunity.
- Endemic unemployment is not only robbing men and women of the minimal means to make their way, but leaving their pride broken, their ambition atrophied, and their children condemned to continuing poverty.
- Wholly preventable diseases are injuring infants, killing children, disabling productive workers, and aging adults long before their time.
- Population increases are eroding hard-won economic gains and adding a staggering burden to poor countries seeking to free themselves from the chains of poverty.

. In sum, hundreds of millions of human lives -- with all their inherent potential -- are being threatened, narrowed, eroded, shortened, and finally terminated by a pervasive and persistent poverty that degrades and destroys all it touches.

The picture is not exaggerated as you who see the painful human evidences of it are all too aware. Throughout the developing world the estimates are that well over a billion human beings are hungry or malnourished. There are 100 million more illiterates than there were two decades ago. Underemployment and unemployment entrap roughly one out of every five in the labor force. Infant and child mortality is four times greater than it is in the affluent world, and life expectancy is 40 percent shorter. To alleviate pain and arrest disease, there are in some developing countries fewer than one physician for every 50,000 people. Per capita expenditures for health care in some countries is less than forty cents. Population increases are highest in those countries with the lowest per capita income and food production.

These facts are neither pleasant nor comfortable. But they are facts. They symbolize the lives of three-quarters of the human race.

Achieving anything approaching the goal set for the Second Development Decade simply will not be possible without the continued economic growth of the developing nations, and the developed nations as well.

But economic growth on the pattern of the past -- and most particularly that in the already highly industrialized wealthy nations -- poses an undeniable threat to the environment and to the health of man. What does this imply? It means reassessing the patterns of economic development that have largely prevailed to date -- it means an increasing

emphasis on investment in man; it means a re-examination of capital-output ratios as the basis of development planning; it means looking at the investments in the physical elements of national growth with regard to their true role in reducing severe social and economic inequities among the peoples of developing nations.

The question is not whether there should be continued economic growth in both the developed and developing nations. There must be. Nor is the question whether the impact on human health and the environment must be respected. It has to be. Nor -- least of all -- is it a question of whether these two considerations are interlocked. They are.

Without economic growth a poor country can only remain poor. There is little point in trying to redistribute indigence.

Without economic growth the rich countries can only be expected to tighten the purse strings on concessionary aid, to fail to move decisively enough to reduce the gross imbalance between their own opulence and the penury of the less-privileged nations.

It is not altogether surprising that those who call for a slowing down or a complete halt to economic growth tend to be those who are already amply provided with the advantages which that very growth has made possible. While some call for this in the firm belief that the earth's life-support systems are gravely threatened, the socio-economic and political repercussions of such a proposition are equally, if not more, alarming. The penalties of prolonged imposition of poverty will be unavoidable. Restlessness will edge toward militancy, and reason will give way to violence. Not only would that fail to assure development, it would prove to be catastrophically costly to rich and poor alike. The uncertainties and speculation over an

environmental crisis could give way to the certainties of global destruction through conflict.

The poor countries have every right to be indignant over any suggestion that they forego economic development in the name of preserving the already disproportionate and rising patterns of consumption of the rich. But to my mind the issue need never arise. It need never arise because there is no firm evidence that properly planned economic growth -- which the developing countries so desperately need -- will necessarily invoke an unacceptable burden on their own or anybody else's environment, or the health of their own or anybody else's peoples.

I repeat that economic growth must continue but on patterns that are maximally protective of the environment and include the new dimension of social concern. The Second Development Decade provides us with the opportunity to establish and pursue "quality of life" goals of development, with new insights, new strategies, new emphases -- and foremost among these is health.

HEALTH AND DEVELOPMENT

One of the principal obstacles to providing better health care is, of course, the scarcity of resources. And, in considering ways to make increased resources available, there emerges a debate over the place and role of health in the efforts of countries to advance their economic and social development. Yet, as one looks at the efforts of developing countries to expand their economies and modernize their social institutions there is no doubting that health programs are necessary to meet human needs. At times they are seen as absolutely essential to the development of disease-ridden areas; while at other times they are needed to permit the

successful implementation of development schemes. Thus, for example, areas in which onchocerciasis is endemic present great obstacles for human settlement and development; and, the construction of irrigation schemes in or near areas harboring schistosomiasis pose the threat of increased distribution of the snail vector, and, hence, the disease itself.

On the other hand, there is great uncertainty over the priority to be accorded health measures in development programs owing, in large measure, to doubts expressed about their real contribution to economic development. Health, not unlike education, has had a relatively low priority in development planning in the still developing countries. The physical elements of national growth such as transportation, communications, power, and industry have been accorded overriding importance, for they have been viewed as the essential contributory elements of development. Only very recently has there been any indication of a change in the philosophy which has stressed physical investments as the principal vehicle of development.

But it is, after all, the goal of all human endeavor to improve the quality of human life -- and education and health are essential to the attainment of that goal. And, education and health would seem vital to the sustained, vigorous utilization of physical investments which, when taken collectively, make for a life situation promising of individual self-fulfillment and social harmony.

Development planners also have long been concerned (and perhaps not without some justification) about the effects of improved health care on population growth. There can be no doubt that programs of public health have added to the rate of population growth by reducing mortality at both ends of the life continuum. Further, population growth, which in places has

approached the "explosive," is and can be damaging to the economy and severely limits the possibilities of improving the living standards and well-being of the people. At the same time, denial of health care to achieve population control is everywhere morally unacceptable. Permitting high mortality through inadequate health care fails to recognize the root cause of too-rapid population growth. Improved health is a prerequisite to reducing fertility. A high infant mortality rate contributes to the cultural imperative for having large families. Only through the provision of health care services which reach into a community to alleviate suffering and pain and thereby promote trust and confidence, can reduced fertility through the necessary behavioral and cultural changes become a reality.

In order to compete successfully for resources earmarked for development, advocates of public health will need to establish at least a qualitative case for economic benefits of such expenditures. In particular, they must face squarely the issues of over-population and unemployment as they relate to improved public health.

By way of example, my own institution, the World Bank, has largely accepted in principle the argument that resources should be invested in proper nutrition for infants and juveniles. The arguments favoring such investments are: the expectation of a short-range increase in productivity of the education system; a long-range increase in productivity, intelligence, and initiative of the work force; and anti-natalist effect as parents gain confidence in government health services, and, in the long run, realize that their offspring are more likely to survive to look after them in their old age. None of these arguments are firmly established empirically, but such evidenceof the retarding effects of mal- and under-nutrition as there is at hand would seem to suggest not waiting until all the experimental evidence is in.

Furthermore, the Bank's interest in nutrition carries forward its evolving philosophy that it is important to give proper weight to investment in both capital and human resources. It is likely that approaches similar to that used by proponents favoring the support of projects involving nutritional improvement by the international development community, can and will be taken by those advocating support of action to control at least some of the debilitating diseases. Emphasis would, of necessity, have to be placed on attacking those priority health problems which most adversely affect the economy where these can be identified. Arguments will, of course, be advanced as to the wisdom of putting support behind such measures in the absence of clear evidence as to their demonstrated efficacy in aiding economic growth. It is my personal view that research along these lines should be continued and expanded while, at the same time, measures for disease control are instituted -- especially in those instances where the realization of economic and social objectives appear threatened by debilitating diseases. Long-range economic growth and social progress are hard to visualize in the absence of some investment in research into the socio-economic effects of disease. Further, such research should in part relate to the effects of communicable disease control, maternal and child health, water supply and wastes disposal, environmental control of the vectors of water-borne diseases, health standards for dwellings, and occupational environments.

Development and Health Hazards

It was stated earlier that health expenditures are being viewed increasingly as real investments on the basis that it is easier and less

expensive to prevent the health hazards accompanying development than to later remedy their consequences. In its own way, the World Bank Group is also undertaking such an approach in connection with the development projects it finances. Projects in the making are examined for their possible environmental, health, and socio-cultural impacts. Identification and analysis of these potential problems often involves field studies by multidisciplined teams operating under carefully tailored terms of reference. As a consequence, health problems attributable to the construction, presence and/or operation of a project are identified, and solutions for their control or mitigation are sought. By way of example, an irrigation project in a West African country was examined in the field for its effect on schistosomiasis. Opportunities for conducting a vector control program in combination with increased support for health care of the affected populace were identified and made an integral part of the project, including its loan provisions.

Large-scale construction projects require the assemblage of a big work force recruited from many locations and quartered near the project site often for many years. The opportunity exists for the introduction and establishment of new disease entities and/or, conversely, the distribution of diseases to new areas by returning workers and their families. Workers and their families have seldom been subjected to preemployment screening for disease, and periodic examinations were but infrequently carried out during the course of the construction period. In making some recent loans for hydro-power dam projects, the World Bank, again by way of example, has made possible the provision of such clinical examinations and facilities. Cooperative arrangements with local health agencies have been urged upon the project sponsors as an important step in controlling potential disease problems.

HEALTH AND DEVELOPMENT FINANCE

In conclusion, it would seem that health should not be considered in isolation from other elements of the development process. Socio-economic development by its very nature includes improvement in human well-being and there is no aspect of the economy, be it agriculture, industry, etc., which does not have a health component. Health should not be viewed as an entity separate and apart from other socio-economic, institutional and policy factors in the development process -- and these factors should not disregard the health component if real economic and social progress is to be made.

Development planners and economists have more and more come to take an ecologic view of development -- a holistic look , if you will --that sees development within a total economic and social framework. Economic changes because they are requisite to the success of development, have resulted in development being conceived principally in economic terms. But, development has as its objectives the securing of social goals -- an opportunity for life styles promising of self-fulfillment, improved living conditions, diversity of opportunity, access to the benefits of science and technology, and, not the least, an improved level of personal and community health. Economic development is the engine, the instrument for achieving social goals and its success, or lack of it, will be measured by these and other social indicators, including health.

In any serious cost/benefit analysis of health programs, the reciprocal interaction of health with other elements of the development process must be recognized. Just as health is affected by socio-economic conditions, so also does it affect them for better or worse. Looking solely at the benefits to the remainder of the development process flowing from health programs fails to recognize this reciprocity.

If, on the other hand, health programs are to become the object of serious cost/benefit analyses for purposes of assigning them both a place and priority within the development process, their real contributions and effectiveness in reaching development objectives must be assessed.

The difficulties experienced by the World Bank in measuring the benefits of its investments in public water supply, for example, stems in part from the absence of adequate data on the state of public health in many of the countries. Attempting to measure the benefits of improved public health on the overall economy of these countries will present similar problems of data deficiency on an expanded scale.

Finally, if proposed greater public health expenditures are ever to be justified on economic grounds, priorities will have to be established among the competing claims for such expenditures, according to the economic significance of the claims and of the measures to be employed -- thus, a plea for the gathering of basic statistics as a fundamental and important use of public health funds now, as an investment, as it were, in the securing and wise use of possible future funds from the international development community.

SUMMARY

The decade of the seventies will witness accelerated economic growth among the still developing nations of the world. However, unless and until the affluent nations increase the level of concessionary aid flowing to these countries, financial resources for development will continue to fall behind demonstrated needs, thereby further widening the gap between the present opulence of the developed countries and the persistent and pervasive poverty of the emerging countries. To close this gap will

require continued economic growth in both the donor and recipient countries. Economic growth not on the patterns of the past wherein the developed countries threaten the integrity of the biosphere and the developing countries base their growth on capital-output ratios and physical investments to the exclusion of the social welfare of people -- the real objects of concern in any development scenario. Whatever the trend in the flow of development finance, investments in the health sector are expected to be severely limited. This will be due in part to a continuing great uncertainty over the priority to be accorded health measures in development programs owing to doubts about their real contribution to economic development. To compete successfully for resources destined for the physical elements of national growth, advocates of public health will seemingly need to establish a strengthened case for economic benefits of such proposed expenditures. Development finance institutions can be instrumental, furthermore, in achieving both a better understanding of the true importance of health measures for economic development through research and in ensuring that appropriate health measures and safeguards are incorporated as integral elements of development endeavors.

HEALTH IN A CHANGING WORLD

BY

James A. Lee

It is a distinct privilege and a great personal pleasure for me to open this International Conference on Environment and Health. There are few places in the world more beautiful than this coastal setting and one is delighted to still find here and there evidences of resistance to change -- charming old walled cities, quiet villages where traditional cultural values still prevail, and the small farms where men and women still remain close to the soil that nourishes and sustains them as it did their forebears. And, the fishermen picturesquely following their time-honored pursuit of the sea's bounty. How pleasant it is to come here and taste something of a quieter yesteryear, to spend just a little while in a place where the kaleidoscopic effects of change have yet to be felt.

Yet, all of us know that change is the natural order of things and so here too "the old order changeth". More and more people will come here seeking that which they have lost at home and, in so doing, will change this land, these peoples and, inexorably, they will create an ambience not differing greatly from that which they sought to escape. The increasing trend to homogeneity in the built environment around the world is becoming strikingly apparent. And, like the fate of many of our natural ecosystems, diversity is giving way, differences are being obliterated, a sameness sets in, conformance to a single model becomes the standard.

Those of us who are privileged to travel over much of the globe are made ever conscious of this world-wide phenomenon -- the phenomenon of change.

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Change that is bringing in its wake deep dissatisfaction for some, rising expectations for others. For the developed world changes wrought by the mind and hand of technological man are shaping an environment increasingly foreign to his biology and tormenting of his psyche. On the other hand, to those three-quarters of the human race in the emerging world change is the welcomed consequence of development and represents new hopes and aspirations, new opportunities for achieving a level of life in accord with fundamental human dignity. And so, change begets change, and some cry out in seeming hopelessness to stem the tide of destruction they perceive being unleashed upon them. Others cry out, too, -- cry out for relief from a pervasive poverty that degrades and destroys all that it touches -- cry out for redress of the imbalances that cause their lives to be eroded, narrowed, shortened, and finally terminated, their pride broken, their ambition atrophied, their bodies stunted, their minds slowed, and their inherent potential forever lost. The peoples of the developed and developing countries share few things in this world but they do share in this common phenomenon of change.

We who are assembled here are caught up in this change as we attempt to understand and grapple with its impact on the psyche and soma of man. For those of us in medicine and public health who share the awesome responsibility for safeguarding human health and well-being it is a troubled time but no less an exciting one. It is a time fraught with problems, a time of challenges to our established disciplines, our professional training, our time-worn programs and venerated institutions, and even our capacity for coping with problems that now seemingly transcend our traditional roles.

Even a cursory look around the world reveals the extent of changes underway in the lives of people and their environment.

Throughout the developing world populations continue to show alarming increases and the rural to urban migration shows no sign of abating. Both will increase the prevalence of diseases peculiar to high-density population groups and give rise to untoward psycho-social consequences. And, the very process of economic development is itself not without its own threats to health and social welfare. Witness the dramatic increase in schistosomiasis accompanying water development schemes around the world. The introduction of industry without proper pollution controls represents an increasing public health threat. Changing life styles, living patterns, dietary habits are similarly introducing new health problems.

And, in the developed world the changes accompanying increased urbanization and industrialization, increased leisure time, higher per capita incomes, are likewise changing the patterns of health and disease. Witness the disorders that have disappeared in their epidemic form such as many of the infectious and communicable diseases. Now appearing in epidemic forms are the "diseases of adaptation" such as lung cancer, emphysema, ischemic heart disease, mental and geriatric disorders, and trauma.

From its earliest beginnings medicine and public health have been concerned with man's relationships with his environment, and in a limited sense they have been oriented toward the concepts of ecology or, more particularly, human ecology. Witness the writings of Hippocrates in his Airs, Waters, and Places, one of the most penetrating works of the Hippocratic Collection, in which he concludes:

"The well-being of man is influenced by all environmental factors: the quality of the air, water, and food; the winds and the topography of the land; and the general living habits. Understanding the effects of environmental forces on man is thus the fundamental basis of the physician's art."

One of our distinguished speakers here at the Conference recently wrote:

" .... disease is embedded in the environment of man and the greatest improvement in human health may be expected from an understanding and modification of the factors that favor disease occurrence."

And no less an authority than Dr. Rene Dubos states:

" .... to a very large extent the disorders of the body and mind are but the expressions of inadequate responses to environmental influences."

With the advent of the work of Pasteur and Koch late in the nineteenth century, the doctrine of specific etiology came to dominate the practice of medicine and public health. The man-environment relationship quickly faded into obscurity as an important causative force in disease. And few would argue with the success of modern medical science as it has applied this doctrine through a reductionist approach to the human organism. The former great scourges of mankind were conquered one by one, and the disease process came to be explained in a simple linear cause and effect relationship. Understanding the triad of causative agent, favorable environment, and susceptible human host was seen as the basis for controlling or even eradicating any disease.

Yet nearly a century later many of the disorders of the body and mind have failed to respond to this approach. Do they await only the technical breakthrough that the reductionist approach promises, or are they the result of a constellation of causative circumstances, and not that of a single determining factor?

In truth, the human organism confronts its changing external environments with a genetic endowment that places tolerance limits and thresholds on its adaptive plasticity. Ignore this legacy of two million years of evolution or exceed its limits and the organism fails to successfully adapt -- dysfunction and disease result.

The commuter driving to work each day in Belgrade or Rome shares a problem with the farmer of Eygpt or northeast Brazil -- while the former may become a victim of lung cancer and the latter destined to suffer from schistosomiasis -- both are casualties of their environmental relationships.

Wherein does the answer to their respective health problem reside? Is it in the induction of an enzyme system that renders innocuous the carcinogens found in air pollution, or in a vaccine that prevents the schistosomes from maturing or producing eggs.

Or, does the answer reside in new forms of automative energy, new transportation modes, and controls on exhaust emissions in the one instance or control over snail populations, improved personal hygiene practices, and elevated standards of living in the other?

I suspect the answers are to be found in both elements of the man-environment relationship.

While our early sanitarians and physicians displayed an awareness of the effects that environmental factors exert on biological health, including man's emotional needs, too often today health and illness are seemingly not

viewed as being largely environmental in origin. Somehow, disease has too often come to be seen as the result of an endopathic process and not related to an exopathic insult.

The theme of our Conference, the topics to be treated and your presence here are witness to the fact that the man-environment system is still viewed by some as the dynamic arena in which health and disease, social well-being and social unrest, are the resultants of the rapidly changing ecology of man and societies.

The diseases and disorders that command your attention are increasingly seen as man made; that is, their geneses reside largely in characteristics of the host and influences of its multi-environments. They result from things man does to his environment and to himself. Slowly, however, a remedy is being recognized and it is based upon an ecological principle that man cannot expect to alter and manipulate his environment without entailing consequences. The U.N. Conference on the Human Environment held last year in Stockholm has sparked a world-wide interest in the environment -- in the threats to its well-being and the threats to man. Programs and activities now being spawned in response to that historic meeting offer promise for an amelioration of some of the more important untoward consequences of man-induced environmental changes. This Conference and your views and recommendations can serve as valuable inputs to the U.N. Environmental Secretariat in its attempts to shape and finance activities related to human health. I urge you to give serious consideration to making such contributions.

As both the developed and the still developing worlds continue to manipulate their environments on an ever-increasing scale, emerging

health problems will more and more be seen as man made. They will be the result of inept adaptation and willful error. Likewise, the search for causes of disease and the factors requisite to the maintenance of health will increasingly be ecologic. Prevention and control, whether at the personal or community levels, will therefore bring into play measures and steps which are at once both biological and social.

Man must somehow find his place in the natural scheme of things. His continued survival depends upon a growing awareness that his place on a health/disease continuum is related to the continued fitness of the environment to meet his somatic and psychic needs.

Through your efforts, singly and collectively, in your respective countries, the new challenges of man and his environment can be met with productive efforts.

I commend the sponsors of this Conference for recognizing the importance and timeliness of its theme, and for the broad international dimensions represented here.

I urge you all to give freely of your knowledge and views for such an exchange is vital to an understanding of this complex field. And, I urge each of you to take from this Conference new ideas and suggestions for research and practice -- take them to your countries and share them with your colleagues.

It was Pope who said ".... the proper study of mankind is man", and Thoreau who said if one would learn about nature it is necessary to study it where it is. You must do both and the approach is essentially ecologic.

I wish this Conference much success and hope that its deliberations will prove for each of you a productive and rewarding experience.

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HEALTH IN THE DEVELOPMENT PROCESS

Trends in Development Assistance to the Third World

By

Dr. James A. Lee

It was just one year ago today that I had the privilege of addressing the Plenary Session of the Ninth International Congress on Tropical Medicine and Malaria in Athens. My paper was entitled Economic Development in the Third World: Some Implications for Health, and I should like to quote briefly from its introductory paragraphs:

"Our Congress comes at a time when there is increasing concern over threats, actual and perceived, to the global environment", I said. "It was this concern in fact that took the world's family of nations to Stockholm [in 1972] . . . for the first United Nations Conference on the Human Environment. Since that historic meeting we have witnessed the creation of a new U.N. environmental organization and increased international activity on the environmental front.

"Our Congress also comes at a time when the energies, efforts and resources of the developing countries are being harnessed as never before to achieve their respective development goals. There is a compelling urgency to the Third World's development objectives as can be clearly seen by the proposals for the Second Development Decade

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endorsed by the United Nations. The widening gap between the developed and developing countries is becoming an issue of major importance in international relations.

"The developing countries, many of them having recently gained emancipation from foreign rule, are expressing a growing political conciousness and experiencing internal demands for more rapid modernization and progress. And, yet, our Congress comes also at a time when international support for development of the emerging nations is flagging. The rich nations of the world are still failing to raise concessionary aid from its present level of 0.35 percent of GNP to the United Nations target of 0.7 percent. That they may not, in fact, meet the target would seem to be simply beyond credence given the small percentage of the incremental income necessary to reach the concessionary aid target.

"Our Congress coincides with a period when the international monetary system is in a crisis, and the climate is heavy with disillusion and uncertainty. It comes at a time when certain resources are exhibiting some early signs of short supply thereby constituting a new element of anxiety in relations between the developed and developing worlds."

Our Conference here in Reston comes at a time when not only do these observations still remain valid but they are being further compounded.

My remarks last October preceded the energy crunch, the full implications of which for developed and developing countries alike

is now becoming all too painfully clear. And, the situation with regard to the transfer of resources to the developing countries grows ever more alarming. But, before examining the implications for the health sector in these countries, let me first review briefly the state of development throughout a greater part of the still-developing world. A candid appraisal reveals it to be unacceptable--unacceptable because hundred of millions of people continue to live at levels of deprivation that simply cannot be reconciled with any rational definition of human decency.

Throughout the developing world:

- Hunger and malnutrition are sapping energy, stunting bodies, and slowing minds.
- Endemic unemployment is not only robbing men and women of the minimal means to make their way, but leaving their pride broken, their ambition atrophied, and their children condemned to continuing poverty.
- Wholly preventable diseases are injuring infants, killing children, disabling productive workers, and aging adults long before their time.
- Population increases are eroding hard-won economic gains and add a staggering burden to poor countries seeking to free themselves from the chains of pervasive and persistent poverty.

In sum, hundreds of millions of human lives--with all their inherent potential--are being threatened, eroded, shortened, and

finally terminated by a pervasive poverty that degrades, destroys, and dehumanizes all that it touches.

The picture is not exaggerated as some of you who see and have seen the painful human evidences of it are all too aware. Throughout the developing world the estimates are that well over 1,000 million human beings are hungry or malnourished (and that figure is rising literally by the day). There are 100 million more illiterates than there were two decades ago. Underemployment and unemployment entrap roughly one out of every five in the labor force. Infant and child mortality is four times greater than it is in the affluent world, and life expectancy is 40 percent shorter. To alleviate pain and arrest disease, there are in some developing countries fewer than one physician for every 50,000 people. Per capita expenditures for health care in some poor countries is less than 40 cents per annum. Population increases are highest in those countries with the lowest per capita income.

These facts are neither pleasant nor comfortable. But--they are facts. They reflect the lives of something approaching three-quarters of the human race.

To achieve anything approaching the goal set for the Second Development Decade will not be possible without the continued economic growth of the developed nations, as well as the developing nations.

And--what are the prospects for this?

A recent World Bank publication, Prospects for the Developing Countries, contains an analysis of the effects of the recent changes

in the world economy on growth prospects and capital requirements of the developing countries. The conclusions stemming out of this analysis leave little doubt that 800 million of the world's poorest peoples--those whose per capita income average is less than $200/year--are likely to receive a "severe setback". Rapidly rising commodity prices mean poor countries will find it difficult, if not impossible, to pay for imports of food and fertilizer. Growth rates in the richer industrialized countries are expected to continue their decline, thereby substantially diminishing the prospects for growth of developing country exports; and at the same time, diminish prospects for these countries increasing their concessionary aid to these self-same poor countries. Last year flows of official development assistance fell from the earlier cited figure of 0.35 percent of the GNP to 0.31 percent, and by 1975 the rate is likely to fall even further. But--even if the richer nations were to maintain their concessionary assistance at 1973 levels--at anticipated rates of inflation, this objective will require an increase in disbursements, in current prices, from $12 billion in 1973, to $18 billion in 1976 and $30 billion in 1980.

In sum, given the present plans of the major international development assistance agencies and the bilateral aid administrations, the transfer of resources will fall far short of what is required to assist those countries which are most seriously affected by recent changes in the world economy.

Now, what does this admittedly bleak picture presage for the health sector?

An examination of these trends with respect to the transfer of financial resources to the developing countries has important

implications for health in those countries. Simply stated, it seems probable that resources available for development will not reach the levels so desperately needed at least not in the near future. Inflation and monetary uncertainties will further diminish the present net flow of external resources. Thus, with resources ranging from very limited in some countries, to desperately limited in others exhibiting poor economic growth rates, investments in the health sector can be expected to show little improvement.

Health and Economic Development

Having painted something of a discouraging picture of the near future as regards the availability and sufficiency of concessionary aid for developing countries, there can be no doubt, however, that economic growth of the developing and developed countries must and hopefully will continue albeit at depressed levels.

Without economic growth a poor country can only remain poor and there is little point in trying to redistribute indigence and poverty.

Without economic growth the rich countries can only be expected to further tighten the purse strings on concessionary aid; to fail to move to reduce the increasingly gross imbalance between their own relative opulence and the penury of the less-privileged nations.

The socio-economic and political repercussions of a marked slowing down or even worse, a halt in economic growth, are likely to be alarming. The penalties of prolonged imposition of poverty will be unavoidable. Restlessness will edge toward militancy, and reason

will give way to violence. Not only will that fail to assure development, it will prove to be catastrophically costly to rich and poor alike.

Leaving aside the question of what level of economic growth will occur in the developing countries in the years immediately ahead, what can be said for the health status of the hundreds of millions struggling to break the shackles of persistent poverty?

In general, economic development tends to improve health, in many ways: better nutrition, improved housing, better education--but, at the same time there are demonstrable health risks. And, as one concerned daily with attempting to identify and minimize the risks while at the same time maximizing the benefits to the human condition that can result from economic growth, I should like to briefly address some remarks to this aspect of the development process.

Health Risks and Opportunities in the Development Process

Economic development by its very nature involves the exploitation of natural and human resources. Such exploitation can and often is traumatic to both. It can and does have profound and lasting effects on the environment and on people. Thus, it is not entirely unexpected that as development proceeds, there is increasing concern within the health community over the adequacy of health provisions and safeguards in many major areas of development activity. For those of us who have witnessed the impact of development and change on the psyche and soma of man, we are all too aware that, in most instances,

development schemes seemingly proceed in an almost total unawareness of, or concern for, the health problems or opportunities that accompany them.

Thus, while economic development projects would seem to have as their principal objective the improvement of social well-being, including, ostensibly, personal and community health, there are many possible health risks associated with them.

Exclusive concentration on a new cash crop can lead to unbalanced diets, roads without safety education can cause a high number of accidents, and, increased general population mobility, or resettlement can spread diseases to new areas. Industry and mining can cause both occupational health problems, as well as disease hazards arising from pollution of their surroundings. Perhaps, the single most important health risks arise from projects connected with water use--hydroelectric dams, irrigation and drainage schemes, land settlement and rural development endeavors. These projects can easily lead to the spread or exacerbation of water-borne diseases such as malaria, onchocerciasis, and schistosomiasis. Especially dramatic in this regard has been that of schistosomiasis which is currently showing a marked increase around the world--due, in no small way, to water-use development. The ensuing social costs of these diseases can be considerable. Yet, in most instances, the health impact of water development projects are seldom taken into consideration at the stage of project design; and, in fact, rarely do the health authorities of developing countries participate in the considerations of such schemes. The

human tragedy and economic burden that often follows in the wake of such projects could be avoided at a fraction of the cost of the curative efforts that will later be needed, but which, may, in fact, never materialize.

My own institution, the World Bank by way of example, in 1971 established an office to consider every project proposed to it for financing from the standpoint of its impact on the environment, and on the health and well-being of affected peoples. Central to this undertaking has been the Bank's handbook of guidelines for ensuring that both the environmental and health dimensions of projects are considered. Entitled Environmental, Health, and Human Ecologic Considerations in Economic Development Projects, and published in English, French and Spanish versions, it contains an important chapter devoted to assessing the potential adverse effects upon health from proposed projects, as well as the means for counteracting such threats and enhancing the health status of peoples in the project areas. As a result of the Bank's initiatives in this regard, projects proposed to it for financing now routinely have health measures built into them as integral components.

Large-scale civil works projects, for example, require the assemblage of a big work force recruited from many locations and quartered near the project site often for many years. The opportunity exists for the introduction and establishment of new disease entities and/or, conversely, the distribution of diseases to new areas by returning workers and their families. Workers and their families have

seldom been subjected to pre-employment screening for disease, and periodic examinations were but infrequently, if ever, carried out during the construction period. Workers billets and sanitary facilities have frequently been completely unsatisfactory, while squatter settlements spring up around the construction site further compounded the health and environmental sanitation problems. The World Bank in making loans for such types of projects, now includes clinical facilities and worker examinations, control of diseases, adherence to environmental sanitation standards; and the establishment of cooperative arrangements with local health agencies in handling squatter problems, VD, etc.

But, perhaps, more importantly, such projects are the subject of studies into the health problems likely to be created by their presence and operations; e.g. schistosomiasis in a hydro-electric impoundment or irrigation scheme. These studies carried out as part of a project's feasibility investigations allow for the identification of the health problems and/or opportunities likely to be associated with the project, and measures whereby appropriate action can be taken. As a result, such projects, as I earlier stated, now quite routinely have health components built into them as integral aspects.

Industrial projects are the incubator of many potential occupational diseases and safety hazards. And, their wastes released to the air or water may contain toxic compounds threatening of the public's health, agricultural and livestock interests, and other important elements of the human ambience. These industrial-type

projects are subjected to the same scrutiny for we are determined that industrial progress should not, at the same time, cruelly strike down the very human resources it seeks to help.

Our experience in the World Bank, admittedly limited, has convinced us,and increasingly, is convincing our borrowers and member countries, that economic growth and development can go forward in all sectors while at the same time protecting vital life-supporting ecological systems and the health and well-being of peoples.

And yet, questions are still raised as to the costs of these environmental and health-protecting measures. Some would say, and do, that from a humanitarian point of view this is all very fine but--in countries desperately short of financial resources and beset with many competing demands for their use--do the benefits justify the expenditure of scarce resources?

Health As a Social Goal and As an Investment

There has been and currently is a great uncertainty over the priority to be accorded health measures in development programs owing, in large measure, to doubts expressed about their "real" contribution to economic growth. Health, not unlike education, has had a relatively low priority in development planning in the still-developing countries. The physical elements of national growth such as transportation, communications, power, and industry have been accorded overriding importance, for they have been viewed as the essential contributing elements of development. Only very recently has there been any indication of change in the philosophy which stresses physical investments as the principal vehicle of development.

But, it is, after all, the goal of all human endeavor to improve the quality of life--and education and health are essential to the attainment of that goal. They both would seem vital to the sustained, vigorous utilization of physical investments which, when taken collectively, make for an improvement in the human existence.

While few would argue that improvement in health is not a worthy social goal, development planners and economists are increasingly examining and questioning the gains to the economy from better health. Those who have gone behind generalities and attempted to come to grips with the realities of applying quantitative analysis to health come up against the pressing need to identify and measure outputs. There is, perhaps, no field where output is as difficult to measure as it is in the provision of health services--a fact that a number of speakers and participants can attest to from their own heroic experiences. Looking at it simplistically it would seem that the full economic costs imposed upon a developing country by illness, disability, premature death, unoccupied areas, include the direct expenditures for health and medical care (at whatever level they may be) and the indirect costs related to the loss of output to the economy; the latter being loss of earnings, employment, education, essential services and the less tangible but very real human costs such as pain, grief, anxiety and despair.

Similarly, it would seem as if we should be able to measure the quantity of health services and related activities which are

provided in some units or other such as patients treated, immunizations rendered, gallons of pesticides applied, hectares of areas sprayed, miles of water pipes constructed, etc. But, these constitute only activities which we record, and they are only a part of the many ways in which health is improved. In truth, the health of a peoples depends on many complex, interrelated factors which are not normally in the purview of the health sector.

Perhaps, a more appropriate framework in which to analyze the role and contribution of health to economic growth is to view better health as a needful part of "balanced" socio-economic development. Poverty, ill-health, high fertility and mortality, fatalism, short-time horizons contribute to a low-level equilibrium in many developing countries which is at variance with their heightened expectations for achieving some demonstrable measure of improvement within their general situations.

There are, however, some encouraging signs that development planners and economists, development finance institutions, and the health community are coming to view development in an ecologic sense--that is, seeing development within a total economic and social framework. Economic changes because they are requisite to the success of development, have long resulted in development being conceived principally in economic terms. But, it is becoming increasingly apparent that development must have as its objective the securing of social goals--improved living conditions, lifestyles promising of self-fulfillment, diversity of opportunity, access to the benefits of science and technology; and, not the least, an improved level

of personal and community health. Economic development is the engine, the instrument for achieving social goals. Its success, or lack of it, in any given country will be measured by these and other social indicators, including health. Seemingly, the reciprocal interactions of health with other elements of the development process should be recognized in any cost/benefit analysis of investment in the health sector. There are a large number of linkages involved in this reciprocity: economic and educational development may encourage family planning, while good health and reduced infant mortality can positively affect the cultural imperatives for large families; family planning improves nutrition and nutrition improves health; higher labor productivity and reduced absenteeism from school enhances economic progress, and such progress can lead to improved housing, water supply and sanitation, with positive health effects. Satisfactorily integrated with other socio-economic advances, health improvements are an essential part of the development process. Pushed into isolation, without other supporting investments, their short-term impact on population growth can have an unbalancing effect, thereby consituting a negative investment that can offset positive short-run consumption gains.

Thus, in their search for increased investments in the health sector, health planners and administrators who fail to stress the "real" gains to the economy from better health and fail to seek help from the economists in quantifying both the economic losses from diseases, and the benefits of an improved health status, will do so at their own peril. In a world where the gap between the "haves" and the

"have nots" is widening both relatively and absolutely; where the flow of development assistance finance from the "haves" to the "have nots" is diminishing, where inflation is eroding hard won economic gains, as are population increases--in this kind of a world scene, the health sector will have to fight to wring out of increasingly scarce resources even modest appropriations for its endeavors. Steeped in a value system that calls for them to render succor and aid to the sick and afflicted because it is the right and humane thing to do--the health profession could be expected to find it painfully difficult to set priorities in health by economic criteria alone. And, perhaps, no one would want to see such important, directly life-related priorities established solely on the basis of economic criteria. For while, increasingly, the fate and future of suffering millions is to be decided in the laying on of money, it is in the laying on of hands is their pain and suffering eased, their grief comforted, and their hope for a future, any future, sustained.

HEALTH IN THE DEVELOPING COUNTRIES

- THE WORLD BANK -

by

Dr. James A. Lee

I appreciate very much the opportunity to participate in this panel on Changing Concepts of International Cooperation in Health and to be associated in this undertaking with Dr. Acuña, the distinguished Director-General of PAHO, and Dr. Taylor, who is widely recognized for his long association with international health affairs. The field of international health has been of a long-standing, personal concern; and, more recently, it has become a matter of official concern to my institution, the World Bank.

There are four major points I should like to touch upon tonight: first, a description of the Bank's target population in health-related activities -- that is, the rural and urban poor of developing countries; second, a brief look at the international economic situation and how it relates to the transfer of resources to developing countries; third, a look at the Bank's evolving policies and operations in the field of health; and, finally, some observations concerning the contribution of medical education institutions.

The World's Poor -- The Bank's Clientele

The rural and urban poor constitute 80-85 percent of the world's population, with an estimated 550 million individuals suffering from absolute

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poverty -- that is, with annual incomes equivalent to US$50 or less. In many of the countries wherein these people reside as much as 80 percent of the population is completely out of contact with official health services. Dr. Barry Bloom of the Albert Einstein College of Medicine recently described these suffering peoples:

> "Try to imagine the quality of life of the people of New York City if every man, woman, and child suffered from malaria, 40 percent had tuberculosis, one in thirty were affected with leprosy, and four in ten children died before age 5 with measles. This is the quality of life, differing only in detail, endured by 500 million people in parts of Africa, Asia and Latin America."

A perhaps even more candid appraisal of the over-all state of development throughout much of the developing world reveals it to be unacceptable -- unacceptable because something approaching one billion people continue to live at levels of deprivation that simply cannot be reconciled with any rational definition of human decency.

Throughout the developing nations:

- Hunger and malnutrition are sapping energy, stunting bodies, and slowing minds.
- Illiteracy continues to lock out learning and is paralyzing opportunity.
- Endemic unemployment is not only robbing men and women of the minimal means to make their way, but leaving their pride broken, their ambition atrophied, and their children condemned to continuing poverty.

- Wholly preventable diseases are killing infants, injuring children, disabling productive workers, and ageing adults long before their time.
- Population increases are eroding hard-won economic gains and add a staggering burden to poor countries seeking to free themselves from the chains of poverty.

In sum, hundreds of millions of human lives -- with all their inherent potential -- are being threatened, eroded, shortened and finally terminated by a pervasive and persistent poverty that degrades and destroys all that it touches.

This picture is not exaggerated as those among you who see the painful human evidences of it are all too aware.

Throughout the developing world the estimates are that well over 1,000 million human beings are hungry or malnourished. There are 100 million more illiterates than there were two decades ago. Underemployment and unemployment entraps roughly one out of every five in the labor force. Twenty to twenty-five percent of the children die before the fifth birthday -- and, millions of those who live lead impeded lives through brain damage, stunted bodies, and their vitality sapped by nutritional deficiencies, parasites, and multiple diseases. To alleviate pain and suffering, to prevent and arrest diseases there are in some developing countries fewer than one physician for every 50,000 people (one to 93,000 in one African country). Per capita expenditures for health care in some poor countries is less than US$0.40 per annum.

These then are the poor -- the absolute poor -- where absolute poverty is a condition of life so limited by illiteracy, malnutrition, disease, high infant mortality, high fertility, and low life-expectancy as to deny to its victims the very potential of the genes bequeathed to them. In effect, it is life at the margin of existence. The heaviest concentration of absolute poverty is in Asia; India, Pakistan, Bangladesh, and Indonesia are particularly afflicted. One out of every two individuals there is enmeshed in it.

In addition to these absolute poor there are the relative poor. These are individuals with incomes somewhat above the absolute poverty level, but still far below the national average of their countries. Because of the distortion in income distribution -- a distortion which in most developing countries far exceeds that of the industrialized nations -- they too have been bypassed by economic progress.

In Africa, most countries are plagued with both absolute and relative poverty.

In Latin America, many countries enjoy higher per capita incomes (with only about one in six at Asian or African levels of poverty). But income distribution throughout the region is marred by serious inequality, and relative poverty is widespread and severe.

This is the target population of the World Bank's attack on rural and urban poverty -- sick in body and sick in spirit.

International Economic Situation

The facts I have just cited are neither pleasant nor comfortable. But -- they are facts, and they reflect the lives of something approaching three-quarters of the human race.

To achieve anything approaching the goal set for the UN's Second Development Decade will not be possible without the continued economic growth of the developed nations, as well as the developing nations.

What are the prospects for this? My institution, the World Bank, has been analyzing the effects recent changes in the world economy are having on growth prospects and capital requirements of the developing countries. The conclusions stemming from this analysis leave little doubt that 800 million of the world's poorest peoples -- those whose per capita income average is less than US$200/year -- are likely to receive a "severe setback". Rapidly rising commodity prices mean poor countries will find it increasingly difficult to pay for imports of food and fertilizer. The economic growth rates of the richer industrialized countries are expected to continue their decline, thereby substantially diminishing the prospects for growth of developing country exports; and, at the same time, diminishing prospects for the developed countries increasing their concessionary aid to these self-same poor countries. In 1974, flows of official development assistance continued to decline from the 1973 figure of 0.35 percent of the GNP to 0.31 percent; and, in 1975 the trend is likely to continue. But -- even if the richer nations were to maintain their concessionary assistance at 1973-74 levels -- at anticipated rates of inflation, this objective will require an increase in disbursements, in current prices, from $12 billion in 1973, to $18 billion in 1976 and $30 billion in 1980.

In sum, given the present plans of the major international development assistance agencies and the bilateral aid administrations, the transfer of resources will fall far short of what is required to assist those countries which are most seriously affected by recent changes in the world economy.

Now, what does this admittedly bleak picture presage for the health sector?

An examination of these trends with respect to the transfer of financial resources to the developing countries has important implications for health in those countries. Simply stated, it seems probable that resources available for development will not reach the levels so desperately needed,at least not in the near future. Inflation and monetary uncertainties will further diminish the present net flow of external resources. Thus, with resources ranging from very limited in some countries, to desperately limited in others exhibiting poor economic growth rates, investments in the health sector can be expected to show little improvement.

Further, with regard to international health, the World Health Organization's proposed budget for its 1976 financial year provides for little or no real program growth. The budget's increases in absolute terms would seem to be cancelled by cost increases. Hence, innovative programs to be initiated would ostensibly be at the expense of program reductions elsewhere.

Indeed, due to financial uncertainty over inflation and foreign exchange rates, there seems to be a general tendency to trim international organizations and programs to ensure fiscal stability.

The World Bank and Health

Against this background of growing poverty affecting three-quarters of the world's peoples, and the international economic situation as it relates to the prospects for its alleviation, the World Bank in 1973 and again in 1975 announced its plan for attacking rural and urban poverty, respectively. Included in this stategy will be a determined effort to improve health within

the patterns of its lending for economic development. (For those of you who may not be familiar with it, I commend to your reading the World Bank's Sector Policy Paper on Health prepared by its Development Economics Department and published earlier this year.) Briefly stated, this strategy includes two major options: (1) to continue to strengthen its awareness of the health consequences of the projects it supports and of the opportunities for improving health that are available under present patterns of lending. This is presently underway. (2) to initiate Bank lending for basic health services; i.e., to finance health projects. The Bank will be exploring this latter option in the years immediately ahead. In the interim, the Bank's vigorous prosecution of the first option should enable it to improve substantially its assistance in the health area and to gain experience which would enable it to assess whether it can effectively assist in the development of health systems that are appropriate to developing countries.

It is the Bank's belief, furthermore, that health services offered in isolation from other development components will not have the desired effectiveness. Within the Bank's present pattern of lending there are, then, two foci of attention:

(1) Preventive Measures -- to prevent, minimize or otherwise mitigate any adverse effects to the public's health and well-being resulting from the presence and/or operation of projects which it finances (such as projects for irrigation, hydro-power, industry, general agriculture, rural and urban development, etc.).

(2) Health Support Measures -- to include as appropriate components of development projects measures necessary for

improving the health of low-income groups (for example, projects involving water supply, sewerage, nutrition, family planning, sites and services for low-cost housing, training of health personnel, etc.).

In sum, health benefits from Bank-assisted projects will increasingly be identified and provided for, but the broad patterns of lending will remain basically unchanged. The health benefits will be viewed as important contributing benefits of projects, rather than as constituting the main objective of lending at this time.

Our attention will be on prevention as opposed to treatment; it will be on health care as opposed to clinical care. It will center around understanding the ecology of health wherein health (or its absence) is viewed as the ecologic resultant of the man-environment relationships as opposed to focusing on a medically oriented, curative view of health's absence.

Again, I would like to emphasize that the Bank's target group is the poorer of the poor, hence the need for projects that package together innovative economic and social components specifically designed to help transform poverty into productivity. Among these components is health. Both the technical and social variables in such a transition are complex. To deal with them effectively calls for continuing feedback and evaluation, sensitivity and respect for indigenous values -- and, a healthy measure of humility.

Role of Medical Education Institutions

Within the general context of these general remarks, how and to what extent can and should medical academic institutions play participating and/or leadership roles in the development and execution of health activities in the developing countries? I am quick to say that I do not know -- for given the

existing orientation, philosophy, structure, curriculum, and general orientation of these institutions, their roles would seem limited. My colleagues on the panel may speak more specifically than I to this point.

Some of the things that daily concern me may provide some clues -- I am concerned with tropical diseases, their prevention and treatment, including new research approaches to better understand their ecology and, hence, control; I am concerned with expanded vector control methods with a view to their impact on non-target organisms; I am concerned with primary health care focusing on disease prevention through community efforts in environmental health, water supply, and sanitation; I am concerned with extended low-cost official health services emphasizing less capital-intensive means, and recurrent costs that can be "realistically" financed; I am concerned with training community-based health workers to cope with the disease patterns of poor communities, etc.

It would seem, therefore, that relevant program areas might include:

(a) studies in tropical medicine;

(b) studies in preventive medicine;

(c) studies in alternative ways of health care delivery, including various manpower mixes;

(d) promoting international interest in American students, indeed, in saying that international health activity is attractive as a career in medicine. This also suggests allowing flexibility in the curriculum to enable students to participate in cross-cultural experiences; and

(e) finally, studies in the implications of international health care. How many of today's medical students realize the gross

disparities in health status worldwide, and in degrees of accessibility to any kind of medical service? How many are aware of the demographic issues in health -- the importance of health as it relates to population growth, or to the development and consumption of world resources?

As stated earlier, given the present structure, curriculum, and orientation of the American medical centers, their role in the above task has been limited. This is to generalize: only you know the degree to which your universities are committed to and involved in international health activities. However, the task remains before us; the issues will not go away.

ENVIRONMENT AND DEVELOPMENT:

THE WORLD BANK EXPERIENCE

by

Dr. James A. Lee

I welcome this opportunity to meet with you today to discuss, briefly, the interests and experiences of the World Bank as regards the environmental implications of its work in the developing countries. The World Bank and its affiliates, the International Development Association and the International Finance Corporation, are development institutions. Their role has evolved over a 30-year history from a focus on the reconstruction of post-war Europe to concentration on the broad problems of social and economic advance for the world's poorer nations.

In the few minutes given over to us today I propose to touch upon four points. First, because I am not certain that all of you know about the Bank, I intend to tell you something about who we are and what we do. Then I should like to describe the implications for the environment arising out of our activities -- how we go about addressing the environmental aspects of development -- and, continue with some remarks about our experience to date.

I have learned from Dr. Bassow that many, if not most of you, are concerned with industry, so I would further propose to conclude my remarks with some references to that sector.

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Background

As I said earlier, the World Bank is a group of three institutions, the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), and the International Finance Corporation (IFC).

The common objective of these institutions is to help raise standards of living in developing countries by channeling financial resources from developed countries to the developing world.

The Bank was established in December 1945, and makes loans at a rate which is calculated in accordance with a formula related to its cost of borrowing. The Bank's charter spells out certain basic rules which govern its operations. It must lend only for productive purposes, and pay due regard to the prospects of repayment. Each loan is made to a government or must be guaranteed by the government concerned. The use of loans cannot be restricted to purchases in any particular member country. And the Bank's decisions to lend must be based only on economic considerations.

The International Development Association was established in 1960 to provide assistance for the same purposes as the Bank, but on terms that would bear less heavily on the balance of payments of the borrowing countries. Though legally and financially distinct from the Bank, IDA is administered by the same staff. IDA's assistance is concentrated on countries which are very poor -- mainly those with an annual per capita gross national product of less than $375. More than 40 countries are eligible under this criterion. They include more than 80% of the population of the 100 countries that are current borrowers from the Bank, IDA, or both. About

74% of the people living in IDA-eligible countries live in Asia, 14% in Africa south of the Sahara, 9.5% in the Middle East and North Africa, and 2.5% in Latin America and the Caribbean area.

While the Bank has traditionally financed all kinds of infrastructure facilities such as roads, railways, and power facilities, its present developmental strategy places a greatly increased emphasis on investments which can directly affect the well-being of the masses of poor people of developing countries by making them more productive and by including them as active participants in the development process. This strategy is increasingly evident in the rural development, agriculture and education projects which the Bank and IDA help finance. The same strategy is also being carried out for the benefit of the urban poor in projects designed to develop water and sewerage facilities as well as "core" low-cost housing, and to increase the productivity of small industries.

In recent years the three institutions have increased their lending very substantially. In FY1976, new financial commitments totalled approximately $7 billion.

The Bank and IDA are now lending more than $6,630 million a year to help raise the standard of living in developing countries. This is well over one-fourth of the total from all official sources outside the developing countries themselves. The IFC has the same purpose, but its role is more specialized; helping to stimulate growth in the private sector, particularly industry. It is now investing nearly $250 million a year.

The role of the World Bank in the international development effort, and the scale of its operations, are further illustrated by the fact that at the end of FY1976 it was supervising the completion of over 1,000 projects in 94 developing countries -- projects representing a total investment of $65 billion, of which the Bank itself is financing $27 billion.

These funds are helping to support a wide variety of projects, large and small, public and private, chiefly in the fields of agriculture and rural development, urban development, education, electric power, tourism, transportation, population planning, telecommunications, water supply and sewerage, and industry.

The Bank has committed itself to helping its 127 member countries with their many intractable development problems, including, among others, questions of income distribution, rural and urban poverty, unemployment, excessive population growth, rapid urbanization and, of late, environmental protection and rehabilitation, and preventive medicine and health care delivery.

Although legally and financially distinct, the Bank, IDA and IFC are a closely integrated unit. Using funds from different sources and lending on different terms and arrangements, they have become a highly flexible instrument for giving both financial and technical assistance to developing member countries at virtually all stages of economic and social growth. Together they constitute a true development institution.

Bank and IDA: Trends in Lending, by Sector
(US$ millions. Fiscal years.)

	1974			1975			1976		
	Bank	IDA	Total	Bank	IDA	Total	Bank	IDA	Total
Agriculture	646.5	309.4	955.9	1,221.5	636.1	1,857.5	1,209.2	418.4	1,627.6
Development finance companies	309.0	36.2	345.2	469.5	34.5	504.0	697.1	64.0	761.1
Education	134.4	18.7	153.1	126.7	97.1	223.8	244.9	76.4	321.3
Electric power	755.9	13.5	769.4	475.7	28.0	503.7	690.3	259.0	949.3
Industry	309.1	109.7	418.8	665.3	125.0	790.3	501.0	105.0	606.0
Nonproject	—	235.0	235.0	195.0	325.0	520.0	75.0	354.0[3]	429.0[3]
Population and nutrition	—	17.0	17.0	25.0	15.0	40.0	25.8	—	25.8
Technical assistance	16.0	5.0	21.0	—	—	—	13.0	19.0	32.0
Telecommunications	66.5	41.4	107.9	96.0	103.0	199.0	59.0	5.2	64.2
Tourism	30.6	16.0	46.6	30.7	—	30.7	21.0	10.0	31.0
Transportation	733.2	223.8	957.0	815.8	172.9	988.7	1,114.7	256.2	1,370.9
Urbanization	68.0	45.0	113.0	70.5	22.5	93.0	79.6	—	79.6
Water supply and sewerage	149.2	24.5	173.7	128.0	17.1	145.1	246.5	88.1	334.6
Total	3,218.4	1,095.2	4,313.6	4,319.7	1,576.2	5,895.8	4,977.1[2]	1,655.3	6,632.4

Details may not add to totals because of rounding.
(1) Includes $200 million for "Maintenance imports."
(2) Includes $477.8 million lent on Third Window terms.

Obviously, I have only touched upon some of the highlights concerning the Bank. For a fuller account of the Bank, its background, policies, operations, borrowings and finance, I commend to your reading its Annual Report for 1976. Additionally, I would mention the address by the Bank's President to its Board of Governors in October in Manila. Copies of those documents are available from the Bank's headquarters in Washington.

As I stated earlier, the basic function of the Bank is to prepare and finance projects for economic development in the developing countries of the world.

That purpose is paramount today; it will remain so tomorrow. But, it is also the policy of the Bank that careful and studied attention must be given, in the planning and execution of its development projects, for the

consequences to the environment and to the health and welfare of affected peoples.

Environmental Considerations in Development Assistance

International development assistance has, from its earliest beginnings, addressed certain problems of the environment -- problems of poverty, hunger, disease, illiteracy -- that is, problems associated with the lack of economic development. Worldwide concern, however, has steadily mounted over other aspects of the human environment. In recent years there has been a rising crescendo of warnings about the environment -- some reasoned and forceful, some shrill and exaggerated -- some cautiously hopeful, some deeply pessimistic. Experts tell us that air, water, soil, and living resources are seriously deteriorating in many regions and threaten vital life-supporting ecological systems. So grave was the portent of these warnings, so serious were the risks to be incurred through continued inattention -- that the world's family of nations gathered at Stockholm in 1972 for the first UN Conference on the Human Environment. Implementation of the results of that historic meeting are presently underway but much still remains for the future, however.

The environmental problems of the developing countries can be divided into two categories: effects of poverty, and effects of economic development.

Under conditions of poverty the biophysical environment often exhibits the ravages of long years of mismanagement (overgrazing, erosion, denuded forests, surface water pollution, etc.). Not merely the "quality" of life but life itself is endangered, for it is often very difficult and

sometimes impossible for the environment to renew its life-supporting capabilities. Developing countries assign the highest priority to finding solutions to problems of this nature. Here the principal concern is to rehabilitate the environment that has gone through a long period of deterioration.

The other set of problems accompanies the process of development itself. Agricultural growth, for example, calls for construction of irrigation and drainage systems, clearing of forests, use of fertilizers and pesticides -- all of which have environmental and health implications. Similarly, the process of industrialization could well result in the release of pollutants and in other environmental problems related to the extraction and processing of raw materials.

In sum, developing countries are now beginning to be concerned with two different types of environmental problems: In the first type, these nations have to alleviate poverty; while in the other, they have to seek ways to prevent the environmental deterioration often associated with development. The first task is considerably more difficult than the second, but the second could also become difficult if the present concern for the environment is not translated into action. The Bank is concerned with both aspects of the problem.

Exploitation of both natural and human resources is a necessary ingredient of economic development. It can, and does, have profound and lasting effects on the naturally occurring environment, its biota, and on people. Increasingly, we read of "ecological boomerangs" occurring in connection with development schemes in which unwelcomed and, sometimes, unexpected consequences have arisen. But economic development cannot proceed

without its impact on man and nature. The developing countries and their peoples have made it clear that they must expand their economies and modernize their social institutions. They must provide themselves with an opportunity to build more productive and rewarding lives.

Clearly, development calls for the continued export of technology from the developed to the developing countries. This export is already of significant proportions. In this process the environmental record of the developed countries, reaping quick economic benefits only later to learn of greater and more lasting social costs, should be taken into account. The question cannot be viewed, however, as one of economic and social development versus the environment. It is rather how this development can proceed in ways least disruptive to the environment and most promising for individual self-fulfillment and social progress.

Technology is for this problem -- as it has been for mankind these many centuries past -- the handiest touchstone. In other words, the solution to the dilemma -- or the choice between economic progress and satisfactory environment -- lies in the development design -- or how projects are conceived and carried out. What good is a reservoir full of water hyacinths?

To take a more dramatic example, let me quote President Julius Nyerere of Tanzania, who may have put the case best: "Personally I have no wish ever to see a wild animal but if they bring in money which can be used in development, then they must be looked after." In other words, conservation and progress must move together.

If the dialogue between the worlds of the "haves" and the "have nots" about such matters is to be productive, it must be based upon a full under-

standing, first: that the viewpoints on both sides are different, and second: that solutions to the world's environmental problems must be complementary to and not at the expense of the world efforts to advance the economic and social development of the poor nations. Progress toward this mutual understanding is being made.

"The question," said the President of the World Bank, "is not whether there should be continued economic growth. There must be. Nor is the question whether the impact on the environment must be respected. It has to be. Nor -- least of all -- is it a question of whether these two considerations are interlocked. They are."

"The solution of the dilemma," he continued, "revolves clearly not about whether, but about how."

The Bank's Approach

Though the Bank prior to 1971 had concerned itself with the environmental implications of its development activities, no systematic procedure existed to identify and examine those effects. More importantly, methods to prevent or mitigate adverse consequences had not, in many instances, been devised.

Such an unsystematic approach was clearly seen as inadequate in light of scientific data that has come to light in recent years about the specific and collective effects of unplanned development on environmental systems; and, the rapid growth of control technologies.

Office of Environmental and Health Affairs

In late 1970, the post of Environmental Adviser was established and given a strong mandate to review and evaluate every investment project

from the standpoint of its potential effects on the environment. That solo post has now grown into an Office of Environmental and Health Affairs which oversees the Bank's environmental activities, including especially, ensuring that projects proposed for financing are examined for their ecological, health, and sociocultural effects, and appropriate measures taken to prevent or mitigate seriously adverse consequences.

Guidelines

Important to this task has been the Bank's handbook, Environmental, Health, and Human Ecologic Considerations in Economic Development Projects. Prepared for use by its own staff, the handbook has found widespread use throughout the developing world, including government planners, borrowing entities, engineering and construction firms, consultant organizations, universities, etc. As environmental considerations have more and more become a fixed part of Bank operations, these guidelines and criteria now cover many different kinds of project possibilities and settings and are used in the evaluation of environmental impacts of virtually all projects.

Conducting Environmental Evaluations

Experience in environmental evaluations within the Bank has given rise to a series of operations which are now being followed for each project believed to have significant environmental/health/human ecologic impacts.

In brief these include:

- In-house study of the proposed project utilizing the Bank's technical staff.
- On-site "environmental reconnaissance" to determine likely impact of the project; the problems, if any, likely to

result; recommendations for preventing or mitigating such problems; or recommendations for in-depth studies of particular environmental responses.

. In-depth studies are the subject of multidisciplinary investigations conducted under terms of reference carefully tailored to the conditions and requirements surrounding the particular project, or component thereof.

. Projects of such a nature that their environmental impacts are of unique importance to a regional or global audience, and wherein singularly unique and important environmental values are involved must, of necessity, be the object of comprehensive and detailed studies to determine how or if the project can proceed.

. Projects for which environmental safeguards or controls are to be included are examined during the construction and pre-operation stages to determine their adequacy and sufficiency in light of any changes which may have occurred subsequent to final appraisal.

. Projects in operation are examined periodically to determine the continuing adequacy of environmental safeguards, and the need, if any, for new or improved controls.

. Projects involving important ecological systems are subjected to "environmental post-audits" at appropriate points in their implementation to determine the accuracy of the pre-project impact assessment, and the actual consequences for such systems.

Cost/Benefit Analyses

In each and every project subjected to one or more of the steps cited above, the environmental safeguards which may be indicated are the object of cost/benefit analysis. Efforts are continuing to develop a more suitable methodology for identifying the diseconomies, social and opportunity costs, and benefits to be anticipated. The difficulties experienced in this regard are many, and are the subject of increased research.

Financing Environmental Studies

The environmental studies seen as being requisite to financing a project are, in most instances, financed by the borrowing entity, in much the same manner as other aspects of project preparation, such as engineering, geology, marketing, etc. In some cases involving poor countries, the Bank may finance the required studies. Increasingly, the borrowing entity is encouraged to make the necessary studies, while the Bank reserves the right to approve the terms of reference and the qualifications of those employed in their conduct. The Bank does assist, where appropriate, in preparing the terms of reference and in defining the disciplines to be used in the studies. In some instances, the Bank will conduct the required studies being financed by the borrower. In any event, findings of environmental studies are shared jointly with the borrower, member country government, and the Bank.

Thus, while no formal "impact statement" on the environmental consequences of a development project is strictly required, the Bank does require that major adverse effects be avoided or mitigated and, as indicated, has established systematic procedures for accomplishing this. To date,

all projects requiring safeguard measures have been successfully negotiated with the borrower and member country.

Industrial Projects

Industrial projects are of especial concern to the Bank -- in FY1976 the Bank and IFC loaned over $800 million in that sector.

Like projects in the other sectors, industrial projects are examined for their environmental, occupational health, and worker safety aspects.

In addition to the extensive guidelines provided in the Bank's handbook, more specific and detailed effluent and emissions guidelines have been prepared for the many types of industries financed by the Bank. Occupational health and safety guidelines are similarly under preparation. Another publication designed to better prepare the Bank's industrial projects staff to handle the many and technically complex problems of pollution control is in its final stage of production. We have close working relationships with the WHO, UNIDO, ILO, ECE and others active in the industrial field.

Bank's Experience with Environment and Development

From a review of the Bank's experience to date, it emerges that the provision of environmental and health safeguards which are carefully tailored to the specifics of the project's setting, has, in general, represented 0-3% of the total cost of a project. While this is most encouraging, it must be noted as the assimilative capacities of ecological systems in developing countries are increasingly used up through further economic development, then protection will require the countries to meet higher standards and impose tighter controls.

The Bank's experience has given encouragement to those who despaired that development could be accommodated with a concern for the environment as well as those who feared that their hopes for a way out of pervasive poverty through urgently needed development would be dashed over the mounting concern for environmental degradation. The Bank's present efforts with regard to the environment are in tune with the objectives of the Second United Nations Development Decade; they reconcile its mandate to assist in the economic advances of the developing countries with the responsibility to protect and enhance the environment.

Finally, the Bank is now prepared to lend for "environmental" projects per se, providing they otherwise meet the usual conditions for Bank lending. Experience is showing that many developing countries are interested in projects such as air and water pollution control, reafforestation, erosion control, disease vector control, and correcting numerous deficiencies in the urban environment.

For a fuller account of the Bank's experience with the environmental and health dimensions of its development assistance activities, I recommend our publication Environment and Development, also available from the Bank's headquarters.

Looking to the Future

Its experience also strongly suggests that in following its present course, the Bank can continue to go forward with its principal task of assisting developing countries in their search for a better future, while at the same time minimizing seriously disruptive impacts on vital ecological systems, the public's health, and social well-being.

-ENVIRONMENTAL CHANGES AND BIOLOGICAL RESPONSE-

MEETING BASIC HEALTH NEEDS

IN THE

DEVELOPING COUNTRIES

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Paper Prepared for delivery at the VI TECHNICON INTERNATIONAL SYMPOSIUM

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SUMMARY

Man's status on a health-disease continuum is the resultant of the ecologic interplay and integration of two ecological universes; namely, the unchanging internal environment of man (milieu interieur) and the external changing multi-environments in which he exists and to whose perturbations he seeks to successfully adapt. The ecologic interplay of man and his environments has as, perhaps, its most important consequences his individual health and social well-being. As it is with the individual so it is with the community. In the still developing countries the absence of health has its genesis in the ways in which the elements of a low level of socio-economic development interact to deny health and foster disease. Health and its provision are, however, coming to be recognized as fundamental goals of development in their own right, and as a means of increasing productivity and of economic development. Improvements in socio-economic development are frequently more important than isolated health care interventions in maximizing improvements in rural and urban health. The problems associated with meeting basic health needs in the context of strategies for socio-economic improvement are examined. Further, the development process itself is not without its own threats to personal and community health, and the opportunities for identifying these hazards and providing for their prevention and/or control are investigated.

INTRODUCTION

The theme of our Symposium, Environmental Changes and Biological Responses, implies there is a dynamism inherent in the man/environment re-

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lationship. And, so there is -- the very process of living is a continual interplay between the individual and his environment, often taking on the form of a struggle resulting in change to the environment and inadequate adaptation to that change by the individual. Our keynote speaker has provided us with an excellent framework for viewing the man/environment relationship, a framework which sees man, the bio-social organism, relating to his multi-environments, and seeking to adapt to change in these environments -- change which he has largely induced. The framework provides for an identification of these relationships and an understanding of the responses which man, the biological organism and "human" being, makes to his total environment. The perspective is an ecological one and the main theme of human ecology is the reciprocal interaction between man and environment. I propose to expand somewhat on Dr. Sargent's remarks, for I want to use the backdrop which he has kindly given us to provide the setting for considering health in the still developing countries.

An Ecological Perspective of Man

As the present end result of hominid evolution, possessed of singularly unique cerebral capacities which afford it the ability to symbolize, to be capable of both a prospective and retrospective view of itself in relation to time and events, to transmit a cumulative record of the manifold consequences of its symbolic activities in the form of life styles and institutions for accomplishing cooperative action in pursuit of commonly shared objectives, to purposely alter and shape its surroundings through the coordinated application of cerebral abilities and physical dexterity -- this biological organism - MAN - is unique. In an ecological perspective of man, the focus of interest is an organism profoundly

modified by a pattern of individual behavior and inter-individual processes coupled with an anthropocentric concept of itself in relation to its animate and inanimate surroundings. The human organism is seen as a bio-social organism possessing unique qualities of "humanness."

Seen from an ecological point of view the environment of man encompasses the bio-physical realms and the psycho/socio-cultural milieu fashioned by his unique cerebral capabilities. His environment is, in fact, a complex multi-environmental system composed of several identifiable broad categories or components -- physical or material, biotic, socio-cultural, and what may be termed, psycho-conceptual. Man's locus is at the interface of these major components where he is enmeshed in a complex web of ecological interactions which determine his psycho/socio/physiological status. Ecologically, man is viewed as existing at the interfaces of his multi-environments -- being at once a part of them and simultaneously interacting with them -- yet capable of resisting their combined impact by virtue of his biologic and cultural adaptability. The interrelations between total man (the bio-social organism) and his total environment (the system of multi-environments) are dynamic and reciprocal. Each makes aggressions on the other, and each, in turn, reacts and responds to these aggressions (environmental change and human adaptation). To support his biological, cultural, and uniquely technological needs man continually alters his total environment and, in fact, creates new environmental settings. Until relatively recent times, changes in the physical environment were slow and naturally occurring, to which man responded through the equally slow process of biological evolution. Now, however, contemporary man himself has set in motion forces of his own making that are of such

magnitude and rapidity as to seriously challenge his biological adaptive capabilities. The capacity of man to maintain the integrity of his internal environment in the face of external perturbations is past oriented. That is to say, the internal regulating properties of man evolved and matured during hundreds of thousands of years during which external, selection-inducing changes were slow and naturally occurring. The regulatory mechanisms to achieve constancy of the internal environment (which is governed within a narrow range of tolerances) are thus genetically linked to a period of man's evolutionary history quite unlike that which he now faces. Put another way, contemporary man is the product of past environmental circumstances to whose slowly occurring homeostatic disrupting forces he survived through biological adaptations. In the present telescoping period of frantic environmental change, there is no longer time for biological adaptation through evolutionary selection to work its will. As a consequence, there can be no assurance and, in fact, increasing doubt that this genetically limited adaptive capacity of man -- the product of past evolutionary history -- will suffice to carry man through future experiences. It is a fact that cultural evolution has proceeded faster than biological evolution. The result of this rapid evolution of culture has been the ascendancy of man to a position of ecological dominancy -- he is the ecological dominant. In this capacity he has wrought an ecological revolution, some of the untoward consequences of which you have experienced here in Japan. Now that man can alter his physical environment so profoundly and modify it rapidly to his short-term preferences, there is a tendency to believe that the biological mechanisms on which he has depended for adaptation in the past have become of negligible

importance. Because he can manipulate so many aspects of his environment and also govern to some extent the operations of his body and mind, modern man has entered a phase of his evolution in which many of his ancient biological attributes are no longer called into play. Natural selection cannot possibly maintain the state of adaptiveness to an environment that no longer exists, any more than it can adapt the human organism to environments that have not yet been created. Yet because of technological advances, such new environments will continue to appear at an accelerating rate. To keep pace with them, man will come to depend even more than in the past on cultural and social evolution. Yet, as I have pointed out, the utilization of social and cultural adaptive strategies are constrained by man's genetic legacy which sets limits on the norm of reaction -- and this norm, it must be remembered, is past oriented to a period in the evolutionary history of man quite unlike that which he faces now, or certainly in the future.

An ecological perspective of man and his total environment rests upon a recognition of an ecological truism: The introduction of any major alteration into the steady-state of life-supporting ecological systems (ecosystems) necessitates appropriate adaptive responses to maintain that balance,or the character of the biotic component will change. Thus, each major alteration of the human environment must be matched by appropriate or neutralizing mechanisms. As a truism in human ecology it implies that man's health and well-being, and, indeed, his survival in an environmental system subjected to the altering effects of technology, urbanization, and over-population will be increasingly dependent on the successful employment of social adaptive strategies including environmental controls utilizing still further increases in technology.

Health and Disease as Ecologic Resultants

Health and disease are not static entities but are phases of life dependent at any time on the balance maintained in the man/environment relationships. Health, in a positive sense, consists in the capacity of the bio-social organism (man) to maintain a balance in which it may be reasonably free of undue pain, discomfort, disability, or limitations of action, including social capacity. There is no clear-cut dividing line between health and disease -- they constitute a continuum. Some years ago I defined man's place at any given time on the continuum as the "resultant of the efforts of the total organism to adjust, survive, and thrive through its continually changing interactions with its total environment ... for it is out of the continually changing nature of this reciprocal interaction that problems of health and well-being have their genesis." Dubos emphasizes that life is an adventure in a world where nothing is static ... where every manifestation of existence is a response to stimuli and challenge each of which constitutes a threat to the integrity of the bio-social organism if not adequately dealt with; i.e., the very process of living is a continual interplay between the individual and his environment, often taking on the form of a struggle resulting in disruptions to the integrity of the organism, to the narrowly fixed and genetically determined constancy of the inner environment (milieu interieur). The health status of man -- I might suggest -- is the resultant of the ecologic interplay and integration of two ecological universes; namely, the internal environment of man and the external multi-environment system in which he exists and to which he relates. As it is with the individual so it is with the community. Thus, any perturbation that upsets the equilibrium of either of these two

major systems -- the internal and external environments -- can become a determinant of dysfunction and disintegration -- hence, disease, or the absence of health. A medico-ecologic definition of a disease state implies imbalance and disharmony in the equilibrium between the internal and external environments leading to organismic dysfunctioning and disintegration. Health and well-being is then a balanced, harmonious blending of these functions yielding individual and/or community integration. Disease or illness is, conversely, an imbalance, dysfunction, and disharmony of these functions yielding individual and/or community disintegration. The causes of ill health are then multiple -- the collective contributions of all the elements of these two interacting systems -- namely, the endopathic process and the exopathic events (or causation). Disease, in essence, is the consequence of the failure to successfully adapt. Let me put it another way -- etiologically, disease is the somatic and/or psychic resultant of a complex process involving both endogenetical factors (call it genotypic weakness and defects) and exopathic events (expressed as stressors, or insults impinging on the bio-social organism) of the material, biotic and socio-cultural milieu -- the environment of man. Thus, man's health status is a function of his genetic endowment and the accumulated, potentiating, synergistic impacts of his environment.

Again, from a medico-ecologic point of view, health is a dynamic process not a static condition of the organism where only the demonstrable absence of organismic malfunctioning at any time is the governing criterion. Health is seen as being a state not synonymous for all humans, for it includes a personal, individualized fitness for self-fulfillment in the total milieu, the total setting or ambience to which that individual interrelates.

The individual's health status is dependent upon the success of his adaptive capacities to achieve organismic homeostasis and functional integration. Disease is similarly a dynamic process -- being medico-ecologically viewed as any disturbance or malfunction; dysfunction, or morbid condition, of the soma or psyche, whether or not clinically manifested -- which hinders or prevents the total individual from achieving self-fulfillment to the extent which its genes permit. Disease conditions range from temporary, passive disturbances to critical illness.

Health and Disease in the Still Developing Countries

I have gone to some length (and, perhaps, too much time) to relate the theme of our Symposium to my topic, namely, the health problems and needs of the developing countries. I think it important that we have an ecological perspective, if you will, of man and his environment, and how in that dynamic man/environment relationship can be found the necessary and sufficient conditions for the causation of individual and community health and social welfare problems. For two billion of the world's peoples their place on the health-disease continuum is a direct outgrowth of their low level of socio-economic development -- and the pattern of disease affecting them clearly demonstrates this fact. You are well aware of the nature and dimensions of the health problems in developing countries, and the staggering morbidity and mortality statistics attributable to them, and I will not recount them here today. Suffice to say, the world's poor are ravaged by the infectious diseases, the parasitic diseases and mal- and undernutrition -- these represent poverty's toll -- the tragic resultant of the ways in which the elements of a low level of socio-economic development interact to deny health and foster disease. Economic development activites

are frequently cited as being more important than isolated health care intervention in maximizing improvements in rural and urban health. If we can accept the validity of health or its absence as being the ultimate indicator of the extent to which man's environmental relationships are enhancing or impairing human life, then the importance to health of improving the socio-economic conditions of poor peoples becomes axiomatic. Thus it is that the concept of improving personal and community health by relieving the most severe symptoms of poverty and improving economic prospects for those with the lowest incomes has appeared as part of a larger reassessment of development goals. The feasibility of including appropriate basic health care within the context of integrated rural and urban development schemes has been reinforced by a number of successful examples reported on by the World Health Organization, UNICEF, and the World Bank, among others. It is conventional wisdom, therefore, that the main causes of ill health in developing countries are due to poverty and deprivation. Still, it would be quite wrong to draw the conclusion that these health problems can be solved only when incomes reach a higher level than at present, still less the conclusion that an increase in incomes will automatically lead to their solution. Alongside strategies for increasing incomes, poor peoples need to be given the means to utilize their income to improve their quality of life and their health. In schemes of rural and urban development, the most important means of income generation is through labor-intensive technologies -- improved agricultural production and small industries, respectively. Health assumes a particular importance in these strategies because of its contribution to productivity. Poverty-stricken peoples who are sick, debilitated, and malnourished cannot make effective use of

the tools of development, whatever those tools may be. Likewise, improvements in health as reflected in reduced rates of infant mortality are seen as important to removing the widespread cultural imperative for having large families. In too many developing countries high population growth rates are eroding hard-won economic gains and defeating the goals of socio-economic development. What, in effect, is needed to meet basic health needs is a combination of interventions which must be implemented concurrently for greatest effect -- interventions on the productivity side to increase incomes and on the consumption side to provide increased access to health care and associated improvements in sanitation, shelter, education and nutrition. Historically, in the now developed countries, improvements in the health status accompanied economic development and the consequent improvements in sanitation and nutrition. Assuming we can accept the necessity of these activities -- that is, economic development and greater access to health care along with associated improvements in meeting basic human needs -- proceeding in tandem -- I will now turn my attention to the health care element.

A wide range of activities are undertaken at major expense to ostensibly maintain and promote health, even in the poorest countries. Public expenditures for personal health care services alone are as little as US$2 per capita a year, but these amounts are supplemented by substantial private outlays for both traditional and modern services. Total recurrent expenditures (public and private) for personal health care represent between 6-8 percent of national income, or from as little as US$8 per capita a year in the lowest income countries to about US$100 per capita in middle-income countries. In addition, there are substantial expenditures for

sanitation, water supply, health education, nutrition, family planning and shelter which are undertaken in whole or in part in order to improve conditions for health. The total commitment of resources to health activities is on the order of US$75 billion a year as compared to US$40-45 billion for education. The scale of spending for health indicates the priority placed on avoidance and control of ill health by the citizens of developing countries. In addition, it signals more importantly that even minor improvements in the efficiency of the sector would have profound implications for the availability of resources and/or the health status of the world's poor. Despite these large expenditures for health, the developing countries continue to suffer massively from diseases for which there are fairly inexpensive, technically feasible methods of control.

Design and Delivery of Health Services

Even though simple, inexpensive technologies to control many of the most common and serious diseases exist, few countries have succeeded in making them available to their poorer citizens. This failure is frequently explained by overemphasis on urban-centered, curative health services and the corresponding neglect of the rural poor and preventive care. This misallocation of resources is often attributed to the preoccupation of professional medicine with sophisticated technology and unusual diseases. However, this explanation oversimplifies the problem: the allocation of health resources also reflects the concentration of political power, perception of needs by decision-makers, and biases introduced by well-intentioned voluntary agencies and external donors. Furthermore, even where there is commitment to promoting rural, preventive care, there persist formidable problems of staffing, supervision and logistics

which often cripple attempts to improve access to preventive care. Finally, the difficulties in marketing preventive services to persons who perceive themselves to be well, while at the same time neglecting obvious medical crises, have been understated. Thus, the failure of most health care systems to exploit available technologies appears to have complex origins.

Popular discussions of health policies for developing countries have emphasized preventive care. However, the potential contributions of preventive technologies have frequently been overstated. Much of the rationale for stressing prevention is based upon the observation that the high health standards of the advanced countries were achieved largely through improvements in sanitation, water supply, nutrition and housing. It does not follow, however, that this strategy is now efficient or even feasible for the developing countries. These countries confront severe cultural, institutional and economic constraints to rapid improvements in living conditions; and the now developing countries also have access to such modern medical miracles as antibiotics and vaccines which have profoundly affected the range of options available for dealing with disease. Thus, a pragmatic approach to health care is required that recognizes the technical options for controlling disease and the constraints that influence the feasibility and cost of operating each. In general, activities that rely upon technical (as opposed to behavioral) solutions pose much smaller risks of failure.

The design of a program of health activities should be based upon the costs and effects of the entire scheme. Much of the discussion to date has emphasized the cost-effectiveness of control measures directed toward a specific disease. However, there are commonly economies of joint production

that imply that a collection of individually suboptimal activities may be together the most cost-effective means of improving health. For example, the service delivery system necessary to distribute antimalarial drugs or to monitor disease in a settlement scheme, may at little additional cost be used as well to provide maternal and child health care, and family planning services. Furthermore, many options require considerable modification of social institutions, cultural practices and/or individual behavior. In appraising a program of health activities, the cost of achieving these changes and the risks implied by possible failure should be evaluated. Substantial economies are likely to derive from subprograms sharing such efforts as modifying attitudes or promoting community involvement.

The foregoing discussion suggests that health care activities in developing countries should focus first on interventions that require little or no cooperation from or commitment by the community in order to be effective. Immunization is highly attractive since it requires no sustained effort and can be carried out with modest public support. Furthermore, immunization affords protection with minimum risks of serious side-effects or of significant untoward consequences in the event a program is disrupted. Maternal and child health care is the second most attractive activity. In most societies, the importance attached to healthy children and concern over complications of childbirth can be depended upon to recruit patients and to motivate compliance with medical recommendations. Pre- and postnatal care require very simple technology, are inexpensive and virtually risk free. Maternal health care is, therefore, ideally suited to a low-cost strategy using paraprofessional community workers. Similarly, monitoring

the development of children is an uncomplicated activity; distributing information on nutrition and hygiene for the child poses few technical or cultural problems. The third priority for health care is trauma treatment for injuries and wounds. Here again the need is evident and,hence, the demand will be readily expressed. The technology is simple and, especially in a tropical setting, highly effective. Treatment of serious injuries will obviously be beyond the competence of a community health worker, but even then, emergency care prior to transporting the patient to a better equipped facility is essential. A fourth priority is education in nutrition, sanitation and personal hygiene. The likelihood that local health workers will have a significant impact on the beliefs and behaviors of their communities is small, at least in the relatively short term. However, as their credibility as a source of health information and care develops, they will eventually acquire the necessary authority. This process is likely to take many years and faces serious risks of failure. But, the cost of health education activities is small if other care is being offered already, and hence is an attractive opportunity.

Improvements in nutrition, sanitation, water supply and hygiene generally require substantial changes in individual behavior and in cultural practices. If people can be motivated to improve their practices, these are highly effective interventions. But the success of these measures depends critically on behavioral and social factors, including the ability of health authorities to effect change. Environmental health activities should be undertaken with a clear recognition of the risk that they may not contribute to the goal of improving health unless the surrounding circumstances are favorable.

In summary, health activities in developing countries should be chosen to permit equitable, mass access to efficiently operated, low-cost services which reduce the economic and human burdens of disease. These activities should also be low-risk. In designing health care programs, particular attention should be paid to the acceptability of activities to clients, and the feasibility and cost of modifying their behaviors if this is required. Thus, immunization, maternal and child health care, family planning services, and first-aid treatment of injuries are likely to be included in a well-designed program of primary health care.

The Primary Health Care Concept

The primary health care concept proposes a delivery system which integrates health care, sanitation, water, nutrition and health education recognizing the importance of the non-health care components, and the synergistic effects of all these interventions on health status.

Some of the fundamental principles of the concept of primary health care for developing countries have been well stated in a recent report of the Organization for Economic Cooperation and Development:

a. The concept is a dynamic one, involving an initial phase of expanding coverage with the most basic services. In this context WHO has proposed that the target of basic health care for all be achieved by the year 2000. Subsequently, services can be steadily improved in terms of quality and efficiency.

b. The Primary Health Care concept is a coordinated multi-sector strategy, recognizing that the essential requirements for health are the basic needs, many of which lie

outside the activities and competencies of the health sector itself.

c. It implies a concern with the health needs of the majority of the population, rather than the minority. This means that priority should be given to the prevention and management of mass diseases affecting the majority -- usually the rural population.

d. It seeks to redress the existing imbalances in resource allocation in the health sector by providing more support facilities and manpower for the rural areas.

e. It advocates the use of a simple and appropriate technology, recognizing that most diseases do not require sophisticated techniques or highly trained professionals.

f. Implicit in the primary health care concept is the recognition that it consists of a package of different activites which need to be implemented concurrently -- that to implement only a part of the package is to reduce greatly its impact on health. The precise mix of activities needs to be determined on the basis of local priorities and needs, matched with the available resources.

g. Finally, one of the most important elements of the primary health care concept, is the recognition that only with community involvement and maximum participation of the people themselves, will the strategy be effective.

Health Threats from Development

In seeking to improve the socio-economic status of developing countries, many development schemes have not only failed to benefit health but have actually had a negative impact by introducing, redistributing and/or exacerbating health problems. Thus, the development process itself is not without its own threats to the public's health and well-being. A few examples will suffice to point up the problems. In development schemes wherein surface waters in semi- and tropical developing countries will be manipulated, the introduction, distribution and/or exacerbation of water-associated diseases, e.g., schistosomiasis, malaria, onchocerciasis, etc., should be taken into account. Other health problems are associated with agricultural, rural development and resettlement schemes wherein the introduction or migration of peoples can serve to introduce new diseases or exacerbate endemic diseases. Failure to recognize and provide for such problems can make a failure of such development schemes. Road building projects, also, by opening up communications between areas hitherto unconnected or by altering settlement patterns, or allowing for spontaneous settlement, can have major health implications. Similarly, rural development projects can bring about alterations in agricultural practices that may lead to less food being consumed by poorer families.

There seems to be insufficient awareness of the potential threat to health from the development process, or of the strategies which could and should be taken to prevent or minimize health threats and thereby even potentiate the health benefits of development endeavors. If health is considered at an early stage in the identification and preparation of a

development scheme, alterations or modifications to the scheme and/or the incorporation of a health component would be possible. The World Bank has developed an effective system for considering health in all the projects for which it provides financing, including occupational health and safety. The latter is especially important in the industrial sector where hazards in the work environment can be detrimental to the health of workers, and their families.

Thus, the development process is itself a perturbation to the man/environment relationship -- by modifying and changing the environment, the affected populace must undergo an adaptational response, physiological, psychic, socio-cultural or all of them. In this connection, the psychic response to new environmental challenges should not be minimized -- increasingly, statistics from developing countries reveal a disturbing trend upwards in mental health problems and trauma.

Failure to be sensitive to the health implications of economic development can result in the failure of well-meaning efforts, or less than expected results.