Beyond Copra

Saving Money, Reducing Poverty, and Diversifying Agriculture in Kiribati

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Cover photo: World Bank

Acknowledgments

This document was written by Aarre Laakso (Consultant) and Samuel Wills (Economist, Task Team Leader). It summarizes three earlier World Bank reports on the copra subsidy in Kiribati: "*Cracking the Nut: A Proposal for Reforming and Upgrading Kiribati's Coconut Industry*" by Blair Edward Lapres (Economist), Aarre Laakso, and Samuel Wills; "*Cultivating Shared Prosperity: Reforming the Copra Subsidy to Enhance Social Protection on Kiribati's Outer Islands*" by Sharad Tandon (Senior Economist), Dung Doan (Social Protection Specialist), Sandor Karacsony (Senior Economist), and Samuel Wills; and "*New Sprouts: Diversifying Agriculture on Kiribati's Outer Islands*" by Agnès Deshormes (Consultant) and Samuel Wills.

The report benefitted from guidance and direction from Steven Ndegwa (Country Director), Stefano Mocci (Country Manager), Lars Christian Moller (Practice Manager), and Ralph van Doorn (Program Leader).

Abbreviations

CSO community service obligation
EEZ exclusive economic zone
GDP gross domestic product
KCDL Kiribati Coconut Development Ltd
PBC performance-based contract
SFU Support Fund for the Unemployed
SOE state-owned enterprise
VDS Vessel Day Scheme

All monetary amounts are Australian dollars unless otherwise indicated.

Executive Summary

Kiribati's copra subsidy is a major element of the government's economic strategy that simultaneously accomplishes three key goals. First, it reduces poverty. Second, it incentivizes living on the outer islands rather than migrating to South Tarawa. Third, it provides employment in a historically and culturally significant industry. However, it does not meet these goals efficiently and effectively, which is creating fiscal issues for Kiribati.

All three goals can be achieved more cheaply and sustainably by lowering the copra subsidy and supplementing it with targeted cash transfers. Replacing the copra subsidy completely would sacrifice its ability to target people in need. Keeping it at its current level of A$4 per kilogram is too expensive. Reducing the subsidy to A$2 per kilogram opens a range of policy options. At that level, Kiribati can make choices about what type of poverty-reducing programs it wants to have, their costs, and the resulting poverty rate. For example, by lowering the subsidy to A$2 per kilogram, Kiribati could lower the poverty rate by 20 percent by spending some of the savings on cash transfers targeted to poor outer island residents. This would cost 30 percent less than the A$4 per kilogram copra subsidy. This option may be of special interest to the Government of Kiribati as it meets all three goals of the current subsidy more efficiently and more effectively. That is, it would reduce poverty, maintain an incentive to live on the outer islands, and encourage people to work. A win-win-win policy decision.

Reducing the copra subsidy would also create opportunities to achieve other goals, like restoring the profitability of the copra industry. This would require additional reforms. Securing land title and creating zoning plans would promote investment. Efficiency would be improved by consolidating the role of Kiribati Coconut Development Ltd (KCDL), combining subsidies, and enhancing state-run shipping through performance-based contracts. Small private mills would help set market prices for copra. However, further investments in the copra sector should only happen after government subsidy is reduced and copra is profitable.

Reducing the copra subsidy would also allow for agricultural diversification, which would create new markets and encourage economic activities on the outer islands. The government can support this by expanding farmer services, training staff, and promoting knowledge exchange. Developing alternative exports like seaweed, solar salt, and tourism, especially on Kiritimati Island, could boost the economy.

Agricultural diversification could improve nutrition and health. It would encourage local production of vegetables and root crops, make them cheaper and more available, and reduce dependence on imported food. Moving away from imported, highly processed foods would improve nutrition and overall health.

Implementing a more efficient and effective poverty-reduction program in Kiribati requires three steps.

1. Working with the World Bank and other development partners to set up a targeted cash transfer system, building on the Support Fund for the Unemployed.
2. As the cash transfers ramp up, gradually reducing the copra subsidy to A$2 per kilogram.
3. If the targeting system is slow or expensive to set up, then capping the amount of subsidy paid to each household in the interim would immediately save money without increasing poverty.

Beyond Copra

While the copra subsidy is a central and popular pillar of the Kiribati economy, it is also expensive, inefficient, and constraining. Reforming it could not only save money and reduce poverty but also significantly increase productivity, diversify the economy, and improve nutrition.

1. The context: Kiribati's copra subsidy has become unsustainable.

This report, which is intended mainly for senior ministers in Kiribati, summarizes a substantial body of recent World Bank analytical work.

1. **Historically, copra production allowed Kiribati to overcome geographic challenges and participate in world markets**. Copra is dried coconut flesh that can be refined into oil. Foreign trading vessels have passed through the islands since 1850, seeking copra and coconut oil for trade. Global commoditization and market volatility, however, left Kiribati in an uncompetitive position. Since the mid-1990s, Kiribati has supported copra through a direct agricultural subsidy to farmers and cross-subsidies to various state-owned enterprises (SOEs). The government purchases copra from farmers at outer island weigh stations at a fixed price. Initially set at A$0.80 per kilogram, the subsidy doubled in 2016 to A$2 per kilogram and again in 2022 to A$4 per kilogram. Consequently, the subsidy has become unsustainable; in 2023, it was 8 times the farmgate price in other countries and cost 8 percent of gross domestic product (GDP).

2. **This document addresses the question: What can Kiribati do to improve the copra subsidy?** We propose several ways to remove distortions, increase efficiency, and encourage diversification. Fundamentally, the recommended reforms begin with reducing the subsidy and allowing the price of copra to float with the market price. A variety of complementary reforms are also warranted to take into account the coconut sector's economic, social, cultural, and agricultural significance.

3. **The report synthesizes three recent World Bank reports:**

- "Cracking the Nut: A Proposal for Reforming and Upgrading Kiribati's Coconut Industry" (World Bank 2024a). It focuses on how the subsidy distorts the copra sector and investigates how to improve its efficiency and profitability.

- "Cultivating Shared Prosperity: Reforming the Copra Subsidy to Enhance Social Protection on Kiribati's Outer Islands" (World Bank 2024b). It focuses on the effect the copra subsidy has on poverty.

- "New Sprouts: Diversifying Agriculture on Kiribati's Outer Islands" (World Bank 2024c). It studies how the subsidy distorts agriculture and nutrition in Kiribati, and explores options for diversifying into more nutritious crops.

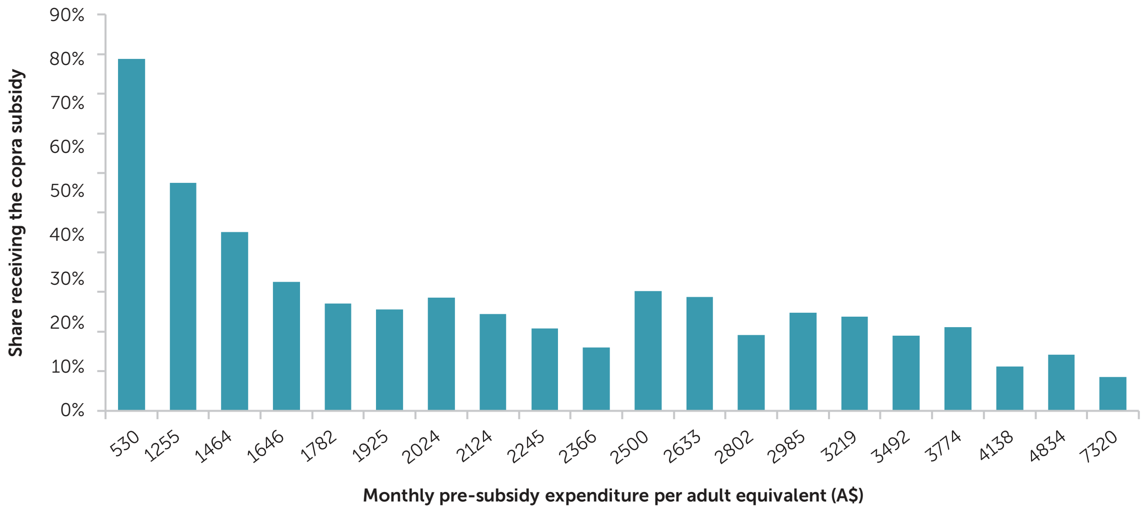
4. **This report is intended for several audiences.** The primary audience is senior ministers with limited time who are familiar with the copra subsidy but are seeking information about whether and how to reform it. We expect that it could also be useful to World Bank staff and other development partners working on this and related issues. It provides limited technical details, although comprehensive information is available in the three underlying reports.

2. The case for the status quo: There are benefits to the copra subsidy.

The Government of Kiribati uses the copra subsidy to achieve three aims: reducing poverty, managing internal migration, and providing employment in a historically and culturally significant industry.

5. **The copra subsidy provides a social safety net in the form of cash income for people living on the outer islands.** Seventy-three percent of outer islanders are outside the formal labor force, and 46 percent of poor households live on the outer islands. Moreover, although 28 percent of all households receive the copra subsidy, those with lower expenditures are more likely to receive it (see Figure 1). Therefore, it progressively targets poverty. However, it does so ineffectively and inefficiently. It is also the main source of cash for many outer island households.

FIGURE 1. *Share of People Receiving the Copra Subsidy by Pre-subsidy Expenditures*



Source: World Bank, Kiribati Household Income and Expenditure Survey (2019).

6. **The subsidy redistributes fishing rents relatively equitably.** Fishing license fees account for 40–60 percent of government revenue each year (A$140 - A$200 million). The Government of Kiribati prioritizes redistributing these rents to the population through high recurrent spending, including on the copra subsidy. Copra farming is widespread on the outer islands, so the subsidy redistributes the rents the government earns from fishing license fees to a large share of the population. Many other resource-rich countries and territories redistribute their sovereign rents directly to households. The US state of Alaska, for example, pays a dividend from its oil revenues to all eligible residents, much like a universal basic income. In contrast, the copra subsidy only goes to households on the outer islands.

7. **The copra subsidy discourages migration from the outer islands to the capital.** Demographic growth and internal migration have increased the population of Kiribati's capital dramatically. The share of Kiribati's population living in the densely populated South Tarawa has grown from about one-quarter in 1970 to over half in 2020. The population has more than tripled since 1985 alone. The density of Betio, South Tarawa's largest township, now exceeds 15,000 people per square kilometer. The government designed the subsidy to provide an incentive for people to stay on the outer islands[1] rather than migrate to the overcrowded capital of South Tarawa. Continued rural migration to the capital worsens social and environmental challenges in South Tarawa. By contrast, this incentive reduces pressure to further develop South Tarawa but makes delivering public services more expensive. Maintaining populations on the outer islands is culturally significant and important to Kiribati's claim to a large exclusive economic zone (EEZ).

8. **There are also various other non-economic reasons for the copra subsidy, including providing work in the coconut sector.** The coconut industry has historical and cultural importance. With limited alternative means of employment and despite infertile sandy soils, Kiribati has historically relied on coconut farming to sustain commercial activity and the cash economy on its outer islands. The subsidy, therefore, supports an increasingly unprofitable but historically and culturally important industry. Coconut farming has been a source of foreign income since the earliest written records in Kiribati. For many people, work harvesting coconuts is not just a source of income but also a source of pride and identity. i-Kiribati copra farmers are proud to continue the tradition of their forebears and maintain this culturally important crop. The copra subsidy differs from cash transfers because the latter do not provide the same sense of cultural fulfillment. As a subsidy rather than a handout, it avoids the social stigma associated with the latter.

3. The challenge: The copra subsidy has negative effects on the Kiribati economy.

> *Kiribati's copra subsidy has imposed a heavy fiscal burden, failed to provide cost-effective social protection, stifled the commercial viability of the copra industry, and hindered agricultural diversity.*

3.1. The copra subsidy creates fiscal issues for Kiribati

9. **The copra subsidy has become increasingly expensive.** The government doubled the subsidy in 2016 from A$0.80 per kilogram to A$2 per kilogram. As a result, the cost of the program increased from A$7.9 million (3.5 percent of GDP) in 2015 to A$32.2 million (13.3 percent of GDP) in 2017 (Figure 2). Kiribati doubled the subsidy for a second time, in 2022, to A$4 per kilogram. Consequently, the cost of the program rose from A$16 million (5 percent of GDP) in 2021 to A$38 million (12 percent of GDP) in 2022. As a result of these increases, the Kiribati government buys copra at eight times the market price. This cost is at least 2 percent of GDP more than coconut products earn in exports.

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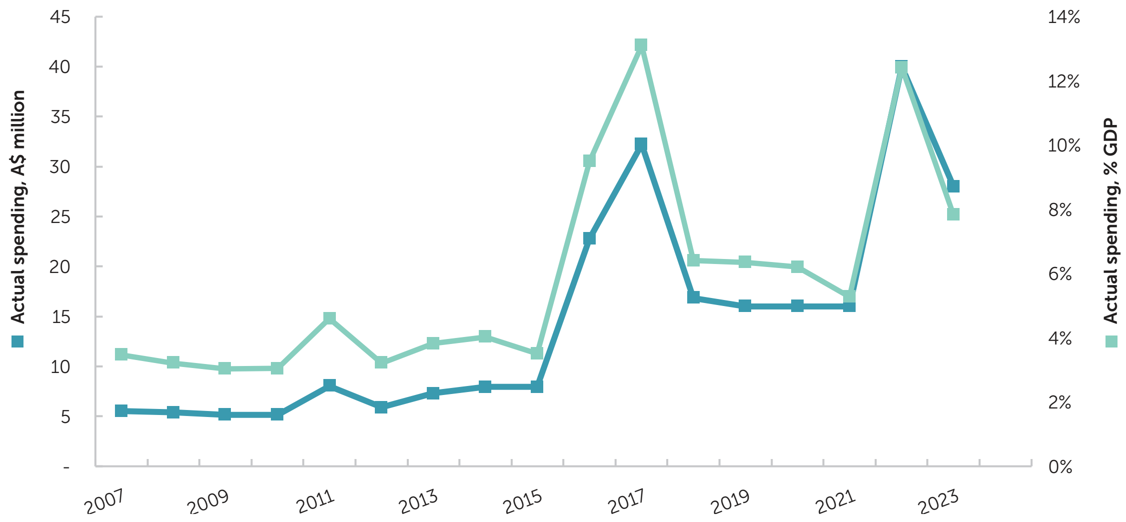
1 The "outer islands" are defined as those in the Northern, Central, Southern, and the Line and Phoenix Islands divisions (that is, excluding South Tarawa).

FIGURE 2. *Copra Subsidy Cost*



Source: World Bank, Government of Kiribati Recurrent Budgets.
Note: GDP = gross domestic product.

10. **Volatile revenues compound the problem.** Recurrent spending on the copra subsidy is high and difficult to reduce or control. At the same time, Kiribati's fishing license fees, which fund the copra subsidy, are highly volatile. In 2022, fishing license fees were 44 percent of GDP, down from 71 percent in 2020 due to adverse climate conditions. Fishing revenues fluctuate widely due to weather patterns, particularly the El Nino Southern Oscillation. The fluctuations are likely to become more extreme as fish migrate due to climate change.

11. **The combination of high recurrent spending and volatile income means that Kiribati's fiscal position fluctuates widely and requires consolidation.** In 2022, Kiribati's overall fiscal deficit (including grants but excluding Kiribati's Revenue Equalization Reserve Fund) was 18 percent of GDP, down from a surplus of 4 percent in 2020. The latest joint World Bank–International Monetary Fund Debt Sustainability Analysis (April 2024) expects that, without consolidation, Kiribati's deficit will stabilize at around 10 percent of GDP. This is likely to be financed by more donor aid or by depleting Kiribati's substantial cash reserves, which were worth 60 percent of GDP (7.3 months of spending) in 2022. Kiribati also has a large sovereign wealth fund that was worth 380 percent of GDP in 2022, but its withdrawal rule prevents Kiribati from using it as a countercyclical revenue source. In the medium term, Kiribati's deficits may jeopardize its fiscal responsibility rule, which requires holding cash reserves worth at least three months of government spending. As a result, the Debt Sustainability Analysis recommends that "Fiscal consolidation will be necessary to reduce fiscal risks by scaling back recurrent spending and mobilizing higher revenue."

12. **Taken together, this means that the copra subsidy constrains the fiscal space that Kiribati has available for other priorities.** In other words, the copra subsidy carries an opportunity cost that may be constraining investment in pressing public needs. The affected needs may include overall essentials such as an adaptive social protection system, public services, climate adaptation, health, education, and physical infrastructure. Additionally, they may involve necessities related to agriculture such as boosting nutritious crop production for the domestic market, strengthening agriculture support services, enhancing the efficiency of food supply chains, and consolidating market demand.

3.2. The copra subsidy does not achieve social protection aims as efficiently as the alternatives.

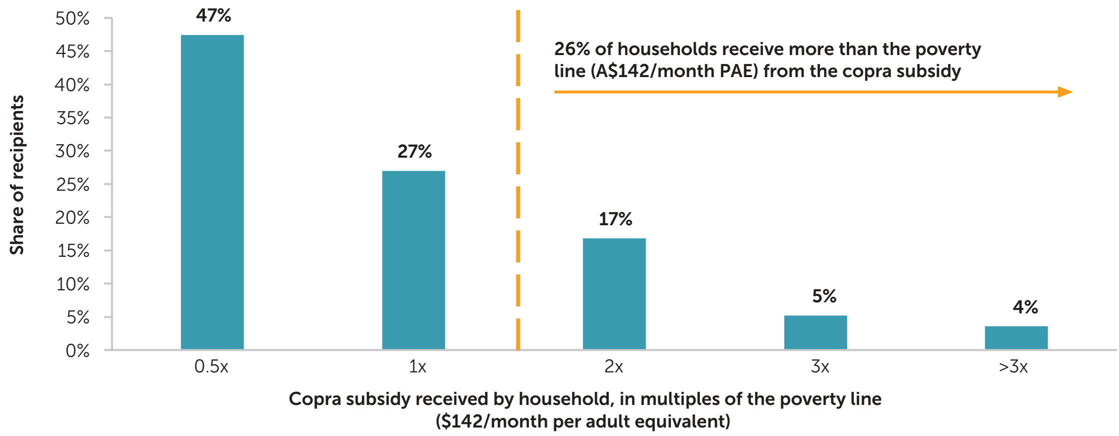
13. **The copra subsidy overlaps with unemployment support.** Spending on the subsidy has increased at the same time as a major expansion in Kiribati's social protection system. The Support Fund for the Unemployed (SFU) was launched in 2020 during COVID-19. It provides A$50 per month (one-third of the national poverty line) to all citizens aged 18–59 who are not formally employed and are actively looking for work. Between September 2020 and May 2021, nearly three-quarters of Kiribati's working-age population (52,300) registered as beneficiaries. The total cost of the SFU in 2022 was US$30 million (9 percent of GDP). The SFU is available to i-Kiribati throughout the country, so there is likely to be an overlap with households who also receive the copra subsidy.

14. **The copra subsidy reaches most households on the outer islands.** By guaranteeing a minimum purchase price for copra that is well above market prices, the subsidy effectively functions as a self-targeted cash transfer mechanism for the outer islands with very large coverage. More than three-quarters of the population in the Central and Southern divisions receive copra income, as do nearly half in Northern and more than a third in Line Island and Phoenix.

15. **The subsidy targets poor people but does so inefficiently because some of it goes to richer households, some households receive a lot, and some poor households get none**. Poorer households on the outer islands (based on their expenditures prior to receiving the copra subsidy) are more likely to receive the copra subsidy than richer households. This is because, even with the subsidy, collecting copra is difficult and poorly paid work. So, the copra subsidy goes disproportionately to poor people. Despite this, many richer households still receive the subsidy (Figure 1). Moreover, many households receive more than necessary to meet their basic needs, with over a quarter receiving more than the poverty line (Figure 3). Furthermore, the subsidy does not reach most of Kiribati's poor people, who live in South Tarawa.

16. **Alternative social protection systems, such as a direct cash transfer to individuals, are relatively efficient at reducing poverty.** In general, subsidizing agricultural inputs or outputs is an expensive form of social protection that significantly distorts the economy. Consumption subsidies are more efficient than input or output subsidies but less fiscally efficient than cash transfers. Consumption subsidies for fresh produce—consumables that are not often subject to import pressures in Kiribati—may also help stimulate local production of agricultural goods while improving nutrition. Targeted cash transfers to poor people are usually the most efficient option but require costly registration and payment infrastructure to ensure the payments reach the right people.

FIGURE 3. *Size of Copra Subsidy Received by Household, %*



Source: World Bank, Kiribati Household Income and Expenditure Survey (2019).
Note: PAE = per adult equivalent.

3.3. The copra subsidy prevents the copra sector from becoming commercially viable.

17. **The government is involved in every phase of the copra supply chain.** The system of state intervention in the coconut sector is two-tiered, involving both a direct production subsidy to farmers, and supporting SOEs. Famers grow ripe coconuts on the outer islands, harvest them, and dry them in the sun. Island Councils operate weigh stations that buy copra using government funds. Farmers bring copra to warehouses managed by the Island Councils. There, the product is weighed. The farmers are paid A$4 (approximately US$2.67) per kilogram. This is a fixed, subsidized price set by the government rather than through any market-based mechanism. Under this direct subsidy scheme, the government acts as the sole purchaser of copra from farmers, which eliminates alternative markets for it. The Island Councils then store the product until the government organizes shipping to Kiribati Coconut Development Ltd (KCDL) facilities in Tarawa. When ready, Kiribati National Shipping Line Ltd collects and transports the copra to Tarawa. There, it is provided for free to KCDL, which processes it for export. KCDL then refines 95 percent of the dried copra into crude coconut oil for export and produces limited quantities of copra meal for sale as pig feed. Maintaining seeds and replanting coconut palms for the next generation of trees is also a government responsibility. Ultimately, this subsidy scheme effectively prevents other purchasers of coconut products from entering the market and leaves KCDL as the country's only commercial off-taker.

18. **The subsidy creates inefficiencies in the copra sector.** Throughout the supply chain, there is heavy government involvement and few market-based incentives, leading to inefficiency and waste. This heavy government involvement has led to a lack of market incentives and accountability and resulted in poor balance sheet discipline across the sector. All the participants are funded directly by the government rather than by sales, so they have limited incentives to innovate and move up the value chain. Because the price received by copra harvesters is fixed, farmers have no incentive to improve the quality of their produce, cut costs, or vary supply in response to global demand. For their part, the weigh stations and transport companies have no incentive to demand such improvements. Weigh stations have no incentive to maintain the quality of copra or upgrade storage facilities. Transfer agents have little incentive to ensure that the copra is of high quality or that it doesn't spoil during transport. The processors have little incentive to produce high-margin products. In sum, the copra subsidy leads to a variety of principal-agent problems, inefficient scale, and productive, dynamic, and allocative inefficiencies. It also distorts the entire agricultural sector, crowding out fresh fruits and vegetables, which leads to poor nutrition and food insecurity.

19. **The result is an industry in disarray.** Copra can be stored at weigh stations for months at a time, leading to spoilage, infestation, and copra "growing legs" (being stolen from weigh stations and re-sold). Shipping is hampered by the government transfer agent's monopolistic practices, infrequent and irregular connectivity, and economically unviable routes. The processing facilities are outdated, approaching capacity, and focused on producing low-margin goods. In total, there is evidence of approximately 30 percent losses between the weigh stations and the export market. Replanting is not happening fast enough to renew the aging stock of trees.

20. **The difference between the costs and revenues of the industry emphasizes the inefficiencies in this system.** Whereas the government provides nearly A$16 million in copra subsidies, the country only makes about A$4 million in export earnings from its coconut oil products. In rough terms, copra from one coconut is purchased at A$0.80, turned into coconut oil, and sold for A$0.20. Given that the government also covers the product shipping costs from the outer islands to Tarawa, this underestimates the fiscal costs to keep the industry afloat. Most importantly, the opportunity costs are likely to further slow broader economic growth in Kiribati.

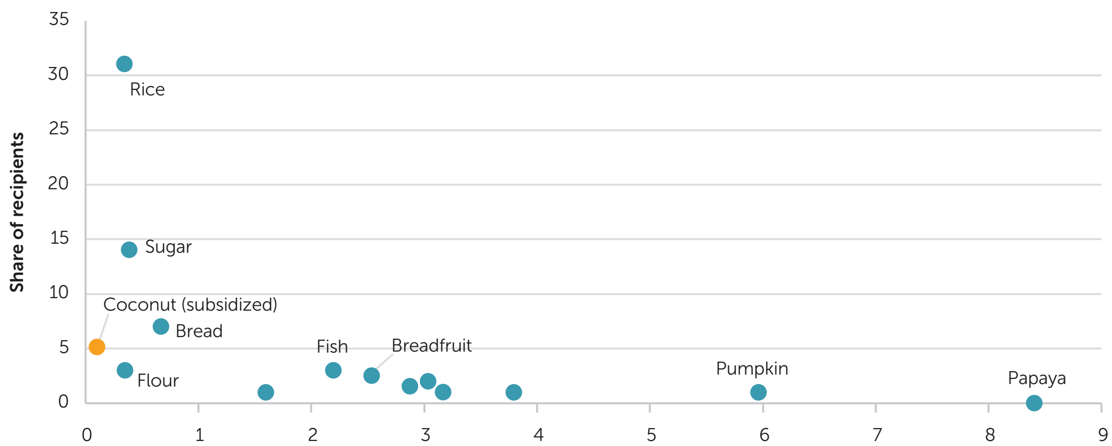
3.4. The copra subsidy prevents the agriculture sector from diversifying, limits productivity on the outer islands, and contributes to poor health and nutrition.

21. **As a result of the subsidy, copra dominates agricultural production**. Heavily subsidized copra dominates agriculture. Almost all non-copra agriculture is for home consumption because the subsidy discourages farmers from growing nutritious food crops for domestic consumption. Approximately 40 percent of households farm coconut, and it is the most harvested fruit in all island groups except the Line and Phoenix islands. The concentration in copra is particularly pronounced in the Central and Southern divisions. There, over 85 percent of households participate in copra production. At a national level, it exceeds the production of all other crops. Only 12 percent of households produce vegetables (mainly pumpkin, spinach, and cabbage) and 8 percent produce root crops (mainly taro and sweet potato).

22. **Due to the lack of diversity in agriculture, traditional diets have shifted toward imported and processed foods.** Traditional knowledge about fishing, farming, and food preparation and preservation are largely lost to young people (MELAD, 2020). As the production and marketing of food crops and livestock has declined, and the population grown, Kiribati has become increasingly dependent on imported food. In 2021, food imports were valued at US$35 million, a 46 percent increase over 10 years, and represented 366 percent of total exports. Imported staple foods (such as rice and sugar) and processed foods (such as instant noodles and sugar-sweetened beverages) are now widely available in food markets and shops across urban and rural areas.

23. **Fresh produce is not widely eaten because it is expensive and hard to find.** Diets are low in domestically produced fruit and vegetables because they are more expensive than imported staple foods. Imported cereals, notably rice and flour, contribute 59 percent of the purchased dietary energy (FAO). They have become integral to the Kiribati diet due to their affordability compared to local staple crops like breadfruit and swamp giant taro (Figure 4). Only 56 percent of households consume breadfruit, and less than 15 percent of households consume other locally grown fruits like pandanus or bananas, compared with 97 percent consuming rice (Government of Kiribati 2020). Of the fruits and vegetables that arrive in Kiribati, most are sold in South Tarawa markets, with few being sold in the outer islands (Government of Kiribati 2024). Aside from being cheaper, imported foods are also easier to prepare, use, and store in family kitchens. This convenience has further contributed to a decline in the consumption of traditional and locally produced foods (Raneri 2022).

FIGURE 4. *Food Cost versus Importance in Diet*



Source: World Bank, Troubat and Sharp (2021).

24. **The dependence on imported and processed foods also means that diets are now high in sugar and fat and low in nutritional value.** Imported food tends to be processed and shelf-stable and thus less nutritious than fresh fruit and vegetables. Average caloric intake in Kiribati has increased over the past 20 years, particularly in South Tarawa, and is now above healthy levels. Moreover, 70 percent of the average dietary energy consumed in Kiribati comes from carbohydrates. Less than 11 percent comes from protective foods rich in vitamins A or C (such as fruits and vegetables) and body-building foods rich in proteins (such as fish and chicken) (Troubat and Sharp 2021).

25. **The copra subsidy also discourages productive activities on the outer islands and contributes to risks arising from a lack of crop diversity.** The high returns that can be earned from copra farming are also likely to hamper economic growth on the outer islands (counter to the subsidy's objective) and discourage investment in building other skills on the outer islands. This may contribute to Kiribati's large inactive population. Moreover, having the agricultural sector so concentrated in a single crop is also likely to exacerbate the risks of crop disease, climate change, and an increasingly senile stock of coconut palms.

4. The proposed solution: Sustainably meeting the goals of the copra subsidy requires several reforms.

> *To meet the copra subsidy goals at a lower cost, Kiribati would need to reduce the subsidy, implement a complementary social protection program, increase copra profitability, diversify agriculture, and improve nutrition.*

4.1. The Government of Kiribati has many options for reducing poverty, but any change to the copra subsidy must consider its goals, benefits, and costs.

26. **The Government of Kiribati has a menu of options for reducing poverty and achieving its other goals.** The options stem from three decisions. The first decision is how much to spend on the copra subsidy. The second decision is what to substitute for the copra subsidy if there is a reduction. The third decision is how much to spend on the substitute. We consider four options for the subsidy: leaving it at A$4 per kilogram, capping it at the poverty line, reducing it to A$2 per kilogram, and replacing it (reducing it to A$0 per kilogram). Each of these has an equivalent cost in percentage of GDP. We consider three kinds of possible poverty-reducing programs: a nationwide cash transfer to poor people, a cash transfer only to poor residents of the outer islands, or a universal basic income. The third decision is expressed as a percentage of GDP. In other words, Kiribati needs to select whether and how much it wants to reduce the copra subsidy, what kind of complementary social protection program it wants to use, and how much it can spend. These decisions will determine Kiribati's poverty rate.

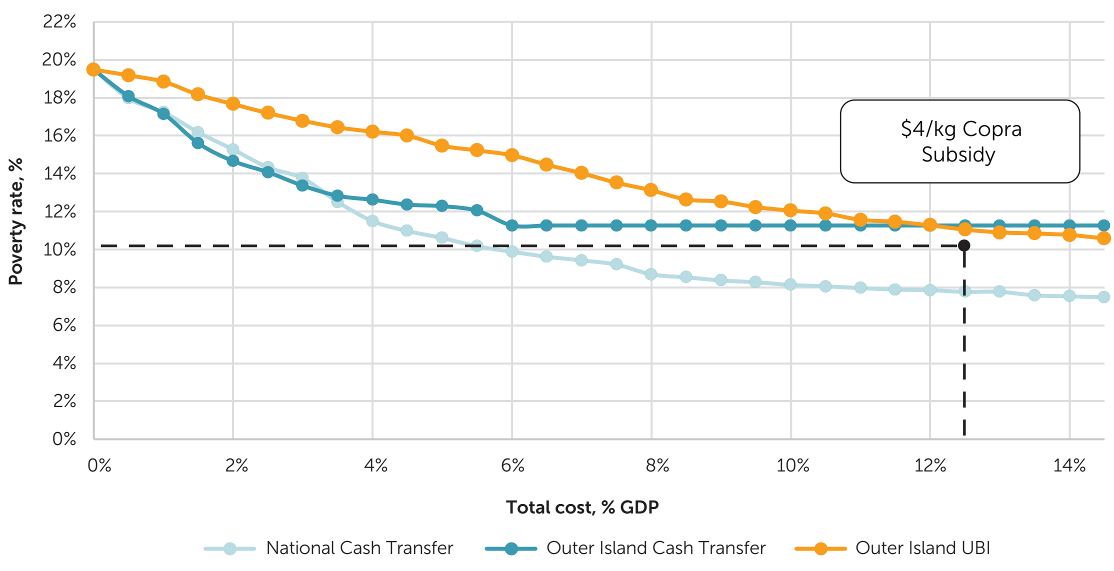
27. **Any reform to the copra subsidy must continue to meet the original goals of the program and have at least some of the other desirable characteristics of the copra subsidy.** The original goals were reducing poverty, discouraging migration to South Tarawa, and providing employment. In the absence of a compelling argument to the contrary (or a plan to accomplish these goals by other means), Kiribati would be well served by preserving these features of the copra subsidy. The copra subsidy also has several desirable characteristics that were not goals but are worth preserving if possible. In particular, the copra subsidy provides dignified, historically grounded, and culturally relevant assistance to many i-Kiribati. Preserving these attributes is important for having a humane social assistance program that is widely popular.

28. **The proposed reforms also address other issues with the current program.** A key goal driving the need for reform is to lower the government's fiscal burden (that is, save money) and make social protection more efficient. The proposed reforms also intend to reduce the subsidy to the copra sector to promote resilient growth. Resilient growth is expected to come from making the copra industry profitable, improving the performance of the coconut industry more generally, and increasing the productivity and profitability of Kiribati's agriculture sector as a whole. It is also anticipated that the changes will diversify agriculture toward nutritious food crops meeting local market demand and high-value-added goods. Diversification will also make the agriculture sector more resilient to climate change and other shocks.

4.2. Reducing the copra subsidy and introducing targeted cash transfers would better achieve the subsidy's goals and reduce costs.

29. **Completely replacing the copra subsidy would not be an efficient way to reduce poverty in Kiribati**. Figure 5 illustrates the remaining options if the Government of Kiribati were to reduce the copra subsidy to A$0 per kilogram. It also shows the status quo in black: a copra subsidy of A$4 per kilogram, which costs 12.6 percent of GDP and results in a poverty rate of 10 percent. Replacing the copra subsidy with an outer islands social protection program (dark blue and orange lines) would not reduce poverty at any cost. These programs would be less effective than the copra subsidy because they would target outer islands residents but not those that are particularly poor, either accidentally or by design. Without a copra subsidy, only a national cash transfer to poor people would reduce poverty (light blue line). Even then, it would be expensive (at least 6 percent of GDP). Moreover, it would not scale well as doubling the spend from 6 percent of GDP to 12 percent of GDP would only decrease poverty by about 2 percentage points.

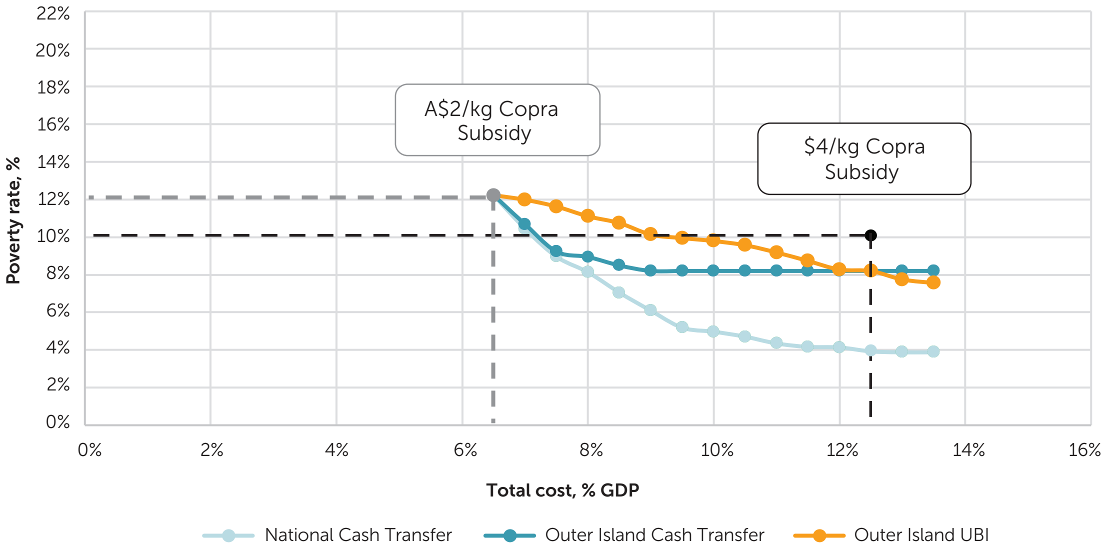
FIGURE 5. *Cost of Achieving Different Poverty Rates at A$0/kg Subsidy, % GDP*



Source: World Bank.
Note: Assumes the copra subsidy is A$0 per kilogram, payments target the poorest 20 percent of people, and inclusion/exclusion errors (failing to provide payments to targeted people or providing payments to non-targeted people) are 30 percent. GDP = gross domestic product; UBI = universal basic income.

30. **The foundation of an effective reform to the copra subsidy is to reduce (but not replace) the subsidy, and eventually to let the price vary with the market.** Figure 6 illustrates the costs and poverty rates associated with various possible cash transfer schemes at a A$2 per kilogram subsidy. Again it shows the status quo in black: a A$4 per kilogram subsidy resulting in a poverty rate of 10 percent. Halving the subsidy to A$2 per kilogram would save 6.3 percent of GDP, but only increase the poverty rate to 12 percent.

FIGURE 6. *Cost of Achieving Different Poverty Rates at A$2/kg Subsidy, % GDP*



Source: World Bank.
Note: Assumes the copra subsidy is A$2 per kilogram, payments target the poorest 20 percent of people, and inclusion/exclusion errors (failing to provide payments to targeted people or providing payments to non-targeted people) are 30 percent. GDP = gross domestic product; UBI = universal basic income.

31. **The Government of Kiribati could keep the poverty rate the same while spending less by combining a A$2 per kilogram subsidy with cash transfers to people in need.** The cash could be transferred to poor people nationwide (light blue line), or only on the outer islands (dark blue line). In either case this would achieve a poverty rate of 10 percent while only costing around 7.5 percent of GDP (6.3 percent on the copra subsidy, and the rest on transfers). A combined strategy like this would save more than 40 percent of the cost of the current A$4 per kilogram subsidy.

32. **Using a cash transfer only to poor people on the outer islands, the Government of Kiribati could reduce poverty while substantially cutting spending and preserving the incentive to live on the outer islands**. At a A$2 per kilogram subsidy rate, the Government of Kiribati could lower the poverty rate considerably by spending a relatively small amount on cash transfers to poor people on outer islands (dark blue line). Specifically, spending an additional 2.5 percent of GDP on these transfers would lower the poverty rate to 8 percent. This option would save more than 4 percent of GDP relative to the A$4 per kilogram copra subsidy, a 29 percent savings. This option may be of special interest to the Government of Kiribati because it would continue to incentivize living on the outer islands, consistent with the goals of the original copra subsidy program.

33. **The Government of Kiribati could reduce poverty even more efficiently by transferring cash to poor people everywhere in Kiribati.** Most i-Kiribati living below the poverty line are in South Tarawa. Combining a A$2 per kilogram copra subsidy with cash transfers to those in need nation-wide (the light blue line in Figure 6) could halve the poverty rate while saving money. This option would reduce the poverty rate from 10 to 5 percent while spending only 10 percent of GDP (21 percent less than the current program) in total.

34. **As an interim measure, capping the amount of copra subsidy that each household receives each month would quickly save money without raising poverty at all**. The cap would depend on the number of people in the household and be set at the poverty line (A$142 per adult equivalent per month). This would prevent some households from receiving more of the subsidy than they need to leave poverty, as seen in Figure 3. It would immediately improve the fiscal position by A$13 million (3.7 percent of GDP).

4.3. Kiribati could make money from copra through a variety of reforms

35. **Insecure title and slow processes are major barriers to investment.** A major constraint on commercializing agriculture, including the coconut industry, is the land title system. Around 60 percent of land in Kiribati is government-owned, and 40 percent is held under collective customary title. Government land is under-utilized due to inadequate zoning and leasing arrangements. Customary land is collectively governed, which leads to complex negotiations with investors and reduces the incentive to invest. The lack of long-term leases on appropriately sized plots is a major deterrent to local and foreign investors. So is the process of registering a property which takes over 500 days on average.

36. **Boosting agricultural productivity requires reforms to make land title secure, enforceable, and fast**. Secure and enforceable land title through freehold or long-term leases is needed to attract private investors. To boost agricultural investment, including in the coconut industry, the government could create zoning plans that provide for long-term leases, especially on Kiritimati. These plans would be created by consulting investors on characteristics like plot size and lease duration, especially for long-term crops like coconut palms. Helping customary landholders adopt best-practice governance structures would streamline decision-making and ease the negotiating process for leases. This could include establishing incorporated landholder groups with inclusive representation and decision-making power. The government would also need to ensure that titles and leases can be easily transferred and used as collateral.

37. **A profit motive could be introduced by consolidating KCDL's role and combining piecemeal subsidies into a single community service obligation (CSO).** To improve efficiency and accountability, KCDL could consolidate control and responsibility throughout its value chain. MELAD could also cede responsibility for seeds and replanting to the private sector and focus on creating a regulatory and biosecurity environment that supports it. KCDL taking on responsibility for purchasing copra and running weigh stations would reduce principal-agent problems and encourage balance sheet discipline. Efficiency could be further encouraged by delivering the subsidy to KCDL as a CSO (a single payment) based on the volume of copra processed in Tarawa. This would incentivize KCDL to pay closer attention to inventory and quality control during purchasing, shipping, and processing.

38. **State-run domestic shipping is infrequent, unreliable, and slow and would be improved by fixed-term performance-based contracts (PBCs).** PBCs involve private companies (and possibly KNSL) bidding to service particular shipping routes for the lowest government subsidy.

Each route comes with specific benchmarks for frequency and reliability that need to be met for the contract to continue. At the end of each fixed term, companies must bid again, encouraging competition among suppliers. PBCs have been used successfully in the Solomon Islands and other Pacific countries, with better services at lower cost than those provided by the government.

39. **Small, private, local mills could help set the market price for copra, although it would not make sense to expand processing capacity until it is profitable.** Small-scale copra milling machinery ("mini mills") have become available recently. These plants require a relatively low investment, are somewhat movable, and can be used to produce crude coconut oil or virgin coconut oil for various uses, including for food or biofuels. Two operators can produce 1,300 liters of coconut oil daily. The refined coconut oil can be used as an inexpensive fuel to supplement diesel in vehicles and generators, among other uses. Although the unit economics of such models need further study, there may be value in limited public investments to lessen market concentration and enable price discovery on Kiribati's outer islands. However, a viable business model for mini mills will only be possible after the government has reduced its price support for copra in line with or below international benchmarks. Thus, before making further investments in processing capacity, it is advised that the copra price be lowered to restore positive gross margins on each unit of coconut oil.

40. **In the longer term, Kiribati could also consider diversifying into higher-value market segments such as virgin coconut oil and fresh coconuts.** Ultimately, Kiribati's remoteness and lack of scale means that it has a comparative advantage in copra, but not a competitive advantage. Opportunities exist in virgin coconut oil and wet young coconuts market segments, but they require significant investment and more efficiency. In the short term, Kiribati could begin by studying the feasibility of entering these markets.

4.4. Reducing the copra subsidy could help diversify agriculture

41. **If Kiribati reduces the copra subsidy, it will have room to diversify agriculture, which would have many benefits.** Agriculture can be diversified by expanding support to farmers and training middlemen, making food supply chains more efficient, and developing alternative exports. Doing so would help achieve Kiribati's social protection goals by creating new markets, encourage people to live on outer islands where there would be viable economic activities, and improve nutrition, health, and lifespan.

42. **The Government of Kiribati can help overcome tough agroecological conditions and limited inputs by expanding support services for farmers.** For example, Agriculture and Livestock Department staff, with appropriate training, can advise farming households on agricultural techniques. Similarly, capacity building provided to agriculture assistants and nursery managers would enable them to promote new technologies, market opportunities, business skills, and women's participation. Farmer-to-farmer visits to exchange knowledge and good practices, pilot demonstrations and hands-on training would show the feasibility of new technologies and the returns they could bring. Male and female local champions such as lead farmers, community leaders, and youth returned from labor mobilization programs can also help innovations be adopted.

43. **Another option is to develop alternative export industries, including seaweed, solar salt, and tourism.** Kiribati's exports center on frozen fish (88 percent) and copra (2 percent). Seaweed, solar salt, and tourism all present export opportunities if the copra industry is reduced, particularly for Kiritimati Island. The first possibility is seaweed. Feeding small amounts of the seaweed genus *asparagopsis taxiformis* to cattle has been shown to significantly reduce their methane emissions (Kelly 2020). No surveys have been done to understand whether this genus can be economically

grown in Kiribati, but it does grow naturally in Hawaii. Some estimates have suggested that it could be sold for up to A$20,000 per ton (Kelly 2020). If true, producing *asparagopsis taxiformis* at the same volumes that the native genus *kappaphycus alvareii* was produced in 2000 would contribute 6–7 percent to GDP. This would entail producing at the same level as before cultivation was abandoned when the copra subsidy took effect. The second possibility is solar salt. Kiribati has a nascent solar salt industry, but Kiritimati has significant scope to expand its solar salt production and move up the value chain. The third possibility is tourism. Kiritimati has a tourism industry comprising 165 beds catering mainly to salt-water fly fishermen. There is significant scope to expand this tourism sector, although doing so would require many upgrades to infrastructure and agriculture.

44. **Other reforms related to diversifying agriculture include making food supply chains more efficient, improving relevant knowledge, and building middleman capacity.** Three kinds of reforms would help diversify agriculture. First, to help food supply chains in Kiribati overcome a range of market failures, Kiribati could implement a range of reforms. The reforms would increase access to market information, promote vertical and horizontal linkages, improve post-harvest management, enhance inter-island connectivity, and facilitate access to finance. Second, a set of priority studies would improve the current knowledge basis. The studies would include a food supply chain assessment, an assessment of the demand for financial services along the food supply chain, a nursery assessment, and a comprehensive agriculture survey. Finally, building middleman capacity could strengthen vertical and horizontal linkages between value chain players.

4.5. Diversifying agriculture would help improve nutrition

45. **Diversifying agriculture would improve nutrition and health on the islands.** It would encourage households to produce vegetables and root crops. The local production of food crops would make fruits and vegetables cheaper and more widely available and reduce dependence on imported food. Because the imported and highly processed foods on which Kiribati now depends are high in sugar and fat and low in nutritional value, moving away from them would improve nutrition and health.

5. Conclusion

46. **Kiribati's copra subsidy needs to be reformed.** The subsidy has some benefits but also creates substantial fiscal problems, does not achieve social protection goals efficiently and effectively, prevents the coconut industry from being productive, and prevents the agriculture sector from diversifying. Completely eliminating the subsidy would not be an efficient way to reduce poverty, but cutting the subsidy to A$2 per kilogram and letting the price vary with the market would open up several options. Combining the A$2 per kilogram subsidy with a cash transfer to poor outer islands residents would reduce poverty substantially while saving money and moderating migration to South Tarawa. Combing the A$2 per kilogram subsidy with a cash transfer to poor residents everywhere in Kiribati would have even more profound effects on poverty and the fiscal position. But, it takes time to set up cash transfers. In the meantime, the subsidy could be capped for each household which would save money without raising poverty. Several other reforms (such as consolidating KCDL's role) could restore the coconut industry in Kiribati to profitability. Additional reforms (such as improving access to market information) could help diversify the agriculture sector in Kiribati. Benefits of the latter would include improvements to the health of i-Kiribati across the nation.

References

Government of Kiribati. 2020. Household Income and Expenditure Survey Report 2019/2020. Pacific Community (SPC).

Government of Kiribati. 2024. Food and Nutrition Security Policy, Final Draft. Tarawa: Government of Kiribati.

Kelly, J. 2020. Australian Seaweed Industry Blueprint—A Blueprint for Growth. AgriFutures Australia.

MELAD. 2020. Kiribati Agriculture Strategy (KAS) 2020–2030. Tarawa: Ministry of Environment, Lands and Agriculture Development.

Raneri, J. 2022. Small Islands Food and Water Project (SIFWaP), Project Design Report, Working Paper 4—Background Paper on Nutrition. Rome: International Fund for Agriculture Development (IFAD).

Troubat, N., and M. Sharp. 2021. Food Consumption in Kiribati: Based on Analysis of the 2019/20 Household Income and Expenditure Survey. Tarawa: Food and Agriculture Organization of the United Nations and The Pacific Community | Statistics for Development Division.

World Bank. 2024a. Cracking the Nut: A Proposal for Reforming and Upgrading Kiribati's Coconut Industry. Washington, DC: World Bank.

World Bank. 2024b. Cultivating Shared Prosperity: Reforming the Copra Subsidy to Improve Social Protection on Kiribati's Outer Islands. Washington, DC: World Bank.

World Bank. 2024c. New Sprouts: Diversifying Agriculture on Kiribati's Outer Islands. Washington, DC: World Bank.