



## FOOD SECURITY: A DEVELOPMENT ISSUE FOR PACIFIC ISLAND COUNTRIES<sup>1</sup>

### Introduction

The adoption of the Millennium Declaration by world leaders in 2000 has ensured that poverty reduction strategies now occupy the centre stage of policy debates in many developing countries. Many of the Pacific island countries (PICs), however, have argued that poverty does not exist in their societies. The lack of reliable data on the indicators of poverty makes it difficult to gauge the true extent of poverty in the PICs, but recent studies indicate that, depending on the definitions used, poverty exists in the PICs, and in some cases it is increasing (Yari, 2003).

Generally speaking, poverty is best measured in terms of access to nutrition, basic education, health care, clean water and sanitation facilities. Among the most broadly used standards for measuring poverty in practice is the adequacy of food consumption, shelter and clothing. The purpose of this article is threefold. It begins with a presentation of background information on poverty and how poverty is defined in PICs. The paper then provides some examples of actions taken at the national and regional levels to address food security concerns. The discussion concludes with a summary of policy issues and options for the future.

Adequate food for subsistence is widespread in most PICs but these countries are increasingly reliant on imports of food. However, the agricultural sector will continue to be important in most PICs, and therefore these countries will need to find ways to increase agricultural productivity. But several developments – such as increasing population, limited and complex land ownership systems and unfavourable economic growth in recent years, coupled with the threat of HIV/AIDS and frequent natural disasters – have made food security a growing concern. Given the PICs' vulnerability to external shocks, and their lack of resources in many cases, regional cooperation initiatives may offer small and micro-economies one of the modalities for addressing food security issues.

***Adequate food for subsistence is widespread in PICs but several developmental problems have made food security a growing concern for many island economies***

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## Global efforts at ensuring food security

***FAO is playing a major role in highlighting and helping member countries to address food security concerns***

While the first goal of the Millennium Declaration is the elimination of extreme poverty, the need to fast-track the elimination of hunger and undernourishment in the world received the highest political attention at the World Food Summit in Rome in November 1996. That meeting focused solely on food security and resulted in an international commitment to ensure “food for all” by the adoption of the Rome Declaration on World Food Security and the World Food Summit Plan of Action. An immediate objective is to reduce the number of undernourished people to one-half the present level by 2015.<sup>2</sup>

Globally, a notable recent development concerning food security was the adoption by FAO of an International Treaty on Plant Genetic Resources for Food and Agriculture in November 2001 (Swaminathan and Pinstrup-Andersen, 2004). The Treaty derives its energy, in part, from a unique instrument known as the Global Crop Diversity Trust. This Trust, established by FAO and the Consultative Group on International Agricultural Research, is building an endowment fund with the interest earned to be used to fund crop diversity collections around the world. Such diversity collections form the basis of much innovation in agriculture. They contain genes that may help to improve yields, to cope with new or old pests and diseases and to cope with changing conditions such as extended drought or the salinization of soils. Each year, farmers and breeders around the world generate scores of new crop varieties without which world agriculture production would spiral downwards.<sup>3</sup>

***Regional organizations are also playing a major role in focusing attention on food security issues***

The importance of food security in the Asia-Pacific region was recently highlighted when stakeholders (e.g., ADB, ESCAP and FAO) jointly organized a meeting that brought together subregional organizations to discuss this issue.<sup>4</sup> A similar meeting was held for the African region in July 2004, at which the Secretary-General of the United Nations observed that given the right kind of national and international support, Africa could achieve the green revolution it needs (Agence France-Pres, 2004). The Secretary-General also noted that hunger was a complex issue and thus every effort must be made to address the interconnected challenges of agriculture, health care, nutrition, adverse and unfair market conditions, weak infrastructure and environmental degradation if the problem was to be solved.

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<sup>2</sup> FAO, World Food Summit, Rome, 1996.

<sup>3</sup> For example, in the 1970s, a virus was wreaking havoc with maize (corn) harvests in many parts of Africa and the islands of the Indian Ocean, leaving corn plants with half-formed cobs. Scientists turned to crop diversity collections, gaining access to corn varieties from a number of countries. Eventually, more than 100 new varieties of maize were produced, suited to all of the farming systems and ecologies in Africa, improving maize yields for poor farmers across the continent.

<sup>4</sup> Regional High-level Round-table Meeting: Spearheading Subregional Programmes and Cooperation for Eradication of Poverty and Food Insecurity in Asia and the Pacific, Bangkok, 23-24 February 2004. Representatives of the ASEAN Secretariat, SAARC and the Pacific Islands Forum Secretariat attended the Meeting.

FAO, with support from relevant agencies, continues to play a major role in assisting countries in implementing the provisions of the World Food Summit Plan of Action, as well as in monitoring (through its Committee on World Food Security) the progress made by member States in achieving the World Food Summit's goals. Information obtained through the Food Insecurity and Vulnerability Information and Mapping System has revealed that progress towards reducing by half the number of hungry people has been slow. If the present trend continues, the goal of the World Food Summit will not be achieved until 2030 (instead of 2015).

WFP is the United Nations' main agency in the fight against hunger, especially in times of emergencies like war and drought. It also attacks the root causes of hunger by helping people to improve their lives. In 2003, WFP operated in 81 countries and shipped 5.9 billion tons of food which was distributed to about 104 million of the poorest people in the world. This compares with 3.8 billion tons shipped in 2002 and 4.2 billion tons in 2001. Almost half of WFP's food aid went to sub-Saharan Africa while Asia-Pacific accounted for only 15 per cent of total aid in 2003. Afghanistan and the Democratic People's Republic of Korea were the main beneficiaries in the Asia-Pacific region, with each accounting for 4 per cent of WFP's total food assistance in 2003 (WFP, 2004).

***WFP is a great  
friend to millions  
of people in times  
of emergencies***

Worldwide, some 842 million people suffer from hunger. Almost 95 per cent of these people (798 million) live in developing countries. Approximately 503 million (63 per cent) of the undernourished people in developing countries are found in the Asia-Pacific region. This region is also home to about two thirds of the world's poor – people who are living on an income of less than US\$ 1 a day.<sup>5</sup> The background papers for the 1996 World Food Summit addressed the various issues, including the definition of food security (FAO, 1996a and b). The discussion of some of these issues is summarized herein as a backdrop to discussing the food security situation in the PICs.

### **Issues in food security**

Food security is defined as a situation in which all households have physical and economic access to adequate food for all members and where households are not at risk of losing such access. This definition implies adequate availability, stability and access. Adequate food availability means that, on average, sufficient food supplies should be available to meet consumption needs. Stability refers to sustained food intake in difficult years or seasons. Access draws attention to the fact that, even with bountiful supplies, many people still go hungry because they are too poor to produce or purchase the food they need. In addition, if food needs are met through exploiting non-renewable natural resources or degrading the environment there is no guarantee of food security in the longer term.

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<sup>5</sup> This result is in spite of the rapid economic growth experienced by countries in the Asia-Pacific region, especially in China, Indonesia, Malaysia and Thailand, over the last three decades and the green revolution, which has resulted in higher agricultural output and rural incomes in the Asia-Pacific region.

***Policies for food self-sufficiency or food self-reliance***

Food security can be defined at different levels, for the world as a whole or for individual nations, regions or households. Ultimately, however, food security concerns the individual (or family unit) and its principal determinant is purchasing power, income adjusted for the cost of what that income can buy. Similarly, purchasing power at the national level, i.e., the amount of foreign exchange available to pay for necessary food imports, is a key determinant of national food security.

There are two broad options for achieving food security at the national level, namely, the pursuit of food self-sufficiency or food self-reliance. Food self-sufficiency means meeting food needs as far as possible from domestic supplies and minimizing dependence on food trade. In several developed countries, the policy goal of high self-sufficiency in food has often taken the form of income transfers to farmers rather than protection against uncertain world markets. A few developing countries have adopted this policy in part because their import requirements would otherwise have been large enough to affect world prices; this is particularly true with respect to rice as the volume of rice entering the world market is relatively small. Another consideration behind self-sufficiency policies in some countries is that under a free trade regime they would be exporters of basic food commodities, thus raising domestic prices to the detriment of the food security of poorer consumers. Other countries have tried to produce enough food domestically to guard against the contingency that they might be unable to import food at any cost – as in a time of war or global shortages.

The concept of food self-reliance takes into account the possibilities offered by international trade. It implies maintaining a level of domestic production, plus the capacity to import in order to meet the food needs of the population by exporting other products. A major contribution of trade to food security has been to permit food consumption to grow faster than domestic production in countries where there are economic constraints on increased production.

***Food imports can make a vital contribution to food security but there are constraints on spending on imports***

Developing countries can meet their domestic food needs from domestic production provided that food prices are allowed to increase sufficiently or that alternative incentives are provided to producers. Therefore, the important role of trade is that it allows domestic food consumption to be met more cheaply through less costly imported supplies. While food imports can make a vital contribution to food security, countries relying on food imports have two key concerns: first, their capacity to maintain food imports at desired levels, and second, the reliability of access to imports. The former depends on the prices and other terms on which food can be imported as well as the country's foreign exchange situation. The ability of many developing countries to import, however, is limited by debt repayments, declining terms of trade and limited export potential.

## Dimensions of hunger

The causes and consequences of hunger vary widely.<sup>6</sup> Those defined as hungry can be grouped into four main categories. The largest group comprises those with low and variable incomes, limited assets, few marketable skills and few powerful advocates to act on their behalf. The second group comprises those who are more vulnerable than others at critical times in the life cycle, including unborn babies, the newborn and young childbearing/lactating women. The unborn may suffer a deficiency of nutrients if their mothers are themselves malnourished. If the constraints before birth are compounded by continued lack of food, the danger of infant and child mortality, or a least suboptimal growth, is huge. Even if children survive severe malnutrition in early childhood, they are likely to become disadvantaged adults.

The third group of the hungry includes those individuals or households that suffer seasonal hunger related to cycles of food growing and harvest. Poor households in many developing countries often suffer from a coincidence of peaks in work requirements, levels of infection, food prices and informal-loan interest rates with troughs in food stocks, food intake and body weights. This situation occurs during what is called the “hungry season” – usually in the weeks before a new harvest in those countries with a rainy season. The fourth group of the hungry comprises people who face acute hunger owing to humanitarian crises. Where the cause of acute hunger is a natural disaster, such as drought or floods, actions need to be swift to assist people and protect their livelihoods. But acute hunger is also caused by displacement of people associated with civil or international conflict – the immediate cause of most humanitarian crises over the past 10 years, especially in Africa.

It is thus clear that no place is immune from hunger if conditions lend themselves to failures in access to adequate, nutritious and safe food. The hungry are to be found in rich as well as poor countries.<sup>7</sup> Within developing countries, they can be found among rural landowners as well as the landless unemployed, among civil servants as well as new arrivals in urban slums and among male-headed as well as female-headed households. Furthermore, often mirroring the geography of poverty, the chronically hungry tend to be concentrated in regions and countries where incomes are low. Countries highly dependent on agriculture tend to have a higher concentration of hungry people than other countries. In agriculture-dependent countries, the absolute numbers of the food-insecure tend to be large in the rural areas, where most of the population is located, although the proportion in urban areas, may be as high or higher and could increase with rapid rural-urban migration.

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<sup>6</sup> Drought is seen as the most common immediate cause of severe food shortages in developing countries, along with conflict, economic problems and flooding. However, at the root of these problems there are often policies in the developing countries that discriminate against the agricultural sector.

<sup>7</sup> Although the majority of the hungry are in the developing countries, hunger is also evident in affluent societies. Here the problem is not lack of access to sufficient food but more usually the incapacity of individuals to access the food provided by society.

***Drought, conflict, refugees, economic problems and flooding were the main causes of food emergencies in that order in recent years***

Within the rural areas, landless labourers and those with little land tend to be poorer and more food-insecure than the adequately-landed groups. Urban slums and squatter settlements mainly in – but not limited to – developing countries tend to have a higher concentration of the food-insecure than those parts of cities where the rich live. Given that the urban poverty growth rate is generally higher than the rural rate, poverty and hunger in the urban areas can be expected to assume even greater proportions if, as seems likely, urbanization continues to increase at recent rates.

### Food security concerns in Pacific island countries

The development problems faced by PICs are widely reported. They include limited natural resources and fragile environments, scattered islands resulting in high freight costs from international and domestic markets, high energy costs, poor physical infrastructure for transport and communication, low human and institutional capacities and a heavy dependence on the public sector for goods and services. Until recently, Pacific societies appear to have been self-sufficient in food production because of the near-universality of their subsistence livelihoods. There have been no reported cases of extreme hunger in the PICs, but changing circumstances gives cause for concern. There are anecdotal reports of poverty and food security concerns in certain sectors of their societies.<sup>8</sup> It is also clear that malnutrition has been growing, along with an increasing incidence of non-communicable diseases.

### Declining food production per capita

***PICs still depend heavily on the agricultural sector for food, income and employment, but the sector itself is constrained by low productivity***

Most PICs still depend very heavily on the agricultural sector for food, income and employment, but the sector itself is constrained by low productivity – particularly in subsistence activities. Except in Cook Islands, French Polynesia, New Caledonia and Tuvalu, agricultural exports constituted over 17 per cent of the total exports of Pacific island countries during 1999-2001 (table 1). However, agricultural production in the PICs is mainly to meet domestic demand and in many cases it appears to be failing to keep up with such demand. Most countries have seen higher food production since 1980 (see figure I).<sup>9</sup> The exceptions are French Polynesia, Samoa and Tonga, which have recorded large declines in food output since 1980. Tonga's production index, which was slightly below 140 in 1980, declined to around 98 in 2000. However, food production was marginally lower in Fiji and there was a slight reduction in food output in Vanuatu between the late 1990s and 2003.<sup>10</sup> Little growth in food production was recorded in the Federated States of Micronesia, New Caledonia, Papua New Guinea and Solomon Islands in this period.

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<sup>8</sup> For example, Samoa's Minister for Agriculture called for cooperation and collaboration among Pacific islands to ensure the region's food safety and security when he officially opened the First Regional Agriculture and Forestry Ministers Meeting in Suva on 9 September 2004.

<sup>9</sup> The food production indexes have a large component of subsistence production, which has to be estimated, and therefore these indexes have to be treated with caution.

<sup>10</sup> The decline in food production and production per capita in Fiji would be largely on account of the decline in fish production in recent years. In Vanuatu it was due to the decline in copra and beef production.

Table 1. Selected indicators for selected Pacific island economies

	Annual population growth <sup>a</sup> mid-2004	GDP growth (percentage) av. 2000-2003	Agriculture, value added (% of GDP) 2002	Agricultural production index (1999-2001 = 100) 2003	Food production index (1999-2001 = 100) 2003	Agricultural exports as % of total exports av. 1999-2001	Agricultural imports as % of total imports av. 1999-2001	Imports/GDP (percentage) av. 1999-2001	Exports/GDP (percentage) av. 1999-2001	Dietary energy supply in total population <sup>b</sup> (kcal/person/day) 1999-2001
Cook Islands	0.1	4.3	12.4 <sup>c</sup>	..	..	2.6	11.4	59.1	8.4	2 782
Fiji	0.9	2.2	..	99.0	99.1	28.6	13.2	48.1	34.4	2 881
French Polynesia	1.5	..	..	106.5	106.5	2.2	18.8	..	..	2 917
Kiribati	2.3	1.7	14.2	103.0	103.0	38.4	34.6	79.1	15.0	2 917
Marshall Islands	1.6	0.8 <sup>d</sup>	13.8 <sup>c</sup>	..	..	..	..	60.4	7.9	..
Micronesia (Federated States of)	1.2	2.1 <sup>d</sup>	..	100.1	100.1	16.6	23.7	46.2	6.6	..
New Caledonia	1.9	..	..	101.3	101.3	0.4	8.8	..	..	2 769
Papua New Guinea	2.1	-0.6	26.9	104.0	104.9	16.6	18.3	31.2	60.5	2 176
Samoa	0.9	4.6	14.3	101.4	101.4	34.6	14.1	50.3	6.7	..
Solomon Islands	2.8	-5.9	..	105.5	105.5	54.2	26.4	29.6	29.2	2 236
Tonga	0.9	2.6	28.6	103.1	103.1	59.4	28.3	71.6	10.8	..
Tuvalu	0.4	2.8	16.8 <sup>e</sup>	..	..	0.0	21.2	..	..	..
Vanuatu	2.4	-0.3	17.4	93.0	93.0	65.2	19.4	34.0	10.3	2 575

Sources: ESCAP, 2004 ESCAP Population Data Sheet (Bangkok, 2004); FAO, FAOSTAT Database, 2004 and The State of Food and Agriculture 2003-2004 (Rome, FAO, 2004); IMF, World Economic Outlook Database, April 2004; UNDP, Human Development Report 2004 (New York, UNDP, 2004) and Pacific Human Development Report 1999 (Suva, UNDP, 1999); ESCAP, Economic and Social Survey of Asia and the Pacific: 2004 (United Nations publication, Sales No. E.04.II.F.20); and ADB, Key Indicators of Developing Asian and Pacific Countries 2003 (Manila, ADB, 2003).

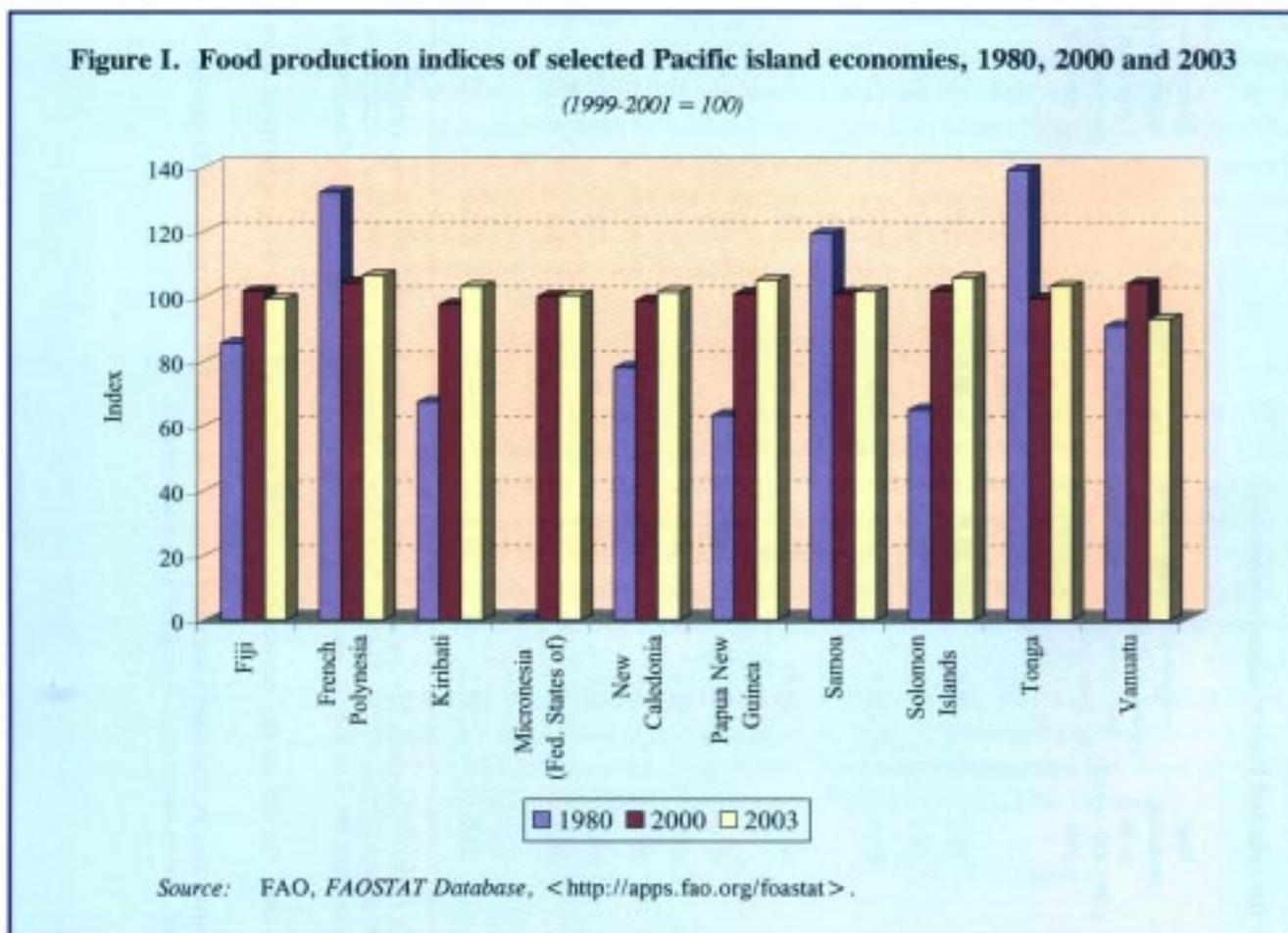
<sup>a</sup> Annual population annual growth rates are calculated based on exponential growth rates. The rates also take into account international migration and thus may not equal the rate of natural increase.

<sup>b</sup> Dietary energy supply refers to per capita supplies in terms of product weight derived from the total supplies available for human consumption (i.e., food) by dividing the quantities of food by the total population actually partaking of the food supplies during the reference period. Dietary energy supply is weighted by the total population.

<sup>c</sup> 2001.

<sup>d</sup> Average 2000-2002.

<sup>e</sup> 1998.



**Several PICs have seen large falls in food production per capita in recent years**

The picture is even more discouraging with respect to per capita food production (see figures IIa and IIb). Food production per head of population has been maintained at or around the 1995 levels in the Federated States of Micronesia, Papua New Guinea, Solomon Islands, and Tonga. However, in both Papua New Guinea and Solomon Islands, per capita production declined between the late 1990s and 2003. Fiji, French Polynesia, New Caledonia and Vanuatu have seen large fall-offs in food production per capita in recent years while the declines in New Caledonia and Vanuatu are a matter of concern.

### Changing dynamics of population

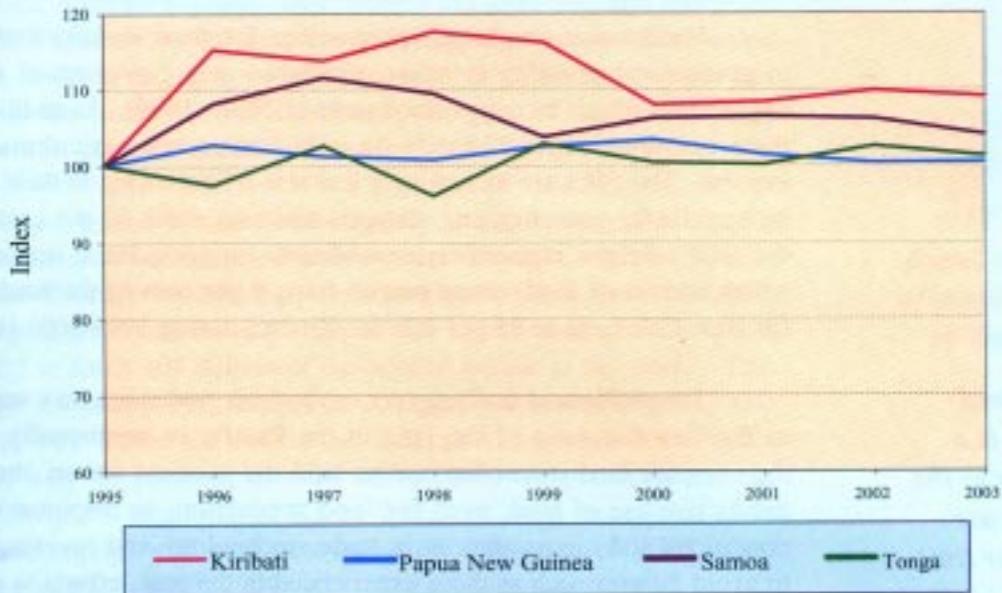
**Traditional village systems are unable to cope with rapid population growth**

The majority of the PICs' population live in the rural areas and rely on the subsistence sector for the bulk of their livelihood.<sup>11</sup> While traditional Pacific island agricultural systems were generally sustainable, these systems appear to be breaking down. It is difficult to imagine agricultural production in communal land ownership systems keeping pace with the recent rapid growth in populations resulting from the reductions in infant,

<sup>11</sup> This situation is changing rapidly. Most PICs (except Papua New Guinea) are expected to have a mostly urban population by 2010.

**Figure IIa. Net food production per capita for selected Pacific island economies, 1995-2003**

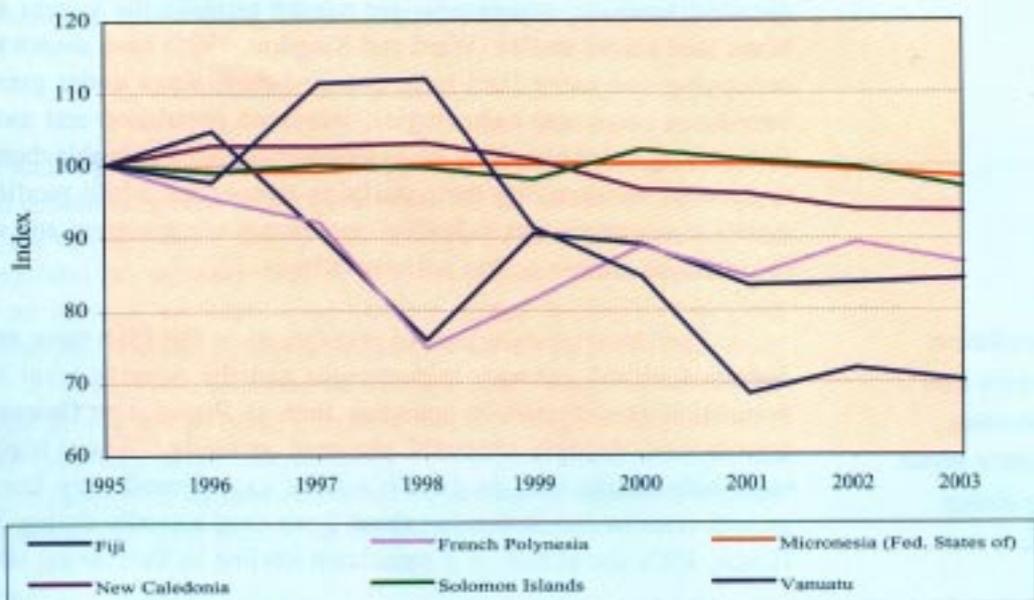
(1995 = 100)



Source: FAO, FAOSTAT Database, 2004.

**Figure IIb. Net food production per capita for selected Pacific island economies, 1995-2003**

(1995 = 100)



Source: FAO, FAOSTAT Database, 2004.

maternal and adult mortality. The growth in squatter settlements in peri-urban areas, due to heavy rural-urban migration, also appears to support the notion that the traditional village systems are unable to cope with the rapid population growth.<sup>12</sup>

The breakdowns have repercussions for food security and could lead to greater vulnerability to other disasters – e.g., overuse of land causes degradation which increases flood risks (UNDP, 1999). In addition, most of these countries depend heavily on only one or two agricultural crops for exports. The PICs are increasingly less self-reliant owing to their dependence on imports for consumption. Imports make up about 50 per cent or more of the GDP of these economies; expenditures on agricultural imports (most of which consist of food) alone ranged from 9 per cent of the total import bill for New Caledonia to 35 per cent for Kiribati during 1999-2001 (table 1).

***Complex land ownership is a hinderance to the productive use of land over time***

The problem of declining per capita food production may well be related to the fact that most of the land in the Pacific is communally owned and the complex land ownership and/or land use systems are an obstacle to the productive use of land, even for food production, in response to changing conditions and circumstances in trade, technology and investment. Thus, to avoid failures such as those experienced in the past, efforts to improve the productivity of the agricultural sector must include initiatives to address land tenure issues. Creating freehold land tenure is not politically feasible at this stage; it is also not necessary in order to provide certainty of tenure to secure increased investment and productivity.

Provision of long-term leaseholds within the customary ownership system seems to be the best course of action and is easiest to achieve in areas offering high-value developments. Fiji's land tenure system with registered land leases to support the sugar industry was successful for several decades; however, adjustments are needed to make the system sustainable. Some land tenure studies (Ward and Kingdon, 1995) have shown how people occupying and using land have changed their ways under pressure from introduced crops and technologies, increased population and monetization. Enterprising individuals have developed approaches that enable them to respect traditional customs for their unifying properties while modifying their details to accommodate individual investment accumulation and distribution of wealth on a more or less permanent basis.

***High population growth rates and poor economic performance mean declining living standards***

The changing dynamics of populations in the PICs have major implications for food security in particular and the poverty level in general. Population growth rates in countries such as Papua New Guinea, Solomon Islands and Vanuatu exceed 2 per cent annually. These high rates are especially challenging as the PICs have experienced very low economic growth rates in recent years – about 2 per cent annually during 2000-2003. Hence, PICs are at risk of a significant decline in their living standards, as

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<sup>12</sup> While the attraction of urban life may help to explain the rural-urban migration, the migration cannot be attributed to employment prospects in urban areas as there is very limited jobs growth in these countries.

was the case for Kiribati, the Marshall Islands, Papua New Guinea, Solomon Islands and Vanuatu during the period 2000-2003 (table 2).

**Table 2. Total land use and agricultural area and its elements in selected Pacific island economies**

	<i>Total land use ('000 ha) 2001</i>	<i>Agricultural area per capita (ha/person) 2001</i>	<i>Arable land (% of agricultural area) 2001</i>	<i>Permanent crops<sup>a</sup> (% of agricultural area) 2001</i>	<i>Permanent pasture<sup>b</sup> (% of agricultural area) 2001</i>
Cook Islands	23	0.35	57.1	42.9	0.0
Fiji	1 827	0.56	43.5	18.5	38.0
French Polynesia	366	0.18	7.0	46.5	46.5
Kiribati	73	0.46	5.1	94.9	0.0
Marshall Islands	18	0.27	21.4	50.0	28.6
Micronesia (Federated States of)	70	0.37	8.5	68.1	23.4
New Caledonia	1 828	1.04	3.1	2.6	94.3
Niue	26	4.00	50.0	37.5	12.5
Northern Mariana Islands	46	0.17	46.2	15.4	38.5
Palau	46	0.45	44.4	22.2	33.3
Papua New Guinea	45 286	0.21	20.3	62.8	16.9
Samoa	283	0.82	45.8	52.7	1.5
Solomon Islands	2 799	0.25	15.8	49.1	35.1
Tonga	72	0.53	32.7	59.6	7.7
Vanuatu	1 219	0.80	18.5	55.6	25.9
Asia and the Pacific	2 014 355	0.32	39.8	5.2	55.0
World	13 041 038	0.82	27.9	2.6	69.5

Source: FAO, *The State of Food and Agriculture 2003-2004* (Rome, FAO, 2004).

<sup>a</sup> Permanent crop area refers to land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest.

<sup>b</sup> Permanent pasture area refers to land used permanently (five years or more) for herbaceous forage crops, either cultivated or growing wild (wild prairie or grazing land).

Pacific societies are seeing significant rural-to-urban migration, which is putting great pressure on the limited services available in urban centres. PIC societies are also experiencing fast-changing lifestyles, with growing demand for non-traditional foods. Despite the many projects that have aimed to promote good nutrition and increase food security, and despite strong economic and health arguments for the consumption of traditional foods, almost everywhere the opposite has happened. The traditional diets of Pacific islanders were once predominantly fresh fish and other seafood, root crops (taro, manioc, yams, sweet potatoes), coconuts and leafy vegetables. As less food is produced locally (and with the higher prices for local food items), more is imported and diets have become nutritionally inferior, being higher in refined oils, fats, salt and sugar.

***Consumption of more imported food is resulting in an upsurge of lifestyle diseases such as cardiovascular disease, strokes, cancer and diabetes***

The dietary energy supply in PICs ranges from a low of 2,176 calories per person per day in Papua New Guinea to a high of 2,917 calories per day in Kiribati (table 1). About 27 per cent of Papua New Guinea's population was classified as undernourished during 1998-2000 (ESCAP, 2003). Within the Asia-Pacific region, only Afghanistan, with 70 per cent, and Bangladesh and Cambodia, with 35 and 36 per cent respectively, have much higher levels of undernourishment than Papua New Guinea. The impact is evident in emerging patterns of ill health in Papua New Guinea.

In general, PICs have witnessed an upsurge in lifestyle diseases such as cardiovascular disease, strokes, cancer and diabetes. Some non-communicable diseases have reached epidemic levels in some countries, including diabetes. In Fiji, for example, diabetes cases occupy 15-20 per cent of all hospital beds. Hypertension and other circulatory diseases are also rising fast, fuelled by diets high in fats and sugar (UNDP, 1999).

### **Vulnerability to environmental shocks**

It is inevitable that unsustainable development is connected with environmental degradation, poor diets, ill health from degenerative and lifestyle diseases, and other forms of impoverishment. Increasing populations also increase competition for the finite amount of land useful for food production. This problem is becoming more pronounced in the small atoll island economies. Indeed, PICs present a contrasting picture in terms of the availability of arable land with several countries comparing poorly to the average for the Asia-Pacific region. Countries such as Cook Islands, Fiji, Niue, Northern Mariana Islands, Palau and Samoa have arable land ranging from 44 to 57 per cent of total agricultural area, higher than the Asia-Pacific average. Most Pacific island countries, however, do not fare well against the averages for Asia-Pacific and the world in terms of permanent pasture as a percentage of agricultural area, but they compare well in terms of permanent crops as a percentage of total agricultural area (table 2).

As noted above, the PICs' smallness and isolation make them more vulnerable to external economic fluctuations and environmental shocks. PICs have no control over world market prices for their exports but they can help themselves by adopting initiatives leading to export diversification. Such initiatives could include attempts at identifying "niche" markets as well as developing more value added products (i.e., products that are further processed and/or produced in higher-quality form. Except for Papua New Guinea and Tonga, value added from agricultural products contribute less than 20 per cent of GDP in Pacific island countries (table 1).

### ***Natural disasters often threaten food security in PICs***

Natural disasters, such as cyclones and drought, often threaten food security in the Pacific. Normally, few lives are lost during natural disasters but there is costly damage to infrastructure and the physical environment; repair and rehabilitation costs can take 30 per cent or more of the development budget. In addition, agricultural production usually takes years to recover from a cyclone, flood or drought. For example, cyclone Heta, which struck American Samoa, Cook Islands, Niue, Samoa and Tonga in early 2004, caused

considerable damage to property and destroyed crops. In the case of Samoa, the damage from cyclone Heta was estimated at US\$ 35.4 million. The agricultural sector is one of the most vulnerable sectors of Pacific island economies and the one least prepared to counter the impact of disasters (Chung, 1996). This sector also occasionally suffers from devastating pests and diseases.

Following a natural disaster, one of the main relief activities is the provision of food<sup>13</sup> because the loss of crops in rural communities constitutes a loss of both food supply and cash income, often for long periods. The costs of food relief and rehabilitation are always very high, but the economic value of lost crop production is higher. This is because of the reduction in export earnings, the increase in food imports and higher prices in domestic food markets caused by food shortages.

### **Importance of sustainable development**

The overexploitation of the PICs' limited natural resources also has serious implications for food security. Overfishing by commercial ventures, mainly large foreign operators from distant-water fishing nations (DWFNs), depletes fish stocks. Unsustainable commercial logging, also dominated by foreign companies, leads to a reduction of biodiversity as well as the destruction of natural habitats for some of the animals and plants that people rely on for food and medicine (Duncan and Temu, 1997). Many logging problems have been linked to the corrupt practices of a few resource owners, developers and government officials; hence there is a need to improve governance. Indeed, exploitation of natural resources has contributed to unrest in several Pacific nations, as communities become divided over the ownership, use and distribution of incomes obtained from these resources.<sup>14</sup>

Resource owners must become involved in decisions concerning the issuing of licences for the use of resources and the process of providing access to resources must be transparent. In the Pacific, this means that there must be sufficient time for stakeholders to reflect and to learn so that they can ensure that the full benefits from such activities are evenly distributed among the resource owners and in accordance with the conditions of the agreements. PICs need to closely monitor the activities of foreign companies to ensure that they comply fully with the terms and conditions of their contracts, and thereby ensure the long-term sustainability of their natural resources.

***It is important for PICs to ensure the sustainable development of their non-renewable resources***

***Local resource owners must be involved in the decision-making processes concerning the exploitation of their natural resources***

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<sup>13</sup> No Pacific island country received such assistance from WFP during 2000-2003. Instead, such assistance mainly came from their traditional donors, namely, Australia and New Zealand, as well as from other sources. For example, Taiwan Province of China donated 720 bags of rice to Tuvalu in August 2004 to ease food problems faced by residents in Funafuti. Rice is the main staple for people living in Funafuti, as most of them came from the outer islands and do not own land on the mainland.

<sup>14</sup> Arguments over land ownership have been mainly responsible for the political and social problems experienced in Fiji, Papua New Guinea and Solomon Islands in recent years.

***Regional cooperation offers PICs a useful option for regulating the activities of foreign firms and addressing concerns over the sustainable exploitation of natural resources***

Regional cooperation offers these small countries a useful option for regulating the activities of foreign firms and addressing concerns about the sustainable exploitation of natural resources. The fishing industry, especially tuna fishing, is a very important industry for several Pacific island countries, with around 2 million tonnes of tuna stock (worth up to US\$ 2 billion) caught every year. But the use of large, modern fishing boats such as purse seiners is threatening the long-term future of the fishing industry itself. Pacific island countries have delegated to the Forum Fisheries Agency control of access to tuna and other fish. The Agency has imposed a 205-tuna-boat ceiling and, in the face of concerns about the larger boats, limited the number of days that boats are allowed to fish in Pacific waters. The new Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific, which came into force in June 2004, is expected to ensure, through effective management, sustainable use of highly migratory fish stocks in the Western and Central Pacific Ocean.<sup>15</sup>

**Increasing threat from HIV/AIDS**

***HIV/AIDS is posing a very serious threat to PICs***

The incidence of HIV/AIDS is increasing in the PICs and is likely to affect adversely the welfare of Pacific societies in important ways if steps are not taken to limit its spread. From experiences in Africa and parts of Asia, the disease has major implications for food security in Pacific societies. A recent United Nations report estimated that 5 million people around the world became infected with HIV in 2003 and that one out of every four new infections was occurring in the Asia-Pacific region. The number of people infected with HIV in Oceania in 2003 was estimated at 32,000.

The rate of new infections in Papua New Guinea is believed to be growing by 50 per cent a year, the highest growth rate in the Pacific region. While there were 8,300 registered HIV/AIDS cases in Papua New Guinea, the authorities estimate that between 40,000 and 60,000 could be affected out of the population of 5.2 million (Niesi, 2004). AIDS is far more than a health crisis; it threatens development. Experiences in countries such as Thailand show that it is important to have adequate political commitment at the highest level and adequate resources to fight the disease and that educating the public about the disease must be an integral part of any anti-AIDS endeavour.

**National and subregional initiatives to foster food security**

A common theme of all declarations and action plans adopted at recent global conferences, including the Rome World Food Summit, is that of national

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<sup>15</sup> This major agreement was the result of a long and arduous process of negotiations among Pacific island countries and the DWFNs in the Pacific Ocean region to establish a new regional fisheries management organization, the Western and Central Pacific Fisheries Commission, with its secretariat located in the Federated States of Micronesia. The negotiations, which began in 1994, have ensured that the Pacific Ocean now has in place a comprehensive and legally binding regime to conserve and manage the region's valuable tuna fishery.

responsibility and international solidarity. The goals defined in those declarations and plans are ones that only States can achieve. However, all developing economies will require assistance from the international community to achieve their goals.<sup>16</sup>

One of FAO's first follow-up actions to the World Food Summit was the preparation of documents on national strategies for agriculture development and food security (NSAFS) for its member countries. With the exception of Nauru, all the FAO member countries in the Pacific (Cook Islands, Fiji, Kiribati, the Federated States of Micronesia, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) had produced NSAFS documents by 2004. Despite these actions, evidence is mixed regarding whether the strategies are influencing prioritization of agriculture and rural development in the allocation of national resources.

The PICs have initiated a variety of activities and policies to improve their agricultural sectors. For example, the Ministry of Agriculture and Forestry in Tonga has changed its operations to focus more on the provision of services to farmers, such as research and extension, and to be less directly involved in commercial activities (ADB, 2002). However, individual PICs have limited financial and human resources, and thus regional cooperation initiatives to achieve food security will be of great importance. It is also important that the PICs work closely among themselves and with other developing countries with similar problems so that they can learn from each other's experiences in moving towards greater food security.<sup>17</sup> For instance, cooperation between agricultural experts from the Federated States of Micronesia, Palau and Samoa in sharing genetic materials on taro revitalized Samoa's taro industry after it was hit by the dreaded leaf blight disease. Taro has now resumed its position as the predominant staple food as well as a major export in Samoa (Pacnews, 2004).

Recent subregional initiatives to address food security and poverty, especially in rural areas, include the Regional Programme for Food Security in the Pacific Islands. This project is funded from an Italian Government contribution of about US\$ 4.5 million to the FAO Trust Fund.<sup>18</sup> The first component of the project is to enhance food production and security activities to address the supply side in Pacific agriculture, forestry and fisheries. Also, there is considerable scope for applied research and development of appropriate technologies for smallholder agriculture. The second component of the project will strengthen PICs' agricultural trade and policy, with a focus on building institutional capacity on trade facilitation

***Evidence is mixed concerning prioritization in the allocation of national resources for agriculture and rural development***

***The Secretariat of the Pacific Community is taking the lead in assisting PICs in agricultural development, including food security initiatives***

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<sup>16</sup> It is one thing for countries to be signatories to the action plans adopted by global conferences; it is another for them to put the plans into action.

<sup>17</sup> See, for example, FAO, "Success stories in food security" (WFS96/TECH/11), a paper prepared for the World Food Summit, July 1996.

<sup>18</sup> To maximize its impact, FAO is working closely with relevant subregional agencies such as the University of the South Pacific, the Secretariat of the Pacific Community, the South Pacific Regional Environment Programme and the Forum Fisheries Agency to implement this project.

related to the establishment of sanitary and phytosanitary standards for agriculture exports.

The Secretariat of the Pacific Community (SPC) has been helping PICs to develop their agricultural sectors for many years. A recent SPC initiative is its project on the development of sustainable agriculture in the Pacific. The project began in November 2003 with the assistance of 6.2 million euros from the European Union. It aims to improve food security and contribute to developing sustainable agriculture for farm families in participating countries<sup>19</sup> through its focus on four major areas: establishing improved systems to identify farmer's production problems and solutions; identifying appropriate technologies through on-farm demonstrations; upgrading farmer participatory extension methods and technical skills; and promoting and enhancing capacity in extension communications.

Other SPC agriculture programmes with food security implications are in entomology, plant pathology, weed management and information and extension services, with special groups for fruit fly control and taro beetle management. Fruit fly management is one of SPC's best-known and most successful projects. Through the development of high-temperature forced air disinfestation protocols, export constraints have been removed from several key crops, namely, pawpaw and breadfruit in Samoa, grapefruit in Vanuatu, chilies in Fiji and pawpaw and lime in New Caledonia. Other SPC activities include work on improving the most important crops in the Pacific (banana, taro, coconut and yam), on animal health and production, on agriculture policy, on farming systems, on marketing and on food and nutrition improvement. Additionally, under its regional forestry programme, SPC helps to strengthen national capacities for promoting sustainable land use, forest management and forest utilization. Under its fisheries programme, SPC provides scientific advice on the status of highly migratory species, primarily tuna stocks.

***The full accreditation of the University of the South Pacific's Institute of Applied Sciences is a major step towards food security in the Pacific***

The awarding of full accreditation of the University of the South Pacific's Institute of Applied Science by the world-renowned accreditation body, International Accreditation New Zealand, is a major step towards food security in the Pacific region. The University of the South Pacific's laboratory is the only one in the south-west Pacific qualified to carry out tests to determine the contents of nutrients and contaminants in food. The University achieved the accreditation with the support of FAO because food composition data are fundamental to food trade, agriculture policy development, nutrition education and the setting of nutritional guidelines.

Since the PICs' first reported case of HIV in 1982, several initiatives have been undertaken, including the first Pacific Regional HIV/AIDS Conference, held in Fiji in 1992. However, international donors and agencies have largely led the response to HIV/AIDS in the Pacific. SPC has also been

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<sup>19</sup> The countries are Cook Islands, Fiji, Kiribati, the Marshall Islands, the Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu.

helping PICs in their fight to control the spread of HIV/AIDS. Pacific island Governments, for their part, need to acknowledge that the threat of HIV/AIDS to their vulnerable societies is a serious one, and their leaders need to take a more active role and work closely with relevant donors and subregional agencies such as WHO and SPC in fighting the disease (see Duncan, 1995, for an early warning of the looming crisis).

### Conclusions and policy options

PICs need to recognize that food security will continue to be a major problem as long as a large proportion of society does not earn sufficient income to obtain enough food to meet their nutritional needs. However, it is important for PICs to note that measures to improve food security should not only be focused on increases in per capita food supplies. Other measures such as trade liberalization – to allow the country to exploit more fully its comparative advantage – improvements in the investment environment to promote employment growth and policies to promote gender equality, health and education can all contribute to improved food security. Moreover, policies that lead to increased income inequality, such as the creation of monopolies for favoured interest groups, and policies that are biased towards the urban centres should be reformed.

For the majority of the Pacific islanders who live in rural areas with few alternative sources of income, agriculture provides the best avenue to ameliorate food security. Therefore, the agriculture sector will continue to be important in meeting their food needs as well as for the employment and income that expand their horizons with respect to their other needs. Given this, it is important that PICs take appropriate measures to fill critical gaps in agricultural technology to increase productivity. In order for PICs to formulate achievable agricultural policies and strategies, they need to have access to reliable agricultural statistics and other information. As mentioned earlier, the PICs will also have to develop more effective land tenure/use systems if they are to improve the performance of the agricultural sector.

PICs also need to invest more on transport infrastructure (especially roads and ports) and on communications (with an eye on improving the poor market integration that exists between producers, especially small farmers, and consumers). Achieving such investments would, among other things, call for measures to encourage the active participation of the private sector in the agricultural sector – and much of that private sector will consist of small and medium-sized enterprises.

Pacific Governments also need to invest more in developing their human resources, strengthening their institutional capacities in research and development and providing extension services that help to improve the relevance of research and to quickly put research findings to use. Measures taken should include strengthening national agricultural research institutes, especially in their efforts to diversify their nations' exports, and ensuring the viability of staple crops such as taro, yam, banana and kava. The priorities in the larger PICs would include plant protection, strengthening of the

***Measures to improve food security in PICs must also address other related issues***

***Reliable agricultural statistics and other information are essential in designing achievable agricultural policies and strategies***

***More investment in infrastructure and human resources is needed ...***

biosecurity situation and facilitation of trade by harmonizing in-country procedures and standards (quarantine, food quality and safety, etc.) to conform to international standards.

In the above connection, PICs also need to improve their quarantine systems to safeguard against the introduction of diseases that could cause extensive damage to staple crops, as happened with the taro blight in Samoa in the 1980s. The countries must be encouraged to continue working closely with relevant agencies such as FAO and SPC, especially in the areas of research and development, so that they can provide inputs to and benefit from global initiatives such as the Global Crop Diversity Trust.

***... and so are sustained efforts to diversify the currently narrow export base***

PICs currently rely on a few commodities for export earnings, and the need to diversify their exports is self-evident. One way to achieve diversification would be to find “niche” exports such as noni, kava and squash. They could also invest more in value added industries to create jobs and earn foreign exchange. In this connection, it is essential to have an investor-friendly environment, low-cost essential services and infrastructure, and effective trade liberalization and facilitation measures.

***Cooperation among all stakeholders as well as among PICs is crucial in addressing concerns for sustainable exploitation of natural resources and food security***

Nevertheless, overexploitation of natural resources in Pacific island countries has often been closely associated with the large commercial activities of mainly foreign investors. Thus, the onus is on resource owners and their Governments to work together to ensure that investors, both local and foreign, who are granted the right to exploit natural resources fully comply with the conditions of their contracts. Additionally, such contracts, among other things, must ensure a sustainable rate of exploitation as well as the equitable disbursement of benefits to the resource owners in a transparent manner.

At the same time, national Governments need to recognize the important role played by non-governmental organizations (NGOs) in assisting local communities in the Pacific in taking more control of decisions concerning the exploitation of their natural resources and in working closely with the NGOs on this important issue. Here again, regional cooperation initiatives offer these small countries options in regulating the activities of foreign firms to address concerns related to sustainable exploitation of natural resources. But it is important to stress that all the parties involved must derive some benefits from such cooperation if these initiatives are to achieve their intended results. Hence, Pacific island countries ought to be congratulated on their efforts towards the adoption of the new Convention on the Conservation and Management of Highly Migratory Fish Stocks.

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