REPUBLIC OF PALAU
ECONOMIC DEVELOPMENT PLAN
Fiscal Years 1995-1999
Volume I: Sector Analysis
CHAPTER 1

GEOGRAPHY, HISTORY, AND POLITICAL STRUCTURE

1.1 Geography

The Republic of Palau (hereinafter "ROP", "Republic", or "Palau") is comprised of more than 200 islands which form an archipelago in the far western corner of the north Pacific Ocean. Only nine of the islands are inhabited. Palau lies between 2 degrees and 8 degrees north latitude and 131 degrees and 135 degrees east longitude.

The islands cover 170.4 square miles of land and include four types of geological formation: volcanic, high limestone, low platform, and coral atoll formations. Babeldaob, the largest island which accounts for four-fifths of total land area, Arakabesang, Malakal, the western part of Koror, and a number of smaller ones are volcanic.

The Rock Islands are composed of limestone while Peleliu and Angaur are low platform islands. The Southwest Islands are made of reef flats resulting from geological uplift. Kayangel, located 28 miles north of Babeldaob, is a classic coral atoll.

Palau's climate is maritime/tropical, characterized by little seasonal and diurnal variation. The annual mean temperature is 82 degrees Fahrenheit, with an average of 83 degrees in the hottest months and 81 degrees in the coolest months. Diurnal change in temperature is approximately 10 degrees.

High rainfall occurs throughout the year which results in over 150 inches of rainfall annually. The heaviest rainfall generally occurs from May to January, peaking in June and July. A slightly drier period extends from February to April. There is relatively high humidity of 82 per cent throughout the year.

Wild plant life is abundant throughout all the islands. In many places, islands are edged with dense mangrove swamps. Food crops, especially fruit trees, are mostly wild with little being cultivated.

Marine life is abundant and varied with more than 1,500 different tropical fish varieties and 700 corals and anemones in the lagoons and reefs. Inshore reef fishing is a major occupational and recreational activity and fresh fish is an indispensable part of a Palauan's daily diet.
1.2 Demography

The original settlers are assumed to have come to Palau as drift voyagers from Indonesia, possibly as early as 2,500 B.C. At the time of Captain Henry Wilson's shipwreck in 1783, Palau had a complex and highly organized social system with an extensive network of villages and an estimated population of 40,000-50,000. The arrival of the Europeans led to a rapid decline of the population because of the epidemic of contagious diseases brought which Palauans had no immunity. Rapid depopulation resulted in the abandonment of a number of villages. In 1901, the German Administration estimated the population at about 3,700.

The population started to grow steadily in the 20th century and increased rapidly during the Japanese occupation partially because of large immigration of Japanese citizens. In the 1920's and 1930's, the Japanese out-numbered Palauans.

In 1957, the population was 7,726 which increased rapidly to 11,365 in 1967, and to 12,473 in 1973. The growth rate slowed afterwards, resulting in 15,122 in 1990. Palau's population growth has been about 1.25 per cent per year since 1973. This small annual population growth rate is mainly caused by continuous emigration of Palauans who seek education and work abroad. Of the total population, 12,321 (81.5 percent) are Palauan citizens and the remaining 2,801 (18.5 percent) are aliens, primarily Filipinos who work in the Islands.

Two distinct languages are spoken, namely, Palauan and Sonsorolese-Hatohobian (spoken in the Southwest Islands). Palauan, which is the official language, is most commonly spoken, along with English.

1.3 Historical Influences

The more important European contacts with Palau date back to 1783 after the early explorers discovered the Caroline Islands of which Palau is a part. Spain, which controlled Palau from 1885 to 1899, did not exert much influence on the traditional ruling system, but focused on the introduction of Christianity and the alphabet. Traditional Palauan religion gave way to Christianity as the primary religion of the islands.

Palau, together with the rest of the Caroline Islands and the Northern Marianas, was sold to Germany in 1899 following Spain's defeat in the Spanish-American War. The chief concern of the German Administration was to increase economic activity by introducing a program of coerced coconut planting and, in Angaur, a phosphate mining operation. They also introduced
major sanitary measures to stem epidemics of contagious diseases. The Germans did not change the traditional system of political leadership, but used the system to enhance mercantile economic activities.

At the beginning of World War I in 1914, Japan assumed control of Palau. The League of Nations, established in 1919 and of which Japan became a member, gave Japan in 1920 a mandate over Micronesia and thus over Palau. Japan observed the conditions imposed by the League of Nations until the early 1930's.

Palau prospered economically under the Japanese rule. Free public and vocational schools were established, along with expanded medical facilities and services. Efforts were made to stimulate cash crop production. Pineapple and other crops were introduced and growing rice and other staples was stimulated. An extensive infrastructure, much of which was destroyed during World War II and its aftermath, was developed under the Japanese.

Palauan traditions were discouraged and a shift of power began from the village chiefs to Japanese administrators. The Japanese military authority was replaced in 1922 by the civilian South Sea Bureau and Koror became the administrative center for all Japanese possessions in the north Pacific. The early 1930's saw an increase in Japanese efforts in phosphate mining in Angaur and agriculture and commercial fishing. An extensive immigration program was started in which Japanese, Okinawan and Korean workers were imported.

Japanese civilian population in Palau in 1935 was 25,760, four times the Palauan population. Modern ways of life were established for Japanese residents, including paved roads, electricity, water and sewer systems, shops and entertainment facilities. These changes led to a higher standard of living, technical efficiency and occupational skills among many Palauans. In the early 1930's, Japan began fortifying Palau which eventually became a closed military area in 1938.

During World war II, Palauans had to face severe economic and social hardship. Medical care stopped almost completely; schools ceased to function during the latter years of the war; and lack of food resulted in malnutrition.

In 1947, Palau, as part of the Japanese mandated islands, with other Micronesian island groups, became a 'strategic' Trust Territory of the Pacific Islands (TTPI). The United Nations entrusted the direction of the islands to the United States of America as the administering authority to enhance social, education, economic and political developments of the islands toward
self-government and independence. Initially, TTPI was administered by the United States Navy. This duty was transferred to the U.S. Department of the Interior in 1957.

The awareness of the need for increased budgets for education and health services and the emphasis of activities and programs for future self-government led to increased TTPI budgets after 1962. Programs in education and health services were accelerated and plans for political development at the village and national levels were introduced.

In 1965, the Congress of Micronesia was formed with basic legislative powers. The call for self-determination and independence became stronger at the end of the 1960's and the Congress of Micronesia commenced discussions with the United States on the future political status of the Micronesian islands.

In 1980's, Palauans approved and ratified the constitution of the Republic of Palau (ROP) and the first constitutional government was instituted on January 1, 1981. Shortly thereafter, Palau, the Marshall Islands and the Federated States of Micronesia began separate negotiations with the U.S. for political status called "compacts" of "free association."

The Compact of Free Association ("Compact") is an agreement between ROP and the U.S. which defines the relationship between the two sovereign nations, following the termination of the United Nations trusteeship. The draft Compact was finally approved by the people of Palau through a plebiscite on November 9, 1993, in accordance with the amended constitutional requirement.

1.4 Social Structure

Palau has been influenced by different life styles resulting in a change in the function of the traditional social system. However, remnants of traditional culture still have a powerful influence on the lives and attitudes of Palauans. One important part of Palauan heritage is the clan system. Every individual, from the moment of birth, has a definite rank in the village, clan and the family. This rank is based on family lineage, but advancement based on individual merit is possible.

Clans are ranked and the leader of the highest ranking clan serves as the chief of the village. The chief, who is not a sole ruler, does not dictate but discusses and has to win the support of the number two rubak. The relationship between a chief and his fellow villagers is a relationship with rights and duties for each side. At present the traditional clan system still exists and is bedded in the formal political system. A Council of Chiefs advises, pursuant to the Constitution, the President on traditional and
customary matters.

1.5 **Form of Government**

The Government of Palau is a republic with three separate branches: the Executive, the Legislative and Judicial. The Executive Branch is headed by the President who is elected for not more than two consecutive terms of four years each. The President is assisted by a cabinet comprised of eight (8) ministers.

The Vice-President serves as one of the ministers actually heading a ministry. The number of ministries is determined by law. Currently the eight ministries are the Ministry of Administration, Commerce and Trade, Community and Cultural Affairs, Education, Health, Justice, Resources & Development and the Ministry of State.

The Legislative Branch is known as Olbiil Era Kelulau (OEK), a Palauan traditional term that closely interprets the meaning and concept of the Legislative Branch of the Government. The Olbiil Era Kelulau (or National Congress) is a bi-cameral legislature comprised of 14 Senators and 16 Delegates. The 14 Senators are apportioned throughout Palau based on population. The 16 Delegates are elected one from each of the 16 States and have the same four (4) years term of office as the Senators, but lack the advice and consent authority for Presidential appointments which is constitutionally reserved for the Senators.

The Judicial Branch is vested in a unified judiciary, comprised of the Supreme Court, the National Court and the lower Court of Common Pleas. Judges are appointed by the President from a list of nominees recommended by the Judiciary Nominating Commission. All judges hold office for life upon condition of good conduct.

ROP also has a federal system of government with two levels: National and State. The state governments have their own constitutions and elected officials.

1.6 **Structure of the Economy**

Palau's economy is essentially based on consumption which is supported by both private and public that makes up a large share of gross domestic product (GDP). However, there exists small and undeveloped economic productive base yet to be tapped.

The largest sector of the economy is services which made up nearly 60
percent of GDP in 1992. Within services, government dominated with 16 percent of GDP, followed by trade with another 16 percent. Agriculture, including poultry, is mainly for subsistence and its contribution to GDP was less than three percent in 1992. Manufacturing was negligible in 1992 and made up less than one percent of GDP.

Fishery, one of the areas with great potential for growth, made up nearly 26 percent of GDP in 1992. All of fishery revenue came from the sale of fishing rights to overseas fishing firms. With better monitoring and surveillance, fishing rights offer a nearly perpetual source of income to Palau.

Another promising growth area is tourism. The building of a number of hotels and favorable climate and diving conditions have helped increase tourism substantially in the last few years. All visitors to Palau tipped from 13,000 in 1985 to over 40,000 in 1993. With proper planning and foresight, tourism can be developed into a major industry. Chapters 3 and 4 present more detailed information and analysis on the economy, its problems and promises.

1.7 Compact of Free Association

The U.S. Congress approved the Compact in November, 1986 and passed another legislation in December 1989 to "authorize entry into force of the Compact of Free Association between the United States and the Government of Palau".

For nearly a decade, the ROP and the U.S. have been working to establish a relationship of free association between the two nations. As an act of self-determination, 68 percent of Palauans voted on November 9, 1993 to end Palau's status as the remaining part of the Trust Territory of the Pacific Islands (TTPI) and approved the Compact of Free Association with the United States of America along with additional related agreements (collectively the "Compact"). With the Compact ratified, the people of Palau look forward to its implementation in late 1994 as their country will assume its place as a sovereign member of the world community of nations.
CHAPTER 2
NATIONAL DEVELOPMENT OBJECTIVES, POLICIES AND STRATEGIES

INTRODUCTION

There comes a time in the history of every nation when it must embark on an unequaled journey. The people of Palau will commence that voyage under the Compact of Free Association with the United States of America. The Republic of Palau undertakes this historic expedition in pursuit of greater political independence and economic self-reliance.

Palau is also part of a world which is increasingly becoming complex technologically and ambitious economically. To become a viable economy in this new world, thrive and retain the strength and commitment of its people, the people of Palau will transform their U.S.-subsidized economy into a self-sustaining market enterprise. Just as importantly, Palau's economy must change to offer its people fulfilling chances to work and make contributions to their own lots and their fellow citizens in Palau.

The ROP's economic and social needs make the transition to a market economy essential to future prosperity. Since the transition will come neither quickly nor easily, it is imperative that it be guided by a prudent and realistic appraisal of Palau's human, natural and technological resources and prospects.

NATIONAL DEVELOPMENT OBJECTIVES

The purpose of this economic development plan is to lay out basic performance objectives of the nation and how they can best be achieved. In the broadest sense, the ROP's national development objectives are to:

a. lay the foundations for achieving economic self-reliance based on a free and vibrant market economy;
   b. develop Palau's human, natural and technological resources in a framework of environmental and cultural protection; and
   c. achieve measurable and certain progress toward balanced and sustainable development of the various States.

2.1 National Self-reliance

The physical (and human) infrastructure of Palau needs improvement in
the journey from a subsidized to a market economy. The physical assets necessary for transforming the economy into an effective market system are an integrated road system, widely available potable water supply, adequate sewage and solid waste treatment facilities, reliable national power and communication systems and adequate educational and training facilities.

Development of this infrastructure must precede meaningful planning for much of the private industry development envisioned in this plan. As such, the future of much of the new private industry for the country will depend on what new infrastructure we can put in place and how we improve what we already have.

Much of the new private industry with reasonable potential will require extensive water distribution systems, efficient sewage and other waste facilities, reliable electrical sources and communication capabilities, expanded and upgraded port and air transport facilities, and a much more extensive road system. The Government's role in meeting these needs will initially complicate the goal of reducing reliance on the public and foreign aid.

Raising economic self-reliance will require a progressive increase in the proportion of total investment funded by domestic savings. This will require restraining consumption and raising savings, investment and net export of goods and services. We will design policies to increase domestic output and income in as many areas as practical.

2.2 Use and Protection of Natural Resources

The saying "Small is Beautiful" is not a cliche in Palau. It is a reality in which we live, envision our future and hope to expand and improve our small island economy. As large economies face the intractable problems and promises of size and space, we face the stubborn dilemma of scarcity. Small size and fragile environment put a high premium on the use of our natural resources. As much as development of private industry will be based on the fullest utilization of the nation's natural and human resources, this will be done within a policy of protecting our national resources and our cultural heritage.

2.3 Development and Use of Human Resources

Building Palau's market economy requires a shift in focus of careers and professions for its people from government service to work in the private sector. Achieving this goal will take time, but programs for training in management and vocations relevant to a market economy will be required immediately. Some of this change and development can occur rapidly enough to meet the early demands of an emerging private sector. But, immigrant
labor will be necessary for quite some time. We will make every effort to train Palauans with skills which foreign labor brings to the market. Among the skill areas in demand immediately will be in visitor services and food and vegetable production.

Concentration of jobs in the public sector has affected incomes and the labor market, particularly the development of jobs or career opportunities for Palauans in the private sector. We must work on reducing the role of government as a producer of services and jobs as part of an ongoing campaign to decrease the gap between its recurrent expenses and revenues.

2.4 Balanced Regional Development

It is proper to make a distinction between economic growth and economic development at this point. Economic growth means an increase in a nation's total output. Economic growth, by definition, creates jobs. Economic development, on the other hand, is an increase in the average standard of living of the average citizen. This makes one thing clear: there can be no economic development without economic growth while the opposite happens often, especially in developing economies.

Palau will pursue all avenues leading to economic growth to create jobs for a growing population. But one must be keenly alert to problems associated with economic growth if it gets too concentrated in certain areas, industries or segments of the population.

Both economic growth and development thus far have benefitted Koror and its urban vicinity more than other areas. The ROP needs to redirect this type of growth pattern in the future. A first step toward a balanced regional development program is building the infrastructure such as roads, power, water, disposal and communications facilities in areas outside Koror. Relocation of the National Government capital to Babeldaob is a vital step in this process. Further, we want to ensure unhindered access to all public facilities so our entrepreneurs and business firms can develop natural resources, create jobs for Palauans and supply goods and service to both domestic and world markets.

One important goal of our development efforts will be to reverse mass migration of both population and productive activity to Koror. Areas outside the urban center, only a few miles but hours away under current travel conditions, remain largely outside the money economy and generally devoid of minimal infrastructure and work opportunities. The result has been a general movement of the population to Koror from other States.
Aside from rural impoverishment resulting from this one-way migration and the high cost of overburdened resources in Koror, the urban center cannot physically accommodate the influx. At the same time, the outer States cannot develop their human and natural resources if their people keep migrating in search of work in Koror. A basic tenet of the EDP is adherence to policies which lead to nation-wide infrastructure provision and a better balance in economic development among the States. Primary emphasis will be placed on the extension of roads, electric and communication systems, water, sewage and solid waste treatment systems.

2.5 Protection of Environmental and Cultural Heritage

Palau's culture and fragile environment will be vulnerable in the face of insensitive rebuilding of the economy. Overuse of resources can cause depletion as well as environmental damage. Economic development, therefore, means change but with the intent to define parameters within which both public and private development programs can move forward without losing the natural and cultural resources in which Palau excels. As we make the transition toward a self-reliant market economy, we will also work to establish a sustainable economy.

DEVELOPMENT POLICIES AND STRATEGIES

The development policies and strategies proposed in this plan are intended to address the critical issues and achieve the national goals. The policies and strategies to help us implement the development plan fall under the following categories:

- Development of a self-reliant production-based market economy
- Reduction and streamlining of the public sector
- Development of natural resources to generate income
- Development of human resources
- Balance regional economic integration and development
- Conservation of environmental and cultural assets.

2.6 Development of a Market Economy

Central to this plan is to create a market economy. This transition will be supported by the Government through public sector infrastructure investment, public and private financial services, fiscal incentives, human development and training programs, natural resource and industrial
development and the increase of administrative (regulatory) and legislative support for these measures.

a. **Private Investment**

The size of the public sector in both resource use and employment of Palau's labor force has focused investment and jobs on consumption. Along with efforts to reduce the dominance of government will be policies to support private investment in the production of goods and services, especially to correct the serious deficit in Palau's balance of payments. In particular, foreign investment will be encouraged through streamlining and focusing the Foreign Investment Board on high-value, income-generating industry.

b. **Government Support for the Private Sector**

Shifting economic activity from the public sector will require a public program of infrastructure development and investment which has as a fundamental tenet the expansion of private economic activity. The following strategies will be pursued by the Government as the initial elements of a broad policy to encourage and channel domestic and foreign investment into a productive and sustainable market economy:

i. **Infrastructure Development**

The Government will build a paved road system throughout Babeldaob, Peleliu and Angaur and upgrade the primary road and complete the secondary road system in Koror. A cost-effective road system will be pursued to link all States on Babeldaob to Koror. The road system in particular will be designed to provide much needed drainage as well as conveyance of electricity and for the development of potable water for Koror and the entire country.

Both domestic and global sea transport facilities will be developed with emphasis on the development of reliable water transport services between Koror and outlying States through channel dredging, dock improvements and installation of navigational equipment. Improved international sea and air transport facilities will be augmented via improvements in port facilities, especially at the airport and freight facilities at Malakal Harbor.

The Government will work to provide reliable energy for the nation. This will require seeking all sources of aid to provide energy to all States. New energy and transport systems will be the basis for establishing safe water and sewage systems throughout Palau. These same capital projects will also be fundamental to the management of solid and liquid waste which not only pollute the environment presently, but need attention as production of goods
and services expands. The specific projects are listed in Volume II of this Economic Development Plan. If other foreign grant aid becomes available, additional infrastructure projects may be developed.

ii. Financial Facilities

The lack of venture capital is a major constraint in Palau. To provide easier access to such capital, the Government will inject additional funds into the National Development Bank of Palau to underwrite subsidized loans to qualified entrepreneurs who will invest in high-priority industries such as tourism, agricultural, marine products and industrial production. The Government will attempt to obtain funds from global development banks for private ventures which qualify for such lending.

The role of commercial financial institutions in generating domestic savings and loans will be aided by ensuring their safety and soundness. Safety will assure mobilization of domestic private savings to the local credit market. The development of a government bank-monitoring authority for scheduled auditing of all depositories and the loan quality for all credit institutions will be central to this aspect of the development plan.

Provisions of credit beyond the scope of conventional commercial lending will be aided by the creation of specific loan guarantee programs through the National Development Bank. But prudent management of a joint public-private loan programs will be mandated to ensure that loan guarantees and national financial resources are not squandered on projects that cannot survive in the market place.

iii. Fiscal Incentives

To encourage the growth of private sector investment, the Government will pursue tax policies which generate domestic savings and promote its effective use. The Government will commit resources to raising administrative skills that allow effective collection of taxes from the populace.

To attract foreign investment for economic growth, tax incentives are less important than equal tax treatment. As a result, tax codes should be designed not to discriminate between local and foreign investors. Equally important are tax and finance policies which do not unfairly discriminate between national and alien workers.

iv. Human Resource Development
As described earlier, development of a viable private sector in Palau requires skilled personnel. The Government considers this as a crucial issue. The Government will attempt to design training and vocational programs for redirecting the labor force toward market needs. Funds for education facilities will help meet this goal.

Improving health services raises the productivity of Palau's work force to supply goods and services to a competitive world market and is essential to the well-being of the Palauan people. Funds for such health related improvements are accordingly needed.

v. Sector Extension Services

An important aspect of redirecting labor to the market economy will be to create extension services that can train people for work in agriculture, forestry, fisheries and visitor services. An overall rural development program will be designed and implemented to integrate these sectors into the money economy and raise the prospects for jobs and productivity in rural Palau. An educational emphasis in these areas will be supported.

vi. Administrative and Regulatory Support

Efforts will be made to protect the nation's resources and environment. Legislation will be required in the areas of foreign investment, mining, environment, supervision of financial institutions, clarification and enforcement of land tenure and title claims, the creation of occupational safety and fair standards rules, and the development of a consistent foreign labor importation program.

2.7 Reducing the Weight of the Public Sector

Just as critical as the move to a market economy is the need to reduce the appeal of government as an employer in order to restrain the use of the limited labor pool. Without reducing government and without the creation of jobs in the market economy, domestic income tax revenues will not rise enough to supplant external subsidies.

2.8 National Infrastructure Development Strategies

Essential to the strategies for protecting the environment and support for Palau's emerging market economy is the creation of infrastructure throughout the nation and within each of the 16 States. A detailed description of Capital Infrastructure Projects (CIP) form the second volume of the Plan.

The basic elements of the infrastructure plan ought to be viewed from
both a national perspective and how they fit within individual State development plans. Common to both views are the building and extension of paved roads, installation of electrical transmission and communication lines, potable water, sewage and solid waste disposal. National and State priorities indicate that urbanized Koror will require massive infrastructure improvement to meet appropriate health and environmental standards. As the economy changes, infrastructure needs will change accordingly. But, unless the minimal needs are met as quickly and as efficiently as possible, the larger changes may never take place.
CHAPTER 3

PRODUCTION AND INCOME STRUCTURE

INTRODUCTION

Gross domestic product (GDP) measures the total final money value of goods and services produced within a country in a year. GDP can be computed by three methods. One is the production accounting method which measures the money value of goods and services produced at each stage of production (value added by kind of economic activity in each of the sectors). This method generates economy-wide (aggregate) supply data.

Another is the income accounting technique which estimates money income accruing to the various factors of production such as land, capital, labor and management. Third is the expenditure method which yields economy-wide consumption and investment (aggregate) demand data. No one method is inherently superior or totally adequate, but the production and expenditure methods are more common because of globally accepted macroeconomic accounting standards and methods, especially in market economies.

Palau lacks the type of macroeconomic data gathering methods used in developed countries such as the U.S. or Japan. As a result, economic performance cannot be gauged with the accuracy and certainty typical of such economies. Yet, enough information exists to provide a sense of the economy’s path, problems and prospects. Aside from visual surveys of ROP’s economic infrastructure, the evaluation below presents the best effort within the existing macroeconomic data limitations.

The earliest GDP estimates for ROP were made in the 1970’s. Reference to either the data or the methodologies and evidence regarding which of the three GDP accounting methods was employed is lacking. As such, these estimates must be taken only as rough macroeconomic appraisals of the ROP’s economy at that time.

The United Nation’s Economic and Social Commission for Asia and the Pacific (ESCAP) attempted a more complete study of ROP’s economy in 1992. Since earlier GDP estimates are not necessarily based on the same data or methodology as the U.N.’s, the two sets make up a discontinuous data series. Nor are the earlier GDP data for consecutive years as are those of the U.N. Accordingly, one needs to be cautious in drawing concrete conclusions.
However, these two sets of GDP estimates are the only ones available and represent a starting point for analysis. Since the U.N. estimates are based on standard macroeconomic accounting methods, they make up the best available benchmark data at this time.

CURRENT SITUATION

3.1 Gross Domestic Product

At market prices, Palau’s GDP was estimated to be $14.5 million in 1975, $17.4 million in 1977 and $31.6 million in 1983. By these estimates, ROP’s economy grew 9.5 percent annually in 1975-77 and 10.5 percent in 1977-83. The U.N. team computed ROP’s GDP to be $76.9 million in 1990, $83.9 million in 1991 and $89.7 million in 1992. According to these data, ROP’s GDP grew 13.5 percent per year in 1983-90 and 8 percent in 1990-92.

Without regard to price inflation, for which consistent and reliable data do not exist anyway, ROP’s economy grew rapidly, especially in 1983-90. In those seven years, ROP’s nominal GDP increased nearly 150 percent, resulting in one of the fastest growing economies in Micronesia. Table 3.1 presents GDP by economic activity for 1983 and 1990-92.

![Table 3.1: Gross Domestic Product (GDP) by Kind of Economic Activity for 1983 and 1990-92 ($1,000 at Current Prices)](image-url)
### 3.2 Price Inflation and Per Capita Income

It is difficult to deflate ROP's GDP data because of a lack of systematic price data. Rough price inflation estimates for 1980-1983 and subsequent years have been made by observing price movements in some of the neighboring states such as Guam, Republic of the Marshall Islands (RMI), the Federated States of Micronesia (FSM) and Kiribati.

A price inflation of 8 percent annually was suspected for 1975-77, followed by a 10.5 percent rise for 1977-83. Another 8 percent inflation was assumed for 1983-90, followed by another 5 percent for 1990-92. Although the latter rate may appear too low, it is not unreasonable in light of low price inflation worldwide once the global oil cartel, OPEC (Organization of Petroleum Exporting Countries) collapsed in the late 1980's.

Adjusting ROP's GDP with these inflation estimates yields an annual average real growth of about 1.5 percent for 1975-77 and zero percent growth in 1977-83. Those rates are much lower than what most developing economies enjoyed in those years. However, they are not entirely unreasonable for a time period marked by worldwide high inflation which was induced by high energy prices, especially in oil-importing economies such as ROP. Besides, there was no structural change in ROP's consumption-driven economy at the time to justify different conclusions.

Lower price inflation worldwide, not structural changes in production, again, brought about real GDP growth of about 5.5 percent per year in 1983-90. Even a lower growth rate, about 3 percent in real GDP, seems most reasonable for 1990-92. The U.N. team, however, estimated real GDP growth of 1.1 percent for 1990-91 and 4.9 percent for 1991-92. As likely as those growth rates may be, they may not be entirely counted on due to a lack of data.

Adjusting these nominal data with suspected inflation rates yields virtually no gain in real per capita income in 1975-83, about 2 percent rise per year in 1983-90 and another 1 percent increase in 1990-92.

The U.N. team estimated a 1.1 percent decline in real per capita GDP in 1990-91 and a meager 2.7 percent gain in 1991-92. This indicates a stagnant real per capita income and standard of living.

The principal factor behind such a disconcerting picture is the consumptive mode of ROP’s economy. Without steady U.S. payments, even this standard of living could not have been maintained. Evidence also suggests that the time to make a serious effort for a new economic future is now. It is time to consider how to broaden the economy’s productive capacity.

3.3 The Structure of Aggregate Production

It should come as no surprise to those familiar with the former United Nations Trust Territory of the Pacific Islands (TTPI) that consumption and services have dominated economic life in the Pacific during most of the post-World War II period. But as Table 3.2 shows, that has begun to change over the last decade, although not as much or as rapidly as a higher self-sustaining standard of living would require.

### TABLE 3.2: Gross Domestic Product (GDP) by Kind of Economic Activity for 1983, and 1990-92 (Percent Shares)

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<td>0.9</td>
<td>1.3</td>
<td>0.8</td>
</tr>
<tr>
<td>Commercial</td>
<td>N/A</td>
<td>2.0</td>
<td>1.8</td>
<td>2.6</td>
</tr>
<tr>
<td>Government</td>
<td>N/A</td>
<td>8.2</td>
<td>5.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Electricity*</td>
<td>1.9</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Utilities</td>
<td>N/A</td>
<td>3.7</td>
<td>4.4</td>
<td>5.0</td>
</tr>
<tr>
<td>Total Industry</td>
<td>15.2</td>
<td>15.5</td>
<td>13.5</td>
<td>13.3</td>
</tr>
<tr>
<td>Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>16.9</td>
<td>15.6</td>
<td>16.5</td>
<td>15.7</td>
</tr>
<tr>
<td>Hotel &amp; Restaurant</td>
<td>1.7</td>
<td>8.1</td>
<td>8.1</td>
<td>9.7</td>
</tr>
<tr>
<td>Transport &amp; Communc.</td>
<td>2.4</td>
<td>4.4</td>
<td>4.1</td>
<td>4.6</td>
</tr>
<tr>
<td>Finance &amp; Insurance</td>
<td>1.8</td>
<td>4.0</td>
<td>3.0</td>
<td>3.6</td>
</tr>
</tbody>
</table>
Despite some notable changes in its makeup, the services sector remains ROP's largest economic activity. Even after a 10-percent drop in its relative share of national output from 1983 to 1992, it averaged nearly 60 percent of GDP in 1990-92. Among the most notable changes in services was the drop in government from nearly 38 percent of GDP in 1983 to less than half of that in 1992.

In contrast, trade, the second largest segment of services, remained unchanged at about 16 percent of GDP over the decade. The rest of the services sector rose from 10 percent of GDP in 1983 to nearly 30 percent in 1992, with hotels and restaurants accounting for one-third of it.

Among other striking changes were the increases in real estate and business, finance & insurance and transportation & communication services, with each rising from a minuscule part of GDP in 1983 to about four to five percent in 1992. The increase in business services, as one would expect, has come with ROP's increasing contacts with the rest of the world. As the economy expands and becomes more sophisticated, more business and personal services are certain to come to the fore.

Perhaps the most dramatic change from 1983 to 1992 was the rise in ROP's second largest sector, agriculture and fishery, in both absolute and relative terms. In current prices, agriculture and fishery increased nearly 390 percent from $5.3 million 1983 to $25.8 million in 1992. As a share of GDP, it climbed from 17.1 percent in 1983 to 28.8 percent in 1992. Fishery alone made up the gain as it rose from $2.2 million in 1983 to $23.2 million in 1992. In relative terms, fishery rose from 7.2 percent of GDP in 1983 to 26 percent in 1992, while agriculture remained nearly unchanged at about 3 percent of GDP, or about $3 million.

ROP's third economic sector, a composite of activities called industry, declined slightly as a share of GDP from 15.2 percent in 1983 to 13.3 percent in
Construction, which has varied widely from year to year, declined from nearly 13 percent of GDP in 1983 to 7.5 percent in 1992. Manufacturing, which tends to support construction, doubled as a share of GDP in the decade but still accounted for less than one percent.

Utilities, which according to the U.N. report, are dominated by power generation, rose sharply from 1.9 percent of GDP in 1983 to 5 percent in 1992. Again, the increase in utilities as a share of GDP has resulted from the economy's rising sophistication. Total electricity consumption rose from 35.3 million KWH in 1987 to 52.5 million KWH in 1992. The resulting 12 percent increase per year in electric power usage in those years is yet another clear sign of economic progress in the ROP.

3.6 The Structure of Aggregate Income

Table 3.3 presents the structure of income which denotes income accruing to the various factors of production such as land, capital, labor and management.

| TABLE 3.3: GDP by Type of Income ($1,000 at Current Prices and as Percent of GDP) |
|---------------------------------------------------------------|------------|----------|----------|----------|
| Employee Compensation                                       | 18,993     | 33,118   | 38,237   | 40,382   |
| As Percent of GDP                                           | 60.3       | 43.1     | 45.6     | 45.0     |
| Operating Surplus                                           | 11,450     | 41,617   | 44,110   | 48,049   |
| As Percent of GDP                                           | 36.3       | 54.1     | 52.6     | 53.5     |
| Consumption of Fixed Capital                                | 1,103      | 1,090    | 1,145    | 1,202    |
| As Percent of GDP                                           | 3.5        | 1.4      | 1.4      | 1.3      |
| Indirect Taxes                                              | N/A        | 3,802    | 3,892    | 4,068    |
| As Percent of GDP                                           | N/A        | 4.9      | 4.6      | 4.5      |
| Less: Subsidies                                             | 34         | 2,739    | 3,529    | 3,961    |
| As Percent of GDP                                           | 0.1        | 3.6      | 4.2      | 4.4      |
| GDP                                                         | 31,512     | 76,888   | 83,954   | 89,840   |
| As Percent of GDP                                           | 100.0      | 100.0    | 100.0    | 100.0    |

Table 3.3 shows a striking drop in employee compensation as a share of GDP from 1983 to 1990 while remaining quite stable afterwards. Such a large shift would normally be caused by a switch from work for wages and salaries to other income sources such as interest, rent, royalties, transfer payments, overseas remittances or some combination. Since such a large and abrupt structural shift cannot be detected from existing data or local experts, the inevitable and obviously convenient conclusion can be data deficiency.

Otherwise, ROP's income structure appears as normal as it has ever been for an economy which generates a large percent of its income from so-called non-market production which is reported under "operating surplus." Non-market production is that share of output (income) which is not sold (valued at market prices) but produced and consumed by both individuals and households. Given the extended history of a subsistence economy long before TTPI became the political and economic concern of the U.S. after World War II, production for self-consumption is still common. It is not, however, as large a share of GDP as it once was.

Data on non-market output have always been imprecise and the estimate for 1983, the latest available, is 18.5 percent of GDP. It is possible that even 18.5 percent understated its relative importance since production for self-consumption still goes on, especially in the rural areas outside Koror and its largely urban economy. Another reason for suspicion of lower than actual non-market production in 1983, which was derived from the 1980 census of the former TTPI, is that ROP's share was much lower than the neighboring island states such as FSM which reported non-market production as high as 40 percent of GDP.

It is not unreasonable to conclude also that the lack of data led the U.N. team to ignore the extent and makeup of non-market output in its 1992 study. Some local observers speculate that the share of non-market production may be higher now than in the 1980's because of better technology and improved methods of production and distribution. Others argue, just as convincingly, that most Palauans would pursue the varied opportunities afforded by modern money economy and avoid altogether any production for self-consumption. In their view, total non-market production may be much lower than what it was in the 1980's. In the absence of supporting data, one can neither support nor refute either argument.
3.7 The Structure of Aggregate Demand

The U.N. GDP estimates by expenditure types for 1990-92 are the only ones available. They are presented in Tables 3.4 and 3.5 in dollar amounts and as percent shares of GDP.

### TABLE 3.4: GDP by Expenditure Shares ($1,000 at Current Prices)

<table>
<thead>
<tr>
<th>Share</th>
<th>1990</th>
<th>1991</th>
<th>1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Consumption Expenditures</td>
<td>34,015</td>
<td>36,543</td>
<td>39,886</td>
</tr>
<tr>
<td>General Government Consumption</td>
<td>25,492</td>
<td>26,629</td>
<td>27,679</td>
</tr>
<tr>
<td>Gross Domestic Capital Formation</td>
<td>29,457</td>
<td>28,335</td>
<td>28,905</td>
</tr>
<tr>
<td>Fixed Assets</td>
<td>26,318</td>
<td>24,720</td>
<td>25,222</td>
</tr>
<tr>
<td>Construction</td>
<td>21,306</td>
<td>17,537</td>
<td>16,722</td>
</tr>
<tr>
<td>Durable Equipment</td>
<td>5,012</td>
<td>7,183</td>
<td>8,500</td>
</tr>
<tr>
<td>Increases in Stock</td>
<td>3,139</td>
<td>3,614</td>
<td>3,683</td>
</tr>
<tr>
<td>Exports of Goods &amp; Services</td>
<td>27,533</td>
<td>37,681</td>
<td>42,395</td>
</tr>
<tr>
<td>Less: Imports of Goods &amp; Services</td>
<td>36,490</td>
<td>42,999</td>
<td>45,000</td>
</tr>
<tr>
<td>Statistical Discrepancy</td>
<td>-3,118</td>
<td>-2,333</td>
<td>-4,126</td>
</tr>
<tr>
<td>Gross Domestic Expenditure (GDE)</td>
<td>76,888</td>
<td>83,855</td>
<td>89,739</td>
</tr>
</tbody>
</table>


### TABLE 3.5: GDP by Expenditure Shares (Percent Shares)

<table>
<thead>
<tr>
<th>Share</th>
<th>1990</th>
<th>1991</th>
<th>1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Consumption Expenditures</td>
<td>44.2</td>
<td>43.6</td>
<td>44.4</td>
</tr>
<tr>
<td>General Government Consumption</td>
<td>33.2</td>
<td>31.8</td>
<td>30.8</td>
</tr>
<tr>
<td>Gross Domestic Capital Formation</td>
<td>38.3</td>
<td>33.8</td>
<td>32.2</td>
</tr>
<tr>
<td>Fixed Assets</td>
<td>34.2</td>
<td>29.5</td>
<td>28.1</td>
</tr>
<tr>
<td>Construction</td>
<td>27.7</td>
<td>20.9</td>
<td>18.6</td>
</tr>
<tr>
<td>Durable Equipment</td>
<td>6.5</td>
<td>8.6</td>
<td>9.5</td>
</tr>
<tr>
<td>Increases in Stock</td>
<td>35.8</td>
<td>44.9</td>
<td>47.2</td>
</tr>
<tr>
<td>Exports of Goods &amp; Services</td>
<td>47.5</td>
<td>51.3</td>
<td>50.1</td>
</tr>
<tr>
<td>Less: Imports of Goods &amp; Services</td>
<td>-4.1</td>
<td>-2.8</td>
<td>-4.6</td>
</tr>
<tr>
<td>Statistical Discrepancy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Domestic Expenditure (GDE)</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Data reported in ROP's first 5-year plan (1987-91) showed that total final consumption spending was as high as 138 percent of GDP. This seemingly statistical anomaly reflected reality in Palau in the 1970s because of U.S. funding which augmented the "income" of Palau. Since transfer payments continue, although with less relative importance than in the 1970's, they account for a smaller but still important portion of spending. As Table 3.5 shows, private and government consumption together made up 75 percent of ROP's aggregate demand in 1990-92.

Government consumption includes direct employee payments such as wages, salaries and benefits. They account for roughly 60 percent of government consumption. Other government spending includes supplies, materials and travel. They exclude transfer payments and subsidies which are included in household and public corporation spending.

ROP's government hopes to reduce spending as a share of GDP to about 25 percent by the end of the century from its current share of about 30 percent. With that happening, total private and government consumption may fall below 70 percent of GDP during the decade.

Gross capital formation, defined as outlays on inventories, durable goods with life exceeding one year and buildings, dropped from 38.2 percent of GDP in 1990 to 32.2 percent in 1992. As pointed out earlier, a large (10-percent) drop in construction was responsible for the decline. Large swings in construction spending, regardless of reason, reflects the state of the basic infrastructure of which ROP needs to build more as it broadens its productive capacity.

Since most capital is imported, there is reason to suspect double counting of "capital" and "imports" as data in Table 3.5 suggest. Even with ignoring the foreign sector, the total of personal consumption, government consumption and gross capital formation exceeds 100 percent of GDP. This is, to say the least, not quite common for most economies, regardless of which accounting system is used.

Depending on where it occurs, double-counting can obscure potentially serious problems, or give rise to undue prospects. Double-counting in private consumption versus government consumption, for example, would exaggerate consumption spending which induces a different economic impact than capital spending. Reporting travel spending, for instance, either as government consumption or private consumption or both is the same in both counting and
its economic impact. Reporting a motor vehicle or a piece of machinery both as an import and as a capital item would inflate both accounts and induce different economic impacts.

Data issues aside, there is a need for better assessment of import priorities. Capital formation ought to be reevaluated with two primary objectives in mind: (1) to begin putting in place an adequate physical infrastructure which would aid the nation's productive capacity and, (2) to raise labor and capital productivity and, as a result, living standards in the ROP.

Since data on disposable income, saving and investment do not exist, one can only speculate on the extent to which any investment is funded by domestic savings. It is common knowledge that a substantial portion of domestic savings comes from foreign remittance, but its amount is unknown. Nor is there information on the money income of foreign workers who send money to their home countries. In the absence of data on these injections and leakages, there is no mechanism to estimate total savings and investments.

The only major source of savings (and investment) is U.S. transfer payments and grants which fund most of ROP's consumption and investment needs. Grants and aid from other nations and world organizations also exist and may increase in the future as ROP becomes a member of the world community as an independent country. Meanwhile, domestic savings will most likely remain inadequate to meet ROP's investment needs.

3.9 The Foreign Sector

GDP data in table 3.4 indicate that ROP's exports of goods and services increased over 54 percent from $27.5 million in 1990 to $42.4 million in 1992 while imports rose 23 percent from $36.5 million to $45.0 million. As a share of GDP, exports increased from less than 36 percent to over 47 percent in 1990-92 while imports rose only slightly from 47.5 percent to 50.1 percent.

The export-import figures should be viewed with caution, especially in the absence of other corroborating evidence. It is common knowledge that fish products have gained in both quantity and intensity over the last several years, but it is not clear whether they alone accounted for all of the export gains in 1990-92. As ROP finds more markets for fresh fish in large economies such as Guam, Hawaii, mainland U.S. and Japan, it can certainly augment its export earnings in an area in which it has a natural and obvious comparative advantage.

As much as fishery fills the export gap, imports keep rising because of both capital and consumer good demands of the young nation. Dependence
on imports is illustrated by the fact that because of the country's small economic base and limited capacity to diversify, its visible trade account will remain unbalanced for the foreseeable future.

PROBLEMS, ISSUES AND STRATEGIES

3.10 Economic Structure Problems and Issues

The main issues concerning ROP's natural economic structure are its small size, isolation, workforce expertise, lack of adequate physical infrastructure and the absence of natural resources other than the vast Pacific Ocean. Some of these constraints are inherent and unalterable in the near future, regardless of the state of technology in both Palau and the surrounding world.

In such a world, ROP's government and people will have to be far more creative as they launch a new life as an independent nation in a world immensely different from that even a few years ago. The old world order and conquest with guns and bombs has given way to contest for markets. Under the new order, ROP will have to devise ways and means which lead to maximum social and economic gain, minimum social and economic cost and take the fullest advantage possible of every chance the world community will present the young republic.

3.11 A Consumption Economy

Consumption remains high relative to GDP. Although domestic income sources such as fish exports show promise of paying for an increasingly larger share of consumption, large U.S. transfer payment will be required to sustain the present mode of the economy. U.S. aid has sustained the economy, but an inordinate amount of funds goes to imports of consumer goods and services which do not expand ROP's productive base.

This mode of the economy cannot continue indefinitely, regardless of economic and political ties to the U.S. The time to start laying the foundation for a productive and innovative economy in the region has come. The new political and economic arrangement with the U.S. should, in fact, be taken as the best chance to start this new era.

3.12 The Export-Import Imbalance

As small as the ROP economy is, it imports a large amount of its needs. ROP's visible trade imbalance may not disappear any time soon, given the population's consumption preferences for Western (especially American)
consumer goods for the last four decades. Also, greater export earnings would have been possible over the last few decades had ROP developed the capacity to police and harvest its fishing resources. Improvements in this area, and in agriculture, forestry and tourism offer reasonable hope for reducing the commodity trade gap.

3.13 Inadequate Goods-Producing Economy

In some respect, this issue has become less critical since the First Plan when agriculture and fisheries together made up only 17 percent of GDP in 1983. Although the two made up almost 29 percent in 1992, the gain entirely occurred in fishery while agriculture actually declined from 10 percent of GDP in 1983 to 2.9 percent in 1992. As much as the gain in fishery is a welcomed development, the loss in agriculture must be viewed as troubling. Unless the economy's productive base can be expanded in all possible areas, including agriculture and other less attractive occupations, these structural imbalances will pose serious threats to ROP's economic stability.

While the gains in fishery and tourism have improved ROP's economic prospects, the economy's goods-production capacity remains too narrow and far below its potential of human, natural and technological resources.

3.14 Reducing Structural Imbalances

The basis for a self-reliant economy is to pay for its own domestic consumption and investment needs. ROP's government will pursue measures to redirect consumption as much as feasible from imports to domestic production of both goods and services. Achieving this goal will require sustained efforts to expand domestic production and import-substitution wherever possible, without causing price distortions and unsustainable subsidies that come with policies which push beyond the local market's productive potential.

Fiscal measures will be adopted to contain government consumption, particularly by stabilizing public employment, wage rates and increasing labor productivity. Spending on travel, supplies and other areas will be monitored more aggressively. Reduction of the country's trade gap will require expanding exports. This effort will utilize both local labor and raw materials as much as practical. ROP's government will encourage the production of exports which generate the highest value.

Along with an aggressive export-oriented approach will be a push for import-substitution within the local resource base. Gradual but enforceable fiscal measures and quantitative controls will be implemented to curb imports.
of foodstuffs that can be produced domestically.

3.15 Development of a Market Economy

The greatest production potential lies in the expansion of fisheries, small-scale manufacturing, agricultural and agri-business trades, cottage industries and tourism. The best way to push ROP's economic resources toward maximum production and highest value is to start building a market economy.

The specific strategies for developing the various sectors of the economy are outlined in their respective sections of this Plan. However, mindful of the pitfalls of planned economies which ignore market principles, ROP will offer its industries support in infrastructure and other areas where the national interest can best be served with collective actions. The government will also remain open to similar support of private investment, from both domestic and foreign sources.

3.16 The Information Vacuum

An adequate statistical data base needs to be vigorously pursued as the needs of the information age, even in a small and developing economy, demand. Without accurate and reliable information and analysis of the past and present, the future can neither be predicted nor understood. Although the U.N.’s 1992 national income accounting effort provides a minimal benchmark data base, it should be considered as the beginning of a long march toward a more adequate and reliable national and regional data base.

The value of good information in sound planning, market targeting and evaluation cannot be exaggerated. A critical factor in economic development and change is to institutionalize a national data-gathering and disseminating mechanism as a major product of the Compact of Free Association. In fact, ROP should take advantage of any and all opportunities afforded by the new political and economic ties to the U.S. and the world to develop an adequate information gathering and interpreting mechanism.

ROP must specifically request both technical and financial assistance in this effort, believing that whatever it will cost, good information will be one of the best investments to make as the new nation launches a new era. Also, as ROP begins this new phase, it will find good information valuable in obtaining economic and technical aid from other regional and world organizations.
CHAPTER 4
EXTERNAL TRADE AND PAYMENTS

CURRENT SITUATION

Although much higher export earnings have accrued to ROP than in the years leading up to the First Plan, imports continue to dominate external trade. Imports range from food and consumer items to construction material and capital goods. As much as commodity exports, primarily fish products, have risen over the last decade, they still do not pay for all imports. The result has been a persistent trade deficit, financed by consumption and capital transfers (grants) from the U.S. and, recently, from increases in invisible earnings such as remittances of Palauans working overseas. Until earnings from tourism and more goods exports rise, ROP will remain dependent on official assistance to finance its imports. Complete and consistent external payment and receipt data have not been collected. Some statements must, therefore, be based on anecdotal and, by definition, incomplete information.

4.1 Current Account

ROP does not formally compile extensive foreign trade statistics. Data from Customs & Immigration Office and other sources indicate that private commercial imports and exports, as shown in Table 4.1, reveal significant changes over the past several years. Particularly impressive is the large increase in fish exports from very small amounts in 1983-84 when overseas sales dropped as a result of the closure of a Van Camp fish processing plant. With the surge in fish exports, ROP’s merchandise trade account has improved substantially.

| TABLE 4.1: Private Commercial Commodity Exports and Imports ($1,000 FOB Values) |
|---------------------------------|------------------|------------------|------------------|------------------|
| Exports:                       |       |       |       |       |
| Fish (Fresh & Frozen)          | 97.0  | 125.0 | N/A   | 27,121.0 |
| Other Exports                  | 211.0 | 339.0 | N/A   | 2,644.0  |
| Total Exports                  | 308.0 | 464.0 | 556.0 | 29,765.0 |
| Imports:                       |       |       |       |       |
| Food                           | 3,382.3| 4,280.8| N/A   | 2,873.7 |
| Beverages & Tobacco            | 2,065.0| 2,105.5| N/A   | 2,075.2 |
| Fuels & Lubricants             | 2,143.0| 2,143.0| N/A   | 12,519.3 |
| Other Imports                  | 5,961.2| 14,496.5| N/A   | 16,750.8 |
| Total Imports                  | 13,551.5| 23,025.8| 24,007.0| 34,219.0 |
Trade Balance  
-13,243.5  -22,561.0  -23,451.0  -4,454.0


4.2 Exports

Despite improvement in fishery exports, ROP’s total earnings in this area remain far below its potential. Yet, large gains in earnings have been made from fish exports in spite of government’s failure to collect all that it is due. Indeed, the most important change in ROP’s external account since the First Plan has been restoration of fish exports which had dwindled to a meager level.

The restoration of ROP’s fishing export base is the clearest evidence that more can be done. As positive as this change is, however, it does not reflect adequate progress toward reaching ROP’s economic potential in fishery. During Japan’s control in 1914-45, Palau exported a variety of goods such as starch from tapioca, sweet potatoes and taro, phosphate, fish, trochus shells, turtle shells, copra and lumber. Total exports in 1937 amounted to 7.9 million yen. Fish exports, which were scuttled by the War and subsequently revived by the entry of Van Camp Seafood Company in 1964, amounted to 10,000 tons a year at a value of $3 million before the plant was shut down in 1982.

The recent recovery in fish exports notwithstanding, farming other than for subsistence was never revived after the War. Both government and entrepreneurs have attempted to attract foreign capital and modern technology for expanded wood and trochus shell production and the mining of phosphate deposits on Angaur. ROP’s government has encouraged foreign investors to explore export-oriented light industries, but the results so far have been less than satisfactory.

4.3 Imports

Commercial imports are goods for household and government consumption. Only partial data for imports by licensed importers or recorded in import taxes are available. Even those data are incomplete. Moreover, some goods are imported by mail order or hand carried into Palau.

Even then, import data tend to be more reliable than export numbers, but in the few years for which they are available, they are reported on
dissimilar bases (varying types and breakdowns), with some categories not fully documented. The result is data from which definitive statements cannot be made. Table 6.2 is an attempt to identify from 1992 data those imports which can be replaced with domestic production.

<table>
<thead>
<tr>
<th>Item</th>
<th>1983</th>
<th>1984</th>
<th>1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Products</td>
<td>1,993.6</td>
<td>2,356.1</td>
<td>2,873.7</td>
</tr>
<tr>
<td>Beverages (all types)</td>
<td>1,555.8</td>
<td>1,644.2</td>
<td>1,787.4</td>
</tr>
<tr>
<td>Wood Products</td>
<td>396.4</td>
<td>553.2</td>
<td>572.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,945.8</td>
<td>4,553.5</td>
<td>5,233.7</td>
</tr>
</tbody>
</table>


Certain imports such as oil and oil products, however, cannot be domestically produced. In 1992, over $12.5 million was spent on fuel products alone. Other large import items which may not be produced locally in the near future are construction material and personal use items, each of which consumed over $1.5 million in 1992.

Imports come primarily from the U.S. and Japan. Much of food products, clothing, building material and office supplies come from the U.S. while motor vehicles and other machinery largely come from Japan. ROP’s largest export market is Japan, followed by Guam, according to 1984 data. Nearly 60 percent of exports, including large amounts of fish, go to Japan. Exports of wood products (largely handicrafts) go mainly to the U.S.

Foreign trade data varies widely from source to source. The U.N. team estimated total imports at $36.5 million 1990, $43.0 million in 1991 and $45.0 million in 1992. It calculated total exports to be $27.5 million in 1990, $37.7 million in 1991 and $42.4 million in 1992. By the U.N. account, the trade deficit had dropped from $9 million in 1990 to $2.6 million in 1992. Since few details of ROP’s foreign trade data are supplied, the U.N. estimates leave some questions unanswered.

4.4 Invisible (Services) Trade

Data on the flow of invisible trade (services), which includes freight
cost, insurance, travel, government services and unrequited private and official transfer payments are scarce in ROP. While unrequited public transfers are documented, data for unrequited private transfers (migrants' transfers and worker remittances from overseas) are generally not.

Official unrequited transfers (grants of goods, financial resources and technical assistance) amounted to $18.4 million in 1984 and $36.6 million in 1992. Of the latter, $17.4 million went to the Government of Palau operational budget, with the remainder going to grants to the various departments of local government and public services.

More accurate and consistent are the data on tourism. Estimated total visitor revenues of $1.6 million in 1983 and $2.3 million in 1984 offered little support for the current account deficit of those years. Total revenues of $16.1 in 1992 and $18.4 million in 1993, on the other hand, have gone a long way toward reducing ROP's external account balance.

Palau's natural beauty and ocean resources offer unparalleled aesthetic values to visitors from all points. As such, tourism can play a much larger role in ROP's economic future, both as a source of income and investment to diversify the economy's productive base.

A category with growing uncertainty in the current account balances is private unrequited transfers. Neither the precise income of visiting labor nor the portion which it remits out of the country is known. This number is likely to be large, as is the level of inward remittances of the large population of Palauans living abroad. Because these data are not collected, an accurate estimates of ROP's actual current account balance remains uncertain.

4.5 Capital Account

This account, which covers requited transfers, varies greatly because of large private investment only sporadically. The $32 million credit for construction of the Aimeliik power plant, for example, caused a surplus in the 1984 capital account. It offset that year's current account deficit which was caused by importing the resources to construct the plant. Similar shifts occur as a result of large investments in major hotels and other facilities. However, because of the difficulty in defining the country's current balance and how much of that is covered by official unrequited transfers from the U.S. government, a clear measure of the capital account will seldom be possible.

PROBLEMS, ISSUES AND STRATEGIES

4.6 Data on Trade and Balance of Payments
Private imports cover most goods, but their quantities and values are not recorded consistently and completely. Records of exports are weak and may understate reality. Data on external trade and other components of the balance of payments hamper both a full understanding and the reasons for structuring this critical sector of ROP's economy.

Some imports to supplement U.S. CIP (Capital Improvement or Infrastructure Projects) and other externally-funded schemes have also gone undocumented. Exclusion of such imports, which have sometimes involved large shares of imported building materials, machinery and equipment, has resulted in understatement of the total value of imports.

Data on invisible trade are similarly scant. The absence of a central monetary or banking authority has made it difficult to collect data on invisible items such as worker remittances to and from abroad, interest income and profits of commercial banks.

Finally, the counterbalance to current goods transactions, the capital account, may remain undocumented, although monitoring by the Foreign Investment Board should mitigate the situation. Invisible and capital accounts will, because of their natures, remain imprecise in the near future. However, an effort to record transactions of goods as accurately as possible should be remedied as soon as possible to provide ROP with a clearer measure of its external balance.

4.7 Dependence on Merchandise Imports

While ROP's imbalance in physical trade is large, it should not lead to restrictive trade policies out of fears of economic domination by others or the desire for greater self-sufficiency. Service exports can offer greater consistency and security than goods exports. Also, forced domestic production of goods usually leads to economic disaster as the collapse of the former planned economies in Russia and Eastern Europe showed.

Should domestic production and the employment of local workers be threatened by predatory foreign producers, protective measures may be necessary. However, if domestic production is mandated by government because it, not the market, views local resources as being wasted, that can be prescription to economic catastrophe. To put it differently, economic nationalism is not only irrelevant, it is impractical.

ROP's Government, therefore, will seek to remedy destructive trade
conflicts and, more importantly, to assist in the local production of the nation’s needs as much as possible. In particular, better monitoring of the nation's fishery uses and expansion of tourism will be attempted with the goals of reducing dependence on foreign resources.

4.8 **Narrow Export Base**

There is a reason for concern, as expressed in the First Plan, over ROP's limited capacity to export goods from its rich but more limited resource base. But a greater worry must be not to become too dependent on one export, whether it may be physical or invisible (service) export. While ROP's recent increase in fish exports is gratifying, it should not be seen as an economic panacea. Instead, it should be seen as an indication that the same can be achieved in other areas.

In fact, it is quite useful to view the increase in fish exports as a means of diversification, rather than a new kind of economic dependence on one product. Broadening the export base must be seen as more important than success with one product. ROP's government, therefore, will adopt policies which will expand other products such as lumber, other export goods and tourism. Expanding the economy's productive capacity will not only raise national confidence, but it is the most prudent and responsible economic policy to pursue.

4.9 **Expensive and Infrequent Transport Services**

Location and its largely one-way transport pattern (imports must often bear the round-trip transport cost) is a common reason for high transport costs in small island economies such as Palau's. When coupled with the transport infrequency resulting from isolation, this additional cost must be considered in all aspects of the economy, including the feasibility of expanding exports and curtailing imports. It is only in the context of that physical and economic reality that matters of economic policy, planning and evaluation must be considered.

4.10 **Dependence on Official Unrequited Transfers**

As the experience of most developing nations has shown in the last four decades, economic independence has often been much more difficult than political independence. It is the goal of the ROP to achieve both political and economic independence through wise and careful planning.
CHAPTER 5
PUBLIC FINANCE

CURRENT SITUATION

5.1 Organization

The management of Government finances includes budget preparation, programming and execution, tax and non-tax revenue collection, utility bills collection, and accounting for revenues, obligations, assets and liabilities of the National Government. These are the responsibility of the Ministry of Administration (MOA). The execution of these fiscal and financial functions are performed by the Bureaus of National Treasury (BNT), Program, Budget and Management (BPBM) and Revenue, Customs and Taxation (BRCT).

The Bureau of National Treasury executes its finance and accounting, and treasury functions through two of its divisions, namely the Division of Finance and Accounting and the Division of Treasury. The Division of Finance and Accounting maintains accounting records of all revenues collected, financial obligations, disbursements, assets and liabilities. The Division also formulates fiscal policies, procedures and regulations for the Government, and ensures adherence to applicable laws and regulations in all financial transactions in the Government. The Division of Treasury maintains the National Government's bank checking and savings accounts. The Division is also responsible for cash management, receipts of cash payments and bank transfers, and makes all National Government's disbursements.

The Bureau of Revenue, Customs and Taxation, through its Division of Revenue and Taxation, is responsible for inspection of books and accounts of private businesses for purposes of tax assessment and enforcement. The Division is also responsible for collection of taxes, business license fees, and other revenues authorized by law.

The Bureau of Program, Budget and Management, through its Division of Management and Budget and the Division of Planning and Programming, performs the function of preparing and executing the annual Unified National Budget and advising the Government agencies on budget preparation and fiscal management matters.
5.2 The Budgetary Process

The budgetary process and the appropriation of funds for the operation of the Government administration involves the preparation of an annual Unified National Budget and the subsequent appropriation of funds by the Palau National Congress.

In accordance with the Constitution and laws of the Republic, the President of the Republic of Palau assumes responsibility for the preparation of a consolidated Unified National Budget for each fiscal year commencing October 1 and ending September 30. The process of budget preparation begins in January of each year when Government agencies prepare expenditure needs for the ensuing two fiscal years. These are submitted to the Ministry of Administration by March, when the Ministry's Bureau of Program, Budget and Management prepares a summary of the estimated expenditure needs of all the Ministries and other Government agencies. The total needs are compared to total forecasted revenues, and the Bureau recommends to the President budget adjustments as necessary to bring budget requests in accordance with total estimated revenues.

The President submits the first draft of the Budget to the National Congress not later than April 1. Upon review of the draft Budget, the National Congress enacts an Authorization Bill not later than May 5. The President submits to the National Congress, not later than July 1, legislation to appropriate funds for the Unified National Budget for the ensuing fiscal year. The President may from time to time transmit to the National Congress proposed supplemental or deficiency appropriations as may be necessary. The President may also veto or reduce an item in the Appropriation Bill and has the authority to reprogram up to 10 percent of appropriated funds from any budget activity, function, line item or object class within a given area to another.

An Appropriation Bill is required to be enacted before the commencement of the ensuing fiscal year. In the event of a failure to appropriate funds before the beginning of a fiscal year, the National Congress is then required to enact a Continuing Resolution to remain in effect until the funds are appropriated.

Under the terms of the Compact of Free Association, the Government will be allowed to request of the U.S. Congress funds for capital improvements when Compact capital funds or other sources of funds are insufficient. In addition, from time to time, Palau Government will be allowed to submit to the Department of the Interior requests for technical assistance and other grant
funds which are outside of the budget allocation to Palau.

The Government is eligible for certain Federal Program grants which are awarded to Palau directly from the grantor agencies. These Federal Program grants have been and will continue to be in addition to operations funds provided by Compact direct financial assistance.

5.3a External Grants

Table 5.1 reflects major grants received by Palau Government from external sources during the period from FY 1990 through FY 1994.

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Grants:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations Grants</td>
<td>14,321</td>
<td>16,645</td>
<td>17,429</td>
<td>17,964</td>
<td>18,464</td>
</tr>
<tr>
<td>Federal Programs</td>
<td>5,785</td>
<td>6,348</td>
<td>5,588</td>
<td>6,983</td>
<td>7,000</td>
</tr>
<tr>
<td>Technical Assistance</td>
<td>495</td>
<td>682</td>
<td>453</td>
<td>262</td>
<td>600</td>
</tr>
<tr>
<td>Capital Improvements</td>
<td>6,589</td>
<td>9,439</td>
<td>5,899</td>
<td>3,281</td>
<td>4,000</td>
</tr>
<tr>
<td>Total U.S. Grants</td>
<td>27,190</td>
<td>33,114</td>
<td>29,369</td>
<td>28,500</td>
<td>30,064</td>
</tr>
<tr>
<td>Japan Grant Aid:</td>
<td>3,185</td>
<td>3,108</td>
<td>2,869</td>
<td>0</td>
<td>5,282</td>
</tr>
<tr>
<td>TOTAL EXTERNAL GRANTS</td>
<td>30,375</td>
<td>36,222</td>
<td>32,238</td>
<td>28,500</td>
<td>36,346</td>
</tr>
</tbody>
</table>

Source: Ministry of Administration & Office of Planning and Statistics

Table 5.1 shows the amount of grants received for financing current operations and those for Federal Programs, provided by the U.S. Government and a few of its agencies, are variable from year-to-year. This is due to non-recurring grants that skew the yearly average, particularly grants for capital improvement programs. Federal Program funds are granted directly to Palau Government by a number of U.S. agency grantees. Japanese grant funds for capital improvements are deposited by the Japanese Government in a certain banking institution in Japan on behalf of the Government of Palau, and said bank will disburse such funds to pay creditors upon the instruction of Palau Government.
5.3b **External Grants for Capital Improvement Projects**

Capital improvement projects have been primarily financed through U.S. funds since the beginning of U.S. administration of the Trust Territory of the Pacific Islands. Beginning in 1983, the Japanese Government began to extend significant capital grant aid assistance to Palau Government. A table showing the amount of U.S. CIP funds and Japanese grant aid assistance received during the period FY 1990 to FY 1994 follows.

**TABLE 5.2:** Capital Grants Received Under U.S. CIP and Japan Grant Aid FY1990-FY1994 ($000)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>U.S. CIP:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water System Improv.</td>
<td>0</td>
<td>2,562</td>
<td>3,224</td>
<td>1,000</td>
<td>0</td>
</tr>
<tr>
<td>Wastewater Sys. Improv.</td>
<td>0</td>
<td>2,345</td>
<td>675</td>
<td>983</td>
<td>3,000</td>
</tr>
<tr>
<td>Power Improvements</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1,453</td>
<td>0</td>
</tr>
<tr>
<td>Schools/Facilities</td>
<td>0</td>
<td>2,752</td>
<td>0</td>
<td>385</td>
<td>0</td>
</tr>
<tr>
<td>Roads Repair</td>
<td>870</td>
<td>400</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bridge Repair</td>
<td>0</td>
<td>1,380</td>
<td>0</td>
<td>0</td>
<td>1,000</td>
</tr>
<tr>
<td>Hospital Construction</td>
<td>5,719</td>
<td>0</td>
<td>2,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>subtotal</strong></td>
<td>6,589</td>
<td>9,439</td>
<td>5,899</td>
<td>3,821</td>
<td>4,000</td>
</tr>
<tr>
<td><strong>Japan Grant Aid:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Improvements</td>
<td>3,185</td>
<td>3,108</td>
<td>2,869</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Power Improvements</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5,282</td>
</tr>
<tr>
<td><strong>subtotal</strong></td>
<td>3,185</td>
<td>3,108</td>
<td>2,869</td>
<td>0</td>
<td>5,282</td>
</tr>
<tr>
<td><strong>TOTAL CAPITAL GRANTS</strong></td>
<td>9,774</td>
<td>12,547</td>
<td>8,768</td>
<td>3,821</td>
<td>9,282</td>
</tr>
</tbody>
</table>

Sources: Min. of Resources & Development and Office of Planning & Statistics

5.3c **Local Revenue**

Table 5.3 shows the amounts of locally generated revenues from fiscal years 1990 through 1994. In FY 1993, local revenue financed about 45 percent of the total general operation (i.e., General Fund) expenditures.

**TABLE 5.3:** Local Tax and Non-Tax Revenue, FY1990-FY1994 ($000)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Taxes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary\Wages (Income)</td>
<td>2,124</td>
<td>2,480</td>
<td>2,789</td>
<td>3,060</td>
<td>3,304</td>
</tr>
<tr>
<td>Business Gross Receipts</td>
<td>2,173</td>
<td>2,836</td>
<td>3,325</td>
<td>4,194</td>
<td>5,393</td>
</tr>
<tr>
<td>General Import</td>
<td>1,863</td>
<td>2,126</td>
<td>2,351</td>
<td>2,707</td>
<td>3,071</td>
</tr>
<tr>
<td>Hotel Occupancy (Room)</td>
<td>441</td>
<td>527</td>
<td>623</td>
<td>678</td>
<td>733</td>
</tr>
<tr>
<td>Traveler's Head</td>
<td>163</td>
<td>357</td>
<td>423</td>
<td>458</td>
<td>475</td>
</tr>
<tr>
<td>Road Use/Fuel Excise</td>
<td>32</td>
<td>33</td>
<td>35</td>
<td>44</td>
<td>45</td>
</tr>
<tr>
<td>Foreign Water Vessel</td>
<td>10</td>
<td>19</td>
<td>9</td>
<td>19</td>
<td>15</td>
</tr>
<tr>
<td>Delinquencies/Penalties/</td>
<td>739</td>
<td>562</td>
<td>318</td>
<td>249</td>
<td>243</td>
</tr>
<tr>
<td><strong>Subtotal - Taxes</strong></td>
<td>7,545</td>
<td>8,940</td>
<td>9,873</td>
<td>11,409</td>
<td>13,690</td>
</tr>
<tr>
<td><strong>Licenses, Fees &amp; Permits:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Licenses</td>
<td>68</td>
<td>92</td>
<td>104</td>
<td>110</td>
<td>127</td>
</tr>
<tr>
<td>Fishing Rights Fees</td>
<td>106</td>
<td>100</td>
<td>347</td>
<td>224</td>
<td>183</td>
</tr>
<tr>
<td>Foreign Investment</td>
<td>N.A.</td>
<td>N.A.</td>
<td>219</td>
<td>458</td>
<td>336</td>
</tr>
<tr>
<td>Corporate Filing Fees</td>
<td>N.A.</td>
<td>N.A.</td>
<td>18</td>
<td>65</td>
<td>72</td>
</tr>
<tr>
<td>Airport/Port Use Fees</td>
<td>20</td>
<td>50</td>
<td>334</td>
<td>174</td>
<td>143</td>
</tr>
<tr>
<td>Other</td>
<td>280</td>
<td>535</td>
<td>286</td>
<td>348</td>
<td>117</td>
</tr>
<tr>
<td><strong>Subtotal - Licenses, etc.</strong></td>
<td>474</td>
<td>777</td>
<td>1,308</td>
<td>1,379</td>
<td>977</td>
</tr>
<tr>
<td><strong>Services, Sales &amp; Misc.:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property Rental/Sales</td>
<td>198</td>
<td>153</td>
<td>65</td>
<td>67</td>
<td>9</td>
</tr>
<tr>
<td>Interest on Investments</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>54</td>
<td>33</td>
</tr>
<tr>
<td>All Other Services, Sales,</td>
<td>13</td>
<td>4</td>
<td>108</td>
<td>393</td>
<td>42</td>
</tr>
<tr>
<td><strong>Subtotal - Services, etc.</strong></td>
<td>211</td>
<td>157</td>
<td>186</td>
<td>514</td>
<td>84</td>
</tr>
<tr>
<td><strong>Court Fees &amp; Fines</strong></td>
<td>58</td>
<td>230</td>
<td>194</td>
<td>105</td>
<td>104</td>
</tr>
<tr>
<td><strong>Postal Sales/Services:</strong></td>
<td>398</td>
<td>306</td>
<td>445</td>
<td>239</td>
<td>374</td>
</tr>
<tr>
<td><strong>HOSPITAL SERVICES:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Services</td>
<td>133</td>
<td>260</td>
<td>346</td>
<td>314</td>
<td>288</td>
</tr>
<tr>
<td>Dental Services</td>
<td>13</td>
<td>4</td>
<td>108</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td><strong>Subtotal - Hospital Serv.</strong></td>
<td>146</td>
<td>264</td>
<td>454</td>
<td>337</td>
<td>305</td>
</tr>
<tr>
<td><strong>Utilities:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The four largest income producers of local revenue are taxes on salary and wages, business gross receipts and general imports, and utility bills and collections. In FY 1993, these four sources of local revenue contributed $12.81 million or 78 percent of the total local revenue collected.

During the four-year period from FY 1990 to FY 1993, local revenue increased by 54.5 percent, from $10.62 million in FY 1990 to $16.41 million in FY 1993, an increase of 13.6 percent per annum. This increase in local revenue was primarily the result of an expansion of economic activity. This is evident in the fact that the business gross receipt tax increased from $2.17 million in FY 1990 to $4.30 million in FY 1993, a 93.1 percent overall increase, or an average increase of 23.3 percent per year.

Although utility bills collections has been steadily increasing at an average of 11.8 percent per year from FY1990 to FY1993, the revenue collected from this source has not been sufficient to even cover the cost of fuel needed for the generation of electric power needs of the country. In FY1994, a Public Utility Corporation was created, which will likely introduce an electricity rate increase(s) to be instituted over a period of time. Until the PUC becomes self-supporting, the National Government will be required to subsidize its operations with other local revenues.

Trends in both tax and non-tax revenues show that overall local revenue collections have been steadily increasing during the last five years. The trend is expected to continue, although at a lower annual percentage rate increase in total.

GOVERNMENT EXPENDITURES

5.4 Recurrent Expenditure

The Unified National Budget for each fiscal year reflects the appropriations of estimated obligations for the three Branches of the Government, for Boards, Commissions and Authorities, for block grants to the 16 State governments, and for various other subsidies and special programs.
Table 5.4 reflects the obligations for recurrent programs of the National Government for the period from FY 1990 to FY 1994.

**TABLE 5.4:** Recurrent Expenditure/Obligations of the National Government According to Program/Activity, FY1990-FY1994 ($000)

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Executive Branch:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office of the President</td>
<td>817</td>
<td>596</td>
<td>677</td>
<td>696</td>
<td>612</td>
</tr>
<tr>
<td>Office of the Vice Pres</td>
<td>405</td>
<td>436</td>
<td>297</td>
<td>339</td>
<td>351</td>
</tr>
<tr>
<td>Ministry of Admin.</td>
<td>1,092</td>
<td>1,229</td>
<td>1,447</td>
<td>1,339</td>
<td>1,487</td>
</tr>
<tr>
<td>Ministry of Education</td>
<td>3,418</td>
<td>3,517</td>
<td>3,817</td>
<td>4,113</td>
<td>4,297</td>
</tr>
<tr>
<td>Ministry of Health</td>
<td>2,472</td>
<td>2,554</td>
<td>3,610</td>
<td>4,187</td>
<td>4,290</td>
</tr>
<tr>
<td>Min. of Comm. &amp; Cult. Cultural</td>
<td>213</td>
<td>206</td>
<td>224</td>
<td>280</td>
<td>314</td>
</tr>
<tr>
<td>Ministry of Justice</td>
<td>1,338</td>
<td>1,362</td>
<td>1,656</td>
<td>1,615</td>
<td>1,889</td>
</tr>
<tr>
<td>Min.of Res.&amp; Develop</td>
<td>7,126</td>
<td>7,816</td>
<td>6,397</td>
<td>6,703</td>
<td>7,448</td>
</tr>
<tr>
<td>Min.of Commerce &amp; Trade</td>
<td>299</td>
<td>340</td>
<td>441</td>
<td>292</td>
<td>348</td>
</tr>
<tr>
<td>Ministry of State</td>
<td>855</td>
<td>844</td>
<td>1,019</td>
<td>1,135</td>
<td>1,180</td>
</tr>
<tr>
<td>Boards, Commissions &amp; Authorities</td>
<td>579</td>
<td>614</td>
<td>677</td>
<td>623</td>
<td>697</td>
</tr>
<tr>
<td>Judicial Branch</td>
<td>1,016</td>
<td>1,147</td>
<td>1,305</td>
<td>1,285</td>
<td>1,444</td>
</tr>
<tr>
<td>Legislative Branch</td>
<td>2,582</td>
<td>2,267</td>
<td>2,520</td>
<td>2,747</td>
<td>3,200</td>
</tr>
<tr>
<td>Non-Lapsing Grants &amp; Subsidies:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>3,197</td>
<td>3,123</td>
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<td>161</td>
<td>161</td>
<td>161</td>
<td>222</td>
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<tr>
<td>Micro Legal Services</td>
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<td>0</td>
<td>55</td>
<td>100</td>
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<tr>
<td>Palau Comm. College</td>
<td>0</td>
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<td>697</td>
<td>2,000</td>
</tr>
<tr>
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<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
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</tr>
<tr>
<td>Nat'l Develop. Bank</td>
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<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
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<td>50</td>
<td>60</td>
<td>65</td>
<td>50</td>
<td>89</td>
</tr>
<tr>
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<td>800</td>
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<tr>
<td>Pension Plan</td>
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<td>150</td>
<td>150</td>
<td>85</td>
<td>150</td>
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<tr>
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<td>15</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>subtotal</td>
<td>4,096</td>
<td>3,761</td>
<td>3,410</td>
<td>4,816</td>
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</table>
The total recurrent or operational expenditure increased in nominal terms at the rate of 7.4 percent per annum during FY 1990 to FY 1994. Note that certain recurrent obligations such as the IPSECO debt service and other obligations of the Government will no longer be recurrent expenditures as soon as these debts/obligations have been paid in full.

5.5 Recurrent Budgetary Expenditure Requirements of Operational Revenues During FY 1995 - FY 1999

Table 5.5 reflects the projected recurrent budgetary requirements of the National Government and the State governments during the Plan Period.

### TABLE 5.5: Recurrent Budgetary Requirements of the Government FY1995-1999 ($000)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Executive Branch:</td>
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<td></td>
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<tr>
<td>Office of the President</td>
<td>698</td>
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<td>1,993</td>
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<td>2,282</td>
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<td>Ministry of Education</td>
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<td>6,457</td>
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<td>8,540</td>
</tr>
<tr>
<td>Ministry of Health</td>
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<td>5,478</td>
<td>5,861</td>
<td>6,271</td>
</tr>
<tr>
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<td>359</td>
<td>395</td>
<td>423</td>
<td>453</td>
<td>485</td>
</tr>
<tr>
<td>Ministry of Justice</td>
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<td>2,243</td>
<td>2,400</td>
<td>2,568</td>
<td>2,748</td>
</tr>
<tr>
<td>Min. of Res. &amp; Develop.</td>
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<td>3,351</td>
<td>3,586</td>
<td>3,837</td>
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<td>Ministry of Commerce &amp; Trade</td>
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<td>529</td>
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<td>606</td>
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<tr>
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<td>1,740</td>
<td>1,862</td>
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<tr>
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<td>740</td>
<td>792</td>
<td>847</td>
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<td>Judicial Branch</td>
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<td>3,979</td>
<td>4,258</td>
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</tr>
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<td>Non-Lapsing Grants &amp; Subsidies</td>
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<td>State Block Grants</td>
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</tr>
<tr>
<td>Aid to Non-public</td>
<td>443</td>
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<td>557</td>
<td>596</td>
</tr>
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<td>Micro Legal Services</td>
<td>137</td>
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<td>125</td>
<td>125</td>
</tr>
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<td>Palau Comm. College</td>
<td>3,000</td>
<td>3,300</td>
<td>3,300</td>
<td>3,300</td>
<td>3,300</td>
</tr>
<tr>
<td>COM Board of Regents</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Nat'l Develop. Bank</td>
<td>1,050</td>
<td>1,050</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Belau Nat'l Museum</td>
<td>101</td>
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<td>119</td>
<td>127</td>
<td>136</td>
</tr>
<tr>
<td>Pension Plan</td>
<td>250</td>
<td>250</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Youth Congress</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>National Postal Service</td>
<td>205</td>
<td>227</td>
<td>243</td>
<td>260</td>
<td>278</td>
</tr>
<tr>
<td><strong>Total recurrent gen. operations</strong></td>
<td><strong>32,516</strong></td>
<td><strong>35,607</strong></td>
<td><strong>37,104</strong></td>
<td><strong>39,972</strong></td>
<td><strong>43,115</strong></td>
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</tbody>
</table>

Source: Ministry of Administration

### 5.6 Revenue Requirements for Financing the Recurrent Budget during the Plan Period

Table 5.6 reflects the anticipated revenues for financing the recurrent needs of the Government during the Plan Period, FY 1995 to FY 1999.

**TABLE 5.6:**

| Anticipated Revenues for Financing the Recurrent Budget, FY1995-FY1999 ($000) |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Local Revenues:                 |                 |                 |                 |                 |                 |
| Taxes                           | 15,252          | 17,202          | 18,062          | 18,965          | 19,913          |
| Licenses, Fees & Permits        | 1,389           | 1,480           | 1,554           | 1,632           | 1,713           |
| Court Fines & Fees              | 109             | 111             | 117             | 122             | 128             |
| Postal Sales & Services         | 412             | 454             | 477             | 500             | 525             |
| Services, Sales & Misc.         | 223             | 226             | 229             | 232             | 236             |
| Hospital Services               | 320             | 336             | 370             | 407             | 448             |
| Water Utilities                 | 87              | 95              | 100             | 105             | 110             |
| **Subtotal**                    | 17,792          | 19,904          | 20,909          | 21,963          | 23,703          |
| Compact Revenues:               |                 |                 |                 |                 |                 |
As indicated previously in this Chapter, the main local revenues are derived through business gross revenue tax, salary and wages tax and general import tax. Electric utility revenue collections will go to the newly created Public Utility Corporation (PUC) which will take over the operation of the government power system as well as the revenue derived from sales of electric energy. Accordingly, electric bills collection is not reflected in Table 5.7 above.

**PROBLEMS AND ISSUES**

5.7 **High Dependency on Non-Domestic Revenues for Government Operations**

Reliance on external current grants for the financing of Government recurrent expenditure is mainly a result of historical developments in our economy. Since the mid-sixties, grants have been provided by the Government of the United States to support the development of education and health, while little investment has been made in developing a productive, self-sustaining economic base. Expenditure in the social services sectors necessarily entails high recurrent expenditure.

5.8 **Reduction in Compact Operational Funds from the Government of the United States**

Under the terms and conditions of the Compact, funds for current operations will gradually phase out over a period of fifteen (15) years. From the sixteenth year, the Compact will cease to provide any funds to finance current operational expenditures of the Government. This financial arrangement is part of the Compact agreement in recognition of our fundamental desire to achieve self-reliance. However, to support our efforts in achieving self-reliance, the Compact will provide capital funds for economic development projects and other funds to be invested in financial assets for earning investment income to enable the financing of Government current and capital expenditure needs after the fifteenth anniversary of the Compact. The capital and investment account funds to be provided under the Compact agreement will not be sufficient to meet the growing financial needs of our
economy. Therefore, it is crucial that foreign investors be invited to invest in employment generating ventures and local private sector activities to increase income and employment in the economy. The expansion of the private sector will allow for a broader tax base which will help to generate additional tax and non-tax revenues for the Government. In FY 1993, over $7 million was granted directly by agencies of the U.S. Government to supplement budgetary needs in the health and education programs of the Government.

The U.S. Government will cease to extend educational and some other Federal grants to our Government under the Compact, but will instead provide "Program Assistance" in amounts of $4.3 million, $2.9 million and $1.5 million during the first, second and third year, respectively, of the effective date of the Compact. Such program assistance will help to sustain only three years of the existing programs currently financed by U.S. Federal Program Grants. Therefore, unless additional local revenues of approximately $7.0 million are raised annually from the fourth year after the effective date of Compact, there will be a shortage of funds to sustain the on-going health, education and social services programs under the recurrent budget.

5.9 Small Tax Base

The future reduction in U.S. grants for financing the Government's recurrent budget stresses the need to increase both tax and non-tax revenues domestically. Presently, tax revenue and non-tax revenue together finance less than 50 percent of the annual recurrent budget of the Government. Our existing structure of tax rates and bases are low compared with most developing countries. This tax burden does not reflect a true burden on the economy since our gross domestic product is significantly enhanced by infusion of current transfer grants from the United States.

Presently, the Government is considering legislation to raise local revenue through marginal increases in income tax and business tax gross revenue and higher import duties on a wide range of products. In addition, tax collection efforts have been strengthened to collect delinquent taxes. Continuous efforts are being pursued to raise local revenue, in a way not to cause adverse effects on investment, particularly the much needed foreign direct investment in the economy.

5.10 High Proportion of Government Employment

In FY 1993 a total of 1,662 persons were employed in the National Government. The average civil service employee salary was $10,515 per annum. The total compensation and benefits of all National Government employees totaled over $18 million.
The reasons for the relatively large government employment are generally salaries and wages are higher and work conditions and benefits are better in the public service than in the private sector, and there is a lack of variety of jobs available in the private sector. The Government intends to stabilize the number of employees in the public sector while promoting economic development activities that will lead to high private sector employment.

5.11 Maintenance of the Infrastructure

A large number of projects completed with U.S. capital infrastructure funds are in need of repair and maintenance. During the Plan period, the Government will undertake several such public sector development projects. Once these projects are completed, the Government will be confronted with additional recurrent expenditures for the maintenance of the resultant infrastructure.

The United States Government through its Department of Interior has been providing special Operations and Maintenance grants to meet the Government's infrastructure maintenance cost. It is expected that these funds will be phased out within the next few years.

Maintenance grants to be provided by the Compact are included in the current account portion of the Compact fund. Given the current level of regular operations of the Government, the Compact current account grants which will diminish over the first 15 years of the Compact will not be sufficient to meet additional recurrent costs from new capital projects. Additional local revenue must, therefore, be sought to meet additional operations and maintenance costs during the Plan period.

5.12 Debt Service

The IPSECO power plant debt of close to $60 million (principle plus interest) was negotiated down and settled for $20 million in FY 1993. A debt service obligation of the Government for the next seven years to fully liquidate this $20 million debt will require a recurrent financial requirement of the Government.

5.13 Inadequate Funding for and Management of Infrastructure Development

Because of the lack of local engineering and construction capability, almost all capital projects have been contracted to foreign firms which necessarily entails higher costs than if they were contracted to local firms.
is anticipated that it will take substantial time for local construction firms to build their civil, mechanical and electrical engineering capabilities.

During large construction projects, almost all skilled and semi-skilled labor and a substantial amount of construction materials and heavy equipment are imported, causing a large "leakage" of funds out of the economy. Imported materials are necessarily expensive and tend to escalate the cost of projects.

DEVELOPMENT OBJECTIVES

5.14 Financial Management and the Recurrent Fiscal Gap

In view of the need to achieve an overall sound financial planning and management, and to reduce the recurrent fiscal gap, the Government's objectives are to:

a. reduce reliance on external grants for the financing of Government regular operations by containing overall current expenditure and by increasing local revenue;

b. check any tendency for large increase in expenditure in the social services sectors;

c. strengthen the revenue collection system, and ensure that overdue accounts are brought up to date;

  d. channel incremental resources to the development of economic and infrastructure sectors;

  e. induce greater efficiency in the public services and a more cost-effective operation; and

  f. avoid securing loans from the international financial market at commercial rates of interest; instead seek soft-term development loans from multilateral development banks; and prepare an annual development budget each fiscal year for the allocation of funds to implement programs and projects contained in this Plan.

POLICIES AND STRATEGIES

5.15 Increase the Share of Local Revenue for Financing the Recurrent Budget

There will be a great need for generating substantially higher local
revenue to finance the recurrent budget. The Government will continue to examine the ways and means of increasing both tax and non-tax revenues as well as broadening the tax base.

Tax reform will be pursued in a way so as to address the national economic and social objectives, equity and economic efficiency, and in addition, to take into consideration the tax collection capability of the Administration when implementing specific tax measures. A related strategy will therefore include the strengthening of the tax collection system and enactment of legal measures against tax evasion. All Government agencies which provide services at cost to the public, such as health care, will be required to improve their service fee collection system to reduce overdue accounts.

5.16 Increase Productivity and Efficiency of Public Sector Employment and Functions

The Government will pursue major efforts in on-the-job and overseas training of Government personnel. Special emphasis will be given to training of public works and maintenance personnel in the field of equipment repair and maintenance of public infrastructure and Government facilities. Efforts will be made to improve the organizational structure of the Government and to relocate personnel within the Government administration with a view to securing an increase in labor productivity.

5.17 Seek Loans from Multilateral Financial Institutions

In view of the present debt-servicing burden of the Government and the increased difficulties in making timely repayments of debts, the Government will try to avoid establishment of lines of credit with commercial banks. If small loans are required, a careful financial cash flow of the specific loan financed project will be undertaken to determine the feasibility of meeting the debt repayment.

For large capital projects in the public sector, the Government will seek financial assistance from multilateral organizations, such as the Asian Development Bank and the World Bank, and bilateral donor countries and agencies. During the Plan period, the Government will attempt to establish membership with the Asian Development Bank and the World Bank in order to qualify for soft-term loan funds.

5.18 Annual Development Budget
An annual development budget will form the major instrument for the implementation of the programs and projects during the Plan period. The preparation and formulation of the development budget, which will mainly present yearly allocation of capital or development outlays, are further discussed in Chapter 6, Financing of the Development Plan, and the Sectoral Analysis (Part III).
CHAPTER 6
FINANCING OF THE DEVELOPMENT PLAN

INTRODUCTION

6.1 Trust Fund

A Trust Fund Advisory Board has been created by law to advise the President about management of the Trust Fund and other Compact funds which will form the major components of the National Development Fund.

6.2 Annual Development Budget

The Government operates a budgetary system in which all funds available to the Government each fiscal year are appropriated for the annual Unified National Budget. The unified budget will distinguish between the allocation of resources for recurrent expenditure items and capital/development projects. The Economic Development Plan will be the primary source of decisions for allocation of revenues, including Compact Funds, for formulation of the annual Unified National Budget.

PLANNED DEVELOPMENT EXPENDITURE ALLOCATIONS/REQUIREMENTS

6.3 Planned Public Investment Requirements

Total development funding required to finance the planned programs and projects for the public sector during the period FY1995-99 is more than $150 million. Total funding utilizing Compact Section 211() (capital infrastructure resources) amounts to $51.9 million. The total planned public investment to be undertaken during the Plan period is more than $200 million, since there will be additional investments undertaken directly by the United States Government. Such investment will be for the operation of the weather station by the U.S. Weather Service, and the relatively large capital investment involved in the construction of a road system to be undertaken by the U.S. Government as specified in the Compact. The allocation for the road system construction has not been included in the development budget because at the time of preparation of the EDP the Government of Palau has no precise knowledge of the capital cost estimate of the road system project to be constructed by the U.S. pursuant to Section 212(a) of the Compact.

Total investment in the economy during the Plan period will be augmented by private investment. Details of planned private investment are
not available,

although some planned sectoral projects specify participation of private sector investors.

6.4 Development Expenditure Allocations

The overall development funds allocation is consistent with the national development objectives and the development model adopted by the National Government. The allocations reflect the development strategy that requires the private sector to play a dominant role in productive investment and generation of employment. It is necessary that the Government provides supportive services to the private sector through provision of adequate infrastructure, such as transportation, energy and power, water and sewer, telecommunications and postal services, for inducing and sustaining private investment.

Furthermore, the sizeable allocations to health and education sectors are consonant with the need to develop our human resources which is a critical factor in the socio-economic development of the country.

a. Economic Sectors:

i. Tourism

Most, if not all, of the Capital Infrastructure Projects to be undertaken during the Plan period will have a direct and positive effect on tourism. Better roads, docks and communications make Palau more accessible as a tourist destination, safer drinking water and sanitation makes Palau more desirable as a tourist destination and improvements in the electrical system will bring Palau the reliable electricity international travelers expect in a developed nation. Perhaps more importantly for tourism is that these infrastructure developments will lay a strong foundation for future tourist facilities such as hotels, marinas, etc.

ii. Marine Resources

Planned investment in Marine Resources accounts for 20.9 per cent of the economic sectors' development allocation. Much of the Government support for this sector will be in the form of pilot projects, and research projects geared toward the development of marine resources. The Government anticipates significant inflow of private investment in deep sea and mariculture and aquaculture fisheries.
iii. Commerce, Industry and Finance

The Commerce, Industry and Finance sector has been allocated a small amount of public investment ($20,000) because the private sector is expected to play a dominant role in industrial and commercial activities. Government allocation to industry and commerce is for undertaking project feasibility studies useful to private entrepreneurs in making decisions on investment/project undertakings. Through the National Development Bank of Palau (NDBP), Government will provide financial support in the form of concessional loans to qualified private entrepreneurs to induce greater investment in priority economic activities, such as agriculture, industry, fishing and tourism. The planned allocation to NDBP is $4.35 million, which represents almost 48.2 per cent of the economic sectors development allocation.

iv. Agriculture

Planned investment in agricultural development requires $1.44 million. The allocation in the first two years is higher than in the latter part of the Plan period to stimulate individual farmers participation in agricultural production. One of the major constraints in the development of the sector is the lack of incentive of the labor force to undertake farming activities. The Government will carefully evaluate and monitor the responses to its investment in agriculture development during the first Plan period to ensure that the investment results in more food production.

v. Mineral Resources

Our mineral resources base is limited, but the Government views with importance private initiatives to revive commercial mining of phosphate and bauxite. Government will develop an appropriate mining code for regulation of mining operations, to protect the landowners and to ensure maximization of income to local entrepreneurs who must seek joint ventures with foreign companies to provide the needed technology and investment funds for mining operations. Planned expenditure on mineral resources to be borne by the Government is accordingly low ($325,000), and will be mainly devoted to formulating appropriate legislation on mining operations.

b. Infrastructure Sectors

Five year planned allocations to infrastructure sectors amount to $159.3 million. This substantial planned investment in infrastructure development is a result of both the high capital cost of infrastructural projects and the Government's commitment to develop an adequate infrastructural base to
support other economic activities to be undertaken primarily by the private sector. Table 6.1 shows these allocations to infrastructure sectors.
i. **Transportation**

The development allocation to transportation accounts for the largest share, $422 million or 26.5 per cent of the total infrastructure sectors' allocation. This share would be higher if investment in the road system planned to be undertaken directly by the United States Government was to be included. Much of the Government's investment in transportation infrastructure is for the development of sea transportation, especially to facilitate linkages of the outer islands to Koror.

ii. **Telecommunications**

Telecommunications services will be financed primarily from a long-term loan of up to $39 million from the U.S. Rural Electrification Administration. Additional funds will be contributed in later years from Palau Communications Corporation's retained earnings. The total estimated allocation is $41.4 million or 26.0 percent of the total allocation.

iii. **Energy**

Energy is a significant infrastructural sector in terms of development allocations for projects. The energy sector's investment allocation amounts to $23.3 million or 14.0 percent of total planned allocation to infrastructure sectors. The planned investment in energy is larger in the last three years of the Plan period to meet the large capital expenses required for the installation of electricity transmission lines on Babeldaob. Energy developments in other States not connected to the central power system have also been given importance. The debt servicing for the Aimeliik power plant is not included in the energy sector as it is anticipated that revenue from the sales of electric power will be used for servicing the debt on a long-term basis.

iv. **Water Supply**

The water supply sector's investment share is $8.9 million or 5.6 percent of the total allocation. During the Plan period, the funds will be used to construct rural water systems as well as upgrade and expand existing water facilities in Koror and Airai.

v. **Wastewater and Solid Wastes Disposal**

The Wastewater and Solid Waste Disposal sector's share of the total allocation is $5.5 million, or 3.5%. The funds will be used mainly to improve the existing sewage collection system and to facilitate construction of rural sewer systems. A new national dump site will also be constructed.
vi. **Government Facilities**

The total allocation to this sector is $38.95 million during the Plan period. The investment share of the Government facilities will increase significantly during the Plan period when construction of the new capital will be underway.

c. **Services Sectors**

i. **Environmental and Pollution Control**

This sector’s direct development allocation is negligible, mainly because it involves allocation to the Palau Environment and Quality Protection Board (PEQPB) which because of the nature of its functions will incur mainly recurrent expenditure. Allocations to environmental and pollution control measures are also included in sanitation and health programs executed by the Bureau of Health Services and development of sewer facilities by the Division of Public Works, and are considered a component of other construction project where applicable.

ii. **Health Services**

Health services will continue to account for the second largest share of the total operating allocations made to the social sectors. It is expected that many health programs which entail recurrent budgetary expenses will continue to be provided by U.S. Public Health Services grants. Substantial development allocations will be made so that there will be at least one fully equipped medical clinic\dispensary with appropriate medical staff in every State. Also planned is one larger medical clinic facility located centrally in Babeldaob.

iii. **Education**

The Education sector requires the largest portion of the social sectors’ total development allocation. Almost $800,000 is allocated annually for food services. The source of funds for this component of expenditure has yet to be identified. As with the health sector, the education sector provides for programs which entail large recurrent costs reflected in the recurrent budget of the sector. Moreover, State plans are expected to contain projects such as upgrading and extension of elementary school buildings located in each State. This will entail additional development allocation for the education sector from the third year of the Plan period.

6.5 **Sources of Infrastructure Development Funding**
The Government of Palau will necessarily rely heavily on external sources of funds for the financing of the infrastructure development projects. In particular, much reliance will be made on the Compact funds to be provided by the United States Government in accordance with the Compact agreement and other U.S. Government grants provided to Palau prior to the effective date of the Compact. The other major source of funding will be the Government of Japan which has been providing a sizeable amount of capital grants in recent years. The rest of the funding requirements are expected to be provided by the donor countries, notably the Government of the Republic of China (Taiwan) and donor agencies such as the agencies of the United Nations. A very small amount of local revenue will be available for funding development projects, but the Government expects to increase the share of local revenue in funding development projects during the Plan period.

6.6  Compact Funding

Compact funds are available for general operations, special program assistance, energy assistance, capital improvements, and a trust fund. The total amount of these funds to be utilized during the Plan period will range between $188.8 million and $214.2 million. The lower range will occur if the Compact energy assistance (production) funds are allocated over a period of fourteen years, i.e., beyond the Plan period. The higher range will occur if the use of the energy assistance funds is accelerated to utilize the full amount within the Plan period. The amounts given include the inflation adjustment provided by Section 215 of the Compact.

During the Plan period, at least $107.6 million of Compact assistance will be used for operations. This includes the amounts of $88.9 and $18.7 million available for current operations and special program assistance, respectively. At least $51.9 million will be used for capital infrastructure projects. Between $14.9 million and $40.3 million of energy production funds (as adjusted) will be allocated. Neither the specific breakdown of the use of these funds for capital projects and operations nor the timing of the allocation of funds has yet been determined. The Compact amount of $5.5 million for military options (defense impact) will become available in year two of the Compact period, and the use has not yet been determined. The amount of trust funds to be distributed during the Plan period will range from $0 to $5.0 million, depending on need and investment earnings. The use of energy production, military options, and trust funds is further explained later in this chapter.

a.  Compact Operating Funds
Compact funds are available for meeting the recurrent budgetary expenses of the Government, as well as financing EDP projects over the period FY1995-99. Brief descriptions of the various Compact funds follow. Table 6.2 summarizes the amount of Compact funds available. The table assumes that the amount of energy production funds to be available will be an even $2.0 million, plus inflation adjustment, annually.
table 6.2
i. **Section 211(a) Compact Fund**

This is the largest source of fund available for the current operations of the Government administration, and as such are allocated to the recurrent budget of the Government. The amount of $55.0 million, plus an adjustment for inflation, will be available during the Plan period.

ii. **Section 211(b) Compact Fund**

Funds available under Section 211(b) Compact grant assistance will assist in the development of the energy sector, in particular to achieve self-sufficiency in energy production. A related item involves allocation of a minimum of $500,000 per annum for energy developments in those areas of Palau not served by the central power generating plant.

Under this funding category $10.0 million will be utilized for the financing of the identified projects in the energy sector over the period FY1995-FY1999, if the funding is to be provided over a fourteen (14) year period. The amount of $7.0 million is earmarked for financing energy projects in the States outside the central power system. The rest of the available funds under Section 211(b) and the corresponding adjustment will be allotted to a variety of energy and other projects.

iii. **Section 211(c) Compact Fund**

Funds available under Section 211(c) are for the development of outer-States telecommunications systems and other purposes. Total utilization of the fund during the Plan period will amount to $2.25 million, plus inflation adjustment.

iv. **Section 211(d) Health, Scholarships, Marine Surveillance Compact Funds**

Section 211(d) Compact funds are tied to three functions/sectoral activities, specifically marine surveillance and enforcement, health and medical referrals, and scholarships to students intending to pursue post-secondary education. The total amount to be utilized for these purposes during the Plan period is $3.2 million.

v. **Section 211(e) Marine Surveillance Compact Funds**

Compact Section 211(e) fund ($0.67 million) is tied to the start-up expenditures for marine surveillance, and is accordingly included in Marine Law Enforcement Division budget of the Public Safety sector for operations.
and other purposes.

vi. **Section 212(a) Road System Compact Fund**

Compact grant assistance under Section 212(a) is for the construction of a road system which will be undertaken directly by the United States Government. Such a project will necessarily be of development nature, but the non-availability of precise information about the actual mileage of the road system and the associated capital cost does not enable the Government to make specific allocations of Section 212(a) fund for the development budget of the transportation sector.

vii. **Section 213 Compact Fund**

This a special category of Compact fund available to Palau for compensation as a result of potential U.S. military activities in Palau. Total availability of funds under Section 213 is $5.5 million in FY 1996, and their development allocations will be made when the use of the funds is determined. In the meantime the funds will be invested.

viii. **Section 221(b) Health and Education Compact Fund**

There are two components of funding available under Section 221(b) Compact Program Assistance which are tied to health services and education. The first component or Section 221(b) provides for an annual grant of $2.0 million during the first 15 years of the Compact; and the second grant component comprises of $4.3 million, $2.0 million and $1.5 million during the first 3 years, respectively, of the effective date of the Compact.

Section 221(b) funds will be utilized largely for financing the recurrent budgetary requirements of the Ministry of Education and the Ministry of Health.

ix. **Section 221(c) Compact Fund**

Funds from this Compact section are in the form of assistance that the United States Government shall make available to Palau for such alternate energy development projects, studies and conservation measures as are applicable to the TTPI on the day preceding the effective date of the Compact. Hard dollars are not provided.

x. **Section 223 Compact Fund**
This is basically a post-secondary scholarship fund to be provided to those students who are already in receipt of scholarship funds for post-secondary institutions in the United States prior to the effective date of the Compact.

The fund will enable such students to continue their higher education, but will be provided for a maximum period of four years. No separate allocations of this fund have been shown in the five year development budget, but it is assumed that eligible students will continue to receive scholarship funds as specified under Section 223.

b. **Compact Capital Improvements Project Fund**

Section 212(b) Compact funds are available to the Government for projects to be determined by the Government. The Compact Capital Improvements fund 212(b) is the most significant of the Compact funds in terms of total impact on economic development. The planned use of these funds is shown on Table 6.3 following.

<table>
<thead>
<tr>
<th>TABLE 6.3: Planned Allocation of Compact Capital Account Funds for Infrastructure Development Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrastructure Sector/Project</td>
</tr>
<tr>
<td>Transportation:</td>
</tr>
<tr>
<td>Natl Roads Repair/Maint Office/Asphalt Plant</td>
</tr>
<tr>
<td>New Airport Terminal Construction</td>
</tr>
<tr>
<td>Energy:</td>
</tr>
<tr>
<td>Natl Power Plants Rehabilitation</td>
</tr>
<tr>
<td>Water Supply</td>
</tr>
<tr>
<td>Natl Water Systems Improvements</td>
</tr>
<tr>
<td>Wastewater &amp; Solid Waste Disposal:</td>
</tr>
<tr>
<td>Sewage Collection Systems Improvements</td>
</tr>
<tr>
<td>Government Facilities:</td>
</tr>
<tr>
<td>National Gymnasium &amp; Sports Facilities</td>
</tr>
<tr>
<td>Education Facilities</td>
</tr>
<tr>
<td>Health Facilities</td>
</tr>
<tr>
<td>State Projects</td>
</tr>
<tr>
<td>National Capital Construction Phase I</td>
</tr>
</tbody>
</table>

1/ All funds to be allocated in the first year of the Plan

c. **Compact Trust Fund**

Section 211(f) of the Compact provides an investment fund to the Government in the amount of $66.0 million in the first year and an additional
$4.0 in the fourth year of the effective date of the Compact. The Government of Palau is required to invest this fund in a qualified financial instrument of U.S. nationality, and from the fifth year of the effective date of the Compact a minimum $5.0 million may be withdrawn to finance Governments' recurrent budget while a corresponding amount is reduced under Section 211(a) grant assistance from the fifth year of the Compact.

The investment fund under Section 211(f) is a significant asset for the Republic which will be required for financing Government expenditure from the sixteenth year of the Compact when almost all other Compact funds will cease to be available to the Government. In fact, the plan of the investment grant is to produce an annual average distribution of $15.0 million commencing on the sixteenth year of the Compact for the following 35 years.

No allocation to the FY1995-FY1999 development budget has been made out of the investment fund, although $5.0 million will be utilized from the fifth year of the Compact financing of the recurrent budget.

d. Other Compact Funds as Available under Sections 214; 221(a) and 222

Section 214 funds are those which were obligated to the Government of Palau following appropriation to the TTPI government. All such funds for Palau have been expended with the exception of $2.6 million remaining available for the national Capital Relocation project.

Section 221(a) funds are for specific activities undertaken directly by the U.S. Government, such as the weather station in Palau operated by the U.S. Weather Service, reciprocal use of the U.S. Postal system, and the services and related programs of the Federal Aviation Administration and the U.S. Civil Aeronautics Board.

Section 222 Compact Program Assistance provides for the Government of Palau to seek technical assistance, from time to time, from the United States Government Federal agencies. Technical assistance is not expected in terms of cash grants.

6.7 Other Grants from U.S. Government

During the initial years of the Plan period funds provided through the U.S. DOI technical assistance program, U.S. Federal Program and U.S. CIP will continue to be available for the financing of the recurrent budget and capital projects, since such grants would have been earmarked for the Government of Palau prior to the effective date of the Compact agreement.
a. **U.S. DOI Assistance**

The Government has received significant amounts of dollars and projects from U.S. DOI Office of Territorial and International Affairs technical assistance and capital improvements funds, and expects to continue to receive such funds after Compact implementation. No allocation plan has been devised for these funds yet due to the high uncertainty of amounts available and the fact that by their nature, they will generally provide assistance for unplanned and/or unfunded programs and projects.

b. **U.S. Federal Programs**

U.S. Federal Program grants have been provided to the Government of Palau for activities and programs in the social sectors, notably health services and education. Numerous Federal Program grants will be terminated at the effective date of the Compact, while others will be phased out over a three fiscal year period. To replace funds lost from immediate termination and phasing out of grants, Section 221(b) of the Compact provides the amounts of $4.3 million, $2.9 million and $1.5 million during the three years following the first year of the Compact. These funds are substantially less, cumulatively, than the total amount of funds that will be lost through termination of grants.

These funds are in addition to $2.0 million to be made available for financing health services and education programs and activities. Given the present level of expenditures in health services and education, the $2.0 million will only provide a small portion (<15%) of the operating budgets for health and education activities, including those activities that are now grant funded but will require funding takeover by the National Government.

6.8 **Japan Grant Aid**

Next to the United States, our major donor country is Japan. During the last approximately ten years the Government of Japan has been providing capital to assist our efforts in developing a sound infrastructural base upon which the economy can be developed. The Government of Palau will continue close ties with Japan during the Plan years and beyond, and will seek greater economic/capital assistance to augment our much needed capital grants for public investments in infrastructure and economic production sector projects. During the Plan period the National Government anticipates $24.9 million worth of capital assistance/grants from Japan, with greater amounts from the third year of the Plan period, primarily for the development of energy and marine resources.

6.9 **Other Foreign Assistance**
The Government has been receiving grants for development purposes from other donor countries. Increased assistance from other donor countries will be pursued during the Plan period in order to finance viable development programs and projects.

6.10 Other Donor Agencies

It is anticipated that various agencies of the United Nations and other non-government foreign organizations such as the South Pacific Commission, the Forum Fisheries Agency, and the Asian Development Bank will provide development assistance, primarily in the form of technical assistance. The Government anticipates contributions from these organizations during the Plan period for human resource development and planning/technical studies projects.

PROBLEMS AND ISSUES

The major problems and issues associated with the financing the Economic Development Plan are noted below.

6.11 Funds for Infrastructure Projects Not Secured

Approximately $64.3 million still needs to be fully secured to finance the planned projects. The infrastructure projects for which funds have not been fully secured are in the second through the fifth year of the Plan. Tentative sources have been identified as Japan grant aid--$24.9 million, private corporation(s)--$2.5 million, U.S. Federal grants--$2.0 million, and local revenues or to be determined--$35.0 million.

6.12 Maintenance and Operations Costs of New Infrastructure

Because of the large scale public investment in infrastructural and other economic development projects, there will be a substantial recurrent maintenance and operations cost implications of these capital projects. Thus the budget in the second five year Plan period must allow sufficient funds necessary to maintain and sustain proper operations and maintenance of the capital projects completed under the first 5-year Plan. In view of the recurrent cost implications of capital projects, the Government will have to ensure adequate availability of locally mobilized financial resources during the second five year Plan period.

6.13 Cost Escalations and Planning Capability

Cost escalations for some of the capital investment projects may result
from increases in the prices of construction materials and equipment and also due to adjustments which may be necessary in the project design. The Plan has provided for flexibility by introducing an annual development budget to reflect any revision in project cost estimates. For large scale capital projects, the cost escalation factor may require substantial upward revision of the project budget and may result in serious shortfall of funds. Under such circumstances there is clearly a need to review project cost on a regular basis, and prioritized projects at the sectoral levels each year to account for the availability of funds.

6.14 Economic Impact of Public Investment Projects

Due to inadequate statistical estimates of capital to labor ratios at project or sectoral levels, it is difficult to estimate the additional labor force that will be required for the implementation of capital projects during the Plan period. This has handicapped development planning efforts since there is need to account for the economic impact of investment projects such that income and employment are maximized for the local labor force, and that employment of foreign labor is kept at a minimum.

DEVELOPMENT OBJECTIVES

6.15 Statement of Development Objectives

Government's development objectives pertaining to Plan financing will be to mobilize financial and capital resources needed to finance well-designed and viable development programs and projects, which will ensure growth and development in the economy and increased welfare of the citizens.

POLICIES AND STRATEGIES

In order to achieve the development objectives and to ease the problems and constraints relating to development financing, the Government will pursue the following policies and strategies.

6.16 Seek Additional External Grants from Donor Countries

Approximately $64 million additional funds are required to finance the full range of development programs and projects identified for implementation during the first Plan period, since local resources will not be available to meet this funding gap. The Government will seek grant assistance from donor countries, particularly Japan.

6.17 Secure Contributions from Beneficiaries of Programs and Projects
Provisions will be made to increase contributions from beneficiaries of social services, particularly health and education related programs. The Health Services sector plan stresses the high cost of medical referrals which entail large budgetary expenditures of the Government. In order to reduce expenses on the medical referrals program, greater efforts will be made to recover the medical costs from the patient. The continuation of the food service program in the education sector will be pursued within the framework of parental/guardian's contribution to the program's budget.

6.18 Increase Local Revenue to Finance Additional Recurrent Expenditure

The completion of public sector capital investment projects, particularly those in the infrastructure sector, will entail increased recurrent expenses for their operation and maintenance. To finance these recurrent expenses additional local revenues will be mobilized through appropriate tax and non-tax measures. In addition, subsidies to the energy sector will be reduced by restructuring user charges for electricity consumption, and strengthening the utility bills collection measures. These aspects of resource mobilization and expenditure controls are treated in Chapter 4 of this Plan document.

6.19 Enhance Project Planning Procedure

All sectoral projects, particularly those of infrastructural nature, must be under continuous review to account for any revision in their designs and costs so as to ensure their successful implementation. Sectoral agencies will be required to implement detailed procedures to monitor and evaluate project implementation, and to minimize project cost escalation.

6.20 Encourage Greater Participation of Local Labor Force

The existing high level of unemployment estimated at approximately 7.2 per cent of the labor force must be reduced during the Plan period. The scope for employment generation will be substantial with the large-scale public investment to be made under the Plan. The local labor force will be encouraged to participate fully in the economic development activities, although there will be a need to employ some foreign labor because of the lack of specific skills among the local labor force. It is expected that the manpower development programs to be sponsored by the Government (see Chapter 7) will enable greater numbers of the local labor force to be employed. It is through greater participation of the local labor force in economic development activities that we will derive the maximum benefit from investment in the economy.
CHAPTER 7

POPULATION, EMPLOYMENT AND MANPOWER DEVELOPMENT

CURRENT SITUATION

This chapter considers the current demographic situation in the Republic of Palau, looking at the age and sex distribution and current migration patterns, and their impact on the current and potential labor patterns in the republic.

A. POPULATION

7.1 Population Statistics

The 1990 Census indicated a population of 15,122, the largest enumerated population of the Republic of Palau to date. The population increased at about 2.4 percent per year during the 1980's, the fastest rate of growth since the 1960's. In the 1950's, the population grew by about 3.1 percent per year, and in the 1960's, by about 2.5 per cent per year. The growth rate further declined in the 1970's to the extent that between 1973 and 1980 the population actually decreased by 0.6 percent per year, mainly due to net out-migration and decline in birth rates.

TABLE 7.1: Total Population for Selected Census Years

<table>
<thead>
<tr>
<th>Census Year</th>
<th>Total Population</th>
<th>Population Change</th>
<th>Annual Growth Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958</td>
<td>8,884</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1967</td>
<td>11,365</td>
<td>2,481</td>
<td>2.7%</td>
</tr>
<tr>
<td>1970</td>
<td>12,015</td>
<td>650</td>
<td>1.9%</td>
</tr>
<tr>
<td>1973</td>
<td>12,673</td>
<td>658</td>
<td>1.8%</td>
</tr>
<tr>
<td>1980</td>
<td>12,116</td>
<td>(557)</td>
<td>(0.6)%</td>
</tr>
<tr>
<td>1986</td>
<td>13,772</td>
<td>1,656</td>
<td>2.3%</td>
</tr>
<tr>
<td>1990</td>
<td>15,112</td>
<td>1,340</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

Source: Abstract of Statistics, Office of Planning and Statistics

A population Census taken by the Office of Planning and Statistics in
1986 showed a population of 13,772, of which 1,528 (11.1 percent) were foreigners. The estimates of the 1986 Census suggest an average population growth rate of 0.7 percent over the period 1973-1986.

The 1990 Census counted 15,122 persons, with 8,139 males and 6,983 females. Palau had about 117 males for every 100 females, largely because of selective migration, both of foreigners coming to Palau, and of Palauans moving out. The median age was 25.7 years, the median being the midpoint, with half the population being older and half being younger. This median age is fairly high for the Pacific Islands, but about 8 years younger than the U.S. population at that time.

The crude birth rate in 1990 was about 22 per thousand, compared to about 32-35 per thousand around 1970. This decline in the birthrate is considered a consequence of the impact of the family planning program that was started in 1974, as well as of the increased out-migration. Given the current death rate of about 7 per thousand, the annual rate of natural increase was about 14 per 1000 about 1990. The net in-migration rate was about 18.5 per 1000, making the actual growth rate (including migration) approximately 3.3 percent per year.

About 30 percent of Palau's population in 1990 was less than 15 years old, down from about 40 percent in 1980 and 45 percent in 1973. For planning purposes, this decline in the age-group 0-14 years, both relatively and absolutely, has implications in terms of quantitative requirements for health, education, training and employment (see section on labor force below).
increases, the likelihood of error similarly increases, for the assumptions on
which the calculations are based may not hold for long periods. Ultimately,
the accuracy of population estimates or projections tends to depend more on
the extent to which underlying assumptions prove correct than the level of
sophistication of the method used to compute the figures.

7.3 Projection Method

The Center for International Research at the U.S. Bureau of Census has
developed a computer program called Rural Urban Projections (RUP) to project
populations for countries around the world.

The features of the RUP program used for the population projections in
this chapter include the following:

a. The program produces projections by single years of age. In the
   projections prepared here, data on single years of age by sex collected by the
   1990 census (see U.S. Bureau of the Census, 1992c, Table 8) is used.

b. The program produces annual projections. This feature enables
   imputing information on demographic events for a particular year (e.g., excess
   mortality due to a typhoon or tidal wave) without spreading the effect over a
   five-year period.

c. In addition to accepting mortality and fertility rates as input (as do
   most programs), the RUP program also allows the input of numbers of births,
   deaths, or migrants. This feature enables updating a base population with
   recent actual data on vital events.

d. The program provides output of a wide variety of demographic
   measures for any specified year of the projection. These outputs include:

   i. Population by age and sex (single years, five-year age groups,
      special groups) and summary measures of age (e.g., percentages, sex ratios,
      median ages, dependency ratios);

   ii. Summary rates (e.g., crude birth rates, life expectancy, infant
       mortality rates, and total fertility rates);

   iii. Life tables;

   iv. Net numbers of migrants or migration rates by age and sex;

   v. Number of deaths, by age and sex; and
vi. Number of births, by age of mother, and age-specific fertility rates.

7.4 Analysis of Population Projections

The population dynamics of Palau recently have been quite volatile, particularly in the area of migration. Although the population remained around 12,000 persons for more than a decade, immigration has caused fairly rapid growth in recent years, to more than 13,000 in 1986 and more than 15,000 in 1990. Almost all of the population increase was due to net immigration. Although Palauans continued to leave Palau, these emigrants were more than offset by other people, primarily Asians (mostly from the Philippines), moving to the Republic to live and work.

Similarly, fertility continues to decrease, although the exact extent of the continued decrease is unknown. The current total fertility rate (TFR) of 2.8 children is one of the lowest in the Pacific. It is unknown whether the Asian immigrants have lower or higher fertility than the Palauans, nor is it known whether the level of fertility for the immigrants continues after arriving in Palau.

Certain, simple assumptions for projections are made, namely that 1990 fertility, mortality, and migration trends in Palau will continue. The current rates for fertility and mortality are continued over time and as well as the current numbers for net immigration, all by age and sex.

Table 7.2 summarizes birth and date rates. The crude birth rate of 22 per 1,000 persons reflects the current low fertility in Palau, and the death rate of 7 per 1,000 persons also is low. These levels of fertility and mortality produce a natural growth rate of 1.5 percent in 1990, a doubling time of around 50 years. In conjunction with the effects of net immigration--19 per 1000 persons--the actual growth rate was 3.3 percent in 1990.

TABLE 7.2:

<table>
<thead>
<tr>
<th>Item</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Birth Rate (per 1,000)</td>
<td>22.02</td>
</tr>
<tr>
<td>Crude Death Rate (per 1,000)</td>
<td>7.14</td>
</tr>
<tr>
<td>Net Migration Rate (Per 1,000)</td>
<td>18.52</td>
</tr>
<tr>
<td>Rate of Natural Increase (Percent)</td>
<td>1.49%</td>
</tr>
<tr>
<td>Growth Rate (Percent)</td>
<td>3.34%</td>
</tr>
</tbody>
</table>

Sources: Chapters 6, 7, and 8 of the 1990 Census monograph
### TABLE 7.3:
Age-specific and Total Fertility Rates for Projections

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Age-specific fertility rate</th>
<th>Births</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 to 19 years</td>
<td>45.0</td>
<td>30</td>
</tr>
<tr>
<td>20 to 24 years</td>
<td>151.8</td>
<td>91</td>
</tr>
<tr>
<td>25 to 29 years</td>
<td>185.8</td>
<td>113</td>
</tr>
<tr>
<td>30 to 34 years</td>
<td>110.9</td>
<td>63</td>
</tr>
<tr>
<td>35 to 39 years</td>
<td>53.9</td>
<td>28</td>
</tr>
<tr>
<td>40 to 44 years</td>
<td>20.0</td>
<td>7</td>
</tr>
<tr>
<td>45 to 49 years</td>
<td>2.0</td>
<td>1</td>
</tr>
<tr>
<td>Total Fertility Rate (TFR)</td>
<td>2.847</td>
<td>...</td>
</tr>
</tbody>
</table>

Source: Chapter 6 of the 1990 Census monograph
Notes: Age Specific Rates are per 1000 women; TFR is per woman

The age-specific fertility rates used in the projections were derived from the vital registration data (for the numerators) and the 1990 census results (for denominators).

Age-specific death rates used in the population projections were derived from registered deaths by age (for the numerators) and the 1990 census results (for denominators). The estimated life expectancy at birth at about 69 years for both sexes combined. This level probably is higher than the actual life expectancy in the Republic. It is unlikely that registered deaths include all deaths of Palauans, particularly those leaving the Republic for medical attention and dying elsewhere.

Infant mortality for the purposes of the RUP program was measured at 25 per 1,000 live births, or 2.5 percent of live babies dying before the end of their first year of life. This rate was held constant throughout the RUP runs.

Migration was indirectly estimated. Obtaining information on immigrants was fairly straightforward. The method chosen was to use the number of persons not living in Palau in 1985, but enumerated in the census in 1990. For example, Table 7.4 shows 1,486 males who lived outside Palau in 1985 but lived in Palau in 1990. Some of these individuals might have been Palau-born persons who left Palau and were outside the Republic in 1985, but had returned by 1990. On the other hand, it was assumed that approximately an equal number of non-Palauans to have been in Palau in 1985, but left Palau by 1990.
TABLE 7.4:  
Migration Between 1985 and 1990 of Palau-born to Guam and CNMI and from Outside to Palau: 1990

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total</th>
<th>Per Yr</th>
<th>In-Migrant</th>
<th>Total</th>
<th>Guam</th>
<th>CNMI</th>
</tr>
</thead>
<tbody>
<tr>
<td>total</td>
<td>1,390</td>
<td>278</td>
<td>2,292</td>
<td>902</td>
<td>354</td>
<td>548</td>
</tr>
<tr>
<td>5 to 9 yrs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 to 14 yrs</td>
<td>(21)</td>
<td>(3)</td>
<td>56</td>
<td>77</td>
<td>12</td>
<td>65</td>
</tr>
<tr>
<td>15 to 19 yrs</td>
<td>(73)</td>
<td>(15)</td>
<td>89</td>
<td>162</td>
<td>67</td>
<td>95</td>
</tr>
<tr>
<td>20 to 24 yrs</td>
<td>188</td>
<td>37</td>
<td>423</td>
<td>235</td>
<td>113</td>
<td>122</td>
</tr>
<tr>
<td>25 to 29 yrs</td>
<td>277</td>
<td>55</td>
<td>420</td>
<td>143</td>
<td>53</td>
<td>90</td>
</tr>
<tr>
<td>30 to 34 yrs</td>
<td>342</td>
<td>69</td>
<td>408</td>
<td>66</td>
<td>19</td>
<td>47</td>
</tr>
<tr>
<td>35 to 39 yrs</td>
<td>302</td>
<td>61</td>
<td>360</td>
<td>58</td>
<td>21</td>
<td>37</td>
</tr>
<tr>
<td>40 to 49 yrs</td>
<td>176</td>
<td>35</td>
<td>218</td>
<td>42</td>
<td>16</td>
<td>24</td>
</tr>
<tr>
<td>45 to 49 yrs</td>
<td>95</td>
<td>19</td>
<td>124</td>
<td>29</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>50 to 54 yrs</td>
<td>62</td>
<td>12</td>
<td>69</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>55 to 59 yrs</td>
<td>4</td>
<td>6</td>
<td>31</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>60 to 64 yrs</td>
<td>43</td>
<td>0</td>
<td>13</td>
<td>10</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>65 to 69 yrs</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>70 to 74 yrs</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>75 yrs &amp; up</td>
<td>(7)</td>
<td>(1)</td>
<td>2</td>
<td>9</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Sources: U.S Bureau of the Census, 1992a, Table 38; 1992b, Table 38; 1992c, Table 38.

The components of population change by sex for population projection purposes is shown in Table 7.5 following.

TABLE 7.5: Components of Annual Population Change by Sex For Population Projections
The estimated population for Palau in 1991 was 15,625 persons. In addition to presenting total populations, the projection table above also shows the 333 births, 108 deaths, 280 net in-migrants, and the rates associated with each of these components of population change based on the mid-year populations. As the population changes with time, fertility and mortality also change, with the former decreasing slightly and the latter increasing as the population ages. The rate of in-migration decreases considerably over time because net migration was fixed at 280 persons per year.

Using these birth, death, and migration rates, the population of Palau will double during the 30-year projection period to about 30,300 persons in 2020. Births increase to more than 500 per year, although the rate drops to 17 per 1,000 persons. Deaths increase to more than 320 per year, the crude death rate increases slightly to about 11 per 1,000 persons. Holding migration at 280 per year causes the rate of in-migration to decrease to roughly 9 immigrants per 1,000 inhabitants in the Republic by 2020. The population growth rate decreases to about 1.5 percent per year at the end of the 30-year projection series.

### Table 7.6:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Midyear Population</th>
<th>Growth Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>15,122</td>
<td>3.340%</td>
</tr>
<tr>
<td>1991</td>
<td>15,625</td>
<td>3.213%</td>
</tr>
<tr>
<td>1992</td>
<td>16,130</td>
<td>3.156%</td>
</tr>
<tr>
<td>1993</td>
<td>16,642</td>
<td>3.089%</td>
</tr>
<tr>
<td>1994</td>
<td>17,158</td>
<td>3.025%</td>
</tr>
</tbody>
</table>
Table 7.7 shows the population distribution for the base year (1990) of the population projection. About 10 percent of the population was aged less than five years and slightly more than 30 percent was aged less than fifteen years. At the other end of the age distribution, about 6 percent of the population was sixty-five years and over. Finally, about 117 males resided in Palau in 1990 for every 100 females.

<table>
<thead>
<tr>
<th></th>
<th>Total No.</th>
<th>Male</th>
<th>Female</th>
<th>Male Percent</th>
<th>Female Percent</th>
<th>Male Per 100 Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>15,122</td>
<td>8,139</td>
<td>6,983</td>
<td>100.0%</td>
<td>100.0%</td>
<td>116.6</td>
</tr>
<tr>
<td>less than 5 yrs</td>
<td>1,513</td>
<td>766</td>
<td>747</td>
<td>10.0%</td>
<td>9.4%</td>
<td>10.7</td>
</tr>
<tr>
<td>5-9 yrs</td>
<td>1,529</td>
<td>793</td>
<td>747</td>
<td>10.1%</td>
<td>9.7%</td>
<td>10.5</td>
</tr>
<tr>
<td>10-14 yrs</td>
<td>1,534</td>
<td>807</td>
<td>727</td>
<td>10.1%</td>
<td>9.9%</td>
<td>10.4</td>
</tr>
<tr>
<td>15-19 yrs</td>
<td>1,464</td>
<td>795</td>
<td>669</td>
<td>9.7%</td>
<td>9.8%</td>
<td>9.6</td>
</tr>
<tr>
<td>20-24 yrs</td>
<td>1,340</td>
<td>738</td>
<td>602</td>
<td>8.9%</td>
<td>9.1%</td>
<td>8.6</td>
</tr>
<tr>
<td>25-29 yrs</td>
<td>1,403</td>
<td>799</td>
<td>604</td>
<td>9.3%</td>
<td>9.8%</td>
<td>8.6</td>
</tr>
<tr>
<td>30-34 yrs</td>
<td>1,338</td>
<td>768</td>
<td>570</td>
<td>8.8%</td>
<td>9.4%</td>
<td>8.2</td>
</tr>
<tr>
<td>35-39 yrs</td>
<td>1,243</td>
<td>720</td>
<td>523</td>
<td>8.2%</td>
<td>8.8%</td>
<td>7.5</td>
</tr>
<tr>
<td>40-44 yrs</td>
<td>873</td>
<td>514</td>
<td>359</td>
<td>5.8%</td>
<td>6.3%</td>
<td>5.1</td>
</tr>
</tbody>
</table>

Source: Rural-urban Protection program, Center for International Research, U.S. Bureau of the Census.
<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total</th>
<th>Males</th>
<th>Females</th>
<th>Male %</th>
<th>Female %</th>
<th>Median Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-49 yrs</td>
<td>666</td>
<td>375</td>
<td>291</td>
<td>4.4%</td>
<td>4.6%</td>
<td>4.2</td>
</tr>
<tr>
<td>50-54 yrs</td>
<td>513</td>
<td>279</td>
<td>234</td>
<td>3.4%</td>
<td>3.4%</td>
<td>3.4</td>
</tr>
<tr>
<td>55-59 yrs</td>
<td>403</td>
<td>208</td>
<td>195</td>
<td>2.7%</td>
<td>2.6%</td>
<td>2.8</td>
</tr>
<tr>
<td>60-64 yrs</td>
<td>387</td>
<td>181</td>
<td>206</td>
<td>2.6%</td>
<td>2.2%</td>
<td>3.0</td>
</tr>
<tr>
<td>65-69 yrs</td>
<td>332</td>
<td>154</td>
<td>178</td>
<td>2.2%</td>
<td>1.9%</td>
<td>2.5</td>
</tr>
<tr>
<td>70-74 yrs</td>
<td>249</td>
<td>117</td>
<td>132</td>
<td>1.6%</td>
<td>1.4%</td>
<td>1.9</td>
</tr>
<tr>
<td>75 + yrs</td>
<td>335</td>
<td>125</td>
<td>210</td>
<td>2.2%</td>
<td>1.5%</td>
<td>3.0</td>
</tr>
</tbody>
</table>


The demographic changes projected for the first half of the 1990's are expected to continue to 2000, becoming less pronounced as the population grows through natural increase while the number of annual in-migrants remains constant. The percentages of individuals aged less than five years, less than 15 years, and greater than 64 years all decline compared to the proportions projected in each of these age groups in 1995. By 2000, the median age of Palau's population is projected to increase to 30.8, more than two years older than the 1990 median. The male/female ratio increases further, exceeding 127 males per 100 females, but the increase is not as great as during the first five years of the projection.

Population projections for the Republic of Palau, beginning with the 1990 census and continuing for three decades have been presented. The projections yield decreasing birth and migration rates, increasing death rates, and growth in the total population of the Republic. The total number of inhabitants nearly doubles in the 30-year period. Key characteristics of the population are likely to change, with increasing numbers of working age persons, growth in the overall age of the population, and an increasing male-to-female ratio. The growing age of Palau's population with time, coupled with the relative increase in males over females, help to explain the projected changes in fertility and mortality.

POPULATION DISTRIBUTION

7.5 Geographic Distribution of the Population

Palau's population is unevenly distributed among its States. In 1990, Koror, which constitutes only 4 percent of the country's land area, had 69 percent of the country's total population. Koror's percentage of the total population increased from about 40 percent in the 1958 Census to 68 percent.
in the 1986 Census. The main factor responsible for this high concentration of the population in Koror State is in-migration from other States, and more recently, the increasing number of foreign workers and their families living in Koror State.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>13,873</td>
<td>15,122</td>
<td>16,130</td>
<td>17,158</td>
<td>18,202</td>
<td>19,256</td>
<td>20,314</td>
</tr>
<tr>
<td>Aimeliik</td>
<td>283</td>
<td>439</td>
<td>468</td>
<td>498</td>
<td>528</td>
<td>559</td>
<td>590</td>
</tr>
<tr>
<td>Airai</td>
<td>1,021</td>
<td>1,234</td>
<td>1,316</td>
<td>1,400</td>
<td>1,485</td>
<td>1,571</td>
<td>1,658</td>
</tr>
<tr>
<td>Angaur</td>
<td>214</td>
<td>206</td>
<td>220</td>
<td>234</td>
<td>248</td>
<td>262</td>
<td>277</td>
</tr>
<tr>
<td>Hatohobei</td>
<td>35</td>
<td>22</td>
<td>23</td>
<td>25</td>
<td>26</td>
<td>28</td>
<td>30</td>
</tr>
<tr>
<td>Kayangel</td>
<td>115</td>
<td>137</td>
<td>146</td>
<td>155</td>
<td>165</td>
<td>174</td>
<td>184</td>
</tr>
<tr>
<td>Koror</td>
<td>9,442</td>
<td>10,501</td>
<td>11,201</td>
<td>11,915</td>
<td>12,640</td>
<td>13,372</td>
<td>14,106</td>
</tr>
<tr>
<td>Melekeok</td>
<td>254</td>
<td>244</td>
<td>260</td>
<td>277</td>
<td>294</td>
<td>311</td>
<td>328</td>
</tr>
<tr>
<td>Ngaraard</td>
<td>468</td>
<td>310</td>
<td>331</td>
<td>352</td>
<td>373</td>
<td>395</td>
<td>416</td>
</tr>
<tr>
<td>Ngardmau</td>
<td>157</td>
<td>149</td>
<td>159</td>
<td>169</td>
<td>179</td>
<td>190</td>
<td>200</td>
</tr>
<tr>
<td>Ngaremlengui</td>
<td>301</td>
<td>281</td>
<td>300</td>
<td>319</td>
<td>338</td>
<td>358</td>
<td>377</td>
</tr>
<tr>
<td>Ngatpang</td>
<td>219</td>
<td>62</td>
<td>66</td>
<td>70</td>
<td>75</td>
<td>79</td>
<td>83</td>
</tr>
<tr>
<td>Ngchesar</td>
<td>271</td>
<td>287</td>
<td>306</td>
<td>326</td>
<td>345</td>
<td>365</td>
<td>386</td>
</tr>
<tr>
<td>Ngarchelong</td>
<td>277</td>
<td>354</td>
<td>378</td>
<td>402</td>
<td>426</td>
<td>451</td>
<td>476</td>
</tr>
<tr>
<td>Ngiwal</td>
<td>218</td>
<td>234</td>
<td>250</td>
<td>266</td>
<td>282</td>
<td>298</td>
<td>314</td>
</tr>
<tr>
<td>Peleliu</td>
<td>545</td>
<td>601</td>
<td>641</td>
<td>682</td>
<td>723</td>
<td>765</td>
<td>807</td>
</tr>
<tr>
<td>Sorsorol</td>
<td>42</td>
<td>61</td>
<td>65</td>
<td>69</td>
<td>73</td>
<td>78</td>
<td>82</td>
</tr>
</tbody>
</table>

Source: Office of Planning and Statistics

Table 7.8 also shows projections of the population by State until the year 2000. The annual growth rate determined for all of Palau in the previous section on estimates and projections was used for each State, starting in 1990. Hence, these projections do not include any intra-Palau movements. The projections assume that whatever migration from the outlying areas to Koror
and Airai has already taken place, and that the States will continue to grow only on the basis of births (less deaths) and migration (into and out of Palau). So, if the capital is moved to Babeldaob within the next few years, and people move to Melekeok to be near work, those movements are not shown here.

In 1990, all of Palau had 89 persons per square mile, largely because of the great expanse in Babeldaob. Koror, as shown in the table, had 1,479 persons per square mile, about 17 times as dense as all of Palau.

Since Palau's population is expected to increase by about 50 percent between 1986 and 2000, it is not surprising that the population will be about 50 percent more densely distributed in 2000. For all of Palau, that figure will be about 119 persons per square mile, but in Koror, the projection is about 2000 persons per square mile.

DEVELOPMENT OBJECTIVES

7.6 Population Objectives

The Government has formulated the following objectives in the area of population to assist in the achievement of the national development objectives:

a. create an awareness among the public of the social and economic problems related to the current population dynamics at national, regional, and household levels;

b. further develop the capacity of the various Government agencies to integrate population aspects into overall development planning; and

c. coordinate the design, development and implementation of programs to deal with national demographic problems.

POLICIES AND STRATEGIES

The Government will pursue the following policies and strategies.

7.7 Population Policies and Strategies

a. In collaboration with relevant Government agencies and non-governmental organizations, the Government will undertake specific policy oriented studies to collect and analyze comprehensive population information in order to identify efficient policies and programs, particularly in relation to disadvantaged groups, such as youth and women;
b. Ensure the provision of population education, family welfare programs at the grass roots level;

c. Decentralize the current pattern of socio-economic growth by stimulating the overall development of the more isolated States in order to, among other things, stem migration flows. The plan to stimulate development activities during the Plan period on the larger island of Babeldaoob will help to arrest the continuing out-migration to Koror State from the States of Babeldaoob;

d. Create an appropriate socio-economic environment at all geographical levels to fully develop the potential of available human resources;

e. Update and extend the coverage of demographic data, including vital statistics and migration statistics.

PROGRAMS AND PROJECTS

7.8 Population Programs and Projects

The programs and projects required for implementation of the above-mentioned policies and strategies will be undertaken through various sectoral activities, and as such they are specified in the relevant sector plans of this Plan document. For instance, the need for population education program will be implemented by the Bureau of Education as is indicated in the sector plan on Education; the need for the implementation of a health education program appears in the sector plan on Health Services; and the need for infrastructure development and stimulation of economic activities are addressed in the sector plans relating to the development of infrastructure and economic sectors.

B. EMPLOYMENT AND MANPOWER DEVELOPMENT

7.9 The Labor Force

The economy is currently facing challenges of absorbing an increasing number of people entering the labor market.

Each census in recent years used different definitions for collecting information on subsistence activities, although the 1980 and 1990 censuses collected comparable statistics, and the 1991 Household Income and Expenditures Survey and the 1993 Labor Force Survey used the same definitions as the decennial censuses.
An understanding of the role of subsistence in Palau is necessary. The U.S. Census Bureau definition of subsistence is:

"A person engaged in subsistence activities if he or she mainly produced goods for his or her own family's use and needs, such as growing or gathering food, fishing, cutting copra for home use, raising livestock, making handicrafts for home use, and other productive activities not primarily conducted for commercial purposes. When subsistence activity categories are shown with the "Employed and the Not in Labor Force" categories of the employment status concept, they relate to activities engaged in during the census reference week. Persons who did subsistence activity only during the reference week were not classified as "Employed," unless they were "With a job but not at work."

The 1980 Census was the first to try to capture information about paid work and subsistence at the same time. In 1980, 941 persons were doing paid employment, but also doing subsistence. These persons worked at a paid job, but then, either after work, or on weekends, also did some kind of subsistence activity, whether gardening or fishing or raising animals. Another 2,158 were reported as doing subsistence activities only. Hence, 3,099 (61 percent) of the "labor force" was either doing subsistence in connection with paid employment or doing subsistence alone. This figure was 44 percent of all adults.

By 1990, when the same definitions were used again, only 916 (14 percent of the "labor force" and 9 percent of the adults) were engaged in subsistence activities, either subsistence alone or with paid employment. This figure shows a decrease in numbers of persons of some 70 percent, more than 2,000 persons. The numbers for 1991 and 1993 are similar to those for 1990 (in 1991 and 1993 persons living in group quarters, primarily barracks, but also the jail and hospital, were excluded, but most of those persons did not do subsistence).

Table 7.9 displays the different definitions, using both paid employment and subsistence as parts of the labor force definition. However, as seen in the table, little comparability exists, overall. The percent in the labor force varies from 52.6 percent for 1991 to 72.4 percent in 1980, the latter mostly because of the very generous definition of the "labor force". Similarly, while unemployment could not be measured for the 1991 income and expenditures survey, and is not yet determined for the 1993 labor force survey, the unemployment rates vary from 2.8 percent in 1980 to 22.0 percent in 1973.
Therefore, the statistics relating to the labor market characteristics lack comparability because of the varying concepts and definitions used for subsistence activity and unemployment. Although the fact that many Palauans engage in subsistence activities, measuring subsistence is demonstrably difficult.

A series of questions on employment status was designed to identify several types of individuals in Palau: persons who worked at a job or business or farm at any time during the reference week (i.e., "employed"); persons who did not do such work during the reference week, but who had jobs or businesses from which they were temporarily absent (excluding layoff); persons on layoff; and persons who did not work during the reference week, but who were looking for work to earn money during the previous four weeks and were available for work during the reference week [i.e., "unemployed"]. Persons in the labor force were those who were either "employed" or "unemployed" during the reference week, by these definitions.

Table 7.10 shows straight line projections for the time of the 2000 census, based on results of the 1980 and 1990 census. In 1980 about 4 in every 10 adults in Palau were in the labor force, a figure which increased to 6 in 10 (as noted above) in 1990, and which, at this rate, should increase to almost 7 in 10 in the year 2000. Given this general trend, more than 6 in every 10 Palau-born potential workers should be in the labor force, compared to more than 8 of every 10 foreign workers. Palau would expect almost 6,000 Palau-born workers, an increase of 50 percent in the 10 year period, while the need for foreign workers would be even greater. Since Palau had 400 foreign workers in 1980 and 1,900 in 1990, the straight line extrapolation would expect
a need for 3,400 foreign workers in 2000.


<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>6,966</td>
<td>6,387</td>
<td>579</td>
<td>10,238</td>
<td>7,874</td>
<td>2,364</td>
<td>13,510</td>
<td>9,361</td>
<td>4,149</td>
</tr>
<tr>
<td>In labor force</td>
<td>2,896</td>
<td>2,494</td>
<td>402</td>
<td>6,072</td>
<td>4,161</td>
<td>1,911</td>
<td>9,248</td>
<td>5,828</td>
<td>3,420</td>
</tr>
<tr>
<td>Percent</td>
<td>41.6%</td>
<td>39.0%</td>
<td>69.4%</td>
<td>59.3%</td>
<td>52.8%</td>
<td>80.8%</td>
<td>68.5%</td>
<td>62.3%</td>
<td>82.4%</td>
</tr>
<tr>
<td>Employed</td>
<td>2,745</td>
<td>2,372</td>
<td>373</td>
<td>5,599</td>
<td>3,711</td>
<td>1,888</td>
<td>8,453</td>
<td>5,050</td>
<td>3,403</td>
</tr>
<tr>
<td>Unemployed</td>
<td>143</td>
<td>122</td>
<td>21</td>
<td>471</td>
<td>448</td>
<td>23</td>
<td>799</td>
<td>774</td>
<td>25</td>
</tr>
<tr>
<td>Percent</td>
<td>5.0%</td>
<td>4.9%</td>
<td>5.3%</td>
<td>7.8%</td>
<td>10.8%</td>
<td>1.2%</td>
<td>8.6%</td>
<td>13.3%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Not in labor force</td>
<td>4,070</td>
<td>3,893</td>
<td>177</td>
<td>4,166</td>
<td>3,713</td>
<td>453</td>
<td>4,262</td>
<td>3,533</td>
<td>729</td>
</tr>
</tbody>
</table>

Source: 1990 Census, Table 53, 1980 Census Report, Table 37, and projections by Office of Planning and Statistics

7.10 Composition of the Labor Force

Palauans have not to date filled all available employment positions, particularly in the private sector where a considerable number of foreign workers are employed. Also, workers are not evenly distributed throughout the country, with Koror having by far the majority of Palau’s workers. The following sections discuss the composition of the labor force by region, industry, occupation, and class of worker.

7.11 Regional Distribution

The regional distribution of the labor force has important implications for regional planning regarding the extent of unemployment and underemployment at the regional level. Among the 16 States, Koror and the adjacent State of Airai have the highest concentration of economic and commercial activities, relatively well developed infrastructures and are, therefore, characterized by a monetized economy. In view of the nature of the regional economies, it is expected that open unemployment will be more widespread in Koror and Airai, whereas, underemployment will be more
prevalent in the economies of the other States.

About 2 out of every 3 adults in Koror was in the labor force in 1990, compared to about 6 in 10 for all of Palau. While Koror State made up 70.8 percent of the adult population of the Republic, that State had 78.7 percent of the workers living there (and, of course, other workers lived in Airai and neighboring States but commuted). About 60 percent of Airai’s adult population was in the labor force.

TABLE 7.11:
Labor Force Status by State: 1990

--ALL-- -----------IN LABOR FORCE-----------

<table>
<thead>
<tr>
<th>State</th>
<th>Persons 16 and over</th>
<th>Total in Labor Force</th>
<th>Percent in Labor Force</th>
<th>Number Employed</th>
<th>Number Unemployed</th>
<th>Percent Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>10,238</td>
<td>6,072</td>
<td>59.3%</td>
<td>5,599</td>
<td>471</td>
<td>7.8%</td>
</tr>
<tr>
<td>Aimeliik</td>
<td>280</td>
<td>119</td>
<td>42.5%</td>
<td>115</td>
<td>4</td>
<td>3.4%</td>
</tr>
<tr>
<td>Airai</td>
<td>840</td>
<td>503</td>
<td>59.9%</td>
<td>463</td>
<td>39</td>
<td>7.8%</td>
</tr>
<tr>
<td>Hatchoboei</td>
<td>15</td>
<td>12</td>
<td>80.0%</td>
<td>12</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Kayangel</td>
<td>81</td>
<td>23</td>
<td>28.4%</td>
<td>18</td>
<td>5</td>
<td>21.7%</td>
</tr>
<tr>
<td>Koror</td>
<td>7,251</td>
<td>4,779</td>
<td>65.9%</td>
<td>4,533</td>
<td>245</td>
<td>5.1%</td>
</tr>
<tr>
<td>Melekeok</td>
<td>152</td>
<td>63</td>
<td>41.4%</td>
<td>57</td>
<td>6</td>
<td>9.5%</td>
</tr>
<tr>
<td>Ngaraard</td>
<td>187</td>
<td>70</td>
<td>37.4%</td>
<td>46</td>
<td>24</td>
<td>34.3%</td>
</tr>
<tr>
<td>Ngardmau</td>
<td>95</td>
<td>35</td>
<td>36.8%</td>
<td>29</td>
<td>6</td>
<td>17.1%</td>
</tr>
<tr>
<td>Ngaremlengui</td>
<td>166</td>
<td>60</td>
<td>36.1%</td>
<td>43</td>
<td>17</td>
<td>28.3%</td>
</tr>
<tr>
<td>Ngatpang</td>
<td>44</td>
<td>19</td>
<td>43.2%</td>
<td>19</td>
<td>0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Ngchesar</td>
<td>179</td>
<td>66</td>
<td>36.9%</td>
<td>57</td>
<td>9</td>
<td>13.6%</td>
</tr>
<tr>
<td>Ngarachelong</td>
<td>222</td>
<td>43</td>
<td>19.4%</td>
<td>38</td>
<td>5</td>
<td>11.6%</td>
</tr>
<tr>
<td>Ngilwal</td>
<td>150</td>
<td>82</td>
<td>54.7%</td>
<td>33</td>
<td>49</td>
<td>59.8%</td>
</tr>
<tr>
<td>Peleliu</td>
<td>402</td>
<td>145</td>
<td>36.1%</td>
<td>83</td>
<td>62</td>
<td>42.8%</td>
</tr>
<tr>
<td>Sonsorol</td>
<td>35</td>
<td>16</td>
<td>45.7%</td>
<td>16</td>
<td>0</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of the Census. 1992c, Table 15.

While about 7.8 percent of the Republic's workers were unemployed,
this was true for only 5.1 percent of those living in Koror and 7.8 percent of those in Airai. Note that unemployment is very dependent on the economic situation in the Republic at the time of a survey or census.

Table 7.12 shows the enormous impact of the foreign workers in Palau. In 1990, just over 6,000 persons were in Palau’s labor force, constituting almost 6 out of every 10 persons 16 years and over. Of these, more than 4,000 (69 percent) were born on Palau; so, more than 3 out of every 10 workers in 1990 were born outside of Palau. The majority of these persons were born in the Philippines. The 1,345 Philippines-born workers were 27 percent of all workers, and 79 percent of all the foreign workers (about 4 out of every 5 foreign workers).

<table>
<thead>
<tr>
<th>Birth-place</th>
<th>Total</th>
<th>Number in Labor Force</th>
<th>Percent in Labor Force</th>
<th>Number Employed</th>
<th>Number Unemployed</th>
<th>% Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total 16+ years</td>
<td>10,238</td>
<td>6,072</td>
<td>59.3%</td>
<td>5,599</td>
<td>471</td>
<td>07.8%</td>
</tr>
<tr>
<td>Palau</td>
<td>7,873</td>
<td>4,161</td>
<td>52.8%</td>
<td>3,711</td>
<td>448</td>
<td>10.8%</td>
</tr>
<tr>
<td>Other Places</td>
<td>2,013</td>
<td>1,693</td>
<td>84.1%</td>
<td>1,676</td>
<td>17</td>
<td>01.0%</td>
</tr>
<tr>
<td>Philippines</td>
<td>1,421</td>
<td>1,345</td>
<td>94.7%</td>
<td>1,341</td>
<td>4</td>
<td>00.3%</td>
</tr>
<tr>
<td>FSM</td>
<td>271</td>
<td>77</td>
<td>28.4%</td>
<td>64</td>
<td>13</td>
<td>16.9%</td>
</tr>
<tr>
<td>China</td>
<td>180</td>
<td>172</td>
<td>95.6%</td>
<td>172</td>
<td>0</td>
<td>00.0%</td>
</tr>
<tr>
<td>United States</td>
<td>141</td>
<td>99</td>
<td>70.2%</td>
<td>99</td>
<td>0</td>
<td>00.0%</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of the Census, 1992c, Table 53.

Note: Because this table does not include all "Other places", the total for the three places listed does not equal the sum.

Table 7.12 also shows differences in proportions of the working age population actually in the labor force. As noted above, about 6 out of every 10 adults were in the labor force. However, while somewhat more than half of all Palau born were in the labor force, about 17 of every 20 foreign born persons were included. And, for Philippines born, this figure increases to 19 of every 20. Since most foreigners must work to stay in Palau, and, in fact, most foreign workers come to Palau specifically to work, these figures are not surprising. However, since the figure for Palau born is still relatively low, ways of increasing Palau born labor force participation is desired.
Most foreigners come to live in Palau because they want work, therefore, their unemployed percentage is very low, only 1 percent in 1990. On the other hand, about 11 percent of the Palau-born workers were unemployed, once again making some cause for alarm, since foreign workers may be taking the place of Palau-born workers.

7.12 Industry

Table 7.13 shows the distribution of industry categories used by the 1980 and 1990 Censuses of Palau. We have continued to use straight line projections to get estimates of the distribution for about the time of the 2000 census. In 1980, the largest industry category was "professional and related services", comprised primarily of persons working in health and education fields. In fact, more than 1 in every 5 workers in 1980 were working in education.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2,665</td>
<td>5,599</td>
<td>8,533</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Agri., forest, fishing, mining</td>
<td>81</td>
<td>446</td>
<td>811</td>
<td>3.0%</td>
<td>8.0%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Construction</td>
<td>476</td>
<td>861</td>
<td>1246</td>
<td>17.9%</td>
<td>15.4%</td>
<td>14.6%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>79</td>
<td>93</td>
<td>107</td>
<td>3.0%</td>
<td>1.7%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Transportation</td>
<td>164</td>
<td>335</td>
<td>506</td>
<td>6.2%</td>
<td>6.0%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Comm/Public Utility</td>
<td>64</td>
<td>142</td>
<td>220</td>
<td>2.4%</td>
<td>2.5%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>115</td>
<td>130</td>
<td>145</td>
<td>4.3%</td>
<td>2.3%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>221</td>
<td>670</td>
<td>1,119</td>
<td>8.3%</td>
<td>12.0%</td>
<td>13.1%</td>
</tr>
<tr>
<td>Finance, Ins., &amp; Real</td>
<td>45</td>
<td>119</td>
<td>193</td>
<td>1.7%</td>
<td>2.1%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Business &amp; Repair</td>
<td>62</td>
<td>178</td>
<td>294</td>
<td>2.3%</td>
<td>3.2%</td>
<td>3.4%</td>
</tr>
</tbody>
</table>
By 1990, while the number of workers in education increased, their percentage of the work force decreased, to slightly more than 1 in every 10 workers. The percentage in construction and public administration also decreased, while workers in tourist related industries ("Personal, entertainment, and recreational services") increased dramatically, from 77 to 750 persons, and from 3 percent of all workers in 1980 to 13 percent in 1990.

7.13 Occupation

If these trends continue over the decade of the 1990’s, tourism occupations will be the largest category in 2000, comprising about 1,400 workers, or about 1 in every 6 workers in Palau. The second largest category should be professional and related services (15 percent), followed by construction (also 15 percent), and public administration (14 percent). The percentage of persons in retail trade will also continue to increase, arriving at about 13 percent in 2000.

The percentages in various occupations will also continue to change as Palau develops economically. Here, the changes are not as dramatic as in the industry categories, but trends can still be seen. The percentages of managers and professionals is projected to remain constant at about 1 in every 4 workers, while the percentages in technical, sale, and administrative support occupations will increase slightly. As noted for industry, the occupation categories having to do with service are increasing, as are fishing and farming occupations. However, the percentage of persons working as operators, fabricators, and laborers is decreasing.

The number of employed Palau-born persons increased from 2,372 in 1980 to 3,711 in 1990, and increase of 56.5 percent, a rate of growth much faster than for the population as a whole. The number of managers and professionals increased by 93.5 percent, and technical, sales and administrative support staff increased by 73 percent. At the other extreme, the numbers for precision production and crafts increased by only 14 percent during the decade, and operators, fabricators, and laborers increased by 28 percent.
percent.

From census data it is also known that the percentage of Palau-born employed who were managers and professionals increased from 23.5 percent of all those employed to 29.0 percent from 1980 to 1990, and employed in technical, sales, and administrative support occupations increased by about 3 percentage points. The percentage of Palauan employees in precision production and crafts dipped from 12 percent to about 9 percent of the work force, and those working as operators, fabricators, and laborers decreased from 16.4 percent of the work force to only 13.5 percent.

Of increasing interest is the proportion of any particular occupation having primarily Palau-born employees. In 1980, fully 86.4 percent of the work force was Palau-born, but this percentage decreased to 66.3 percent in 1990, a decrease of 20 percentage points in one decade. That is, in 1990 two out of every 3 employed persons in Palau was Palau-born. The percentage of Palau-born managers and professionals decreased from 85 percent of the work force in 1980 to 80 percent in 1990, and those in technical, sales, and administrative support occupations decreased from 93 percent to 87 percent. While Palau born were 9 out of 10 employed in farming, forestry and fishing occupations in 1980, they were only 1 in 3 of those employed in these occupations in 1990. And, Palau born decreased from 2 in 3 of those in precision production and crafts in 1980 to only 1 in 3 in 1990.

The service sector, though, probably showed the greatest change in terms of number. While Palau-born constituted 92 percent of those in service occupations in 1980, they make up only 57 percent in 1990. Much of the change appeared in persons working in private households. Palau-born made up 82 percent of private household workers in 1980, but only 5 percent in 1990, which is commonly attributed to the growing impact of the Filipina domestic helper.

7.15 **Class of Worker**

Traditionally, the majority of Palauans who worked for money, worked in the public sector, e.g. the Government. Only recently has Palau's private sector developed. Until the 1990 Census, in fact, all censuses in the American period or later showed a majority in the public sector. For example, in 1980 about 4 out of every 10 employed persons worked in the private sector, about 10 percentage points less than those working for all levels of government. By 1990, however, the situation reversed, with about 6 in every 10 working for private wages and salary and less than 4 in 10 working for the government. The trend should continue so that only about 3 in every 10 workers will work for the government in 2000. Still, this figure is about 3,000 persons, a fairly
large government sector for some 20,000 persons. The private sector should also increase considerably, to almost 6,000 persons (including self-employed workers.)

TABLE 7.14:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>no. no. no. %</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Total</td>
<td>2,365</td>
<td>5,599</td>
<td>8,833</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Private wage and salary workers</td>
<td>1,016</td>
<td>3,323</td>
<td>5,630</td>
<td>43</td>
<td>59.3</td>
<td>63.7</td>
</tr>
<tr>
<td>Local government workers</td>
<td>1,149</td>
<td>1,982</td>
<td>2,815</td>
<td>48.6</td>
<td>35.4</td>
<td>31.9</td>
</tr>
<tr>
<td>Federal gov't workers</td>
<td>114</td>
<td>133</td>
<td>152</td>
<td>4.8</td>
<td>2.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Self-employed workers</td>
<td>86</td>
<td>151</td>
<td>216</td>
<td>3.6</td>
<td>2.7</td>
<td>2.4</td>
</tr>
<tr>
<td>Unpaid family members</td>
<td>0</td>
<td>10</td>
<td>20</td>
<td>0</td>
<td>0.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Source: 1980 Census Report, Table 23, 1990 Census Report, Table 15, and projections

Note: For 1980, 80 persons doing subsistence excluded.

If current trends continue, about 2,000 males will be working for the government in 2000, and about 1,000 females. More than 3,600 males will be working for private wages and salaries compared to about 2,000 females.

As the higher skilled jobs are occupied by the foreign workers, the question arises as to whether the type and level of education/training of Palauans is sufficiently tailored to meet the manpower needs of the economy especially those requiring medium and highly skilled personnel.

One reason for the under-representation of Palauans in the private sector is the prevailing wage-structure. With wages as well as job security better than in private sector, the Government sector remains relatively attractive for educated Palauans. As employment opportunities in the Government sector have remained stagnant, a sizeable number of Palauans being educated and trained in Guam, CNMI, Hawaii, and the US mainland stay abroad. If private sector wage rates are brought more into line with the government sector, this will stimulate the growth of the private sector.

With relatively higher wage rates demanded by Palauans in the private sector, following the demonstration effect of high wage rates in the Government sector, entrepreneurs are induced to employ foreign workers,
particularly from the Philippines. Apart from the cost factor, Palauan employers tend to favor employment of foreign labor because of the relative ease with which output of the latter can be maximized. Because of immigrant status and the desire to maximize income in the shortest period of time abroad, the foreign workers often perform duties beyond normal working hours.

In many trades and businesses, foreign workers are employed simply because the required expertise is not available among the local labor force. This may be a short-term problem as technology and expertise may eventually be acquired by the local labor force through specific manpower development schemes. In the longer run, unless the other constraints are resolved, there will be a continuing tendency of favoring the employment of foreign workers in the private sector.

7.15 Labor Supply over the Plan Period

During the Plan period, the economy will need to absorb the new entrants who reach labor age. There is no precise forecast of the labor supply in future years. The working age population is usually considered to be persons 15 to 64 (although in many cases in the Pacific Islands, the upper figure is 59 years old). Looking at the distributions of persons less than 15, 15 to 64, and over 65 years old, some dramatic changes in Palau have happened over the last part of the 20th century. In 1973 about half of the population was working age, but that increased to about 55 percent in 1980, and following the projections in the first part of this paper, by 2000 about 7 in every 10 person will be of working age.

There are several reasons for these demographic changes. The birth rate in Palau has decreased enormously, mostly because of selective migration (particularly of low-fertility in-migrants) and family planning, much of that for economic advantage--women want to provide even better economic lives for their offspring. Hence, while children less than 15 were 45 percent of Palau's population in 1973, they will constitute only 26 percent of the population in 2000 (Table 7.28). On the other hand, because of the large increases in the working age population, the percent elderly will not undergo much change (although their numbers will increase considerably, from about 600 in 1973 to more than 1,000 in 2000).

<table>
<thead>
<tr>
<th>TABLE 7.15: Percent Working Age Population: 1973 to 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Percent</td>
</tr>
<tr>
<td>Less than 15</td>
</tr>
</tbody>
</table>
The group of persons of labor force age increased by less than 1 percent per year during the late 1970's, but increased by more than 4 percent per year during the 1980's, largely because of migration. In fact, the rate of increase remained relatively constant, as measured by the 1980, 1986 and 1990 censuses, about 4.1 percent per year. However, projections indicate that the rate of increase is speeding up in the early 1990's, to about 4.7 per year (23.4 percent between 1990 and 1995.) The rate is expected to decrease to about 3.6 percent per year during the last half of the decade. By any measure, however, these rates show very rapid increases, much larger than in the population itself. That is, while the numbers of children and elderly are growing rapidly, the labor force population is increasing even more rapidly.

These figures show that the potential labor force will be available for economic development. Jobs must be created to make certain that all persons wanting jobs will be able to get them. Obviously, the private sector is the area where these jobs are most likely to be created.

7.16 Manpower Requirements

The 1990 Census data on Industry and Occupation presented previously shows general areas where employment opportunities are likely to exist. Based on the 1990 Census results and the projections, plus sectoral growth potential and directions for development specified in this Plan document, the major areas for potential expansion will be the development of marine resources, tourism, agriculture and infrastructure construction activities. Initial Government support including training and infrastructure to secure a steady labor supply is considered essential for successful development of these sectors. There is also a projected need for the development of private sector services such as computer programming, equipment maintenance and repair, transportation, electronic repair, specialized stores and other types of services.

The Sectoral Plans of this documents indicate that activities in infrastructure, particularly road construction, water and sewer systems installation, building structures and power transmission lines installation, will assume a significant proportion of the Government's development activities and programs during the Plan period. Skills among the local labor force in the fields of civil and structural engineering, and mechanical and electrical engineering need to be developed. Training in these and other fields will be given emphasis.
PROBLEMS AND ISSUES

7.17 Inadequacy of Domestic Training Institutions

The Palau Community College (PCC) offers courses in vocational and service areas including building trades, automotive mechanics, electronics, general home economics, food service, and others. In terms of manpower development, a person trained at PCC still needs to continue training in an apprentice program to be fully qualified in his vocational field. Practical knowledge and skill that is imparted to the student in his or her Palauan high school career is such that, at the time of his graduation, he or she may still not be able to contribute any specialized skill to the work force.

7.18 High Rate of Unemployment

The estimated unemployment rate of 8 percent in 1990 (about 11 percent for Palau-born but only 1 percent for non-Palau born) was considerably lower than the 20 to 22 percent rate estimated in 1987 at the time of development of the First Development Plan. Nonetheless, because of the increasing numbers of foreign workers, and the continuing high dropout rates from high schools, it is important to consider implications of the undereducated and undertrained segment of the labor force.

7.19 High Government Wages and Job Security Discourage Job Seekers from Seeking Employment in the Private Sector

Relatively higher wages and job security in the Government sector may cause both unemployed and some of those employed by the private sector to look for employment in the Government sector. The private sector has difficulty in competing with the Government for employment of qualified Palauans. This fact contributes to the private sector's reliance on employment of aliens.

7.20 High Costs Limit Further Education Opportunities

In the absence of domestic facilities for further education few Palauan families can afford to send their children for education beyond high school because of high costs of education overseas, especially in the United States. Scholarships funds are insufficient to meet students demand for study abroad.

7.21 Limitation of Employment Opportunities

As a result of the Republic being a small island economy with limited resources, productive employment opportunities in Palau are scarce. Some
Palauans who have completed college education abroad are reluctant to return home because of the lack of employment opportunities.

DEVELOPMENT OBJECTIVES

7.22 Human Resources Development Objectives

To create conditions to enable Palauans to achieve their individual potential, and to participate in an accelerated and sustained economic growth process, the Government’s objectives in the area of human resources development will be to:

a. promote a higher level of productive employment in the formal economy in order to absorb the new entrants to the labor market, as well as to reduce the backlog of unemployment;

b. stimulate the subsistence sector to increase and commercialize outputs; promote the replacement of foreign workers by Palauan citizens where feasible; reduce the relative imbalance in the job opportunities between Koror-Airai and the other 14 States;

c. provide appropriate educational training for the new entrants into the labor force to match the supply of and demand for manpower; and promote up-grading of skills of those already employed to increase their labor opportunity.

POLICIES AND STRATEGIES

To achieve the above objectives, the Government will pursue the following policies and strategies.

7.23 Stimulate Productivity Growth

In focusing on employment expansion in the formal sector of the economy, the Government will stimulate productivity growth in the private sector, and limit Government wage increases to avoid adverse effects on private sector wage levels. The strategies for stimulating growth in the private sector have been elaborated elsewhere in the Plan document.

7.24 Replace Expatriates With Palauan Workers

Private sector employers will be encouraged to replace expatriates with Palauans. Skill enhancement will be undertaken through training schemes at high school and post secondary vocational institutions within the country.
Training of local counterparts of expatriates will be encouraged and a skill certification system will be introduced. A manpower training program will be established for meeting the requirements in the various occupational groups. This will be achieved through offering scholarships to selected and qualified high school graduate students to pursue their studies in their preferred disciplines. In this connection the National Scholarship Board will interface with all the sectoral agencies to identify the precise fields or disciplines for encouraging students to pursue their studies abroad. The Government will also encourage the formalization of on-the-job training schemes in both the Government and private sectors.

7.25 Statistical Base

Sound management planning entails the development of the required statistics relating to the labor market. In this respect, the Government, through the Division of Labor, will develop a comprehensive labor market information system for evaluating the current situation, trends and bottlenecks of the labor market at National and State levels. The results of the 1993 Labor Force Survey and their own data bases on domestic and foreign workers will assist the Division of Labor to forecast demand for and supply of skilled manpower, particularly in the private sector. The forecast will cover the period 1994-2000. This forecast will be used by the Palau Community College to develop their curriculum, and by the National Scholarship Board for selecting candidates for the scholarship program.

7.26 Employment Services

The Division of Job Placement will set up a nation-wide employment services scheme to provide information on the labor market and to offer counseling services for the unemployed, and others interested in job openings, concerning employment and education/training requirements.

PROGRAMS AND PROJECTS

7.27 A Survey of the Labor Market

The 1993 Labor Force Survey will continue to be analyzed. Then, comprehensive periodic surveys of the labor market will be undertaken by the Division of Labor. These survey results will be useful in understanding the
labor market characteristics and behavior, as well as a projection of manpower supply and demand for the period of the Plan. The surveys will commence annually, and then move to quarterly, to permit adequate monitoring of the current labor force situation in the Republic.

7.28 Labor Law/Legislation

The Government will formulate and institute legislation to protect workers adequately in the following areas: fair labor standards; standard occupational classification; occupational safety and health; regulations governing the importation of foreign workers consistent with the national development objective to encourage increased participation of the local workforce; and other issues concerning protection of workers, without undermining the efficiency of labor market operation.

CONCLUSIONS

This chapter has looked at current demographic and labor trends in the Republic of Palau, and used straight line projections to hazard some guesses and the age and sex distribution through the rest of this decade. Projected is a continuing increase in the Palau's population. During the 1960's and 1970's Palau experienced little population growth because the natural net increase from births and deaths was offset by outward migration of Palauans. The 1980's saw a reversal, to a certain extent, because while outward migration continued, some Palauans began to return to Palau and many foreigners came to Palau to work. Since more jobs are being created, particularly in the private sector, than can be filled by Palauans, this in-migration is likely to continue.

Palau has a population of more than 17,000 now, and should have about 20,000 by the year 2000. The population is aging, partly because of a comparative low birth rate by Pacific Islands standards, and partly because of the immigration of middle-aged foreigners.
INTRODUCTION

The Republic of Palau's most significant—and as yet comparatively untapped—economic resource is its unparalleled natural beauty and consequent potential as a tourist destination. The Smithsonian Institute identifies Palau as one of the most unique marine environments in the world. The coral reefs surrounding the islands of Palau are regarded by scuba diving enthusiasts as one of the earth's premier underwater wonders. Palau's ocean waters are home to enormous schools of tropical reef fish, multiple species of predatory fish such as shark and barracuda, marine mammals, turtles and hundreds of different corals. The famous Rock Islands, located south of the provisional capital of Koror, are surrounded by some of the cleanest beaches and most pristine aquamarine ocean waters in the world. Palau also provides spectacular scenery above water: the big island of Babeldaob boasts of breath-taking waterfalls, intricate river systems, fascinating coastal villages, and a seemingly unending display of varied flora and fauna.

Until very recently, the Republic of Palau's relative geographic isolation protected its complex but fragile ecosystem from the ravages of modern society: over-development, westernization and pollution. As international interest in Palau has grown, however, so has the pressure to modernize and develop. The islands relatively close proximity to Japan, Southeast Asia, Indonesia and Australia render them an easily accessible vacation destination for millions of people. (Please refer to the map on the following page.) Indeed, recent applications submitted to the Foreign Investment Board and the Environmental Quality Protection Board by potential foreign investors include business proposals for high-rise hotels, casinos and spacious golf courses. Given that the tourism industry may provide a source of income and long-term growth for future generations of Palauans, and in recognition of the fact that any significant development inevitably will generate unwanted side-effects such as pollution, the national government must play a role in setting priorities to guide the growth of this nascent industry and ensure the protection of the environmental and culture heritage of the islands.

This chapter presents a description of the current status of the tourism sector of Palau's economy. The chapter then identifies the challenges that the country must confront and overcome in order to fully maximize this growing sector of the economy in a sustainable manner. Finally, the chapter
concludes by setting forth the various strategies for achievement identified by the national government as a means by which to meet those challenges and ensure that the tourism sector will become and remain a centerpiece of Palau’s vibrant market economy as the country moves into the twenty-first century.

CURRENT SITUATION

8.1 Visitor Arrivals

The number of tourists and business visitors traveling to the Republic of Palau has increased every year for more than a decade. In 1993, total passenger arrivals hit a record 40,497—more than three times the level recorded in 1985, when the total passenger arrivals numbered a mere 13,000.

<table>
<thead>
<tr>
<th>Year</th>
<th>Arrival</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>5,640</td>
</tr>
<tr>
<td>1981</td>
<td>5,057</td>
</tr>
<tr>
<td>1982</td>
<td>5,330</td>
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<tr>
<td>1983</td>
<td>6,380</td>
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<tr>
<td>1984</td>
<td>9,014</td>
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<tr>
<td>1985</td>
<td>13,371</td>
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<tr>
<td>1986</td>
<td>9,612</td>
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<tr>
<td>1987</td>
<td>11,682</td>
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<tr>
<td>1988</td>
<td>15,975</td>
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<tr>
<td>1989</td>
<td>19,396</td>
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<tr>
<td>1990</td>
<td>23,398</td>
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<tr>
<td>1991</td>
<td>32,846</td>
</tr>
<tr>
<td>1992</td>
<td>36,117</td>
</tr>
<tr>
<td>1993</td>
<td>40,497</td>
</tr>
</tbody>
</table>

Source: Palau Visitors Authority

Palau emerged as a notable tourist destination in 1985, when a major luxury hotel (the Palau Pacific Resort) was opened to the public. Today, this facility continues to accommodate a significant percentage of the tourists visiting Palau. Prior to 1985, tourist arrivals had been nearly flat for several years at approximately 5,000 arrivals per year. At that time, the tourists arriving in Palau principally were dedicated scuba divers willing to travel the distance and stay in less-than-luxurious accommodations in order to dive the
waters of Palau. More recently, Palau attracts a variety of visitors due to the expansion of hotel facilities as well as the availability of alternative forms of recreation such as sports fishing, sailing, and island tours.

The majority of visitors come to Palau from Japan and the United States; significantly, however, an increasing number of Taiwanese are visiting Palau due at least in part to the fact that a direct flight recently opened between Taipei and Palau. In fact, the number of Taiwanese tourists visiting Palau in 1993 represented a 52% increase over the prior year. The national government projects a continued increase in tourists arrivals from Taiwan and other Asian nations over the next decade.

<table>
<thead>
<tr>
<th>Country</th>
<th>Arrival</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>5,907</td>
</tr>
<tr>
<td>Japan</td>
<td>17,903</td>
</tr>
<tr>
<td>Philippines</td>
<td>949</td>
</tr>
<tr>
<td>Aust/NZ</td>
<td>458</td>
</tr>
<tr>
<td>Europe</td>
<td>1,614</td>
</tr>
<tr>
<td>Asia/Pacific</td>
<td>1,579</td>
</tr>
<tr>
<td>Taiwan</td>
<td>3,334</td>
</tr>
<tr>
<td>Other</td>
<td>381</td>
</tr>
</tbody>
</table>

Source: Palau Visitors Authority

The national government projects that the recent average annual growth rate in visitor arrivals of 13% will continue during the 1990's. As such, total annual passenger arrivals will exceed 85,000 persons by the year 2000. As discussed below, Palau's currently available hotel space, rental car businesses, recreational facilities, and all other tourism-related enterprises must be expanded in the next few years to accommodate the anticipated growth in visitor arrivals.

8.2 Access to Palau

At present, Continental Micronesia is the only international airline engaged in business in the Republic of Palau. Continental Micronesia presently offers fourteen (14) flights a week between Guam, Yap and Manilla on its Boeing 727 and 737 aircrafts. In addition, Continental Micronesia recently began offering two direct flights a week to Taipei, Taiwan. In general, the prices charged for these flights are perceived to be quite high given the
The Republic of Palau’s International Airport is located in the state of Airai, on the big island of Babeldao, which is connected to Koror by paved roads, bridges and causeways. The airport is classified as a transport airport and functions as Palau’s primary air transportation center. (The islands of Angaur and Peleliu also have runways which are adequate for the small planes utilized by the local airline, Paradise Air.) The airport has a 7,200 foot asphalt runway and medium intensity lights. Navigational aids include a non-directional beacon, distance measuring equipment and visual approach slope indicators. The airport accommodates medium range, narrow body aircraft such as Boeing 707’s and 727’s and DC-8’s. The terminal facilities include an apron area, passenger terminal building and car parking area; the airport itself is surrounded by perimeter security fencing.

Regular water transportation service to Palau does not yet exist. The cruise ships, sail boats and other yachts arriving periodically in the territorial waters of Palau typically are privately chartered from foreign locations. Malakal Harbor, the principal harbor facility in Palau, is a deep water port that is home to hundreds of vessels operated by foreign tuna fishing companies as well as enormous commercial ocean liners.

8.3 Access within Palau

An extensive sealed road system provides access within Koror and connects Koror to the neighboring state of Airai. The visitor easily is able to travel within this area either by rental car or by utilizing the services of the local taxi companies. The sealed road is subject to extensive use and significant rains; it therefore is regularly maintained by the Bureau of Public Works.

The big island of Babeldao also has an extensive road system; however, because the roads principally are constructed of dirt and/or coral, they are only passable by four-wheel drive vehicles during heavy rains. Even with four-wheel drive vehicles there currently is no way of driving from Koror to northern Babeldao. The common means of access between Koror and the various villages of northern Babeldao (as well as the other inhabited islands of Palau) therefore is by open boat. Several of the state governments and a number of federal agencies maintain inboard vessels capable of carrying passengers and small cargo. Likewise, many people travel by privately owned and operated boats powered by outboard motors.

Paradise Air is the only domestic airline currently in operation. It has
a fleet of 3 light aircraft and flies a twice-daily service to the island states of Angaur and Peleliu, as well as one aircraft fitted with floats that occasional flies to Kayangel. The airstrips on Angaur and Peleliu originally were made by the Japanese prior to World War II of crushed coral. They remain serviceable and are 7,000 and 6,000 feet in length, respectively. Paradise Air’s aircrafts also are available for charter flights and sightseeing tours.

8.4 Tourist Attractions

As mentioned above, the Republic of Palau's unique marine resources historically have attracted the majority of tourists to the islands. Palau's wondrous dive sites have been featured repeatedly in international diving magazines and are the subject of many books and films published within the last several years. Similarly, Palau's unusual marine lakes have been the subject of serious biological study. Perhaps the most famous of these lakes, known as Jellyfish Lake, is a one-of-a-kind marine environment in which millions of jellyfish have coexisted for hundreds of years without a natural predator; as a result, they have lost their ability to sting or otherwise harm human visitors. Jellyfish Lake attracts hundreds of visitors each week who are transported there by the dive operators and other local tour companies to swim with the jellyfish. Palau also is well known for its incomparable Rock Islands, more than 200 islands of limestone formation which are home to some of the most beautiful beaches in the world. Many tourists come to Palau to visit these islands by power boat, sailboat, canoe or kayak.

The island state of Peleliu draws thousands of visitors each year interested in exploring the historic battle sites of World War II. A resident historian of Peleliu greets the visitor at the airstrip (or boat dock) and offers a day-long historic tour of the island, which includes Bloody Nose Ridge, the fascinating underground cave systems created by the Japanese (where the visitor can see remnants of Japanese uniforms, bones, and hundreds of empty sake bottles), the beaches upon which the American forces launched their invasion of the island, and much more.

Additional attractions are located in the provisional capital of Koror, including the chambers of Palau's National Congress (the Olbiil Era Kelulau, or "OEK"), the Belau National Museum, the Marine Mariculture Demonstration Center, the Senior Citizens handicraft shop, local stores and dozens of restaurants offering freshly caught fish and other foods. In addition, the local jail has become a famous tourist attraction as the temporary home of some of Palau's most talented "storyboard" carvers. The storyboard typically consists of a heavy, burnished piece of wood that has been hand-carved to depict one of Palau's local legends.
The big island of Babeldaob has the potential to become one of Palau's most significant tourist attractions. The east coast states of Melekeok, Ngiwal and Ngaraard are characterized by lovely natural beaches, picturesque local villages and hospitable people. Tours are available in some of the villages. The interior of the island presents an exotic array of flora, fauna and spectacular waterfalls currently accessible to the adventurous traveler.

8.5 Tourist Services and Facilities

Hotel facilities have increased dramatically to accommodate the 13% annual increase in the number of tourists visiting the islands. At present, Palau has 10 economy hotels (with a total of 142 rooms), 11 standard hotels (with a total of 311 rooms), and one deluxe hotel (with a total of 100 rooms). (Please refer to the chart on the following page which presents additional information about the currently available accommodations.)

Twenty-three (23) tour operators now operate in Palau and offer a range of tour packages and options. As international interest in Palau has grown beyond scuba diving, the local tour operators expanded the range of activities they provide to include such things as sports-fishing, historical tours of the Rock Islands, water-skiing and jet-skiing, and sailboat tours. The number of dive operators also has increased significantly in the last ten years. At present, Palau has at least a dozen dive operators offering daily outings to various reef locations as well as three live-aboard dive operators offering charter trips throughout the territorial waters of Palau.

The twenty-eight (28) restaurants in Palau offer a variety of international cuisine, including Japanese, Chinese, Korean, Philippine, American and, of course, Palauan foods. In addition, there are a number of bars and nightclubs offering live music and the opportunity to interact in a relaxed atmosphere with members of the local community.

8.6 Tourism Promotion

The House of Delegates and the Senate of the Olbiil Era Kelulau oversee the development of tourism in Palau; in addition, the Ministry of Commerce and Trade (which is part of the executive branch of government) has jurisdiction over tourism issues. The National Government funds the Palau Visitors Authority ("PVA"), which is the national tourism organization and charged with the responsibility of promoting Palau as a tourist destination. The PVA also serves as a clearinghouse of information regarding tourism in Palau, maintains statistical data, and works with outside consultants to
evaluate how to develop and enhance Palau's reputation as a premier tourist destination.

PROBLEMS AND ISSUES

8.7 Access

Although the current air transportation service to Palau is able to meet today's level of demand, it is not satisfactory for several reasons. To begin with, the cost of flying to Palau from virtually any point of origin is quite significant: for example, roundtrip tickets to Palau average approximately $1,500.00 from the United States; $1,000.00 from Japan; and $1,000.00 from Taiwan. The high cost of air travel is attributable at least in part to the monopoly position of Continental Micronesia which no doubt has suppressed demand to visit Palau as tourists select alternative destination sites that are within their budgetary constraints.

In addition to the high cost of air transportation to Palau, the lack of direct flights is a deterrent to the expansion of tourism in Palau. With the exception of the direct flight from Taipei, travel on Continental Micronesia requires the international visitor to travel to Palau via Guam, Yap or Manilla, which can add significantly and inconveniently to the time spent traveling.

The current facilities at Palau's International Airport may also constrain access to the islands. First, the airport's 7,200 foot runway is not capable of accommodating the long-range, wide-bodied jets utilized by most international airlines. As such, access to Palau is limited to medium-range, narrow-bodied aircraft. Second, the available airline apron space can accommodate only three such aircraft at any one time. Third, the space available in the terminal building for airline ticketing windows currently is extremely limited. Indeed, the terminal building itself is expensive to maintain (and poses somewhat of a safety threat) as it was poorly designed and constructed.

Similarly, ocean access to Palau is constrained by several factors. The present utilization of Malakal Harbor by foreign fishing fleets and commercial carriers tarnishes its appeal as a tourist destination. Cruise ships have little incentive to stop over in a port if their customers' first impressions of Palau will be of harbor congestion and commercial shipping containers.

Moreover, access within Palau needs improvement. Although there is an extensive road system on the big island of Babeldaob, the heavy annual rainfall often limits access to 4-wheel drive vehicles. Indeed, some of the most
beautiful and intriguing areas of Babeldaoob are accessible only by boat and remain unseen by the vast majority of tourists visiting Palau.

8.8 Accommodations and Attractions

The existing tourist accommodations need to be upgraded, expanded and diversified to meet the growing number and sophistication of international travelers. In part due to the high cost of travel to Palau, the islands tend to attract high-income visitors desirous of deluxe accommodations. As such, the only deluxe hotel in Palau, the Palau Pacific Resort, has captured between 43-66% of all visitors since it opened in 1984 despite the fact that it represents only 26% of Palau's total accommodation stock.

In addition, although some steps have been taken in this direction, the tourism industry in Palau must continue to broaden the scope of attractions it can offer the international tourist. As interest in Palau expands beyond the dedicated diving community, the local tourism industry should be prepared to take advantage of the arrival of such tourists in Palau.

Three potentially crippling constraints on the improvement, expansion and diversification of tourist accommodations and attractions are (1) the limited capacity of Palau's infrastructure, (2) the uncertainty over title and rights to land, and (3) lack of capital. First, as discussed elsewhere in this Plan, the infrastructure (such as the sealed road system, the water treatment plant, the sewer system, the power plants, and so forth) currently exists almost exclusively on Koror. Moreover, almost all of these systems are running at full capacity and would not be able to service the increased demand that would be placed upon them by an expansion of tourist accommodations and attractions.

Second, the improvement, expansion and diversification of Palau's tourism industry will be dependent upon the resolution of hundreds of pending land title disputes. Investors—such as developers—potentially interested in entering into this sector of the economy will not do so until they are able to obtain clear title to the real property they seek to develop.

Third, Palau does not have a sufficient domestic savings base from which to fund even modest scale investment in the tourism sector. Necessarily, the national government of Palau must solicit and encourage foreign investment to provide the capital unavailable domestically to fortify the tourism industry.

8.9 Leakages
An unacceptable amount of the tourist expenditure in Palau is leaked out of the country and therefore cannot be properly considered a net addition to the country's economy. For example, a United Nations study estimated that hotels and restaurants contributed $8.7 million (or roughly 10%) of Palau's Gross Domestic Product ("GDP") in 1992, but confirmed that a significant percentage of that amount leaked out of the country in payment for foreign debt servicing; repatriation of profits; overseas promotion expenses; imports of capital equipment; imports of foodstuffs and beverages; imports of other goods consumed by overseas visitors; imports of fuel, building materials and infrastructure consumables; and remittances of earnings by foreigners working in the industry. (Please refer to the "Flow of Tourist Expenditure in Palau" chart on the next page for a graphic representation of this problem.)

These leakages make it very difficult to accurately analyze the actual contribution of tourism to the national economy, but one analyst has concluded that of the $8.7 million contributed to the GDP by hotels and restaurants in 1992, only $2 million (or 23%) of that amount was a net addition to Palau's economy. Even so, the tourism sector constitutes a sizeable portion of Palau's non-subsidized, income-generating economy and has great potential to create significant value and jobs in Palau.

8.10 Promotion

Despite the growing international awareness of and interest in Palau, the islands remain relatively unknown outside of Micronesia. In particular, Palau is virtually unknown among the mainstream international travel agents responsible for booking vacation arrangements for their customers. An easily identifiable constraint upon the promotion of Palau as tourist destination is the relatively small budget allotted to the Palau Visitors Authority ("PVA"). PVA receives the major part of its funds from the $10.00 airport departure tax paid by those leaving Palau via the International Airport; 70% of the taxes collected is allocated to the PVA. At present, this amount is either too small or is misdirected as PVA has not conducted the in-depth market research necessary to "sell" Palau as a tourist destination.

Another constraint on the promotion of Palau as a tourist destination that is not so readily identifiable is the fact that there is no tourist industry-based organization established in Palau. Unfortunately, rather than work together to promote their inter-related businesses, most of the existing tourism-related business owners seem to view each other as adversaries. This lack of common understanding and fragmentation within the industry is a significant constraint on the promotion of Palau as a premier tourist destination.
Sustainability

To date, the tourism industry in Palau has evolved in an unplanned manner. As of yet, the country has not articulated a vision for what the future in tourism should be for Palau. For example, there is no consensus as to whether Palau should encourage large-scale, high-rise resort developments with the aim of attracting as many tourists as possible; or whether Palau should encourage smaller, unique projects designed to attract a more limited, but much more affluent, number of travelers; or whether Palau should encourage something in between.

Perhaps even more significantly, although the country has begun some serious conservation efforts, as of yet it has not developed or implemented a comprehensive program designed to guarantee the conservation and sustainable management of Palau’s terrestrial and aquatic resources as the anticipated expansion of the tourism industry occurs. Studies should be commissioned to assess the impact of the large-scale foreign fishing industry on the unique marine environment that is Palau’s greatest, long-term economic resource. Given that Palau’s appeal as a tourist destination is largely based on its pristine environment and incomparable marine resources, the future success of the tourism sector will be dependent upon a comprehensive understanding of these issues.

POLICIES AND STRATEGIES

8.12 Improve Access to and within Palau

The national government already has begun to meet the challenge of improving access to and within Palau. To begin with, the government through its Foreign Investment Board actively is encouraging other international airlines to establish their business in the Republic. The government anticipates that the resultant competition will drive down the cost of air travel and increase demand for Palau as a tourist destination. As of the drafting of this Plan, other airlines have expressed serious interest in flying to Palau. The government must continue these efforts until it succeeds in persuading at least one additional airline to begin doing business in Palau.

The national government also has made significant progress in its attempts to make short-term improvements to the existing facilities at the Palau International Airport. As of the drafting of this Plan, the government is about to conclude negotiations with virtually all commercial tenants at the airport terminal (such as car rental companies, tour operators, restaurants and gift
shops) which will bring Palau increased revenues with which to fund future airport improvements.

Over the long-term, with the implementation of the Compact the national government plans to allocate $6,000,000.00 of the total Capital Infrastructure Project ("CIP") funds for the construction of a new airport terminal. This new terminal will feature additional apron space to enable a greater number of jets to park at the airport; an improved parking lot for travelers' vehicles; and enhanced navigational aids and airport lighting.

Another long-term plan of the national government is to extend the existing 7,200 foot airport runway in order to accommodate larger, wide-bodied jets. Given that the government has had to prioritize its use of CIP funds among an enormous range of projects necessary to the development of Palau, this particular plan is not included in the $6,000,000.00 funding proposal.

8:13 Enhance and Diversify Tourist Accommodations and Attractions

The national government hopes to eliminate or minimize the constraints described in the preceding section to the enhancement and diversification of tourist accommodations and attractions. First, with the implementation of the Compact and release of CIP funds, the national government intends to significantly expand the existing infrastructure. Specifically, the government plans to allocate $2.5 million to improve the Koror sewage system; $5 million to improve Palau's national water system; nearly $8 million to improve and repair the national road and highway system and construct a new hot-mix asphalt plant; and $8.5 million to rehabilitate the country's existing power plants. These improvements to the existing infrastructure will facilitate the growth and enhancement of Palau's tourist accommodations and attractions.

Similarly, the government believes that the above-described improvements to the country's infrastructure also will assist Palau in attracting direct foreign investment in the tourism sector. Indeed, potential foreign investors repeatedly have told the Foreign Investment Board that they are waiting to apply for approval for their projects until additional infrastructure is in place. The national government further is attempting to encourage foreign investment by sponsoring the cross-cultural exchange of information between Palau and other countries. The Foreign Investment Board is in the process of streamlining its procedures to expedite its review of foreign investment proposals and thereby reduce the costs of such investment to foreign entities. The Board also is finalizing regulations to implement the Foreign Investment Act, which should clarify and resolve ambiguities in the law.
Unfortunately, the resolution of hundreds of pending land title disputes will require time to go through the necessary judicial process. The national government will push for the expeditious resolution of these claims at all times.

8.14 Reduce Leakages

The national government will assess the advisability of introducing initiatives designed to create incentives for the tourism industry to reduce leakages out of the Palauan economy. In particular, the government will study whether it should adopt legislation (such as amending the existing gross receipts tax structure) designed to deter the importation of certain foodstuffs that could be produced locally at a lower cost. Similarly, it may be cost effective to create incentives for businesses to utilize locally produced building materials and to encourage the production of locally produced crafts and other goods for sale to the tourist market (rather than importing goods for resale to tourists visiting Palau).

8.15 Improve Promotion

The national government will request that the Palau Visitors Authority implement an in-depth market research program, beginning with a market survey and analysis project to acquire the information necessary to plan appropriate promotional campaigns. Given that Palau is less than a five hour flight of Japan, South Korea, China, Taiwan, Indonesia, Thailand and Malaysia, the country must gain an understanding of what the country can do to persuade the people of these nations to travel to Palau to spend their vacation. PVA also will be encouraged to concentrate on improving the currency and accuracy of its data and to carry out further work on market segmentation and definition.

Second, the government will encourage the private tourist-based businesses to establish an united industry body, such as a "Tourism Industry Association of Palau." All the various sectors businesses from the tourism industry should be represented in this association so that it can identify and communicate the views of the industry as needed.

Third, the government will appoint a temporary Tourism Development Commission whose task will be to "jump start" tourism in Palau. The Commission will serve for a finite period of years and will be comprised of representatives from industry, PVA, the Ministry of Commerce and Trade, and some persons from outside Palau who have experience in the developmental aspects of tourism and who have no business or financial ties with the country. These outside persons will be knowledgeable in the subject of building up a
national tourism industry, with experience in investment, land use planning and development, architectural design and so forth. The purpose of this commission will be to set things in motion so that the tourism industry will develop in a balanced way and become the leading growth sector in the national economy.

8.16 Ensure Sustainability

The government is hopeful that its efforts to lend some cohesion to the tourism sector through the establishment of a Tourism Development Commission and the encouragement of a Tourism Industry Association of Palau will lead to the articulation of a consensus goal for the future of this industry in Palau. The nation must consider and choose among the various alternative routes that Palau could pursue for the enhancement and diversification of this economic sector.

The national government will continue to support and encourage the development and implementation of programs aimed at conserving and protecting Palau's valuable natural resources. To begin with, the government will request that the Economic Unit of the South Pacific Forum Fisheries Agency based in Honiara, Solomon Islands conduct an economic feasibility study of the foreign tuna fishing industry in Palau. The government further will seek an environmental study of the impact the fishing industry is having on Palau's marine environment.

CONCLUSION

The Republic of Palau is proud of its unique position in the world as a marine paradise with a strong economic future. The government will support the responsible growth of tourism as the leading sector of Palau's economy as long as that growth takes place in a manner consistent with the environmental and cultural heritage of the islands. Through the judicious expenditure of CIP funds to improve and enhance the infrastructure of Palau, the government hopes to attract and facilitate increased foreign investment in tourism-related industries. With careful planning and support, the tourism industry will lead Palau towards an independent and financially prosperous future.
CHAPTER 9
MARINE RESOURCES

CURRENT SITUATION

Palau's marine resources include inshore and offshore vertebrate species such as reef fish, pelagic fish, bottom fish, turtles, birds, crocodiles and marine mammals. Invertebrate species include shrimp, clams, trochus, lobsters, pearl oysters, crabs, octopus, corals and others. There is also a variety of marine plants. The coral reef ecosystem is widely recognized as one of the richest and most diverse in the world. For these and other reasons, the ecosystem is one of our most valuable resources. Evidence to show that Palau's marine resources generate interest beyond our shores is the number of tourists. In 1993, over 40,000 visited Palau, most of whom were pleasure visitors enjoying our ocean in one way or another.

Palau's marine resources are used in various ways. Fishing in the lagoons and on the reefs is a means of both subsistence and generating small amount of revenue for local fishermen. The methods of fishing range from simple collecting of sea cucumbers, sea urchins, clams and other species at low tide, often by women and children, to hook and line fishing, underwater spear fishing, net fishing and trolling. The latter types typically require the use of 16-25 feet long motor boats. At least 20 percent of Palauan households currently own such power boats. Given the Palauan extended family system, most fishermen have indirect access to the boats, even if they do not own them.

In 1993, 777 fishermen landed a total of 769 tons of fish and invertebrates at three major fish markets with a dockside value of over $2.1 million. This did not include aquarium fish, cultured giant clams or trochus.

Fishing for trochus is a large source of seasonal income for local fisherman. Average annual catches during the June season range from 100 to 300 tons. In 1992, after a harvest moratorium of three years, the fishermen landed a total of 265.1 tons, with a dockside value of $645,000. A total of 251.9 tons of cleaned and dried raw product from this harvest was exported to Asian markets, bringing in $1.1 million into Palau. In 1993, only two states responded to the trochus harvest season declared by the OEK and the catch was only 29.3 tons with a dockside value of $58,600. Export of ornamental aquarium organisms by the private sector began in 1991. In 1993, a total of 38,553 live fish were exported bringing in an additional $48,600.

Offshore fishing of pelagic species, particularly tuna, is conducted
mainly by foreign fishing vessels. American and Japanese licensed vessels are not required to land fish in Palau. Vessels from Taiwan and mainland China are required to off-load their catches in Palau. In 1992, locally-based tuna shipping companies exported 4,007 metric tons of tuna with an estimated market value of about $36 million. The companies contributed about $2 million in taxes and fees which represent about 6 percent of the estimated fish market value.

Purchase records from major fish retailers show commercial landings (tons) and dockside values ($) for 1991, 1992 and 1993 as follows: 350.8 tons ($1.032 million), 599.1 tons ($1.624 million), 418.91 tons ($1.077 million). Subsistence production has been estimated to be as large as three times that of the commercial landings, but data to verify this is minimal.

Inspection of airline freight records indicate that a large volume of marine products leave the country as air freight. Outgoing marine products in 1991 were 775 tons from 13,748 containers and 1,005 tons and 17,767 containers in 1992. This large gain in exports was the result of aquarium sales that year. An unknown amount of marine products are exported as carry-on baggage which does not get recorded. In 1992, an estimated 203 metric tons (with a cash market value of $700,000) of edible fish was exported by individual fishermen or companies that did not land their fish at PFFA, PMCI, Oh's or Melekeok Cooperative. In addition, over 220,000 organisms, mainly cultured giant clams, valued locally at over $220,000 were shipped during 1992.

The national government agencies concerned with marine resource use and development include the Ministry of State, the Ministry of Resources & Development (the Division of Conservation/Entomology and the Division of Marine Resources), the Ministry of Justice (the Office of the Attorney General and the Division of Marine Law Enforcement), the Environmental Quality Protection Board, the Palau Fishing Authority, and the Palau Visitors Authority.

9.1 Palau Maritime Authority

Within the Ministry of State, the Palau Maritime Authority (PMA) is mandated under Title 27 of the PNC to: (a) develop and manage offshore fisheries in the Extended and Exclusive Economic Zone (between 3 and 200 miles from shore), (b) adopt regulations for the conservation, management and use of all resources in the Extended and Exclusive Economic Zone, (c) participate in the delimitation of the Extended and Exclusive Economic Zone, (d) negotiate foreign fishing agreements and issue foreign fishing permits. PMA has jurisdiction in the Exclusive Economic Zone from 12 to the 200 mile limit and determines the allocation among foreign nations of the total allowable
foreign fishing levels.

PMA presently licenses 50 Japanese longliners and 32 purse seiners. Palau Marine Industries Corp. (PMIC) has an access agreement for a maximum of 120 vessels, although only 93 were active in 1993. Palau International Traders Inc. (PITI) has an access agreement for a maximum of 250 longliners with 145 active in 1993. All PITI vessels are mainland Chinese while PMIC operated 52 Chinese and 41 Taiwanese vessels. The Kuniyoshi Fishing Company (KFC) recently started operations with 11 of a maximum of 70 allowable vessels.

9.2 Division of Marine Resources

The Ministry of Resources & Development includes the Bureau of Natural Resources and Development which directs the activities of the Division of Marine Resources. The main functions of the Marine Resources Division include marine research and development, resource management, technology transfer, technical advisory and extension services, statistical monitoring and recommending legislation. In addition, the Division is charged with oversight of the Micronesian Mariculture Demonstration Center (MMDC) which develops and promotes commercially viable marine species and serves as a base of operations for some visiting international researchers.

9.3 Palau Fishing Authority

A semi-governmental entity supervised by an appointed board, the mandate of the Palau Fishing Authority (PFA) under Title 27 of the PNC is to: (a) provide support for the development of local fisheries in Palau, (b) recommend to the government a marine resources policy for the internal waters of Palau, (c) conduct pilot fishing operations and participate in large scale commercial fishing operations, including joint ventures, (d) to support fishery cooperative associations, (e) support locally-owned private fishing enterprises.

In addition, the Palau Federation of Fishing Association (PFFA) was established in 1975 as a fishermen's cooperative to offer shoreside facilities and services to local fishermen. Heavy losses rendered PFFA insolvent in 1982, and was taken over by the national government in 1983. It is currently managed as a quasi-government agency by the PFA. Together, PFA and PFFA operate a 100-ton cold storage facility and three ice machines with a combined production capacity of 16 tons a day. In addition, PFA and PFFA manage 10 35-foot diesel vessels donated by Japan and provide fishing gear at cost to local fishermen.
9.4 Division of Conservation and Entomology

The Division of Conservation & Entomology was created by an executive order in 1989 to develop and implement conservation policies. Its mission is to: (a) provide technical assistance and guidance to the three branches of the national and state governments and their agencies on conservation, (b) recommend policies for the enforcement of conservation laws and regulations, (c) develop education programs concerning conservation and entomology for schools, museums, and other groups and organizations. The Division currently employs four Conservation Officers.

9.5 Environmental Quality Protection Board

The Environmental Quality Protection Board (EQPB) has the specific responsibility to protect marine resources under Title 24 of the PNC. The EQPB's mandate is to oversee the administration of permit and monitoring systems for the discharge of any pollutants on the land, air or water in Palau. It is also charged with enforcing laws to monitor, inspect and keep records of environmental protection programs and activities.

In cooperation with U.S. Environmental Protection Agency (EPA), the EQPB promulgated the Marine and Freshwater Quality Standard Regulations which include the following: (a) uses for which the various waters of Palau shall be protected, (b) specifications of water quality standards to be maintained in designated areas, (c) prescription of regulations and implementation of programs to maintain specified water quality standards.

PROBLEMS AND ISSUES

9.6 Data Base

Data on fish and shellfish catches in the reef, the number of fishermen, the commercial and subsistence catches, and the sales to local markets needs to be developed in greater details. Equally important is data on exports and imports.

Several sources suggest that fish harvests from the reef may have reached maximum sustainable yield levels. Preventing overuse of key species requires action including monitoring. Another useful act is to encourage fishermen to catch more pelagic species such as tuna, mahimahi, etc.

9.7 Local Participation
Three big commercial traders service foreign licensed vessels in transshipping their catches of tuna to Japan. However, local people currently have limited roles in management positions, thereby limiting potential benefits to Palauans.

9.8 Environment and Conservation

The environmental erosion stemming from congested harbors and lack of sanitary facilities is becoming a major concern to the growing tourism industry. Poaching of inshore and offshore marine resources by foreign vessels is a persistent problem, clearly showing the need for regular surveillance. Traditional conservation methods such as reef tenure have eroded near population centers although there is a growing movement to revive them.

9.9 Marine Resources Imports

More than 100 tons of canned fish is imported annually. Canned tuna and sardines are regarded locally as affordable and convenient foods, but importation of canned and frozen fish is a wasteful drain on foreign exchange given local resources.

Expanding the export market of our marine products, mainly reef fish, is often constrained by the lack of cargo space and connections to major markets such as Japan, Taiwan and parts of the U.S.

OBJECTIVES

9.10 Marine Resources Objectives

The nation’s marine resources use objectives in the Plan period are to:

a. Increase local participation in employment and other income generating opportunities in all commercial fishing, shore-based processing and servicing, export facilities, marine-based recreational ventures, mariculture and others.

b. Develop long-term integrated resource management policies that take into account the principle of sustainable development and adherence to it by resource owners, managers and users.

c. Explore further possibilities for local participation in the harvest of oceanic resources for sashimi markets
d. Increase export of cultured and under-utilized species.

e. Introduce and demonstrate efficient methods for harvesting, handling, storage and marketing of marine products.

f. Develop fishery support facilities at strategic locations and increase use of existing ones.

g. Establish a marine export monitoring system and find ways to maximize net returns from it.

h. Satisfy domestic demand for marine products.

POLICIES AND STRATEGIES

The government's strategy for marine resource management and use recognizes that the ocean is our most valuable resource which offers us the best potential for long-term economic growth and the attainment of economic self-reliance. As a result, we will pursue the following policies and strategies.

9.11 Private Sector Employment and Income Opportunities

In the private sector, the ROP will facilitate private sector employment and income opportunities as follows:

a. Develop fisheries support infra-structure at the community level and create programs that provide long-term employment opportunities.

b. Improve domestic and foreign channels for marine products marketing.

c. Institute advisory and training programs involving harvesting, handling, processing and quality control of marine products with emphasis on deepwater and oceanic species.

d. Encourage the formation of locally-owned and joint ventures that favor employment of Palauans.

e. Encourage fishermen to get involved in income-generating marine tourism industries.

f. Provide opportunities for women to participate in fishery-related activities.
g. Encourage formal education for management level jobs in fisheries.

9.12 Effective and Realistic Resource Management Parameters

To establish effective and realistic marine resource management the ROP will:

a. Conduct and fund surveys to identify and quantify resources to assist with management and policy development.

b. Encourage non-exploitative use of marine resources which maximizes local benefits and minimizes adverse impact on resources and environment.

c. Establish long-term programs to monitor the health of the marine environment and resources.

d. Establish national reserves and marine zone at key locations to ensure species recovery and long-term sustainability.

e. Support programs that protect reefs and other marine habitats.

f. Formulate plans and harvest regulations for major commercial and game species.

g. Encourage resource owners' participation in management decisions.

h. Delineate duties for surveillance and enforcement of marine resource regulations and upgrade enforcement capabilities, including the prosecution procedures for violators.

9.13 Fishery Information

In order to improve the ROP's fisheries information base, the following will be done:

a. Appoint a full time fishery statistician in the Marine Resource Division.
b. Expand data collection to include imports and exports of all marine organisms and products.

c. Publish an annual report of the Marine Division with data and analysis of production, export and import of marine commodities.

d. Package important fishery information and research results for public distribution.

9.14 Full and Efficient Use of Existing Infrastructure

The ROP will maximize use of existing fishing ports and facilities through development of land access in order to strive toward full and efficient use of its infrastructure.

9.15 Broader Marine Resource Income Base

A broader marine resource base will be encouraged by:

a. Promoting and maximizing benefits from marine-related visitor industries and recreational activities.

b. Identifying markets and promoting private involvement in the development of high-quality and high-value products.

c. Encouraging and promoting the production and export of mariculture species and related products.

d. Establishing an aquarium as an income source and to support research objectives.

9.16 Strong Development and Management

To strengthen marine resources management capabilities, a number of programs and projects will be instituted. We will upgrade marine resources positions and fill them with professional staff. Support facilities will also need to be upgraded.

PROGRAMS AND PROJECTS

The government will undertake programs which are consistent with the sectoral development objectives and national policies and priorities. While the projects listed below are in order of priority, we will be flexible in carrying
them out.

Activities of all agencies involved in marine resource policy and management will be reviewed to improve organizational makeup, staffing and long-term educational plans. The Division of Marine Resources will explore both formal and informal education and training program to improve the career opportunities for fishery managers, business people and fishermen.

A marine biologist will be recruited for a two-year period to help coordinate management policies. The duties will also include resource surveys and assessments and training of new staff. A tuna biologist will be retained for two years to identify issues relating to tuna and help develop a long-term tuna management program which will include economic and environmental analysis.

The Palau Fishing Authority (PFA) is charged with the support and promotion of fishery by the private sector. Presently, its main activity is the operation of the fishery center at Malakal which buys, sells and exports fish. It also leases to local fishermen a number of fishing boats provided under Japanese aid. PFA has played a major role in establishing a thriving inshore fishery in Palau which produces 250-300 tons of fish a year. A business plan for PFA will be prepared by a consultant in collaboration with the board and management of PFA. The consultant for this work will have a strong marketing and finance background, with expertise in fishery in the Pacific.

Fisheries and other conservation regulations need to be strictly enforced. With increases in population, tourism, and fishing levels, it is essential that we enforce conservation measures. The first task in this project will be to establish its policies, code of operations and a work plan. This will cover education as well as enforcement. A handbook will be prepared for the use of all staff of the Fisheries Management Branch and others involved in enforcement of fishery regulations.

The project will also recruit and train two Fishery inspectors whose training will include knowledge of fishery, methods of inspection of marine resources, identification of different types of fishes, fishery regulations of Palau and other matters relating to conservation and enforcement. Training will be arranged with an established fishery inspection operation in the Pacific region.

We will prepare and implement an integrated fishery development program at the fishing ports of Ngarchelong, Angaur, Melekeok and Ngatpang. The program will train 10 fishermen at each port in off-shore fishing around FADs and train 10 fishermen at each port in the correct handling of chilled tuna. We will implement an improved system of transportation for fish and other
marine products from the fishing ports to Koror.

A survey of the role of women in the fisheries of Palau in 1991 by the Division of Marine Resources provided the first quantified description of their contribution to fishery. The study showed that most marine products produced by women were hand gathered from shallow inshore areas and comprised a wide range of invertebrates. Some fishing was also done, mainly using lines. Other findings were that although much of women's catches were for their families, three quarters of them regularly sold part of their catch. This project will formulate an action plan for technical assistance to women's fisheries in Palau.

There is a need to develop small-scale tuna long-line fishing methods and gears suitable for Palau.

Sports fishing is a major tourist attraction and a lucrative business in many parts of the world. Many prime species sought worldwide by sports fishermen are present in Palau's waters. They include marlin, tuna, shark, wahoo, Spanish mackerel and other large pelagic species. There is already a thriving tourist industry in Palau, much of it associated with marine recreation. Establishing a specialized sports fishing industry is another way to develop private fishery activity.

Assistance will be provided to all state governments on the proper management of trochus sanctuaries and on ways to increase reef production. Marine areas of high bio-diversity will be considered for national marine reserves. Efforts will be made to integrate the expertise and resources of all private concerns and government agencies to draft a conceptual plan and implementation scheme.

A research program aimed at understanding the dynamics of Palau's nesting turtle population will be initiated. A recovery program to restore the declining population of nesting females will be developed and implemented. This will be done in collaboration with SPREP, USFWS, University of Georgia and Australian experts.

While tourism in Palau is becoming a mainstay of the local economy, increasing competition from other island destinations dictates that we enhance the experience of Palau's visitors. A commonly heard complaint among visitors to Palau is that there is a shortage of land-based tourist activities. About 50 percent of the tourists visiting Palau are SCUBA divers. For them, the major attraction is the chartered boat trips to rock island dive spots.
For the non-divers, however, and for all visitors during days when inclement weather precludes diving, we need to improve the quality of available activities related to the marine environment. There is a growing demand for a new tourist destination in Koror, one that can showcase the beauty, diversity and fragility of Palau's marine life without the need for boat trips and scuba diving. An aquarium would fill this need and offer educational opportunities to Palauan school children at the same time.
CURRENT SITUATION

Along with American influence to the Pacific Islands came a money economy which had just begun under Japanese occupation. A well-established money economy and its underwriting by American aid since the 1950's separates Palau and her sister Pacific Island states from the typical developing economies. As the ROP starts a new era, it is helpful to trace the makeup of its commerce, industry and finance, show how it has evolved and suggest what can and should be done to increase its productive capacity and social appeal.

A useful way to examine an economy's commercial, industrial and financial makeup is to explore the types of jobs and levels of income it generates over time. U.S. census data provides an indication of the ROP's sectoral makeup, dilemmas and promises.

Especially useful is the ROP's compilation of U.S. census data in a volume known as the Census Monograph. Similar to the U.S. Abstract of Statistics, which is published annually, the Monograph is a one-time gathering and interpreting of census data following the decennial census.

10.1 Commerce And Industry

Table 10.1 presents data on Palau's commerce and industry by employment types for 1970, 1980 and 1990.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag, Fish &amp; Mining</td>
<td>309</td>
<td>16.8</td>
</tr>
<tr>
<td>Construct &amp; Manufa</td>
<td>362</td>
<td>19.7</td>
</tr>
<tr>
<td>Transp, Comm &amp; Util</td>
<td>132</td>
<td>7.2</td>
</tr>
<tr>
<td>Trade (Whlsl &amp; Rtll)</td>
<td>228</td>
<td>12.4</td>
</tr>
</tbody>
</table>

TABLE 10.1: Industry By Type of Employees (16 years old & over)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag, Fish &amp; Mining</td>
<td>161</td>
<td>8.0</td>
</tr>
<tr>
<td>Construct &amp; Manufa</td>
<td>555</td>
<td>28.3</td>
</tr>
<tr>
<td>Transp, Comm &amp; Util</td>
<td>228</td>
<td>11.8</td>
</tr>
<tr>
<td>Trade (Whlsl &amp; Rtll)</td>
<td>336</td>
<td>17.1</td>
</tr>
<tr>
<td></td>
<td>800</td>
<td>41.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1970</td>
<td>1980</td>
</tr>
<tr>
<td></td>
<td>1990</td>
<td>1990</td>
</tr>
</tbody>
</table>
The data in Table 10.1 shed light on several critical points. First, employment in the money economy (item #7 in the table) tripled from 1970 to 1990. In fact, employment rose from 15.3 percent of the population in 1970 to 22.7 percent in 1980 and 37.1 percent in 1990. The large increase in employment is a clear indication that more people abandoned other ways of making a living, such as subsistence, for example, to earn money wages in the money economy.

As the population ages, more people will enter the labor market to work for wages to sustain their living standards. Half of the population joining the labor force (persons either working or actively seeking work) is the normal labor participation rate for the U.S, for example. It may take another decade or longer, but half of Palau's population entering the labor force appears to be an eventual certainty.

The effect of a progressively higher labor participation rate in the money economy is that a person "once a wage-earner is always a wage-earner." This is to say that as persons get used to earning money wages and get accustomed to certain standards of living, they generally do not leave the labor market. To the extent that a higher standard of living requires more and better chances of work in the money economy, the adverse social and economic impact of job losses in the money economy must be clearly understood.

The second point worth making is that the goods-producing segment of the economy (#1 and #2) dropped from 36 percent of employment in 1970 to 25 percent in 1980 and it stayed there through the 1980's. Although this type of economic change is not unusual when an economy develops, fewer workers producing goods is not necessarily a sign of economic progress. As people abandon the production of goods, especially those which require hard labor, and join the money economy's labor force with low-skill service jobs, that change can be detrimental to both persons and to the economy. However, this transition, which usually causes migration to and congestion in urban areas such as Koror, should be viewed as the best evidence of the need for more jobs.
The third point brought to light in Table 10.1 is that transportation, communication and utilities (#3) remained at 8 percent of total employment in 1970-90. This segment's constancy of employment as a share of the total ought to be a source of concern because it may represent lack of progress in areas that should see more change in a growing economy.

The fourth point is that trade and services, including government services, (#4, #5 and #6 combined) rose as a share of total employment from about 55 percent in 1970 to 65 percent in 1980 and it remained there in the 1980's. The rise in services as a share of total employment is not unusual in advanced economies where higher levels of income and leisure have made it possible to buy more services.

However, high level of services can be an ambiguous signal. If services represent high levels of skill and knowledge, they become a primary source of earnings and offer their providers high incomes. Financial and international trade services in Hong Kong, for example, make up a large part of the territory's exports and earnings. Most tourist services in Guam, for example, do not require high levels of skill and, therefore, do not command high wages.

Nor should the argument for more goods production and fewer services be interpreted as meaning that services ought to be abandoned in favor of producing more goods regardless of their nature and value. Returning to a subsistence economy at the expense of a higher standard of living in the urban economy, for example, is neither practical nor economically wise. Rather, the government and industry must recognize the potential economic and social pitfalls of low-skill services careers and gradually but certainly replace them with high-skill services.

Because the ROP needs more jobs, regardless of quality, as it develops a self-reliant and market-oriented economy, it should focus on its best comparative advantages. Again, as discussed elsewhere, Palau's best comparative advantages lie in tourism and fishery, but more extensively in the first than in the second. Accordingly, the ROP's scarce resources should be committed to areas where its commerce and industry develop with the goal of creating more jobs, a larger and broader tax base, and more dependable sources of income.

10.2 Private Financial Institutions In Palau
Financial risk is generally high in developing economies. The risks arise from undeveloped markets and institutions, social and political insecurity, poor appraisal of risk, benefits, and insufficient reward for capital. In spite of these and other risks, capital flow from savers and lenders to borrowers and users throughout world markets has increased steadily. With the collapse of communism in Russia and Eastern Europe, more and freer capital flow worldwide will undoubtedly occur in the years ahead.

High-risk capital, from both foreign and local development banks, will most likely flow to high-risk ventures in Palau's early stages of economic change. These ventures can range from new hotels and resorts to fish processing plants, sea and air transport efforts to woodwork factories. Committing capital to such endeavors will require long-term views, high risk premiums and high returns.

By contrast, low-risk funds such as deposits which must be paid upon demand, generally finance only proven ventures with good performance records in areas such as cash flow, management and collateral. One would hope that these types of ventures will become much more common once Palau's economic transformation gets underway. The critical distinction between high-risk and low-risk capital and, therefore, between the types of projects they should fund, has not been made as clearly in the past as is necessary. Now that ROP is moving toward building a market economy, it is critical to understand both the role and the importance capital plays in the early stages of economic change.

It is often said that commercial banks have not done all they can to lend money, especially to local entrepreneurs. What perhaps has gotten lost in the argument is that commercial (even savings) banks are merely circulating deposits which are payable upon demand. Any institution which fails this crucial test can be declared insolvent. The failure of local entrepreneurs to obtain private funding is not so much the failure of commercial (and savings) banks as it the functions of the laws and the institutions they govern.

10.3 Recent Developments in Banking and Finance

The small size and slow change in Palau's economy over the last four decades has limited the growth of commercial banking. In 1961-84, only one commercial bank (a branch of Honolulu-based Bank of Hawaii), operated in Palau. It was joined by the Bank of Guam in 1984 and the Bank of Palau one year later.

With the commencement of negotiations for the Compact of Free
Association with the U.S. came a number of small financial institutions, variously called banks and finance companies for which data are not available. Some of these organizations function as depositories to remit alien worker wages to their home countries. Since the ROP has not yet developed a central banking or monetary authority, there is little information on these emerging institutions. Nor does any one know much about their impact on the rest of private financial services firms or the credit market in general.

Since banks, especially U.S. banks, are governed by strict deposit control regulations, they have not fulfilled as many of the credit demands as there are in the market. Nor should that be expected in the future. As a result, new credit unions have emerged to meet the needs of one segment of the credit demand: small consumer loans.

The development of proper financial institution monitoring is a vital requirement. Potential losses of deposit can damage both depositors and the reputation of financial institutions holding them. No one should understate the importance credit and financial institutions play in economic growth.

The possibility of Palau becoming a global (offshore) banking center as a means of achieving professional and income growth has been raised regularly. Absent from this discussion has been a careful and complete assessment of what makes a place an international banking and money transfer facility. Many of the advantages that such centers offer to the world of finance may be difficult to develop in Palau as a part of the U.S. monetary system. Also, given the small size of the local population, creating an independent monetary system could be costly to justify, at least initially.

This, however, does not imply that Palau cannot develop a well-functioning credit and financial system of its own. With the transition of Palau to a market economy will come chances for traditional and new forms of credit in both the private and public sectors. There will undoubtedly be opportunities for some joint public-private funding of projects. It will be important for development experts to keep in mind, however, that sound lending and financing in the traditional sense will depend on learning sound and well-documented practices. These must include cash flow analysis, proper appraisal of assets and liabilities and a thorough understanding of the risk-and-reward business which lending and borrowing is.

Failure to clarify the standing of title to property or to require credit allocation to developments that can give no market evidence of repayment will jeopardize the safety and confidence of private lending institutions. The
challenge before the National Government is to provide a legal and physical infrastructure within which private credit can safely play a dynamic and positive role.

Filling the gaps left by banks, credit unions have played an important role in Palau by moving savings from savers to small loans to their members. As member-user institutions, they have extended credit where other traditional lenders have not played as large a role because of regulatory restrictions. With the Compact and Palau's plan to move from a subsidized to a market economy, the role of banks, credit unions and other institutions will have to expand. Although Palau's size will limit that expansion, credit unions can still play an important role. Until improved transport links to many remote parts of Palau are developed, the local credit unions will serve a role that most other financial institutions cannot.

One area the EDP recognizes as critical in the early stages of economic change is the provision of high-risk capital through semi-private institutions such as development banks. The National Development Bank of Palau (NDBP) is one such structure. NDBP, in alliance with the U.S. Small Business Administration (SBA), will have to create reliable sources of debt/equity capital in amounts large enough to meet the credit demands of those that cannot obtain the capital but which can bring about the positive change in Palau's economy.

PROBLEMS AND PROSPECTS

10.4 Commerce, Industry and Finance Problems

Palau's dispersed and remote areas and limited managerial pool cause some of its many financial institutions, such as credit unions, to function ineffectively as instruments of economic change. Part of this arises from their predominant function as underwriters of consumer loans rather than for capital formation. The small size of most of these individual institutions has prevented them from offering funds for many projects that may be considered as important contributions to development and change.

Initially direct foreign investment (which may include foreign ownership) may make up the largest private agent of change in transforming it into a market economy. A country is in much greater control of its development if it depends on equity rather than debt capital from abroad. Extensive use of such foreign investment in commercial projects throughout the country may be fundamental to Palau's future development. Equity capital
will come in a responsible manner for that purpose if the criteria for its sanctioned use is reasonable and clearly spelled out in the laws of the Republic.
CHAPTER 11

AGRICULTURE, LIVESTOCK AND FORESTRY

CURRENT SITUATION

In rural Palau, the majority of households earn a part of their livelihood from subsistence farming and fishing. Women grow staple crops such as taro (both the dry-land and wet-land varieties), cassava and sweet potato and men provide the protein in the household's diet by catching fish. Although not locally produced, rice has become an important staple food. Over a million pounds of rice is imported annually, mainly from the U.S. Bread, made of imported wheat flour, has gained popularity as a staple food mainly in urban Koror where several commercial bakeries operate.

Some households in rural Palau and even in Koror, raise pigs and chicken generally fed on kitchen left-overs. Pigs are kept in back yards and chicken are free to rummage for feed and occasionally receiving commercial feed. A growing number of farmers are engaged in small commercial agriculture operations and market their produce at several outlets in Koror. Individual farmers in commercial agriculture sell their produce directly to hotels, restaurants and small stores specializing in local foods. The Division of Agriculture supplies seedlings of fruit bearing trees, vegetables, etc. to the local population.

There are four commercial egg producers presently in Koror. Because of the high cost of imported feed and small scale of production, the unit cost of egg production is higher than of imported eggs. However, because of the freshness of locally produced eggs, customers are willing to pay this premium price. At present, there are 13,000 egg-laying hens in production which do not produce enough to meet the demand of the local market. This population of egg-laying hens supplies about 65 percent of the total egg market.

A feasibility experiment was conducted on broiler chickens by the Agriculture Division. The results indicated that because of the high cost of imported feed, the unit cost of a pound of broiler was too high to make local production competitive with imported broilers. The nine semi-commercial piggeries cannot meet the demand for pork and therefore much of it is imported. Pork made available through backyard operation is traditionally consumed at customary functions and festive occasions.
A couple of small scale saw mills are in operation. Lumber trees from forest and mangrove areas are cut and brought to the mills to be dressed into boards and planks for house construction, furniture making and storyboard carving. Palau also depends to a large extent on imported lumber for house construction.

Land ownership problems and the uncertainty generated thereby constrain agricultural development. Land may be public, held in trust by national or state governments, owned by the national or state governments, owned by a clan (which may consist of several families) or privately owned. Clear titles to land customarily do not exist.

Loans for financing commercial farming can be applied for at commercial banks and the National Development Bank, but they are not easy to get because of land title problems. Nor are there formally-organized farmer cooperatives.

A soil survey of the Palau Islands established that a large percent of Palau's soils are suited to the production of certain crops and livestock. However, only a small percent of the available land is being used for agricultural production in large part because of lack of roads to these arable lands.

11.1 Organization

The Divisions of Agriculture and Mineral Resources, of Conservation & Entomology, and of Marine Resources make up the Bureau of Natural Resources and Development in the Ministry of Resources and Development. The Division of Agriculture and Mineral Resources is headed by a Chief and consists of four branches. The Division is based at the Agriculture Demonstration Station in Koror. The other facility related to the operation of the Division is the Nekken Forestry Station in Aimeliik State.

11.2 Division of Agriculture

The Division of Agriculture provides technical aid and management services to farmers and markets local produce and assists farmers in finding solutions to technical problems. The Division also disseminates information on new and improved production techniques and results of their local experiments.

a. The Agriculture Extension Branch
The Chief of the Division, by law, manages the Palau Agriculture Revolving Fund which was created by the Palau Legislature in 1970. This fund purchases seeds, fertilizers, livestock feeds, agricultural machinery and implements, pesticides, and small equipment such as garden tillers and chain saws. These items are sold to the farmers with a mark-up of only 10 percent to cover administrative costs.

b. **The Animal Industry Branch**

The Animal Industry Branch has four employees. Its main functions are to assist farmers in livestock production. It provides technical advice and minor veterinary services and organizes and conducts demonstrations for farmers and students. The Branch also maintains a breeding herd of around 16 sows to supply an improved breed of piglets to the farmers and the general public. It runs cattle and goat projects to upgrade the local breeding stock. It also operates a breeding unit of dual purpose breed chickens for hatching and distribution.

c. **The Plant Industry Branch**

The Plant Industry Branch has 8 employees and consists of two sections:

**The Horticulture Section** prepares seedlings for farmers at no cost, except for the price of seeds. The section also conducts trials on vegetables and fruits to determine the viability of yield and adaptation to local conditions.

**The Quarantine Section** enforces the quarantine regulations and measures. Activities under this section include inspection at ports of entry and promotion of public awareness of the quarantine regulations and measures.

d. **The Forestry Branch**

Activities of this branch include a plant nursery for different species of timber and other trees of economic value at the Nekken Station in Aimeliik State. It cultivates several plots for species trials and demonstration. Its extension programs distribute seedlings of timber trees to farmers free of charge. It also advises on new techniques and ideas on forestry practices, conservation and management.
PROBLEMS AND ISSUES

Agricultural production for commercial market in Palau is limited. The main production activity is food for household consumption. Domestic demand for certain agricultural products is high, but is generally met by imports. Major constraints to developing market-oriented agriculture are outlined below.

11.3 Availability of Arable Land

There are large areas on Babeldaob which may be suitable for farming. However, there are limitations related to soil fertility, water resources, suitable soil types, and topography. Most soil already identified in the Soil Survey of the Palau Islands as suitable for farming lack adequate road and transport systems. Adding to the land problem are land tenure and title issues.

11.4 Labor

Because of unsuitable land and lack of adequate roads for mechanization, agriculture and farming are very labor intensive. To increase production, more labor would be required than is presently available in rural areas. The unemployed in the labor market are not inclined to accept agricultural work as wage rates are low in comparison to wages in other sectors, especially in urban Koror. Another restraining factor still in the Palauan social system is the perception of agriculture as traditionally a woman’s work. Also, there is the rather strong perception among the younger generations that agriculture is a low-status occupation. Clearly, there is an apparent need for skilled labor for semi-commercial and commercial farming.

11.5 Capital

It is often difficult for farmers to obtain capital for small-scale agricultural investment. Both the Agriculture Revolving Fund and the Palau National Development Bank have limited resources to meet the needs of farmers for financial loans. Moreover, PNDB requires collateral before approving a loan. Commercial banks do not provide long term low interest loans which are the type of loans farmers typically need. The small size of commercial agriculture and high risk associated with farming has precluded the extension of private development and credit loans.

11.6 Physical Infrastructure Deficiencies
Infrastructure needs include access roads, irrigation systems, water storage and distribution systems, utilities, transport facilities and services. In terms of marketing and distribution requirements, the needs include storage, refrigeration and handling facilities for fresh fruits and vegetables.

11.7 Small Markets

Markets for local produce are suitable in Koror, the capital area. These markets can absorb only limited local produce. The size of the market is small in terms of the quantity of any agricultural commodities that can be produced. The current channels of distribution for fresh produce are inadequate, resulting in unstable supply and absence of quality standards. The basic problem is the lack of a steady supply by farmers for the market.

11.8 Institutional Support

A centralized public market, together with organized market networks needs to be developed.

11.9 Lack of Market Incentives

One necessary component to a successful agricultural development program is adequate incentives to induce increased production. While a variety of services are available to the farmers, market support designed to stabilize produce prices is lacking. This kind of support is crucial, given the small local market. Product prices must be sufficient to provide incentive for farming. Otherwise, semicommercial and commercial farming will be slow to develop.

11.10 Training Facilities and Inadequate Follow-up Field Work

Farmers who need technical assistance to improve farming methods depend mostly on services provided by the Division of Agriculture and Mineral Resources. There are other agencies or organizations which offer training courses in agriculture, such as OISCA International and the Palau Community College. Technical expertise is currently offered by the Republic of China’s Agricultural Mission which focuses on demonstration for vegetable and fruit production.

11.11 Division of Agriculture and Mineral Resources Services
The Division of Agriculture and Mineral Resources provides services to the farmers through a wide range of activities and projects. The activities presently undertaken are as follows:

a. **Pilot Projects in Agriculture**

The Agriculture Division is undertaking several trial projects at the Agriculture Demonstration Station in Koror and at the Nekken Forestry Station in Aimeliik State. The Koror Agricultural Demonstration Station lacks adequate space for the implementation of pilot projects. The Nekken Forestry Station is located in an area with extremely poor soils so some studies undertaken there are not conclusive.

b. **Pilot Projects in Livestock and Pig Production**:

To encourage commercial piggeries, the division is selling piglets at subsidized prices. The demand for piglets cannot be met since most of the piglets supplied by the Agriculture Station are normally raised for meat rather than for breeding purposes. Pigs are traditionally fattened for customary occasions. The existing piggeries sell pigs mainly for customary occasions and festive purposes. Consequently, commercial piggeries have not fully developed.

**Cattle Production:**

The Livestock Branch oversees the cattle project which consists of 13 breeding cows from which weaners of 7 months old are sold to farmers for breeding or fattening purposes. The animals are raised on a ring and rope type of tethering. Access and networking roads throughout Babeldaob will allow expansion of cattle raising on the good natural grassland.

**Goat Production:**

The goat breeding and multiplication unit at the Nekken Forestry Station has a great deal of potential. The project is to provide upgraded stock for meat production in the private sector.

**Poultry Production:**

The poultry production project focuses on giving incentive to farmers to set up layer operations for egg production. Trials conducted at the Agriculture Station showed that local broiler production is uneconomical.
because of high cost of imported feed. Problems associated with poultry operations are related to poor management, high cost of imported feed and a lack of local feed ingredients.

c. Pilot Projects in Forestry

The services provided to farmers consist mainly of free seedlings of timber trees and other trees of economic value including seedlings for watershed protection and soil control measures. The management and maintenance of plantation by farmers is poor and insufficient thinning and pruning of young plants which often results in the death of newly planted seedlings.

11.12 Demand for Agricultural Products

The current demand for certain farm produce such as vegetables and fruits cannot be satisfied by domestic production and the supply of vegetables and fruits is unstable and lacks consistent quality standards. This inconsistency tends to encourage importation of fruits and vegetables. Because of economies of scale on large commercial plantations and farms, certain food items such as vegetables, meat and eggs can be imported and sold locally at more competitive prices than local production.

For Palau to attain a near self-sufficiency in food production, a strong national policy for a flexible agricultural development program is needed. This policy should aim to increase production of food, crops and commodities in which either economies of scale or native comparative advantages can be used more effectively.

OBJECTIVES

11.13 Agriculture Goals and Objectives

The long-term goal of economic self-reliance requires an agricultural development program to increase national production to meet local demand, reduce food imports and export certain commodities. To achieve this long-term objective, the following short- and medium-term objectives will be pursued:

a. Increase current levels of production in the subsistence sector to satisfy the local demand for crops which traditionally make up a large part of the local diet;
b. Diversify agricultural production and cultivation of high-value crops which are in demand but imported;

c. Commercialize livestock production;

d. Stimulate the use of forestry resources and encourage state governments to undertake tree planting programs, watershed protection and soil erosion control programs; and

e. Undertake studies to assess the potential for developing an agri-business industry and promote development of the industry by inviting foreign investors to invest in viable projects.

POLICIES AND STRATEGIES

Achieving the national objectives for agriculture, livestock and forestry productions will be assured by following policies listed below.

11.14 Sufficient Production in the Subsistence Sector

Maintaining the level of subsistence production of crops such as cassava, taro, sweet potato, and fruits and vegetables is the present dominant role of the agriculture sector and should continue. The government will aim at increasing the level of productivity by offering technical assistance in the production of subsistence crops.

11.15 Diversified Market Production

In view of the demand for agricultural products such as fresh vegetables and fruits resulting from an increase in the number of tourists, the government will support and create private sector initiatives to increase production and marketing of these crops. The government will provide farmers with improved cultivars and appropriate packages of practices and instructions. Low-interest, long-term credit should be made available to the farmers. Marketing facilities such as storage, refrigeration and handling facilities must be in place to increase supply.

To increase agricultural production for local and export markets, the government will adopt a strategy of small holder agriculture development. This approach supports the subsistence and semi-commercial farmers to raise production through teamwork, rather than encouraging large-scale commercial production typical of large producers. The introduction of the
semi-commercial farming system may become an effective method for unsophisticated farmers to learn the operation of commercial farming gradually.

11.16 Developing Livestock Production

The government will support farmers in improving and increasing their stock of pigs, chickens, goats and cattle. Efforts will be given to increasing existing egg-laying flocks and establish new ones to increase egg production. The government will formulate regulations to ensure quality meat production and preparation. Studies will be undertaken to determine the necessity for the establishment of an appropriate slaughter facility.

11.17 Developing Forest Resources

The government will continue to distribute seedlings of mahogany and other trees of economic value to farmers free of charge and continue with trial projects to test the potential for growing other species.

A careful approach in using the natural forests will be implemented to prevent overuse that may lead to soil erosion and watershed destruction. Use of the natural forest and the landscapes should be in harmony with other uses such as the recreational use of forest areas and take environmental concerns into account.

11.18 Crop Research and Development Program

During the first year of the plan, a feasibility study to assess the potential markets in Guam and Saipan will be undertaken for air-transported fresh fruits such as bananas, papaya, avocado, pineapple, and certain types of citrus. There is a potential for developing these crops for export.

Once we know that potential markets for these fresh Palauan fruits exist in Guam and Saipan and establish the size of the market, a production program will be planned and implemented by organizing and aiding existing farmers to engage in the program. The Agriculture Division will assist in the identification of suitable types of soil, appropriate technical advice on the culture of these crops, monitoring the quality and establishing the markets.

Research to study how to increase yields of subsistence and semi-commercial crops will be considered. Findings of this research, together
with relevant information in the soil survey report, will be used to plan an orderly transition to a market-oriented agricultural industry.

A feasibility study will be conducted in the field of hydroponics and greenhouse culture to determine if specialty crops such as tomatoes, cantaloupe, and other sweet melons can successfully be grown to supply the local market.

11.19 Improving Support Services

The Government will improve agriculture extension services to farmers and provide basic infrastructure for production and marketing of agriculture produce. Extension services will consist of the providing technical know-how, management and marketing assistance, provision of seeds, fertilizers and pesticides to farmers. To meet capital needs, the government will make loans at low interest rates through the Palau National Development Bank. The Bank and extension officers from the Agriculture Division will assist farmers in applying for loans.

The Agriculture Division will continue to provide farm tilling services at low cost. Improvement of livestock operations will depend on better management, a more effective breeding program, efforts to develop local ingredients and a more effective livestock extension program. The development of a road system on Babeldaob will encourage livestock production.

To improve farming methods and diversify crop production, the government will maintain cooperative efforts with foreign experts to undertake pilot projects such as the one started with the government of the Republic of China. Where needed, employees of the Agriculture Division will receive training here and abroad. Training courses or programs will be organized either directly through the Agriculture Division or through educational institutions such as the Palau Community College, OISCA and other institutions. The Agriculture Division will receive an appropriate budget for both recurrent and capital expenditures to execute its functions.

CHAPTER 12

MINERAL RESOURCES

CURRENT SITUATION
12.1 Surface Mineral Development

Both the Germans and Japanese, during their respective administration of Micronesia, conducted explorations for mineral deposits and reported the presence of phosphate, bauxite, copper, silver, gold, manganese and lignite. Only phosphate and bauxite deposits were found to be of sufficient quality and quantity for commercial development.

A phosphate mining operation was started on Angaur by the Germans in 1909 and continued until 1914. With the advent of the Japanese administration in that year, the Angaur mines were taken over by the Japanese. In addition, the Japanese discovered phosphate deposits on Peleliu Island and commenced mining. Phosphate mining at both islands continued until operations were disrupted in 1944 because of World War II.

In 1946 mining operations in Angaur resumed by J.H. Pomeroy, an American company, under the control of the United States Navy. Between June of 1946 and June of 1947, the J.H. Pomeroy Company mined some 142,767 metric tons of phosphate ore. Following the termination of the mining contract of the J.H. Pomeroy Company, Rinko Kaihatsu Kaisha, was allowed by the U.S. Military Administration of Palau to continue the mining operations. Between July of 1947 and July of 1957, this Japanese company mined and shipped to Japan a total of 512,833 metric tons of phosphate ore.

It is estimated that a reserve of approximately 500,000 dry metric tons of phosphate ore is still available in Angaur in areas that the Rinko Kaihatsu Kaisha was not authorized to mine. This deposit could sustain a 10-year continuous mining operation at the rate of 50,000 tons per year before the resource would be expected to be exhausted.

Bauxite mining operations were started by Nanyo Aruminyumu Kogyo Kabushiki Kaisha, a Japanese company, in both Ngaremlengui and Ngardmau in 1938. Mining in Ngaremlengui stopped before the advent of World War II. However, the Ngardmau mining operations continued and were only disrupted when the mining facilities were bombed by American planes at the beginning of hostilities in Palau during World War II. During the seven-year period (1938-1944) this Japanese company mined and shipped to Japan a total of 369,227 metric tons of aluminum ore. It is estimated that the total bauxite reserve in Palau (deposits in all areas) is approximately 5 million dry metric tons, over 2 million tons of which is still in the Ngardmau deposit.

The Japanese also explored for gold in the southeastern part of Babeldaob prior to World War II. However, only a trace of gold was discovered.
in the area and the effort was abandoned. Triggered by the recent discoveries of large gold deposits containing metal value of up to $1 billion in several islands in the South Pacific in which the geologic setting and gold deposit are similar to that of Palau, the United States Geological Survey (USGS) has taken a keen interest in the Babeldaob gold deposit. The USGS has sent a team of geologists three times to Palau (two times in late 1985 and one time early 1986) to conduct further exploration of the gold deposit originally discovered by the Japanese.

Based on preliminary investigations conducted by the USGS, an area favorable for the presence of a large epithermal gold deposit has been identified in the southeastern part of Babeldaob known locally as Rois Malk. The main zone of mineralization, having ore-grade gold values as high as 1/4 ounce per ton, covers an area with a minimum length of 500 meters by a width of 200 meters. Several U.S. and other foreign mining companies have sent representatives to Palau to try to verify the findings of USGS.

Exploitation of existing mineral related resources for construction purposes include basalt rock quarrying and coral and beach sand dredging from the lagoon. A private company is presently in business supplying aggregates from the crushed basalt rock and beach sand for making concrete. Production of both aggregate and beach sand varies, but can be as high as 10 thousand cubic yards per month, depending upon the demand.

Koror State Government engages in the commercial production of dredged coral with the capability of 800 cubic yards per day. Other States are also involved in coral dredging not for commercial purposes but for utilizing the material for specific construction projects.

12.2 Ocean Mineral Development

One long range possibility is the development of magnesium nodule retrieval from the ocean floor. Such nodules are believed to be composed of sedimentary clumping of ocean minerals with high monetary value. To date the fact that these nodules are generally found only at extreme depths has made retrieval cost prohibitive. However, given the proximity of deep sea trenches to Palau should a cost effective retrieval system be developed this could provide a lucrative opportunity for the Republic.

12.3 Organization

There is no department or agency within the Government
organizational structure which is exclusively responsible for matters related to mineral exploration and mining, rock quarrying, sand and coral dredging activities. Matters relative to environmental consideration are under the jurisdiction of the Palau Environmental Quality Protection Board.

PROBLEMS AND ISSUES

The following are problems and issues related to the exploitation and development of mineral and related resources:

12.4 Absence of a Mining Code

Without a mining code, potential investors interested in the exploitation of mineral and oil resources in the Republic might be discouraged from proceeding with their project proposals. Furthermore, the relationships between the state governments where the mineral resources are located, the land owner and the National Government pertaining to the rights to the resources and the division of royalty resulting from granting concessionaire rights to an investor and sale of the resources are not defined. This is an area of potential legal problems which needs to be resolved.

12.5 Lack of Data on the Extent of Mineral Resources

Although several mineral resources have been identified and verified to be in existence in the Republic, some of the deposits are probably of too small a quantity to allow viable commercial development. Without the full knowledge of the extent of some of the mineral resources in the Republic, planning for commercial development of the resources cannot be readily undertaken.

12.6 Undefined Boundaries Between States

Several States claim overlapping boundaries. This is problematic for mineral and oil resources exploitation and could cause problems for other economic development projects.

12.7 Lack of Organizational Structure to Handle Foreign Investment Interests in Mineral Exploitation

The Government has no department and agency with the necessary expertise and a defined responsibility for assisting foreign investors interested in the exploration of mineral, oil and gas resources.
12.8 Slow Process for Legal Land Title Determination

Potential foreign investors are often frustrated by the lack of existing records pertaining to legal title to real property.

DEVELOPMENT OBJECTIVES

12.9 Mineral Resources Development Objectives

The following mineral resources development objectives will be pursued during the Plan period:

a. Consider partially reviving the commercial mining operations of the Angaur phosphate deposits, the Ngardmau bauxite deposit and the Ngerasch clay industry. Further develop the commercial production of basalt rock aggregates in support of road work and general construction programs including construction of an asphalt factory;

b. Further explore the extent of land based mineral resources such as gold and marine based oil and gas resources, determine the commercial viability of their development and encourage commercial exploitation of the resources by providing appropriate incentives to potential investors if resources are proven to be of commercial quantity and quality; and

c. In order to protect potential future economic possibilities related to magnese nodules the Republic's maritime boundaries need to be strictly enforced.

POLICIES AND STRATEGIES

The following policies and strategies relative to the development of the mineral sector will be implemented during the Plan period:

12.10 Formulation of a Mining Code

The Government will seek technical assistance from an appropriate agency of the United States or the United Nations to assist in the development of a mining code for the Republic. The National Government and the State governments will cooperate in the determination of the distribution of royalty payments that would result from giving concessionary mining rights to private foreign companies proposing to invest in mineral, and oil and gas exploitation. The mining code will be designed to provide incentives to the concessionaire, protect the rights of the land owners, provide an equitable distribution of
royalty payments among the land owners, State government and the National Government and regulations for protection of the environment.

12.11 Determination of the Extent of Resources

More detailed exploration work to determine the commercial viability of the reported mineral deposits will be undertaken.

12.12 Allowing Exploitation of Oil, Gas and Mineral Resources

Incentives will be given to encourage foreign investors with the necessary financial resources and technical expertise to exploit the gas, oil and mineral resources identified in the exploratory stage of development to have potential.

Once a surface and ocean mining code has been developed, and the commercial viability of any of the resources of gas, oil and minerals has been established, the Government will encourage and support private exploitation of these resources.

PROGRAMS AND PROJECTS

The above formulated policies and strategies will be reflected in the projects described in the following sections.

12.13 Formulation of a Mining Code

Formulate a surface and sea mining code which will provide incentives to investors interested in the exploitation of gas, oil, mineral and related resources, protect the rights of land owners, provide for an equitable distribution of royalty payments among the land owners, State government and the National Government and provide for the protection of the environment. The funds for this project will be sought from technical assistance grants from the Department of the Interior.

Estimated Cost: $50,000
Source of Funds: U.S. DOI\OTIA Technical Assistance Program

12.14 Rock Products to Support Compact Construction Program

Rock aggregates, if of sufficient quality, must be made available for use in the Compact infrastructure construction program. Such aggregate may, depending on the quality, be used in conjunction with the product of the planned asphalt plant for road construction/repair. The private sector will be
encouraged to invest in production of aggregate for the support of Compact construction and other construction projects.
Viable economic development requires reliable communication and transportation links with the outside world and within Palau. Land, sea and air transportation service modes are all critically important to the economic development of Palau.

A. LAND TRANSPORTATION SECTOR

CURRENT SITUATION

13.1 Development

Native Palauans were road builders well before the arrival of Europeans. On Palau, good roads (footpaths), in many instances paved with stone slabs, connected villages with boat landings. Some of these footpaths can still be seen in several of the States such as Ngaraard, Melekeok, Ngardmau, Ngaremlengui, Ngchesar and others. Many of these native built roads have fallen into a state of disrepair over the years and those that still remain are being protected by the government as being of historical/cultural significance.

The Japanese administration of Palau spent considerable effort and money in constructing roads. It is reported that by 1937 the Japanese had constructed over 66 miles of roads, of which 41 miles were between 12 and 21 feet wide and 3.7 miles were over 21 feet in width. The islands of Malakal and Arakabesang were connected to Koror Island with causeways and bridges to allow tidal currents to pass through. In Koror, a primary road was constructed from the west to the north end of the island, where a ferry was used for crossing the Koror-Airai channel to Babeldao Island. Asphalt paved streets were constructed all over Koror, Malakal and Arakabesang islands. A motor bus and, to a lesser extent, taxi services, were in operation in Koror. In 1936, 30 automobiles, 23 motorcycles, 2,270 bicycles, 58 carts and 13 wagons were reported to have been in use in Palau.

On Babeldao, a Japanese built primary road led from Airai northward through Aimeliik, Ngatpang, Ngaremlengui and terminated in Ngardmau. Farm roads were also constructed in numerous areas on Babeldao.
On Peleliu Island, by 1936, there was a good automobile road from Elochel Dock at the northernmost part of the island extending southward through Klouklubed and Ngerchol villages to Ngesias village, some four miles to the southeast. A secondary road was constructed leading northward from Ngesias village through the eastern edge of what is now known as the Bloody Nose Ridge mountain range and down westward to Ngerchol village.

Many of the roads, including causeways and streets in the Koror-Airai area, which were initially constructed during the Japanese regime in Palau are still in full use today after having been improved with funds from the U.S. Government through the Trust Territory Capital Improvement Programs (CIP). This road improvement program, collectively called the Palau Roads Project Phase I-IV, was administered by the U.S. Navy's Officer-in-Charge of Construction (OICC), and entailed the improvement of approximately 22 miles of asphalt paved primary and secondary roads from 1974 to 1988. With U.S. CIP funds a two-lane concrete box girder type bridge spanning the Koror-Airai channel was constructed in 1976 connecting Babeldaob Island with Koror State.

The Babeldaob north-south primary road is still in use in certain sections after having been improved by the combined efforts of the U.S. Military Civic Action Team, the Palau National Government and various State governments. However, 4-wheel drive type vehicles are required when driving in the area. A land transportation system linking all the 10 states in Babeldaob Island with the civic, commercial and administrative center of Koror State is still lacking.

Through their own initiative, the State governments of Melekeok, Ngiwal, Ngaremlengui and Ngarchelong constructed a combined total of 13.9 miles of asphalt concrete paved roads within their respective states from 1985 to 1988. These State governments contracted with Japanese private construction companies to build certain segments of road within their States. The length of these roads and the respective states within which they were built are as follows: Melekeok--2.5 miles; Ngaremlengui--3.0; Ngiwal--3.4; and Ngarchelong--5.0 miles (approximately 3 miles of this road segment is crushed stone surfaced).

Through the combined efforts of the U.S. Military Civic Action Team and the National and State governments, a considerable number of dirt roads have been constructed in 7 of the 10 states in Babeldaob. At present, the states of Ngaremlengui, Ngchesar, Ngatpang and Melekeok are accessible from Koror by means of 4-wheel drive vehicles and the States of Airai and Aimeliik are accessible by regular vehicles.
A provision in the Compact of Free Association makes it the responsibility of the U.S. Government to provide a 53-mile road on the island of Babeldaob, the specification of which will be mutually decided upon between Palau and the U.S. Government. This road development program is viewed as one of the most important CIP undertakings in the history of Palau.

The development of a permanent road system on Babeldaob will give major impetus to the socio-economic development of Palau. The Government of Palau’s position is that the Compact mandated 53 mile road must be aligned to link all communities on Babeldaob with Koror. The road should also provide access through, or near to, known areas having potential for agriculture, forestry, mining, industry and tourism, and near watersheds for future water resources development, rock sources for quarries, potential port development site(s) on the west coast of Babeldaob, and the proposed site of the new capital of the Republic in Melekeok State.

Table 13.a shows the approximate length and type of existing roads in each of the 16 states.

<table>
<thead>
<tr>
<th>State</th>
<th>PALT</th>
<th>ORALDI</th>
<th>RT</th>
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<tbody>
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<td>Aimeleik</td>
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</tr>
<tr>
<td>Airai</td>
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<td>5</td>
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<td>Anguar</td>
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<td>10.8</td>
<td>5</td>
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<tr>
<td>Kayangel</td>
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</tr>
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<td>Koror</td>
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</tr>
<tr>
<td>Ngaraard</td>
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<td></td>
</tr>
<tr>
<td>Ngatpang</td>
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<td>12</td>
</tr>
<tr>
<td>Ngchesar</td>
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<td>4</td>
<td>6</td>
</tr>
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<td>Hatchobei</td>
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</tr>
</tbody>
</table>

Total: 3
Table 13.b shows the number of registered motor vehicles by state from 1990 to 1994.

TABLE 13.b: Number of Motor Vehicles Registered by State, 1990-1994

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Aimeliik</td>
<td>36</td>
<td>39</td>
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<tr>
<td>Airai</td>
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<td>314</td>
<td>235</td>
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<tr>
<td>Ngiwal</td>
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<td>3</td>
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<tr>
<td>Peleliu</td>
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<td>62</td>
<td>121</td>
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<td><strong>Total</strong></td>
<td>2,712</td>
<td>2,988</td>
<td>3,577</td>
<td>3,913</td>
<td>4,684</td>
</tr>
</tbody>
</table>

Source: Bureau of Public Safety

A fleet of approximately 106 taxis individually owned and operated provides the only public land transportation in Palau, mainly in the urbanized Koror-Airai area. Half a dozen car rental companies with a combined total of 157 vehicles are in operation, mainly in the Koror-Airai area.

Approximately 93 percent of the vehicles registered in Palau are presently in use in the Koror-Airai area, while the remainder are in use in other states, primarily in Peleliu and Angaur states.
13.2 Organization

The responsibility for the implementation of the U.S. financed CIP was shared by the Ministry of Resources and Development and the U.S. Naval Facilities Engineering Command through its Officer-In-Charge of Construction (OICC) who maintained a representative in Palau until 1992.

The U.S. Military Civic Action Team was instrumental in pioneering coral sealed roads, particularly in Aimeliik and Airai States during the 1970's. The Civic Action Team has also helped the various States in other minor construction projects.

The Bureau of Public Works in coordination with State governments is presently engaged in road work in some States. Work is being concentrated on: mitigation of detrimental environmental effect caused by previous road work; the construction of a causeway connecting Melekeok State with Ngiwal State; and; the capping of the dirt road with coral from Ngchesar to Koksai area of Ngatpang State. Permits have recently been issued and U.S. Housing and Urban Development's Community Development Block Grants funds are anticipated to soon be released for the construction of bridges associated with roads in Ngardmau, Ngaremlengui, Ngiwal and Ngaraard States.

The Bureau of Public Works is responsible for the maintenance of primary roads. The primary road presently consists of about 10 miles of asphalt concrete road within the Koror-Airai area. Each State is generally considered responsible for the maintenance of secondary and tertiary roads within its boundary. But this policy must be formalized during the Plan period to clarify the division of responsibility of road development and maintenance between the National and the State governments.

The U.S. Government will handle the construction contract management on the Compact mandated Babeldaob road project. However, the Government of Palau may need to establish a liaison office to coordinate the activities of the contractor(s), State governments affected by the road construction program and the contracting officer. A liaison office could also monitor the progress of the construction project to ensure that land easements and related problems that could occur will be resolved in a timely manner so as not to delay the project.

PROBLEMS AND ISSUES

The following have been identified as the main problems and issues...
relative to land transportation:

13.4 Inadequacy of Land Transportation Infrastructure

The biggest constraint to land transport is the lack of road infrastructure linking all the communities of Babeldao with Koror State, the center of administrative, social and commercial activities of the country.

13.5 Inadequate Financial Resources for the Improvement and Maintenance of Roads and Streets

The few miles of asphalt concrete paved primary roads in the Koror-Airai area have begun to show structural failures requiring immediate corrective action. However, due to insufficient operations and maintenance funds, road repair has generally been minimal. Additionally, financial resources are needed for the acquisition of proper road construction/maintenance equipment and appropriate materials and hiring of personnel with the expertise for road construction, repair and maintenance.

13.6 Technical Capability for Road Construction and Repair is Lacking

The Bureau of Public Works currently needs to develop the technical expertise for large scale road construction and repair involving asphalt concrete pavement.

13.7 Land Easements and Construction Rights of Ways are Difficult to Obtain

It has been difficult for the Government to obtain land easements and construction rights of ways for CIP and the problem appears to be becoming more complicated. The National Government and State governments must face this issue in the immediate future.

13.8 Lack of Reliable Public Transportation System has led to Traffic Congestion in Koror

Because of the lack of a reliable public transportation system in the urbanized Koror-Airai area, residents of the area have to depend on individually owned automobiles to meet their land transportation needs. This has led to an increased number of imported automobiles which has caused traffic congestion in certain street intersections in Koror during rush hours and
increased traffic accidents.

DEVELOPMENT OBJECTIVES

13.9 Land Transportation Objectives

The objectives of the Government for the land transportation sector are to:

a. Formalize a policy to clarify the division of responsibility between the National Government and State governments relative to road maintenance;

b. Repair existing asphalt concrete paved roads and streets in the Koror-Airai area before the damage already done to the asphalt concrete pavement is extended down to the structural base and sub-base courses;

c. Install traffic control signals at certain street intersections in Koror to help expedite traffic flow;

d. Construct/improve farm and other access roads in Babeldaob, Peleliu and Angaur;

e. Develop the necessary technical capability as well as properly equip a centralized effort for undertaking the construction of needed farm and access roads and to carry out proper maintenance on national roads and highways thereby ensuring the protection of the huge investment in the transportation infrastructure which will be the backbone of Palau’s economic development;

f. Provide a fully coordinated effort to ensure that the planning, design and construction of the Compact mandated asphalt concrete paved primary road in Babeldaob will progress smoothly without delay;

g. Encourage the private sector to provide a cost effective means of land transportation system (public transit service) immediately for the Koror-Airai area with the potential to later link all the states in Babeldaob with Koror, thereby discouraging the need for many individuals to purchase automobiles for transportation purposes; and

h. Create a fund through a road use tax specifically for the maintenance of roads in the Republic.
POLICIES AND STRATEGIES

13.10 Land Transportation Policies and Strategies

The following land transportation policies and strategies will be pursued during the Plan period:

a. To enable an early commencement of the Compact mandated primary road construction program, a collaborative planning effort between the National and affected State governments will be undertaken to determine the alignment of the proposed 53 mile road and to work with the U.S. Government agency responsible for the management of the road construction project on the determination of the parameters for the road design and specifications for its construction.

b. The State governments affected by the Compact mandated road and any other secondary roads construction program requiring public funding will be required to commit themselves to providing the necessary land easements and construction rights-of-way for the road projects in question.

c. The present problem of traffic congestion in Koror State will be alleviated by the installation of traffic control signals at certain street intersections and by encouraging the private sector to operate a reliable and reasonably priced public transit service that the general public can rely upon for transportation, thereby minimizing the need for importation of automobiles.

d. To be able to carry out secondary roads construction and to ensure the protection of the huge investment in the existing, as well as the planned ground transport infrastructure development in the post Compact period, a technically qualified and properly equipped effort will have to be organized and put in operation.

e. To ensure that financial resources for road maintenance will be sufficient, the Government will have to raise additional maintenance funds through increased fuel and road taxes levied on vehicle owners, which must be earmarked to meet the increasing costs of road maintenance.

A related benefit resulting from the Compact mandated road construction project is the knowledge and work experience to be gained by the Palauans hired to work on the project. The Government will make it a policy to encourage selected young people to work as counterparts to the contractor's supervisory and equipment operation personnel with the aim that by the end of
the road construction project this trained cadre can be hired by the Government for a road repair and maintenance program.

PROGRAMS AND PROJECTS

The following programs and projects are designed to increase accessibility and efficient overland movement of people and goods:

13.11 National Road Building and Maintenance

As indicated in an October 1988 DOI/TTPI report by Louis Burger International, Inc., ("Evaluating Quality Defects of Specific Projects - Final Report"), the defects associated with 20 miles of roads and streets in the Koror-Airai area are categorized as follows: inadequate drainage structures/systems; poor roadbed stabilization; premature asphalt concrete pavement deterioration; inadequate roadway safety elements; and inadequate carrying capacity. Those defects which have not been corrected will be repaired during the Plan period.

To be able to carry out the correction of the deficiencies associated with the existing roads in the Koror-Airai area and the construction of newly planned road projects and to provide the protection of the huge investment in the existing and future ground transportation infrastructure in terms of an efficient and cost effective road maintenance program, appropriate heavy road construction and asphalt concrete paving equipment and a centralized equipment repair facility must be acquired/developed and personnel properly trained to engage in the national road construction and maintenance program in the Plan period and beyond.

Estimated cost: $7,885,000
Source of funds: Compact funds

13.12 Access Roads to Communities, Farming and Other Areas

Although the Compact mandates a 53-mile road to be constructed in Babeldaoob, there is need to provide access roads to communities, farming areas and potential areas for resort, industrial, commercial fisheries, mariculture and forestry developments. In its entirety, approximately 45 miles of access roads is required; however, probably only 8 to 10 miles will be constructed during the Plan period.

Estimated cost: $7,700,000 ($3,850,000 per year for two years)
Source of funds: OEK appropriations

13.13 Babeldaoob Primary Road Planning, Design and Construction
The Palau Government will closely coordinate the efforts of the U.S. Government in the planning, design and construction of the Compact mandated Babeldaob primary road. Alignment considerations will include: provision of access to existing and potential settlements; provision of access to exploitable natural resources such as agricultural soils, timber, minerals, marine resources, potential harbor and port sites and tourism and related projects sites; provision of access to sources of required road construction materials; provision of access to water resources; and provision of access to important government facilities such as the proposed capital at Melekeok and the Aimeliik power plant. The cost for planning, environmental assessment, design and construction of the Babeldaob Primary Road is to be borne by the U.S. Government.

13.14 Installation of Traffic Control Signals in Koror

Traffic control signals will be installed at two locations in Koror.
Estimated cost: $100,000
Source of funds: OEK appropriations

Table 13.c delineates the planned allocation for the land transportation sector during the Plan period.

<table>
<thead>
<tr>
<th>TABLE 13.c: Planned Allocation for Land Component of Transportation Sector, 1995-1999 ($'000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Road Building &amp; Maintenance</td>
</tr>
<tr>
<td>Babeldaob Secondary Roads</td>
</tr>
<tr>
<td>Koror Traffic Control Signals</td>
</tr>
<tr>
<td>-Total7,985</td>
</tr>
</tbody>
</table>
B. SEA TRANSPORTATION SECTOR

CURRENT SITUATION

13.15 Development

The Republic depends primarily on sea transportation for the importation of food and beverage, materials, fuel, transportation equipment, machinery and other needed commodities. Sea transportation is provided by three shipping lines—the Palau Shipping Company, the Kyowa Shipping Company Limited and the Philippines, Micronesia and Orient Shipping Line (PM&O). Through both direct and transshipment services, cargo destined for Palau from the U.S. West Coast, Japan, Australia, Taiwan, Hong Kong, Philippines, Guam and other countries are transported to the Republic by vessels operated by these three companies. Vessels operated by the three companies call at Malakal commercial dock on fairly regular schedules, generally on a 30-day interval. PM&O vessels bring cargo from the West Coast of the U.S. after stopping at ports in the Marshall Islands, Federated States of Micronesia and Saipan. Palau Shipping Company’s vessels bring cargo from Korea, Japan, Philippines, Hong Kong, Taiwan, Saipan, Guam and Yap. Vessels operated by Kyowa Shipping Company Limited bring cargo from Japan and Guam.

Table 13.d shows the tonnage of cargo delivered at the Malakal commercial dock during the period from 1990 to 1993.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TONS OF CARGO DELIVERED</th>
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<tr>
<td>1990</td>
<td></td>
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<td>1991</td>
<td></td>
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<tr>
<td>1992</td>
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</tbody>
</table>

Table 13.d: Tons of Cargo delivered at Malakal Commercial Dock from 1990 to 1994
Palau’s deep water harbor is at Malakal island in Koror State. Commercial port facilities include two perpendicular faced wharves, with lengths of 510 feet and 350 feet respectively and a water depth of 25 feet at low tide. Limited container handling and storage space is available at the Malakal commercial dock. Other facilities include two warehouses of 5,000 square feet of floor space each. Cargo handling equipment include a 30-ton capacity forklift, other forklifts of lesser lifting capacity, and a 30-ton truck tractor with a flatbed trailer for hauling containers and other heavy loads.

Nearby is located the bulk plant of Mobil Oil Micronesia, Inc., with a combined capacity of 3 million gallons of fuel storage tanks primarily for diesel fuel and gasoline. Bunkering facilities for vessels are available at dockside. Vessels belonging to Mobil Oil Micronesia, Inc., coming to Palau to deliver their cargo of fuel oil and gasoline, utilize the Malakal commercial port as well as going directly to Aimeliik Harbor (where fuel oil for the power plant is pumped to the Government’s fuel tank farm adjacent to the Aimeliik power plant).

A deep harbor at Aimeliik accommodates fuel oil tankers up to 15,000 tonnage. However, the harbor currently lacks docking facilities, and therefore oil tankers calling at Aimeliik have to anchor in the harbor and pump their cargo of fuel oil through floating hoses which are extended from the vessel to shore based pumping facilities. This fuel oil delivery method is inefficient and environmentally problematic. Therefore an oil off-loading terminal facility is critically needed at Aimeliik Harbor.

The two private commercial fishing companies own and operate their own docking facilities on Malakal Island.

Facilities for domestic water transport include: numerous small docks in Koror, notably M-Dock for accommodation of government boats;
Malakal fishery dock for inshore fishery operations; and T-Dock for accommodation of boats traveling to and from various points in Babeldaob. In general, each of the outlying States has its own docking facility(s), except the States of Hatohobei and Sonsorol. Dredged channels provide small water crafts access to several State docking facilities at all tide conditions. However, at some of the States, notably Peleliu, Ngiwal, and Ngaraard, either the existing channels have been silted up or channels are lacking, thereby making it impossible for even small water craft to reach the dock at low tide.

In the mid-1980's, four small fishing ports were constructed under Japanese grant aid assistance in the states of Angaur, Ngatpang, Melekeok and Ngarchelong at a cost of over $10 million.

Limited public passenger and freight services are operated between Koror and a few of the outlying States. These include a 3 times a week service to Peleliu, once a week service to Angaur, and a bi-weekly service to Kayangel. Heavy reliance is placed on small privately owned water craft (outboard motor boats) for transportation between Koror and outlying states. The southwest island states of Hatohobei and Sonsorol are serviced by the Government with privately owned chartered field trip vessels.

Dozens of tour and dive companies as well as individual boat owners provide guided boat tours and diving expeditions to the dive spots and land tours of the outlying States. A small number of live-on-board dive vessels are also in operation in Palau.

Fleets of commercial fishing boats belonging to two Koror based foreign fishing companies fish for tuna in Palauan waters for the sashimi markets of Japan. The catch is transported fresh by air to the sashimi markets in Japan.

The Palau Government owns a very old vessel previously used by the U.S. Coast Guard which is utilized for surveillance missions in the Republic's 200-mile Extended Economic Zone.

13.16Organization

The Division of Transportation and Communication of the Ministry of Commerce and Trade exercises jurisdiction over the administration of both marine and air transportation in the Republic of Palau.

As mentioned earlier, three private shipping companies handle the trade shipping needs of Palau, mainly the transportation of imported goods
from their points of origin. The United States and Japan are the main trading partners of the Republic of Palau. The PM&O handles the transportation of imported goods originating from the West Coast of the United States, whereas Kyowa Shipping Company Limited and Palau Shipping Company share the transportation of imported goods from Asian countries, including Japan, Taiwan, Korea, Hong Kong and the Philippines. Currently a private company is operating the Malakal Commercial Port.

During the Japanese regime, work started on the construction of a drydock at Malakal Island. Unfortunately, the work was disrupted by World War II and the drydock was not completed. If this drydock were to be completed, it would be the only facility of its kind in the whole of Micronesia.

State governments have been responsible for constructing and improving their own docking facilities and the installation of markers at the channels leading to their respective docking facilities.

The National Government at one time was active in a program for improving boat channels by removing coral heads and widening navigational channels by dredging as well as repairing small craft channel markers.

Navigational aids at the entrance of the West Passage west of Ngaremlengui and throughout the entire length of the channel leading from the West Passage to Malakal Harbor and those at the Malakal Passage leading to Malakal Harbor are currently being maintained by the U.S. Coast Guard.

There is no set regular schedule of services to the southwest island states of Hatohobei and Sonsorol. Field trips to the two remote states are organized utilizing chartered private vessels at least once every three months, plus special trips for medical evacuation and/or election purposes. An appropriate vessel is needed for servicing the outer island States on a regularly scheduled basis.

The Government operates a former U.S. Coast Guard cutter as a sea patrol boat. The vessel is usually used in response to calls from the various states, notably the two southwest island states when they report vessels intruding in waters of their waters.

The States of Angaur, Peleliu and Kayangel own and operate State boats which make regularly scheduled runs between their respective States and Koror State. These State boats bring passengers to Koror, and cargo consisting of firewood, fish and other items to be sold in the Koror local produce or fish markets. On returning trips, the boats carry passengers,
cargo of merchandise for sale in local retail outlets, building materials, block ice, diesel fuel and gasoline, and occasionally an automobile. Other outlying States also have State boats (usually outboard motor boats) for the purpose of carrying farm produce and fish from the States to the local produce and fish markets in Koror on a once-or-twice a week schedule.

Several hundred outboard motor boats ranging from 25 horsepower to 200 horse power are individually owned and are used for fishing, scuba diving operations catering to tourists, and other recreational purposes.

PROBLEMS AND ISSUES

Problems and issues relative to the sea transportation sector include those described in the following sections.

13.17 Commercial Port

Operations of the Malakal commercial port presently lack adequate heavy equipment for loads in excess of 30 tons and/or equipment whose lifting capacity is equal to or exceeds the ship’s own equipment lifting capacity. Consequently, cargo destined for Palau have to be limited in weight. Malakal commercial port must be equipped to handle loads heavier than 30 tons.

The Commercial Port also has very limited container space, and there is no more room for expansion. The existing warehouses are built close to the edge of the wharf making the loading/off-loading of ships difficult. Furthermore, the warehouses lack ample space for sorting and/or storing incoming and outgoing cargoes.

13.18 Lack of Oil Terminal Facility at Aimeliik Port

The lack of a proper oil terminal facility for off-loading fuel oil from an oil tanker to the oil tank farm in Aimeliik makes fuel oil off-loading operation at Aimeliik extremely inconvenient and dangerous for both the workers and potentially hazardous to the environment in the event of an oil spill. A properly designed and constructed oil terminal facility at Aimeliik is needed.

13.19 Inadequacy of Public Sea Transportation Services

In the absence of an all-weather road system, the only effective transportation for passengers and cargo between Koror State and most of the States in Babeldaob is by boat. Transportation between Koror and Kayangel State is, of necessity, by boat. Although transportation between Airai and
Peleliu and Angaur by air is possible, sea transportation is the primary mode of transportation between Koror and the States of Peleliu and Angaur. Because of the inadequacy of public sea transportation service from Koror to most of the outlying States, passenger and cargo movement is heavily dependent on individually owned small boats which are an expensive mode of sea transportation. Cost effective and regularly scheduled field trip services should be provide for servicing the southwest island States of Hatohobei and Sonsorol. Should funding become available, the purchase of a ship for inter-island transportation is planned.

13.20 Need to Improve Sea Transportation Facilities, Navigation Aids and Waterways for the Outlying States

It is anticipated that the docking facilities at each state in Babeldaob will become less important and most probably will be utilized mainly for support of small scale inshore fishing activities after the completion of the Babeldaob Road System. However, the outlying States of Kayangel, Peleliu, Angaur, Hatohobei and Sonsorol will continue to depend, to a larger degree, on sea transport. Accordingly, special attention should be given to the improvements of docking facilities, navigational aids and waterways for the five (5) outlying states.

13.21 Need For a Drydock Facility

A drydocking facility is badly needed for drydocking and repair of larger size fishing vessels and live-on-board dive vessels. Sending these Palau based vessels outside of Palau for drydocking is too costly and time consuming.

DEVELOPMENT OBJECTIVES

13.22 Sea Transportation Objectives

The objectives of the sea transportation sector are:

a. Due to the status of the Malakal Commercial Port, planning for a new commercial port to be located either to the southwest of the existing Malakal commercial port and/or somewhere near the geographic center of the west coast of Babeldaob should commence within the Plan period;
b. Provide a safe and efficient fuel oil terminal at Aimeliik;

c. Provide a drydock facility at Malakal to support the locally based fishing and live-on-board dive vessels operations; and

d. To ensure reliable safe water transport services between Koror and outlying States, the Government will undertake planning for and implementation of appropriate sea transportation infrastructure projects at certain States.

POLICIES AND STRATEGIES

The objectives of the sea component of the transportation sector will be achieved through pursuit of the following strategies.

13.23 Improve Fuel Oil Delivery and Ship Bunkering At Aimeliik

Infrastructure for fuel oil delivery and ship bunkering at Aimeliik dock will be improved. At a minimum, offshore mooring and a hose-handling platform and a trestle for supporting the pipelines from the shore to the hose-handling platform needs to be installed. If the shore is at a considerable distance from where the oil tanker is normally moored, the trestle can be omitted altogether and pipelines could be run out on the sea bottom to the hose-handling platform. Other marine structures such as breasting dolphins against which the tanker moors and separate dolphins to take the ship's mooring lines are required. Certain improvement to the harbor itself such as dredging may be required.

13.24 Improve State Sea Transportation Infrastructure

Improvements in infrastructure in States such as Kayangel, Peleliu, Hatohobei and Sonsorol will be made to enhance safe water transport to such States.

13.25 Finish Drydock In Malakal

To support the commercial fishing and sport diving industries, the unfinished graving drydock in Malakal needs to be completed so that the Palau based fishing and live-on-board dive vessels could be repaired in Palau.

PROGRAMS AND PROJECTS
The following programs and projects related to the sea transportation sector will be pursued during the Plan period:

13.26 Improvements of Docking Facilities, Harbor and Channel Dredging at Peleliu

The existing channel leading from the protected lagoon just north of the Peleliu community dock was dredged during the Japanese administration of Palau. Due to siltation the channel has become too shallow and during low tide the Peleliu State boat has to wait for high tide to be able to pass through the channel. To facilitate boat travel between Peleliu and Koror at all tide conditions, the 15,000 feet long channel will need to be dredged down to eight (8) feet at low tide. The Peleliu community dock will need to have the loading area concreted, have the dock extended by 300 feet with sheet piling as well as being dredged to eight feet at low tide. At Kambek Harbor, the harbor entrance will need to be dredged to the original depth of 12 feet with a width of 40 feet. The breakwater structure which was destroyed by a typhoon will need to be repaired. Kambek Harbor is important as a shelter for fishing and dive boats to take refuge in during inclement weather.

Estimated cost: $7,000,000
Source of funds: Japanese grant aid

13.27 Improvement of Fuel Oil Off-loading Facilities at Aimeliik

An appropriate oil terminal consisting of a 3-buoy offshore mooring system, a hose-handling platform, and construction of a trestle to support fuel oil pipes from the hose-handling platform to the shore will be constructed.

Estimated cost: $2,500,000
Source of funds: Unidentified

13.28 Harbor Improvement at Angaur

Angaur dock has already been improved with funds from Japanese grant aid assistance; however, the breakwater structure was damaged by a typhoon, and now must be repaired.

Estimated cost: $1,200,000
Source of funds: FEMA and ROP 10% matching funds

13.29 Docking Facilities Improvement at Kayangel State

Transport time between the States of Kayangel and Koror can be lessened and made more cost effective if based on a scheme utilizing both sea
and land transport. For example, Kayangel State could acquire an appropriate vessel to ferry Koror bound passengers and cargo between Kayangel and Ollei hamlet in Ngarchelong State. Upon arrival of the ferry boat at Ollei, passengers and cargo would be transferred to an appropriate vehicle for the rest of the trip to Koror over land. This mode of transportation calls for improvement of the docking facilities in both Kayangel and Ollei. These improvements include docking berths with water depth of at least eight (8) feet at the lowest tide condition, resthouse and some dredging at Kayangel (the docking facilities at Ollei has been improved with funds from Japanese grant aid assistance).

Estimated cost: $1,500,000
Source of funds: Japanese grant aid

13.30 Ship to Shore Transport System at Sonsorol

This project consists of the construction of a concrete ramp with a marine railway complete with a powered winch for pulling a shore-to-ship boat in and out of the water into a boat shelter when the boat is not in use, construction of a combination boathouse/copra storage structure and procurement of an appropriate shore-to-ship vessel similar in design to a Landing Craft for Vehicle and Personnel (LCVP) used by American landing forces during World War II.

Estimated cost: $1,250,000
Source of funds: Unidentified

13.31 Ship to Shore Transport System at Hatohobei

This project consists of the construction of a concrete ramp with a marine railway complete with a powered winch for pulling a shore-to-ship vessel in and out of the water into a boat shelter when the boat is not in use; construction of a combination boathouse/copra storage structure; and procurement of an appropriate shore-to-ship vessel similar in design to a Landing Craft for Vehicle and Personnel (LCVP) used by the American landing forces during World War II.

Estimated cost: $1,250,000
Source of funds: Unidentified

13.32 Improvement of Small Boat Navigational Aid

Damaged channel markers will be repaired and additional channel or shallow area markers will be installed throughout Palau.

Estimated cost: $150,000
Source of funds: OEK appropriations
13.33 Completion of the Unfinished Graving Drydock at Malakal

This facility when completed will be the only facility of its kind in Micronesia. Completion of the facility will be an inducement to the development of a ship repair industry in Palau. There is the potential for this drydock facility to support both the Palau based commercial fishing operations as well as other fishing boats based in the neighboring FSM countries for their drydocking/repair needs.
Estimated cost: $3,500,000
Source of funds: Japanese grant aid

13.34 Feasibility Study for a New Commercial Dock at the West Coast of Babeldaob

In anticipation of a shift in population, commerce and the seat of the Government to Babeldaob in the future, and in anticipation of an increased volume of cargo and the limited space of the existing Malakal commercial port, a feasibility study for a new commercial dock to be located either to the southwest of the existing Malakal commercial port and/or somewhere on the West Coast of Babeldaob will be undertaken during the Plan period.
Estimated cost: $850,000
Source of funds: Japanese grant aid

The following table summarizes the planned allocation of funds for the sea transportation sector.

| TABLE 13.e: Planned Allocation for Sea Transportation Sector, 1995 - 1999 ($'000) |
|-----------------------------------------------|---------|
| Peleliu harbor/dock/channel                   | 4,000 |
| improvement                                   | 3,000  |
| Oil terminal improvement                      | 2,500  |
| Angaur harbor improvement                     | 1,200  |
| Kayangel dock improvement                     | 1,500  |
| Sonsorol shore-to-ship system                 | 1,250  |
| Hatchobei shore-to-ship system                | 1,250  |
Navigational aid
improvement 150
Malakal drydock completion 3,500
New commercial dock
feasibility study 850
Inter-island Vessel 1,500
-------------------------------------------------------------------------------
Total 1,200,654,004,000,500
-----------------------------------------------------------------------------

13.35 Purchase of Inter-Island Vessel

Purchase of an appropriately designed and equipped vessel to be used for servicing the outer-island States of Hatohobei and Sonsorol.
Estimated cost: $1,500,000
Source of funds: Unidentified

C. AIR TRANSPORTATION SECTOR

CURRENT SITUATION

13.36 Development

Palau's international airport is located in Airai State, about eight miles from downtown Koror. The airport has a 7,200-foot runway capable of accommodating medium range, narrow bodied type aircraft such as B-727-200's, DC-8's and B-707's. The runway is equipped for night operation and includes navigational aids such as a rotating beacon, runway, taxiway and apron lighting, visual approach slope indicator (VASI) and runway end identifier light system/OMNI-directional approach light system (REILS/ODALS). Other navigational aids available are a windcone and a segmented circle, non-directional beacon (NDB) and distance measuring equipment (DME).

The terminal building which opened for service in 1985 was discovered to have structural deficiencies. Presently chunks of concrete are spalling off from the second floor concrete slab and dropping down to the ground floor in several areas.
Continental Air Micronesia, utilizing both B-727-100 and B-727-200 aircraft, is the only carrier for passengers, airfreight and airmail for Palau. The airline provides 7 weekly turn-around services between Guam and Palau with 4 of the flights stopping on Yap enroute to Palau and in returning to Guam, stopping on Yap. Three weekly flights from Guam stop in Palau enroute to Manila and in returning back to Guam, stop in Palau for passengers and airfreight. One of the 7 weekly turn-around flights is routed via Saipan in returning to Guam. There is a once a week flight direct to Taipei from Palau. Another weekly flight comes to Palau directly from Taipei.

Transfer connections on Continental Air Micronesia flights and other airlines out of Guam are available to Honolulu, Tokyo, Nagoya, Okinawa, Taipei, Indonesia, Korea, Saipan and points in the Federated States of Micronesia and the Republic of the Marshall Islands.

Two domestic airlines utilize six-passenger Cessna 207 aircraft in providing regularly scheduled services between Airai and Angaur via Peleliu. Privately chartered flights can also be arranged with these domestic airlines.

The domestic airlines utilize airstrips on Angaur and Peleliu which were constructed during World War II. The runway on Angaur is approximately 7,000 feet with an asphalt concrete pavement while the runway on Peleliu is only 6,000 feet long and is coral surfaced. A more recent development is the Melekeok airstrip constructed through the effort of Melekeok State. Currently, there is little demand for air services to Melekeok State and, therefore, there are no scheduled flights to Melekeok.

13.37 Organization

The Division of Transportation and Communications of the Bureau of Commercial Development, Ministry of Commerce and Trade, has the responsibility for the operation of the Airai airport and the maintenance of the aeronautical navigational aids at the airport. Ground to air communications is provided by PNCC in coordination with personnel from the Division of Transportation and Communications responsible for the operation of the Airai airport.

Immigration and fire fighting services at the airport are provided for by the Ministry of Justice, whereas customs service is provided by the Ministry of Administration and the quarantine service is provided by the Division of Agriculture under the Ministry of Resources and Development. Presently, landing rights for any foreign non-scheduled flights are issued by the Ministry of
Commerce and Trade while entry permits are issued by the Division of Immigration of the Ministry of Justice.

Different sites, including the present Airai airport site, were studied for the possibility of the development of a new Palau international airport in 1987 by Japan Airport Consultant, Inc., a Japanese consulting firm. A new site that cuts through the boundaries of the States of Ngatpang, Ngaremlengui and Ngchesar, was recommended as a potential future site of the Palau international airport.

Since the Republic of Palau is still administratively under the control of the United States Government, both the Civil Aeronautics Board (CAB) and the Federal Aviation Administration (FAA) have jurisdiction over approval of applications from foreign flag carriers for landing rights in Palau and the control over airports and safety regulations.

PROBLEMS AND ISSUES

The main constraints to the development of the air transportation sector in the Republic of Palau are as follows:

13.38 Limitation of Airai Airport Facilities

The runway at the Airai airport is currently lacking structural strength and runway length for accommodation of long-range, wide bodied aircraft normally utilized in international flights. In addition, the airport terminal building was discovered to have structural deficiencies.

13.39 Airport Runway Lighting System Needs Upgrading

The existing airport runway lighting system is obsolete and parts for the system are hard to find. The lighting system needs to be completely rehabilitated and/or replaced.

13.40 Status of the Airport Property not Clearly Defined

The ownership of the airport property is not clearly defined. The Trust Territory Government through condemnation procedures purchased the existing airport property collectively from individual land claimants in the
1970's. Although the property was then transferred directly to the National Government, subsequent actions by various parties have created some uncertainty regarding the ownership of the property. The Trust Territory Administration in 1979 placed $500,000, the agreed upon land price, in escrow until the rightful owners of the different parcels of land within the airport property have been identified and paid from the funds in escrow. From the development point of view and for security control, important public facilities such as airports and seaports are best put under the control of the Government.

13.41 High Cost of Air Travel to and from Palau

Airfares in Micronesia are relatively expensive compared to other parts of the world, and this fact discourages tourists from traveling to Palau. Continental Air Micronesia is the only carrier in the Micronesian region, excluding Guam and Saipan. Direct flights to Palau by other foreign flag carriers are not currently in existence. This contributes to the high cost of airfares to and from Palau in comparison to airfares in other countries.

13.42 Under the Jurisdiction of CAB, Palau may have Difficulty in Attracting Foreign Flag Carriers

The necessity for foreign flag carriers to deal with the United States Civil Aeronautics Board in bilateral agreements for landing rights in Palau is not only time consuming but discouraging. Foreign flag carriers interested in landing rights in Palau anticipate the CAB to reciprocate by asking the country in question for landing rights for U.S. flag carriers in that foreign country in return. Using Palau as a landing rights commodity to trade for additional landing rights in foreign countries for U.S. flag carriers may discourage foreign flag carriers applying for landing rights in Palau.

13.43 Aviation Gasoline is too Expensive for Domestic Airlines

Airfares currently being charged by the two domestic airlines are relatively high. The reason for this is the high price of aviation gasoline to the domestic airlines. Due to the small demand for aviation gasoline, this commodity is brought to Palau in small quantities resulting in high unit price.

13.44 Need to Assume the Functions of CAB at the Termination of the Trusteeship Agreement
Administratively, CAB and FAA now exercise control over civil aviation responsibilities in Palau. The CAB economic regulation functions will be transferred to the Republic of Palau upon the implementation of the Compact, but U.S. technical assistance will continue to help get the necessary control activities in place and functioning under Palau's administration. FAA safety regulation functions will not be transferred immediately, but U.S. technical assistance will be provided to equip Palau to assume responsibility for its own aviation services as soon as possible.

The Republic of Palau currently lacks a basic civil aviation and trained personnel to readily assume the responsibilities of managing and regulating the civil aviation functions of the Republic.

DEVELOPMENT OBJECTIVES

13.45 Air Transportation Objectives

The Government will seek to achieve the following objectives of the air transportation sector during the Plan period:

a. As a gateway to the Republic of Palau, Airai airport must be improved. The needed improvements entail the construction of an appropriately designed new terminal building, upgrading and/or replacement of the existing navigational aids and runway lighting system, providing additional aircraft parking aprons and improvement of automobile parking lots;

b. Legislate the necessary civil aviation laws for the Republic to replace the CAB economic regulation functions when the Compact comes into effect and train citizens to assume responsible positions in the Republic's civil aviation administration;

c. Resolve and the issue of the ownership status of the Airai airport property and construct a new terminal facility to replace the existing one;

d. Perform a feasibility study for the expansion of the Airai airport to accommodate long-range, wide bodied aircraft normally utilized in international flights; and

e. Pursue dialogue with the airlines presently serving Palau to expand their services to include direct flights to and from countries such as Japan and Korea and negotiate with a Japanese flag carrier to provide direct air services between Japan and Palau.
POLICIES AND STRATEGIES

13.46 Air Transportation Policies and Strategies

To achieve the above air transportation objectives, the Government will pursue the following policies and strategies:

a. Allot funds for the construction of a new Airai airport terminal building, upgrading and/or replacement of existing navigational aids and runway lighting system, provision of additional aircraft parking aprons and improvement of automobile parking lots;

b. The main goal of the Government in promoting tourism can be enhanced by allowing more air carriers to serve Palau, particularly direct flights from Japan. The Government will pursue dialogue and negotiations with the airline presently serving Palau to improve and expand its services to include direct flights from Korea and Japan. In addition, the Government will pursue dialogue with Japanese air carriers to consider providing direct flights between Japan and Palau;

c. The Government will continue to work to have the ownership of the Airai airport property resolved as soon as possible;

d. To expedite bilateral negotiations with foreign air carriers, the Government of Palau must have its own civil aviation code since the jurisdiction of the U.S. CAB over Palau will be terminated as the Compact comes into effect. As early as possible in the Plan period, the Government will request assistance from the U.S. Department of Transportation to assist in drafting an appropriate civil aviation code for Palau;

e. To meet the long-range air transportation needs of the Republic, the Government will undertake a feasibility study for the expansion of the existing Airai airport runway to accommodate long-range, wide bodied aircraft normally utilized on international flights; and

f. Train citizens to assume responsibility in the Republic’s civil aviation administration.

PROGRAMS AND PROJECTS

The following programs and projects will be implemented to enhance
the air transportation sector during the Plan period:

13.47 Airai Airport Facilities Improvement

Undertake an improvement program for the Airai airport entailing a new terminal building, upgrading and/or replacing the existing navigational aids and runway lighting system, provision of additional aircraft parking aprons and improvement of automobile parking lots.

Estimated cost: $6,000,000
Source of funds: Compact funds

13.48 Formulation of a Civil Aviation Code for the Republic

Early in the Plan period, the U.S. Department of Transportation will be requested to assist the Republic of Palau in drafting our own civil aviation code.

Estimated cost: $35,000
Source of funds: DOI technical assistance program

13.49 Early Determination of the Ownership of Airai Airport Property

The Government will aggressively pursue the resolution over the legal ownership of the Airai airport property.

Estimated cost: $50,000
Source of funds: Recurrent budget of the Ministry of Justice

13.50 Feasibility Study for Upgrading Airai Airport to meet Palau’s future Aviation Needs

To meet the demand of future air transportation needs of the Republic, the Government will undertake a feasibility study for upgrading the existing Airai airport to accommodate long-range, wide bodied aircraft utilized in international flights.

Estimated cost: $850,000
Source of funds: Japanese grant aid

13.51 Allowing a Japanese Air Carrier to Provide Direct Flight Services to Palau

During the Plan period, the Government will aggressively pursue dialogue with other air carriers such as All Nippon Airways, Japan Air Lines and/or Japan Asia Airways to provide direct flight services between Japan and Palau.
Estimated cost:  $15,000
Source of funds:  Recurrent budget of Ministry of Commerce and Trade

Table 13.f reflects the planned allocation of funds for the air transportation sector during the Plan period.

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Airai airport facilities improvement</td>
<td>6,000</td>
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</tr>
<tr>
<td>Civil aviation code</td>
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<tr>
<td>Airport property status determination</td>
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<td>50</td>
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<td>Palau International Airport feasibility study</td>
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<td>850</td>
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<td>Luring direct flight services to Palau</td>
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<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>6,100</td>
<td>850</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CURRENT SITUATION

14.1 Development

Palau National Communications Corporation (PNCC) currently provides digital switching in the Koror and Airai exchange areas through a Northern DMS-10 switch equipped with a 2,500 line capacity. Telephone services are distributed on aerial cables attached to power poles. The Koror central office in downtown Koror is connected to the international gateway and earth station in Meyuns via an aerial fiber optic cable. The Airai switch reaches the international gateway and the Koror central office via microwave and fiber optic facilities. There are 2,318 working lines at present with 680 pending requests for services. Installation of services in Koror are being held up due to lack of vacant outside plant facilities and over-burdened power poles that cannot accommodate additional cables. Requests for services in Airai are being held up because of lack of switching capacity. Both network shortages are being addressed by projects scheduled to be implemented beginning in the first half of 1994.

International services are provided through a REDCOM I-Gate and a 13 meter standard "B" earth station with 28 SCPC circuits (23 voice and 5 leased data). The earth station, recently purchased from COMSAT, is operated under an FCC license issued to Koror Satellite Earth Station (KSES), Inc., a wholly owned subsidiary of PNCC. The earth station is scheduled for refurbishing of its antenna and upgrade to digital IDR circuits using AT&T's multi-destinational "IAT" equipment. The earth station refurbishing project has been contracted to AT&T and the earth station is scheduled to be back in full service in the third quarter of 1994. Upon completion of this project, PNCC will also begin direct service to mainland United States via the AT&T system. This direct service to the U.S. mainland through the AT&T system will be in addition to existing direct connections to Guam via MCI, to Hawaii via HTC and to Japan via KDD.

Service to the outlying states of Palau (areas beyond the existing wire based system) is being provided with High Frequency (HF) single sideband radio. A project is currently underway to provide full duplex VHF radio telephone service to each of the states using a system from EXICOM International, a New Zealand based manufacturer. Each system provides two discrete telephone lines, one of which will serve the State office and the other
to provide a public pay phone. As of January 26, 1994, VHF radio telephone systems have been installed in the states of Ngatpang, Ngaraard, Aimeliik and Ngaremlengui. The outer island states of Sonsorol and Hatohobei are currently being upgraded to an HF radio telephone system utilizing equipment manufactured by CODAN of Australia that will give the two remote states direct access to the global public switch network.

PNCC presently houses its operations in buildings at three different locations in Koror State. A substantial portion of the REA loan, approximately $7.3 million, is for the development of a new central office and headquarters complex in Airai and associated telecommunications equipment. PNCC holds a long term lease issued by the Palau Public Lands Authority (PPLA) to the land, located adjacent to the Airai airport terminal building, on which the Corporation’s headquarters facility will be built. This new facility, scheduled to break ground in the Spring of 1994, will consolidate the staff, alleviate the shortage of work space and provide for future growth.

International Direct Dial (IDD) service was implemented by PNCC in August of 1993 after additional SCPC equipment and circuits were put in service. At this time, IDD service is limited to Koror customers because the switching equipment that service Airai is not compatible. Upgrade of the Airai switch and its interface to the digital switch in Koror is scheduled for completion in mid-1994, at which time IDD service will become available to customers in the Airai area.

Other communications systems are used by commercial and governmental agencies in Palau. Two way radio communications are concentrated in the 27 mhz citizen band, 150 VHF, 800 mhz and 450 mhz Ultra High Frequency range.

Citizen band radios with 27 mhz are primarily used by the six taxi companies in the Koror-Airai area. Each taxi company has a base station located in the city of Koror which receives requests for taxi services and dispatches the taxi cab closest to the customer.

Very High Frequency 150 mhz radios are used by several agencies of the Government including the Bureau of Public Safety, the Bureau of Public Works, the Port Authority, the Marine Safety and various commercial enterprises. The Bureau of Public Safety system is the most complex of the 150 mhz systems in that the system has one repeater and call encoding. The remaining 150 mhz systems including Marine band and Aeronautical band are non-encoded two-way voice communications. The system ranges are limited to the lower half of Palau (southern part) due to terrain conditions and base
stations locations.

Ultra High Frequency 800 mhz and 450 mhz radios are used by the tourist industry and various commercial enterprises. The radios used in this system operate through a community repeater provided by a local radio company. There is a monthly charge to access to the system. The system is encoded to allow for individual calls and telephone interconnection. The effective range for this system covers the west coast of Babeldaob and the southern part of Palau.

The Government of the Republic of Palau owns and operates a 5 KW radio broadcasting station (WSZB) which is used for local broadcasting services. A private 175 KW broadcasting station (KHBN) is owned and operated by a missionary group and the purpose for this station is to broadcast religious programs to certain Asian regions.

There are two television companies in operation in the Koror-Airai area, one of which is a cable TV partly owned by PNCC. Both TV companies provide public service announcements, one-week old taped programs from major U.S. mainland West Coast TV stations and live CNN newscasts.

14.2Organization

PNCC was incorporated in 1982 by enactment of the Republic of Palau Public Law No. 1-40 to establish, provide and operate telecommunications services, both domestic and international, within the Republic. The corporation is headed by a President and Chief Executive Officer, and is structurally divided into three operational departments as follows: Finance and Administration under a Vice President and Chief Financial Officer; Operations and Customer Services Officer under a Vice President and Chief Operating Officer; and Network Services under a Vice President and chief Technical Officer. The President/CEO reports to a five member Board of Directors who are appointed by the President of the Republic of Palau with the advice and consent of the Senate. The Board of Directors are appointed for a four-year term and meet monthly or more frequently as need arises.

PNCC has a total of 71 employees, including 23 administrative/financial, 28 technical, and 20 operational staff members.

The Corporation had total revenues of almost $2.7 million against total expenditures of about $1.9 million during 1993. It is interesting to note that in 1983, PNCC operated at a deficit with $544,500 in revenues against $640,800 in
expenses. This represents a 500 percent increase in revenue over the past decade. At the present time, all profits are being reinvested in infrastructure as retained earnings; however, the corporation expects to begin returning dividends to the Republic as soon as its REA funded improvement and expansion program is completed and its basic financial and service objectives are being met.

PROBLEMS AND ISSUES

The following major problems have hindered the development of telecommunications in the Republic of Palau:

14.3 Financial Resources

Lack of financial resources has been the major hinderance to the orderly development of a telecommunication system to meet the needs of the Republic of Palau. It is only recently that a long term, low interest REA loan package amounting to $39 million has been approved, thus providing PNCC access to the capital needed to provide state-of-the-art telecommunications products and services within the Republic.

14.4 Shortage of Fully Qualified and Experienced Manpower

PNCC was created as a public corporation to run an efficient and profitable operation and to respond to the changing trends and emerging technologies to ensure the availability of a universal telecommunications service to the people of Palau. However, these objectives could not be achieved without fully qualified technical, managerial and operational personnel.

14.5 Problems Associated with Acquisition of Real Estate for Project Sites

The single most pressing problem associated with the development of telecommunications infrastructure system, or for that matter, any governmental infrastructure project, has to do with acquisition of land easements and construction rights-of-way.

DEVELOPMENT OBJECTIVES

With an REA loan amounting to $39 million, PNCC will embark upon an aggressive 5-year program of improvement and expansion of the Republic's telecommunications infrastructure with the following objectives:
a. Integrate Palau into the global telecommunications network for the long term economic well-being of the country by incorporating state-of-the-art technology in the Republic's telecommunications system;

b. Provide 7,000 telephone lines by the year 2000 which translates to about 35 lines per 100 residents;

c. Provide quality customer service by meeting set standards for operational efficiency, reliability and cost effectiveness;

d. Upgrade the skills of employees of PNCC by providing them with both short-term and long-term training; and

e. Commit to an aggressive and prudent fiscal program, recognizing that optimum return on the capital investment is essential to achieve development and operational objectives.

PROGRAMS AND PROJECTS

The following planned programs and projects are to be implemented during the Plan period using the REA $39 million loan as the main financial resource. While the cost estimates for the following described projects are based on the REA loan design, PNCC anticipates reducing the amount of loan funds actually required through application of the most cost effective technologies and through internal construction and funding of significant portions of the rural telecommunications infrastructure. Certain projects indicated in Table 14.1 scheduled for 1995 are already being undertaken and/or will be undertaken in 1994.

14.6 Central Office Equipment

PNCC currently uses a Northern Telecom DMS-10 (genetic 400) switch in a container at the Koror Central Office in downtown Koror. This switch is state-of-the-art digital technology currently equipped for 2,500 lines with an ultimate capacity limit of over 10,000 lines. The company will expand the line capacity of the Koror switch and purchase and install a second DMS-10 switch in Airai at its new Headquarters & Central Office complex due for completion in late 1995 or early 1996.

The company will also install small class 5 central offices or remote switches for the other exchanges (States). The last rural telephone system projected to be built in Kayangel State is expected to be in operation by the 4th
quarter of 1995.

The company also plans to purchase a packet switch to provide on demand access to the global X.25 data network. The REA loan includes money for a new switching system in Koror. However, this purchase is expected to be deferred to the end of the REA "A" loan period.

Estimated cost:  $7,218,000
Source of funds:  REA loan and retained earnings

14.7 Electronic Equipment

With the purchase of the Koror earth station from COMSAT in October of 1993, PNCC assumed full responsibility for international communications to and from Palau. A project contracted with AT&T will refurbish the 13 meter antenna and upgrade the station to digital "IDR" standards scheduled for completion by August of 1994. The multi-destinational IAT equipment from AT&T will provide greatly increased capacity at a reduced space segment cost due to 4 to 1 compression. The dynamic allocation of bandwidth provided by this new equipment will make high speed data applications possible in Palau, including: compressed video conferencing, medical imaging, interactive distance learning, etc.

PNCC will also be installing a second satellite earth station to provide redundancy in the international network in the near future. This station is likely to have a smaller aperture antenna (9 meters or less) and will track an alternative satellite. The addition of a second earth station will ensure that Palau is never out of touch with the global network.

The "Electronic Equipment" category of projects includes state-of-the-art distribution technology, using a "fiber to the distribution node" design with subscriber carrier systems directly interfaced to the DMS-10 switch in Koror. This design is compatible with a future migration to a "fiber-to-the-curb" and, ultimately, "fiber-to-the-home" architecture.

PNCC is also using or has plans to use wireless (radio) telephone and microwave trunking technology to provide communications to outlying areas of Palau. The EXICOM "Hawk" radio telephone systems are currently being installed in all states outside of Koror and Airai (except Sonsorol and Hatohobei) to provide basic telephone service.

Estimated cost:  $9,146,000
Source of funds:  REA loan and retained earnings

14.8 Improvement of Outside Plant
A major project is scheduled to begin in the first half of 1994 that will place a buried outside plant distribution system in Koror and Airai to replace current overburdened and undersized aerial facilities. During the construction phase of this project, PNCC construction personnel will perform placing and inspection functions alongside the contract personnel in order to gain first hand, on-the-job experience in buried placing techniques. Outside (distribution) plants in the rural states of Palau will initially be a combination of buried and aerial plants (both fiber and copper), designed and installed by PNCC employees.

An emphasis is being placed on the use of the fiber optic cable for all inter-office trunking. While the REA plan budgets a large amount of money for microwave radio trunking, advances and cost reductions in fiber optics make this technology cost competitive. The great bandwidth advantages of fiber make it the technology of choice wherever practical. Fiber facilities are already scheduled for the Koror-Airai route in late 1994.

Discussions have also been initiated with several providers of undersea fiber cable about the technical and economic viability of a festooned fiber optic ring around Babediaob and a link to Peleliu using newly available shallow depth materials and placing methods. Such facilities could also provide capacity for the distribution of educational and public services, such as interactive distance learning and television. In the long term, there is a recognition that Palau must be linked to the outside world via undersea fiber optic facilities. This is a project that is beyond Palau's ability to fund alone; however, PNCC will watch for any opportunity to participate in future projects, such as the proposed Indonesia to Guam cable, that could reach Palau.

Estimated cost: $11,670,000
Source of funds: REA loan and retained earnings

14.9 Station Equipment

This category includes the purchase and installation of telephone instruments, key and PBX systems, and pay phones. With the exception of pay phones, PNCC is moving toward a complete "deregulation" of customer premises equipment (CPE) in accordance with global trends.

Estimated cost: $1,237,000
Source of funds: REA loan and retained earnings

14.10 Land and Buildings Development
The most significant facility planned is the Headquarters and Central Office complex at the Airai airport. This multi-million dollar facility will be the primary administrative office for PNCC and communications hub for the nation. The facility will have about 15,000 square feet of office/public floor space and 6,000 square feet of equipment/technical space. The site will also have a large warehouse/shop building for materials and supplies and equipment maintenance. The facility is scheduled to break ground in the summer of 1994 and should be completed by early to late 1995 or early 1996.

Support facilities in rural states will generally be limited to small central office structures to house electronic switching and trunking equipment. These small "equipment huts" will be either prefabricated containers or will be constructed from hollow block and concrete. PNCC will need to secure sites for these small structures and is currently approaching each state to determine the best location.

Estimated cost: $4,608,000
Source of funds: REA loan and retained earnings

14.11 Support Systems and Equipment

This category includes test equipment and tools, vehicles and construction equipment, computer systems, and office fixtures. The construction of the central office facilities in Airai and planned reconstruction of the downtown Koror business office will require a significant investment in office furnishings and computer equipment.
Estimated cost: $1,427,000
Source of funds: REA loan and retained earnings

14.12 Engineering

All projects require engineering and architectural work to be done. The REA program requires that this work be done by an REA certified engineer. This category provides engineering funds of up to 15% of the project cost. Since much of the work will be internally funded, PNCC does not anticipate spending the full amount budgeted under this category.

Estimated cost: $6,153,000
Source of funds: REA loan and retained earnings

Table 14.1 indicates the planned development allocations for telecommunications during the Plan period.
### TABLE 14.1: Planned Development Allocations for Telecommunications ($000)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Central Office Equip.</td>
<td>2,650</td>
<td>481</td>
<td>286</td>
<td>191</td>
<td>3,610</td>
<td>7,218</td>
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<tr>
<td>Electronic Equipment</td>
<td>1,850</td>
<td>2,918</td>
<td>2,189</td>
<td>1,459</td>
<td>730</td>
<td>9,146</td>
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<tr>
<td>Outside Plant</td>
<td>5,633</td>
<td>2,415</td>
<td>1,811</td>
<td>1,207</td>
<td>604</td>
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<td>Station Equipment</td>
<td>550</td>
<td>299</td>
<td>177</td>
<td>129</td>
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<td>1,237</td>
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<td>Land and Buildings</td>
<td>2,685</td>
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<td>15</td>
<td>15</td>
<td>4,608</td>
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<td>Support Sys. &amp; Equip.</td>
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<td>456</td>
<td>206</td>
<td>241</td>
<td>159</td>
<td>1,427</td>
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<tr>
<td>Engineering</td>
<td>2,391</td>
<td>1,457</td>
<td>833</td>
<td>566</td>
<td>906</td>
<td>6,153</td>
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<tr>
<td><strong>Total</strong></td>
<td>16,124</td>
<td>9,814</td>
<td>5,607</td>
<td>3,793</td>
<td>6,0914</td>
<td>1,424</td>
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CHAPTER 15

ENERGY

CURRENT SITUATION

15.1 Development

The Republic relies almost entirely on imported petroleum fuels for its energy sources. In 1993, the level of imported fuel was approximately 365,200 barrels consisting mainly of diesel oil, gasoline, Jet A-1 fuel, including lubricants and small amounts of AvGas, kerosene, and LPG. Fuel comes from Singapore via Guam, with some lubricants being shipped from Hong Kong via Guam.

It is estimated that in 1993 petroleum consumption by end use sector was as follows: 51 percent of the imported fuel for transportation; 44 percent for electricity generation; and the remaining 5 percent for operating heavy equipment and use by households and restaurants. Within the transportation sector, 37 percent of the transportation fuel was used to power land vehicles, 16 percent was used in aviation, and 47 percent was used for marine vessels.

With approximately 75 percent of all households and all the major governmental facilities and private commercial and industrial enterprises being concentrated in the Koror-Airai area, the energy demand and consumption in these urbanized areas is by far the highest. Existence of an asphalt concrete road system contributes to fuel consumption for motor transportation being the greatest in these areas as well.

The other main component of fuel consumption is the demand by the marine transport sector. A fleet of approximately 140 fishing boats operated by two locally based commercial fishing companies is currently supplied with fuel locally. Privately owned motorized boats have also increased in number and in use by households for several purposes, such as fishing, recreation and water transportation where roads are lacking.

With three main fuel depots, Palau does have sufficient storage capacity for the foreseeable future. Mobil Oil Micronesia, Inc. has a storage capacity of approximately 70,000 barrels dedicated to diesel oil, 13,000 barrels for gasoline, and 21,000 barrels for jet fuel (700 barrels of which are at the Palau International Airport). Shell's (Palau Petroleum Products, Inc.) facility on Malakal Island has a total storage capacity of 7,900 barrels, 5,500 of which are for storage of diesel oil, with the remaining 2,400 barrels for gasoline. The
Government's storage facility at Aimeliik has a total storage capacity of 144,000 barrels, 72,600 of which are dedicated to diesel, and the remaining 71,400 barrels of storage capacity are not currently in use.

The following table shows petroleum consumption by end use sectors.

<table>
<thead>
<tr>
<th>Products</th>
<th>Power</th>
<th>Heavy Ships/Boats</th>
<th>Hotels/</th>
<th>Totals</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Plants</td>
<td>Equipment</td>
<td>Planes</td>
<td>Vehicles</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel</td>
<td>6,679</td>
<td>5303,652</td>
<td>138</td>
<td>--</td>
</tr>
<tr>
<td>Gasoline</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>2,796</td>
</tr>
<tr>
<td>Jet Fuel</td>
<td>--</td>
<td>--</td>
<td>1,244</td>
<td>--</td>
</tr>
<tr>
<td>AvGas</td>
<td>--</td>
<td>--</td>
<td>7.4</td>
<td>--</td>
</tr>
<tr>
<td>Lub Oil</td>
<td>53.6</td>
<td>5.9</td>
<td>9.7</td>
<td>15.9</td>
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<tr>
<td>Kerosene</td>
<td>--</td>
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<td>--</td>
<td>--</td>
</tr>
<tr>
<td>LPG</td>
<td>--</td>
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<td>--</td>
<td>96</td>
</tr>
</tbody>
</table>

Source: Mobil Oil Micronesia, Inc. and Belau Petroleum Products, Inc.

Electric power is generated both in public and private sectors, but only the Government produces and sells power as a utility service. The four states of Koror, Airai, Aimeliik and Ngatpang are served by the central power generating facility.

The main sources of electric power are the 12.8 megawatt Aimeliik power plant and 6.25 megawatt Malakal power plant, respectively located in Aimeliik and Koror States. Smaller conventional diesel power plants are found on Angaur, Peleliu, Ngaremlengui, Ngchesar, Melekeok, Ngaraard, Ngarchelong States, and Ibobang village. Each of these smaller plants is owned by the respective state government, with a few in operation up to 12 hours per day, although most are operating only 6 hours every night. Airai State has a 14 megawatt private power plant which has never been put in operation.

The electric power produced in the outlying states is used primarily for light and, to a lesser extent, for refrigeration and other miscellaneous uses. The installed capacity of each of these state-owned power plants varies from a minimum of 30 KW to a maximum of 300 KW.
Photovoltaic systems are used for house lighting in Kayangel State and Ngkeklau village in Ngaraard State. In addition, most of the outlying states utilize photovoltaic systems to power their communication systems and small refrigerators for keeping medicine at State dispensaries.

The major privately owned power generating facilities are located in Koror State. They are utilized by the major commercial and industrial establishments as standby units or as prime power. The combined installed capacities of these private power generating facilities amounts to 6,400 KW. Of these facilities, one major hotel is totally dependent on its own 1,800 KW power plant for electric power. The rest of the privately owned power generating facilities are used by the respective owners as auxiliary units.

Due to an ever increasing number of residents, dwellings, offices, commercial and industrial establishments and activities in the Koror-Airai area, the average "peak" electrical load growth has been increasing over 13 percent per year from 1989 to 1993 where the average normal load growth increase per year for the same period was 12 percent.

The trend in electric power demand from 1989 to 1993 is reflected in the following tables.

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<table>
<thead>
<tr>
<th>TABLE 15.b: Trend in Electric Demand (Peak Load) in Kilowatt - 1989 to 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Demand: 6,490 7,380 8,100 9,500 10,700</td>
</tr>
</tbody>
</table>

-Source: Bureau of Public Works

---

As noted in Table 15.b, average "peak" load demand has been increasing about 13 percent per year from 1989 - 1993. At this rate of peak demand, the supply capacity of power generation will be inadequate by 1995, considering that only 14,550 KW is currently available from the combined output of Aimeliik and Malakal power plants.
TABLE 15.c: Existing Power Supply Capacity

<table>
<thead>
<tr>
<th>Source</th>
<th>Installed Capacity (KW)</th>
<th>Prime Power Output (KW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malakal Power Plant</td>
<td>6,250</td>
<td>3,750</td>
</tr>
<tr>
<td>Aimeliik Power Plant</td>
<td>12,800</td>
<td>10,800</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19,050</strong></td>
<td><strong>14,550</strong></td>
</tr>
</tbody>
</table>

Source: Ministry of Resources and Development

Given the age and obsolescence of the Republic's power generating equipment and the difficulty in obtaining spare parts, only 60 percent of the combined 6,250 KW installed rated capacity of the Malakal power plant can be counted upon as prime power. Due to their age and the lack of long overdue complete overhaul of power generating units in the two power plants, the operating mode is to run the units at no more than 80 to 90 percent of their rated capacity.

Table 15.c indicates the limitation of the combined generating capacity of prime power of both power plants at 14,550 KW. At the present rate of power demand, as mentioned above, the combined prime power generating capacity of the two power plants will be exceeded by 1995. The Government, therefore, must now make plans to alleviate the problem by increasing the prime power generating capacity of both power plants.

The Republic recently received from the Government of Japan a grant aid assistance for improvement and expansion of the existing power transmission and distribution system. The first phase of the grant aid project will tie together the Aimeliik and Malakal power plants so that they can be operated in a synchronized manner and will also update both the transmission and the distribution system in Koror State. Phases two and three of the grant aid project will enable the extension of the 34.5 KV transmission lines from Nekken north to Ngaremengui and 13.8 KV distribution lines east to Melekeok and Ngchesar States and north to Ibobang village.

In remote and rural areas the main sources of energy for cooking are firewood, LPG and kerosene. Because of the difficulty in transporting kerosene to the southwest island states of Hatohobei and Sonsorol, kerosene is reserved exclusively for lighting purposes (fuel for kerosene lamps), while firewood is used for cooking.
Limited amounts of imported kerosene, LPG and charcoal are used to supplement electricity which is the primary energy source for cooking in private households and commercial establishments in the Koror-Airai area.

A limited amount of AvGas is imported for the operation of aircraft belonging to domestic airlines.

15.2 Organization

Operation and maintenance of the National Government-owned power system, as well as the retailing of electric power to consumers, is currently carried out by the Ministry of Resources and Development through the Bureau of Public Works. Billing for and collection of utility charges is the responsibility of the Ministry of Administration through its Utility Agency.

A recent law creates Public Utility Corporation (PUC) and requires the transfer of the assets and the operation of the currently government-owned power system to it. The PUC is expected to improve operations and efficiency in power generation, distribution and sale.

Several State governments operate their own power plants and receive technical assistance support from the Bureau of Public Works upon request.

State governments also receive technical assistance from both the Palau National Communications Corporation and the Bureau of Public Works for the repair of their photovoltaic communication systems, dispensary lighting and refrigeration systems, and household lighting systems where required.

The importation and distribution of petroleum fuels and products are handled by Mobil Oil Micronesia, Inc. and Belau Petroleum Products, Inc. Retailing of diesel fuel and gasoline is done by the private sector through several gas station outlets. Airlines operations are directly supplied by Mobil Oil Micronesia, Inc.

PROBLEMS AND ISSUES

The following problems, issues and constraints are presently confronting the energy sector:

15.3 Present Status of Power Supply
If the present trend of demand for electricity is to continue, it is anticipated that by 1995 the combined output of both the Aimeliik and Malakal power plants will not be sufficient to supply the demand for electricity.

As pointed out earlier, the existing equipment in the Malakal power plant is obsolete and spare parts for said equipment are difficult to obtain. The four 3.2 megawatt power generating sets at the Aimeliik power plant are over six years old, and three of the units must be immediately overhauled as these units have been in continuous operation beyond their recommended scheduled overhaul date by more than two years.

15.4 High Cost and Demand for Electricity

The Pacific Regional Energy Assessment Report points out that Palau's per capita energy consumption, particularly petroleum, is very high by Pacific islands standards being more than twice that of any other island nation and four times that of the neighboring Federated States of Micronesia. Palau's consumption level is more typical of large developed countries such as Australia or Japan than of a developing island nation.

The cost of electric power production at the power plants has been estimated at 22 cents per kilowatt-hour, which does not take equipment depreciation cost into account. This high unit cost of electric power production is due to the high price of diesel fuel and probably excessive line loss.

15.5 Low Power Rates and Low Collection of Users Fee

The Government sells electric energy to the general public at a highly subsidized charge rate of 9 cents per kilowatt hour. For consumption exceeding 2,000 KWH per month, the rate is increased to 10 cents per KWH. Where no watt-hour meters are installed a pre-determined flat rate is charged the customer until the facility is metered properly.

Although the Government is selling electricity to the general public at a subsidized charge rate of only 9 cents per KWH, a significant number of consumers still fail to pay at all. At present, uncollected utility bills amounts to 5 percent of the annual billing.

15.6 Existing Power Grid Covers Only a Few States

Currently only Koror and three of the 10 states in Babeldaoob receive
power from the public power grid. Limited financial resources has precluded
the Government from extending the power grid to any point in Babeldaob to the
north and east of Ngatpang State.

15.7 Status of Power Supply in Outlying States

The outlying states of Kayangel, Peleliu, Angaur, Hatohobei and
Sonsorol do not have regular 24-hour supply of electric power. The existing
power systems in Peleliu and Angaur are in operation only part of the day to
conserve fuel. Kayangel State is dependent on photovoltaic systems for
lighting individual homes. Kayangel State needs a more reliable source of
power to support its fishing industry. The remote states of Hatohobei and
Sonsorol, because of the difficulty and expense in transporting petroleum fuel,
must consider renewable energy sources such as photovoltaic systems for
household lighting. The outlying 7 states in Babeldaob have the potential of
being connected to the public power grid in the future.

15.8 Conservation of Energy Needs to be Practiced

Government offices and other facilities are presently not metered.
This leads to a waste of energy as there is little incentive for the power
consuming departments to practice conservation measures. The same
careless attitude may be true of private consumers who are not metered as
they are paying a preset amount per month that may reflect considerably less
than the actual energy consumed. A significant amount of energy is also
wasted through improper insulation of homes and offices where air
conditioners are utilized.

15.9 Power Grid in Koror Needs Upgrading

A large part of the existing power transmission and distribution system
in Koror has been in service for over 20 years resulting in many deteriorated
poles and cross-arms. Additionally, the original design capacities of cables
and service transformers have been exceeded in many instances. This
situation must be corrected by upgrading the Koror power grid system.

15.10 Lack of Reliable Public Transportation Services Contributes to High
Energy Import Bill

Palau's considerable number of motor vehicles, motorboats, and
vessels consume approximately 43 percent of imported petroleum fuel. The
low import tariff on gasoline, currently only 5 cents per gallon, contributes to a
general lack of prudent use of these transportation means, and a general unawareness by the public of the high import bill that Palau is paying for petroleum products. Only limited and unreliable public land and water transportation systems are available, which encourages individual families to resort to buying motor vehicles and boats contributing to the high energy import bill.

15.11 No Potential for Alternative Renewable Energy Technologies

Alternative and renewable sources of energy such as wind, biomass, biogas, hydroelectric power and geothermal power have no great potential in Palau. Ocean Thermal Energy Conversion (OTEC), ocean waves, solar ponds and other technologies may have potential in Palau, but such technologies have not been developed fully and their commercial applications are still questionable. Although still relatively expensive, photovoltaic, as an alternative power source, may be applicable in Kayangel, Hatohobei and Sonsorol due to small power demand and the difficulty for transportation of fuel oil to these remote islands for operations of conventional diesel power plants. Photovoltaic power systems may also be applied as a supplement to the smaller conventional power systems presently existing in Angaur and Peleliu.

Only very small, low head hydroelectric power plants could be developed at certain limited locations in several states in Babeldaob. It is not clear if the development of such hydroelectric power plants would be cost effective. Judging from the sizes of rivers, it can be concluded that the potential output of such hydroelectric power plants would not be sufficient to meet the energy requirements of the states in Babeldaob because of the low head and small flows in said rivers in the area.

15.12 Aimeliik Power Plant Debt will place a Financial Burden on the Government

The expenditure of $15,500,000 during the Plan Period (with a remaining $4,500,000 to be paid outside of the Plan period) to service the Aimeliik power plant debt will place a financial burden on the Government. Additional local revenue sources should be tapped to help liquidate this debt.

OBJECTIVES

15.13 Energy Objectives
The Government, in furtherance of its goal to provide energy to the general public at reasonable cost, and to enhance the general socio-economic development of the Republic, has adopted the following objectives for the energy sector during the Plan period:

a. Immediately allocate financial resources for the complete overhaul of the existing power generating equipment and purchase and install a new 3.2 megawatt unit at the Aimeliik power plant.

b. Immediately allocate financial resources to: upgrade the Malakal power plant by completely renovating the physical structure; overhaul all salvageable power generating sets; upgrade the electrical switch gear, engine control systems, cooling systems, exhaust systems, etc.; and purchase and install appropriately sized generator(s) to supply power demand during the Plan period.

c. Locate financial resources for upgrading the Koror power grid and tying together the Malakal power plant and Aimeliik power plant to allow them to operate in synchronization.

d. Locate financial resources to extend the power transmission and distribution grid to certain states in Babeldaoob.

e. Upgrade existing power plants and distribution systems in Peleliu and Angaur and provide appropriate power systems on Kayangel, Hatohobei and Sonsorol.

f. Have the new Public Utility Corporation (PUC) operate and maintain the national public power system and the fuel storage tank at Aimeliik power plant in a business-like manner, with the aim of making the PUC becoming financially independent within the Plan period.

g. Improve dock facilities for fuel oil delivery and bunkering at Aimeliik.

h. Incorporate into a building code energy conservation policy measures to include, but not be limited to, requiring newly constructed homes, offices and other facilities intended to be air-conditioned to be properly insulated; full metering; no installation of electrical water heater where solar water heater is sufficient. The Public Utility Corporation will implement a program of demand side management tailored to address the effectiveness of the operations of the national power system.
i. Where fuel oil for the conventional power plant is too expensive and/or difficult to transport, supplementing diesel power generation by means of the application of appropriate, alternate and renewable energy technologies will be considered.

j. Raise more local revenue to service the $20 million IPSECO power plant debt.

POLICIES AND STRATEGIES

In order to achieve the energy sector objectives during the Plan period, the Government will implement the following policies and strategies:

15.14 Increase Power Supply for Koror and Babeldaob States

The need to provide electricity for the socio-economic development of the nation is a fundamental objective of the Government of the Republic of Palau. Koror being the present civic, administrative and commercial center of the Republic, and Babeldaob island being the largest mass of land in Palau where most of the land base resources of the country are found, it is appropriate to develop a central power system to serve Koror and all the states in Babeldaob. The Aimeliik power plant was therefore developed, and recently the Malakal power plant was put back into operation when the total output of the Aimeliik power plant was surpassed by demand for power.

The first order of priority in the energy sector is to have all the power generating units at the Aimeliik power plant completely overhauled. The plant has space designed for a 3.2 megawatt generating set available. Procurement of a new 3.2 megawatt diesel prime mover set must be expedited. The foundation, the alternator, exhaust system, cooling system, fuel and air starting systems for a new unit are already in place.

Concurrently with the upgrading of the Aimeliik power plant, the existing power generating units in the Malakal power plant will be fully evaluated, and those units with good potential for long-term use will be serviced. Ancillary equipment and systems such as electrical switch gear and the exhaust and cooling systems also need full evaluation and a decision has to be made either to repair and/or replace such equipment. The existing electrical step-up transformer substation will need to be replaced with new equipment to allow the synchronization of the operations of the Malakal and Aimeliik power plants.

During the Plan period, a new 8 to 10 megawatt power plant will need
to be developed at the Malakal power plant (possibly within the existing but renovated and expanded building) and commissioned.

15.15 Improve of the Airai-Koror Power Grid

The IOMVA rated capacity of the Airai step-down substation transformer (34.5 KV/13.8 KV) is being surpassed by the amount of power generated by the Aimeliik power plant. This situation, together with the fact that the power demand in the Koror-Airai area has made it necessary to reactivate the Malakal power plant to take some of the electrical load off the Aimeliik power plant, thus help limit the flow of electricity from the Aimeliik power plant within the capacity of Airai substation transformer.

Presently, the two power plants are not electrically tied, and therefore are operated independently of each other. The whole of Malakal Island and part of Medalai hamlet in Koror are being powered by the Malakal power plant while the rest of Koror and the States of Airai, Ngatpang and Aimeliik are served by the Aimeliik power plant.

With a recently awarded Japanese Government grant aid, a new 10 MVA step-up (13.8 KV/34.5 KV) transformer substation will be installed at the Malakal power plant replacing the existing substation equipment. The existing 13.8 KV transmission lines between the Airai substation and the Malakal Island will be replaced with a new 13.8 KV distribution lines while the Nekken-Airai 34.5 KV transmission lines will be extended from their terminus at the Airai substation to the Malakal power plant. In other words, both the 13.8 KV distribution and 34.5 KV transmission lines will be installed on the same sets of power poles, the alignment of which will follow the existing right of way. Certain existing electrical loops within Koror State will also be upgraded. This will result in a synchronized operations of the Aimeliik and Malakal power plants for ease and efficiency of operation.

15.16 Expand the Power System to Certain States in Babeldaob

Presently, only three of the ten States in Babeldaob are served by the central power system. The objective of the Government of Palau is to provide electricity to the remaining 7 states in Babeldaob. Japanese grant aid is presently being sought to extend power transmission lines from Nekken to Ngchesar, Melekeok, Ibobang and Ngaremlengui. It is understood that such a request for assistance from the Japanese Government will be considered favorably. However, should the anticipated aid from the Japanese Government not materialize, some other sources of funding may need to be utilized for this project.
Providing electricity to the non-electrified states in Babeldaob will require extension of the 34.5 KV transmission lines to a location near each community and lowering the voltage to 13.8 KV through step-down transformers (34.5 KV/13.8 KV) through which 13.8 KV distribution lines will be extended throughout each community.

15.17 Improve Power Systems in the Outlying States

The Government, ever mindful of the responsibility to improve living conditions in all parts of the Republic, will assist the State governments in the outlying states in the improvement of their power systems. The outlying states of Peleliu and Angaur have established power systems consisting of small diesel power generating equipment, low voltage step-up transformer substations and low voltage transmission/distribution lines. To conserve fuel, these systems operate for part of each day. The required improvements needed to upgrade these power plants consist of modification and/or replacement of the existing power plant building to provide more ventilation; procurement and installation of more appropriate power generating equipment; and upgrading of the transformer substation equipment and the power transmission/distribution lines.

Although Kayangel State is currently employing individual photovoltaic systems to provide lighting for each household, a conventional diesel power plant is needed to support the state's fishing industry. Photovoltaic or hybrid technology will be considered for power system development in the outlying States of Hatohobei and Sonsorol.

15.18 Introduce Energy Conservation Measures

A large percentage of all imported fuel is for power generation. Reduction of the enormous cost involved in this can most effectively be achieved through conservation measures. The Government, through the implementation of a building code, will require metering of all facilities, whether government or privately owned, proper insulation of offices and facilities intended to be equipped with air conditioners and utilization of solar water heaters instead of electric and/or gas water heaters for households.

The Government will enforce an effective control of the usage of Government-owned vehicles and boats to minimize fuel requirements in the transportation sector.

The economics of introducing a coal-fired base-load power station to
utilize a cheaper source of energy (Indonesian coal) will be studied as part of the long-range plan for a base-load power station in Palau.

15.19 Creation of a Public Utility Corporation to Own and Manage the Operation of the Public Power System

To ensure a reliable and cost effective operation, legislation has recently been enacted creating a public utility corporation which will be responsible for the operation of the electrical utility system. This is a critical step in the development of the power generation and distribution system for the Republic. This will help to ensure that these important functions are being undertaken in a professional and productive manner. A duly appointed Board will determine overall policy although governmental approval will be required for any transfer of operational or managerial control. A professional General Manager shall, in accordance with Board oversight and policies, have operational control of the PUC.

From an economic stand point, establishing an autonomous PUC will also ensure that the actual costs of electrical power production and utilization are more clearly accounted for. Of critical importance is the fact that the PUC Board shall have the right to independently set electrical use rates which will ensure that the PUC covers its operating costs. Public hearings regarding the rates are required and the Board may choose to adopt various rate schedules based on the user classification. To help ensure the fiscal autonomy of the PUC, a separate PUC fund and accounts within the National Treasury will be created.

The PUC may initially hire qualified foreigners to fill management and technical positions or contract out the operations and maintenance of the electric power utility system including the fuel storage facility at Aimeliik power plant to a highly qualified private firm.

The ultimate goal of the public utility corporation is to provide reliable and sustainable electric power services meeting the short and long-term socio-economic needs of Palau and to eventually turn the operation of the public power utility system into a profitable enterprise.

15.20 Liquidation of IPSECO Power Plant Debt

The Government will allocate funds to service the $20 million IPSECO power plant debt, according to the terms of the Settlement Agreement with the creditor banks.
PROGRAMS AND PROJECTS

Certain of the following energy sector programs and projects will be undertaken during the Plan period to enhance the socio-economic development of the country.

15.21 Operation of the Public Utility Corporation

Public Law No. 4-13 mandates the transfer of the ownership of the existing public power utility system presently owned by the National Government to the Public Utility Corporation. Government employees (employees of the Utility Agency and the Bureau of Public Works) presently engaged in the production, distribution and sales of electricity will be transferred to the PUC. In addition, highly qualified management, administrative and technical personnel will be hired to ensure proper operation and management of the corporation. The PUC will continue to receive subsidies from the Government until such time that it becomes financially independent. The total yearly budget, including revenues from the sales of electricity required for the operation of the PUC is estimated at $6,000,000.

Estimated cost: $6,000,000 per year
Source of funds: OEK appropriations and OMIP grant funds

15.22 Increasing the Power Generating Capacity of the Aimeliik Power Plant

Increasing the power generating capacity of the Aimeliik power plant entails three pronged action as follows: i) purchase and install a 3.2 megawatt power generating unit (identical to the existing generator sets) in the space allotted for such a unit; ii) procure the necessary spare parts and utilize same in completely rebuilding the three power generation sets which have not been overhauled; and iii) build up the spare parts inventory for the next scheduled overhaul of the power generating units and purchase other consumable mechanical and electrical supplies.

Estimated cost: $3,000,000
Source of funds: Compact funds

15.23 Increasing the Power Generating Capacity of Malakal Power Plant

Concurrently with the upgrading of the power generating capacity of the Aimeliik power plant, the following actions must be taken to increase the power generating capacity of the Malakal power plant: procure parts for and completely service the remaining four operational power generating units, including new cooling and exhaust systems and switch gear equipment (after
being completely rebuilt these units should only be used as auxiliary power sources); commission a 8 to 10 megawatt base power plant at Malakal including a new building (and/or

utilize the existing but fully renovated and expanded building) and new power generating equipment.
Estimated cost: $5,500,000
Source of funds: Compact funds

15.24 Upgrading of Koror-Airai Power Grid

An ongoing Japanese Government grant aid assistance is being utilized to upgrade the power grid in the Koror-Airai area. The scope of this project is to: extend the 34.5 KV transmission power lines from the Airai substation all the way to the Malakal power plant; remove the existing 13.8 KV transmission lines and replace them with new 13.8 KV distribution lines on new 34.5 KV power poles (34.5 KV lines on top while 13.8 KV lines are installed below); upgrade certain 13.8 KV power loops within Koror; and install a new 10 MVA step-up transformer substation at Malakal power plant, and; tie the Aimeliik and Malakal power plant together to operate in a synchronized manner.
Estimated cost: $5,300,000
Source of funds: Japan Grant Aid

15.25 Expand the Power Grid to more areas in Babeldaob

It is anticipated that Japanese Government grant aid assistance already awarded for the upgrading of the power grid in Koror will be increased by an amount necessary to finance the extension of the 34.5 KV transmission lines from Nekken to Ngaremlengui and, along the way at Koksai area, 13.8 KV power lines are extended therefrom to Ngchesar and Melekeok. Materials such as concrete power poles, hardware, transformers and insulators, etc. will be given to Palau Government to provide 13.8 KV rated distribution lines within Ibobang, Ngchesar and from the terminus of the 34.5 KV power transmission lines at Yamato to Imeong given the rest of Ngaremlengui and Melekeok States already have appropriate 13.8 KV distribution lines, and it is therefore only necessary to tie these systems to the new power grid through appropriately sized step-down transformer substations.

Further, extension of the electric transmission/distribution lines to the remaining four States in Babeldaob (Ngiwal, Ngardmau, Ngaraard and Ngarchelong) is estimated to cost $9,950,000, the funding source of which has
not been identified. Accordingly, funding for the extension of the power grid to these States will be sought during the Plan period.
Estimated cost: $6,700,000
Source of funds: Japan Grant Aid

15.26 Installation of Electricity Consumption Meters

All private and public housing units, facilities and offices receiving electric power from the public utility grid will be equipped with electricity consumption meters.
Estimated cost: $120,000
Source of funds: Public Utility Corporation

15.27 Upgrading of Peleliu Power System

The power system in Peleliu State will be improved as follows: upgrade power plant building; purchase and install new and appropriate power generating equipment complete with new switch gear, exhaust and cooling systems; upgrade the step-up transformer substation; upgrade existing power distribution system including the installation of watt-hour meters at all customers facilities, and; upgrade fuel oil storage facilities.
Estimated cost: $650,000
Source of funds: Compact Energy Account

15.28 Upgrading Angaur Power System

The Angaur power system will be improved as follows: upgrade power plant building and fuel oil facilities; purchase and install new and appropriate power generating equipment complete with new cooling and exhaust system and new switch gear; upgrade step-up power transformer substation; and the existing power distribution system, including the installation of watt-hour meters at all customers facilities.
Estimated cost: $580,000
Source of funds: Compact Energy Account

15.29 Upgrading Kayangel Power System

Development and improvement of Kayangel power system includes upgrading the existing photovoltaic lighting systems at each household; and purchasing an appropriately sized conventional diesel power plant to support fishing and other economic activities of the state.
Estimated cost: $385,000
Source of funds: Compact Energy Account

15.30 Development of Power Systems for the States of Hatohobei and Sonsorol

Due to the difficulty and high cost of transportation of fuel for a conventional power plant, the most viable/practical power source for these two remote States would be individual photovoltaic lighting systems for each household. Accordingly, an appropriate photovoltaic system will be designed and installed at each household and school building classroom.
Estimated cost: $160,000
Source of funds: Compact Energy Account

15.31 Liquidating the IPSECO Power Plant Debt

Allocate funds from local revenue sources to liquidate the IPSECO power plant debt.
Estimated cost: $15,500,000
Source of funds: OEK appropriations

Table 15.d summarizes the planned development allocation for the energy sector from 1995 to 1999.

<table>
<thead>
<tr>
<th>TABLE 15.d: Planned Development Allocation for the Energy Sector, FY1995-FY1999 ($000)</th>
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</thead>
<tbody>
<tr>
<td>PROJE</td>
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<tr>
<td>Operation of PUC</td>
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<tr>
<td>Increase Ameleik power plant generating capacity</td>
</tr>
<tr>
<td>Increasing Malakal power plant generating capacity</td>
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<tr>
<td>Upgrading Koror power grid</td>
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<tr>
<td>Expansion of power grid in Babeldaob</td>
</tr>
<tr>
<td>Project Description</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Installation of Meters</td>
</tr>
<tr>
<td>Upgrade Peleliu power system</td>
</tr>
<tr>
<td>Upgrade Angaur power system</td>
</tr>
<tr>
<td>Upgrade Kayangel power system</td>
</tr>
<tr>
<td>Upgrade Hatohobei and Sonsorol power system</td>
</tr>
<tr>
<td>IPSECO Power Plant debt liquidation</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>
CHAPTER 16
WATER SUPPLY

CURRENT SITUATION

16.1 Development

At present, about 70 percent of the communities in the Republic have their own public water systems which vary in extent and degree of operational sophistication. The sources for the public water system serving the urbanized Koror-Airai area are the 20-million gallon impoundment at the Ngirimel dam and the water of the Ngirikiil river, which discharges approximately 20 million gallons per day. The smaller public water systems located throughout Babeldaoob derive their water supply from dammed streams. Angaur and Peleliu States obtain their water supplies from groundwater sources.

Some communities have no public water systems. Accordingly, residents in such communities depend entirely on rainwater caught off the roofs of their homes and stored in small storage tanks; to supplement rainwater—especially during dry seasons—groundwater from shallow dug wells is used for bathing and washing. Nearly every household in rural Palau depends on rainwater for drinking and cooking purposes.

16.2 Urban Water System

The Koror-Airai water system is the largest public water system in the Republic and requires considerable technical expertise and financial resources to operate and maintain. During the rainy season, water from Ngirimel river dam is fed to the Airai water treatment plant (WTP) by gravity. However, the Ngirimel river tends to dry up during the dry season because the watershed feeding it is limited in area. The system then has to rely on the Ngirikiil river source. The Ngirikiil river pump station facility is located near a small diversion dam at the confluence of the Ngirikiil and Pkulakuml rivers, which divert the river flow into a sump. Three 150 horse power electric driven pumps, with a capacity of 1400 gallons per minute (gpm) each are installed on top of the sump. The Ngirikiil river pump station is connected to the Ngirimel dam by three miles of two separate transmission force mains of 12-inch and 10-inch diameter pipes, respectively. By valving arrangement at the Ngirimel dam, water from the Ngirikiil river source flows directly down through a 16-inch gravity line and/or dump first into the dam, then by gravity, flows down to the Airai WTP through a 12-inch and a 16-inch parallel gravity lines.
At the Airai WTP, the water received through gravity pipe from the Ngirimel dam is delivered by three 700 GPM booster pumps into one or two of the four 1.0 MGD rapid sand filters, while the water pumped directly from the Ngirikiil river source flows directly into the other two 1.0 MGD rapid sand filters. Subsequently, the filtered water flows into a 100,000-gallon clearwell where it is chlorinated and pumped to several storage tanks in Airai and Koror through a combination of 12-inch and 10-inch transmission mains. Three pumps, each rated at 1050 gpm at 289 feet of head, are utilized for pumping water to the several storage tanks.

From the three 1.0 million gallon and two 0.50 million gallon storage tanks strategically located in Airai and Koror States, potable water flows by gravity directly to industrial, commercial and household consumers through over 110,000 feet of water distribution mains and lateral pipes ranging in sizes from 12-inch down to 2-inch and through over 2,035 service connections. The system also has 60 fire hydrants strategically located throughout the service area. A few deep wells located in Airai and Koror are incorporated into the system; however, groundwater as a source to the urban water system is negligible.

The average potable water production of the Airai WTP is approximately 3.8 million gallons per day, which is approximately 2.9 times more than the amount required to serve the nearly 13,000 people in the Koror-Airai area on a daily basis. However, only a relatively small amount of water is stored in the storage tanks at any given time. The reasons for this small amount of water storage are the existence of many leaks at the consumers’ facilities; the overuse of water by consumers; the probable existence of as-yet undetected major leaks in the system; and, to a lesser extent, power interruptions, mechanical failures and operator errors.

16.3 Rural Water Supply

Some of the communities in the 10 states in Babeldaob Island are conveniently located near streams or small rivers and the people living there take advantage of these surface sources. The communities situated near streams or small rivers are served mainly by small community water systems some of which were crudely designed and constructed between 1965 to 1975. The average system typically has a small concrete diversion dam which diverts raw water through a small diameter gravity transmission main to a steel or concrete storage tank from which water is transmitted through a main gravity line and distributed to the homes in the village. As a result of poor
maintenance over the years, many of these small community water systems are malfunctioning and/or inefficiently operational.

Beginning in FY 1984, the U.S. Government began to make funds available for the improvement and expansion of these small community water systems. As of FY 1993, a total of $10 million has been made available by the U.S. Government for the rural water improvement program. To date, ten (10) rural community water systems have already been built and/or are presently under construction, leaving six (6) remaining communities without improved water systems. Water systems for these communities will be upgraded during the Plan period.

The recent water improvement projects are fully designed and feature diversion dams, pump stations where required, transmission and distribution pipelines, slow sand filter, storage tanks and chlorination facilities. In communities where there are no surface water sources, such as in Angaur and Peleliu, groundwater sources have been developed by means of shallow wells and in the case of Peleliu, gallery-type wells. In communities such as Kayangel State and the Southwest Island States of Hatohobei and Sonsorol, where there are no surface water sources and the groundwater sources are either inadequate or could easily become contaminated, utilization of rainwater caught off from roof areas and stored in tanks is the only alternative.

16.4 Organization

The Ministry of Resources and Development, through the Bureau of Public Works, is responsible for the operation and maintenance of the Koror-Airai water system. The day-to-day operation of the system is handled by the Public Utility Division of the Bureau of Public Works. The Airai WTP requires 24-hour operation in three 8-hour shifts to ensure that pumps, filters and chlorinators are continuously operational throughout each 24-hour day.

Operations and maintenance of the water systems in the outlying communities are the responsibility of each state government. Upon request, the Bureau of Public Works of the Ministry of Resources and Development provides technical assistance to the state governments for major repairs associated with the operation and maintenance of the state water systems.

PROBLEMS AND ISSUES

The main problems and issues relative to water supply systems needing resolution during the Plan period include the following:
16.5 Inadequacy of the Koror-Airai Water System

The worst drought recorded in the Republic of Palau occurred in 1983 and its impact demonstrated that the two sources for the Koror-Airai water system are not sufficient. During this drought, the Ngirimel river virtually dried up and became useless as a source of water. Although the Ngirikiil river has an average daily flow of approximately 20 million gallons, during the drought, the flow was only 800,000 gallons per day. As the population of the Koror-Airai area increases and more commercial and industrial developments take place (private plans are underway for the possibility of development of two major resorts in Koror and an 18-hole golf course in Airai), it is imperative that additional sources of water be found and developed. Alternatively, additional raw water transmission capacity must be developed to pump water from the Ngirikiil source and store it at Ngirimel dam.

16.6 Excessive Use for Water from a Small Population

Approximately 3.8 million gallons of water are produced daily at the Airai WTP. Based on a consumption rate of 100 gallons per person per day, this amount of water is about 2.9 times the normal daily requirement of a non-industrialized area with a population of 13,000 people. In other words, the Airai WTP produces 3.8 million gallons of water daily of which 1.3 million gallons are presumably consumed and 2.5 million gallons are not accounted for. It appears that this large volume of unaccounted-for water is lost due to misuse by consumers (many consumers' homes/facilities are not metered so there is no incentive for them to conserve water); to leaking pipes at consumers' homes or facilities; and to undetected major leaks in the water mains and laterals.

16.7 Inadequate Water Treatment

Chlorine disinfection of water is not performed in many of the outlying community water systems. Moreover, due to a combination of financial cash flow and shipping problems chlorine supply to Palau, at times, is delayed which results in a lack of chlorine treatment in the Koror-Airai public water system. None of the public water systems which derive their water supply from surface sources meet U.S. Public Health Service criteria for minimum allowable turbidity. The only effective way to remove the turbidity in the water from surface sources is to chemically pre-treat the water, which is an expensive process. Although chemical pre-treatment of the raw water is expensive, the process must be incorporated in the overall water treatment process in order to meet U.S. Public Health Service criteria for minimization of turbidity in public water supplies.
16.8 Operations and Maintenance

The operation and maintenance of both the urban and rural water systems need to be dramatically improved. The personnel assigned to operate and maintain the Airai WTP lack the technical expertise required for the operations of the facility. For example, the technical support personnel for the maintenance and repair of electrical control and pumps at the WTP lack the requisite knowledge. Similarly, the personnel in charge of the management of the overall Koror-Airai water system lack the full understanding of the hydraulics of the system and therefore are not able to properly analyze the system to account for the 2.5 million gallons of water per day allegedly lost due wasteful use and/or leaks in the system.

The National and State governments have not always been able to provide adequate financial resources for the operation and maintenance of the public water systems. Materials, supplies, spare parts and necessary funds to hire qualified utility management and technical personnel to handle the day-to-day operation and maintenance of the water systems have not always been available.

16.9 Status of the Public Water Systems

Although the existing Koror-Airai water system provides sufficient quantity of water for the present needs, future demand will overtax the current production capability of the system. Existing raw water mains from both the Ngirikiil and Ngirimel sources have a combined capacity of transmitting 4 million gallons of water per day to the Airai WTP. Once this amount of water undergoes the treatment process (filtering and chlorination), 3.7 to 3.8 MGD is pumped into the system for distribution to the consumers while the remaining 0.2 to 0.3 million gallons is used up for backwashing the four 1.0 MGD rated rapid sand filters. Because of the increased turbidity of the incoming raw water during the rainy seasons, the net output of the Airai WTP is reduced as more filtered water is needed for the filter backwashing operation.

Regardless of how many times the filters are backwashed, it will be extremely difficult, if not impossible, to reduce the amount of turbidity in the finished water to meet U.S. Public Health Service standards. Results of a test performed by Hawaii Architects and Engineers in 1982 on the raw water feeding the Airai WTP indicate that the only way to meet U.S. Public Health Service standards limitation of turbidity in potable public water systems is to subject the raw water to chemical pretreatment prior to filtration.
Due to the low holding capacity of the existing clearwell, a considerable amount of finished water is wasted at the Airai WTP. The rate of filtered water entering the clearwell exceeds the rate of finished water being pumped out of the clearwell into the distribution system and the excess water is lost through the overflow pipe. This situation is particularly true during the dry season when the incoming raw water has a lower turbidity level than during the rainy season, thus making the water faster to filter. A new 100,000-gallon clearwell is needed at the Airai WTP not only to prevent the waste of treated water, but also to allow the existing clearwell to be emptied for maintenance and repair without having to shut down the WTP operation.

Another problem is the lack of standby electric power generators at both the Ngirikiil pump station and at the Airai WTP. During a power outage, which occurs quite often, the Ngirikiil raw water source system ceases to operate. The little raw water that does reach the filters through the 12-inch gravity main from Ngirimel dam is filtered but is lost through the overflow outlet at the clearwell because the transmission pump for the treated water at the WTP is not operational during a power outage. Clearly this situation could be improved if standby electric generators were installed at the Airai WTP and at Ngirikiil pump station to power the pumps during island-wide power outages.

If one of the existing three 1050 GPM clearwell pumps is shut down for repair and maintenance, there will be inadequate water reaching the consumers, even just for an hour period. Accordingly, a standby pump must be installed.

The existing chlorination system at the Airai WTP must be upgraded to ensure proper disinfection of the water supply. Almost all the community water systems in the outlying states do not practice any form of disinfection of the water supply. This situation has to be corrected during the Plan period.

A drought similar to the one in 1983 would present a severe health hazard to the people depending upon the Koror-Airai water system and would critically disrupt industrial and commercial operations in the area. Both the Ngirimel and the Ngirikiil water sources were critically inadequate during the 1983 drought. The Ngirimel dam impoundment completely dried up and the average flow of the Ngirikiil river dwindled down to approximately 0.80 MGD. Additional water sources will have to be identified and developed to accommodate the expected future growth of the Koror-Airai area.

Several communities in the outlying states do not have sufficient ground or surface water sources for development of an adequate water supply.
Accordingly, the only way to provide water to the community is for each household to utilize rainwater.

DEVELOPMENT OBJECTIVES

16.10 Water System Development Objectives

The following development objectives will be pursued during the Plan period to ensure that each community in Palau will have a safe and dependable water supply:

   a. A reliable and dependable potable water system will be developed for the urbanized Koror-Airai area by carrying out certain improvement to the system;

   b. Reliable and dependable potable water systems will be developed for all the outlying states of the Republic; and

   c. Sufficient funds will be allocated to ensure appropriate operations and maintenance of public water systems.

POLICIES AND STRATEGIES

To achieve the development objectives described above, the following policies and strategies will be applied.

16.11 Public Water System Survey

A comprehensive survey of the existing Koror-Airai public water system will be conducted complete with a hydraulic analysis, leak detection of both water mains and consumer facilities to account for the large amount of water presently unaccounted for. The survey will result in a comprehensive set of actions to be undertaken to prevent wastage of water.

16.12 Water Meters Installation Program

The metering program as a measure for conservation of water will be completed, including all government facilities.

16.13 Upgrade Public Water Systems

The Koror-Airai public water system will be upgraded, including the installation of an additional pump; expansion of the clearwell; the installation of
auxiliary power generators (including appropriate electrical control, transformers and automatic transfer switches at the Airai WTP and at the Ngirikiil pump station); the installation of one more 1.0 MGD rapid sand filter; and construction of a chemical pretreatment unit at the Airai WTP. In addition, water systems in the six communities presently without improved water systems will either be upgraded and/or developed to provide each community with a reliable and safe water supply.

16.14 Allocation of Sufficient Funds for Water System Operations and Maintenance

An adequate budget will be provided that will meet the operation and maintenance needs of the Republic's public water systems as well as establish a training program for citizens to properly manage the day-to-day operations and maintenance of the public water systems.

16.15 Identify New Water Sources for Future Development

Additional water sources of good quality and sufficient quantities will be identified for future development. These potential water sources must be protected from land development encroachment and from being degraded.

PROGRAMS AND PROJECTS

The following water system improvement programs and projects will be undertaken during the Plan period.

16.16 Hydraulic Analysis and Leak Detection Survey

The necessary hydraulic analysis and leak detection survey will be conducted on the Koror-Airai water system to account for the 3.8 MGD production of the Airai WTP.

Estimated cost: $75,000

Source of funds: OMIP with ROP matching funds

16.17 Water Meters Installation

Five hundred new and replacement water meters will be installed at consumers' facilities in the Koror-Airai area.
16.18 Improvement of Public Water Systems

The Koror-Airai water system will be upgraded in terms of the operational reliability and quality of the finished water as follows: i) At the Airai WTP, install/construct the following: a 4.0 MGD chemical pretreatment unit; a chemical storage/laboratory building; a 100,000-gallon clearwell; two appropriately sized standby power generator sets; a 1050 GPM potable transmission pump; two raw water influent pumps; new chlorinator units; and, all the necessary electrical appurtenances and wiring to make the system workable; and ii) At the Ngirikiil pump station, construct/install the following—an appropriately sized standby power generator set complete with housing; two new 1400 GPM raw water transmission pumps and all the necessary electrical appurtenances and wiring to make the system workable. In addition, upgrade six community water systems in certain States, including Ngardmau, Ngiwal, Ngaremlengui, Kayangel and Ngchesar (2 locations) to provide each community a reliable and safe water supply.

The total estimated cost for the improvement of the public water systems as scoped hereinabove is $8,750,000; however, only $5,000,000 from the Compact CIP funds will be allotted to this water systems improvement project during the Plan period.

Estimated cost: $5,000,000
Source of funds: Compact funds

16.19 Allocation of Additional Funds to Water System Operations

The present level of operational funds will be increased by allotting more operations funds to meet the material needs of the operation and maintenance of the Koror-Airai water system and implementing a training program to upgrade the skills and knowledge of the personnel who handle the day-to-day management, operation and maintenance of the Republic's public water systems.

Estimated costs: $150,000 per year
Source of funds: OEK appropriations

16.20 Study for Additional Water Source for Koror-Airai

Additional water sources for the Koror-Airai water system will be identified during the Plan period; however, such sources will be developed after the Plan period.
**Estimated cost:** $130,000

**Source of funds:** Local revenues

Table 16.a reflects the planned development allocations for water systems in the Republic of Palau during the Plan period.

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CHAPTER 17

WASTEWATER AND SOLID WASTE DISPOSAL

CURRENT SITUATION

17.1 Development

Currently a central sewer system exists only in the State of Koror. Constructed in the early 1970's, the Koror sewer system has been gradually expanded by "satellite sewers". The systems include integrated gravity collector sewers, sewer force mains, manholes and sewage lift stations for the individual hamlets in Koror. The sewage effluent from these satellite sewers and the regional sewer system flow by gravity, or where elevations are lower than the sewer main by pumping into elevated manholes, to two main sewage pump stations along the sewer main to the Malakal Sewage Treatment Plant (STP).

At present, the Koror sewer system is comprised of over 20 miles of gravity collector sewers, 7.5 miles of sewer force mains, 445 sewer manholes, 3 major pump stations, 33 lift stations and a sewage treatment plant with a 1.0 MGD capacity.

The Malakal STP was designed as a secondary waste water treatment plant employing the trickling biofilter treatment process. Recent monitoring reports in 1991 and 1992 indicate consistently higher levels of fecal coliform and somewhat higher levels of turbidity in the immediate vicinity of the outfall. This indicates that the Malakal STP is not operating as a secondary treatment plant.

A two-week inspection of the treatment plant by engineers from the Parsons Overseas Company in September 1993 indicated that the Malakal STP is actually operating only as a primary treatment plant. Wastewater flows received at the plant during the first three months of 1993 averaged about 1.3 million gallons per day (MGD) which represents 130 percent of the plant's capacity. Flows received at the plant during prolonged periods of wet weather have already reached as high as 2.4 MGD. Wastewater flows are expected to continue to increase (a recent study conducted by the Parsons Overseas Company indicated a potential average of 1.7 MGD by the year 2000) at the plant due to the continuing effort to connect new homes to the system and further sewer collection system expansions presently planned.

The treatment capacity of the Malakal STP will need to be expanded as soon as possible in order to properly treat the ever increasing wastewater flow received at the plant. Unless this expansion takes place in the next few years, the Koror sewer system and the Malakal STP will not be able to protect the environment and the public health of the people of Koror.

The treated effluent from the Malakal STP flows through an 18-inch, 2,000-foot outfall pipe down to a 60-foot depth of water in Malakal Harbor where it is discharged through two 6-inch pipe diffusers and dispersed with the tidal current.
At present, there are over 1,600 facilities (composed of residential, commercial, government, industrial) connected to the central sewer system. However, there are several areas in Koror State where the sewer system has not yet been extended to. New satellite sewer systems are needed for the hamlets of Echang, lower Ngermid, lower Ngerkesoao1, Ngerias, Diberdii, Ngesaol and the developing commercial areas of Malakal and M-Dock. Short sewer extensions to existing satellite sewer systems are also needed in certain areas of Koror. At present, there are 755 people living in 126 households as well as commercial facilities in these unsewered areas. During the past few years, water quality sampling by the Palau Environmental Quality Protection Board has shown coastal waters to be contaminated by raw sewage near some of these areas.

The continuing growth of population and the resulting sanitary and environmental stress in the unsewered areas have made the provision of satellite sewer systems an absolute necessity. The long-term benefits that will result from providing these sewer systems include improved public health and the reversal of environmental degradation.

To insure that homes and commercial establishments are connected to the central sewer system, funds were made available in the early 1980's by the U.S. Environmental Protection Agency, which enabled the House Sewer Connection Program (HSCP) to commence. This has been a very successful project. Some 1,680 homes, governmental facilities and commercial establishments have been connected to the sewer system to date.

In FY 1991 and FY 1992, the U.S. Environmental Protection Agency again provided funds to implement a Rural Sanitation Program. As a result of the FY 1991 program, practically every household in Kayangel, Peleliu, Angaur, Hatohobei and Sonsorol was provided with a better designed latrine. The FY 1992 program provided Airai State residents with 125 septic tank/leaching field systems with 80 more systems planned for the Phase B of the program. Approximately 70 percent of the households for which a septic tank/leaching system has been provided are already connected to western-style plumbing.

Rubbish collection in Koror State is handled by the Koror State Government Public Works Department. Small trash collection vehicles are utilized for trash collection. Many Koror residents also take their own trash to the public dump adjacent to M-Dock. Household waste collection in Koror is often unscheduled and the disposal method of dumping the waste in the public dump creates public health and environmental issues.

17.2 Organization

The day to day operations of the Koror centralized sewer system is handled by the Sewer Branch of the Bureau of Public Works of the Ministry of Resources and Development. The primary functions of the Sewer Branch are to: operate and maintain the sewage collection system and sewage pump stations; repair and overhaul sewage pump station equipment; and operate and maintain the Malakal STP.

The House Sewer Connection Program (HSCP) is a government force account
operation which started in 1983 and derives its funding mainly from the U.S. Environmental Protection Agency. As the name of the program implies, the main function of the HSCP is to connect the homes, governmental facilities and commercial establishments to the centralized Koror sewer system. Later resources were provided to implement the rural sanitation program in the outlying States where there is no centralized water-borne sewer system.

While rubbish collection in Koror State is handled by the Koror State Public Works Department, the operations and maintenance of the public dump at M-Dock is currently the responsibility of the Division of Maintenance of the Bureau of Public Works of the Ministry of Resources and Development.

Regulatory inspection of commercial eating and drinking establishments such as bars and restaurants, hotel kitchens and dining rooms is handled by the Division of Environment and Sanitation Services of the Bureau of Public Health, Ministry of Health. This Division also occasionally conducts sanitary inspections of private homes throughout Palau.

The Palau Environmental Quality Protection Board is responsible for the enforcement of the Sewer Use Act of 1984 as well as the enforcement of laws and regulations relative to the protection of the environment, particularly in regards to sand and coral dredging, earthmoving, garbage disposal, oil spills, etc. The Palau Environmental Quality Protection Board also monitors the quality of the water in the water mains of the Koror-Airai water system by performing regular biological as well as chlorine residual tests on water samples obtained from the system.

PROBLEMS AND ISSUES

The main problems and issues needing immediate resolution in order to maintain a clean and healthy environment throughout Palau are as follows:

17.3 Status of Malakal Sewage Treatment Plant

The Malakal STP originally designed for a treatment capacity of one million gallons of domestic wastewater per day was constructed and put in operation in the late 1970's. At present the dry weather average and peak wet weather daily flows to the Malakal STP are 0.815 MGD and 1.45 MGD respectively. Wastewater received at the plant during prolonged periods of wet weather have already reached as high as 2.4 million gallons per day. The Malakal STP was not designed to treat this much wastewater. Accordingly, a project for the expansion of the treatment capacity of the Malakal STP will be accorded a very high priority in the Plan period.

17.4 Certain Areas in Koror Still Need Improved Sewerage

Although the sewer system provides service to most of the hamlets located within Koror State, additional satellite sewer systems are needed to serve unsewered areas which have experienced rapid growth and development over the past several years. At present there are 126 households and 12 business establishments located in 6 different areas with a combined population of 755
within Koror State which are not serviced by the centralized sewer system. A
project to expand the centralized sewer system to these areas will be accorded
a very high priority during the Plan period.

17.5 Poor Operations and Maintenance of the Sewer System

The operations and maintenance of the sewer system suffers from an
inadequate operational budget. Adequate financial resources have not been made
available for materials, supplies and spare parts required for the proper
operations and maintenance of the sewer system.

17.6 Inadequate Management of the Public Dump

Operations and maintenance of the public dump at M-Dock needs to be
improved. The operation lacks equipment as well as appropriate fill material
for the disposal of solid wastes by means of a landfill operation. The problem
is further aggravated by the location of the public dump site which is at sea
level and is surrounded by the sea and therefore has a potential for contamination
of the surrounding water. During the Plan period, an alternate public dump site
must be found and developed.

17.7 Pig Raising and Uncollected Rubbish in Residential Areas Create Unsanitary
Conditions

The rubbish collection function presently handled by Koror State
Government needs improvement. Rubbish collection is often delayed and the
uncollected rubbish (a part of which is garbage) becomes a breeding place for
flies and rats. The practice of keeping pigs close to the houses in residential
areas in Koror as well as in other states also contributes to breeding of flies
and rats which pose threats to public health.

17.8 Inadequate Human Waste Disposal Systems in the Rural Areas

Only a few homes in the outlying states have flush toilet/septic
tank/leaching field disposal systems. The majority of the homes and government
facilities such as schools in the outlying states use pit latrines which are
difficult to maintain and can become breeding grounds for flies and other vermin.
On islands and communities where the ground is sandy or porous, pit latrines
as well as flush toilet/septic tank/leaching field systems may contaminate
groundwater sources. Since groundwater sources may be the only means of water
supply in these communities during extended dry periods, they must be protected
from contamination.

DEVELOPMENT OBJECTIVES

17.9 Waste Disposal Improvement Objectives

The objectives relative to waste disposal improvement during the Plan period will be to:

a. Expand the treatment capacity of the Malakal STP to ensure the quality
of treated wastewater before dumping it into the surrounding sea;

b. Expand the existing Koror centralized wastewater collection system to those areas in Koror State presently unsewered and connect homes and commercial establishments therein to the system;

c. Allot more funds to the operations of the sewer system;

d. Provide for an adequate management of the Koror public dump while looking for an alternate site to be developed and operated as a proper landfill for the disposal of solid waste; and

e. Extend the rural sanitation program to those outlying states which have not had the benefit of the program.

POLICIES AND STRATEGIES

17.10 Waste Disposal Policies and Strategies

The achievement of the objective to keep the Republic of Palau a clean and healthy place to live and work will be through the implementation of the following policies and strategies:

a. Allocate adequate funds to expand the treatment capacity of the Malakal STP from 1 MGD to 2 MGD.

b. Allocate adequate funds to extend the existing wastewater collection system to those areas in Koror presently unsewered and connect existing and new homes, government facilities and commercial establishments to the system.

c. Allocate adequate funds for the purchase of materials, supplies and spare parts for the proper operation and maintenance of the sewer system.

d. Allocate funds for the development of an alternate public dump site and for the cleanup and closure of the present public dump site.

e. Pass legislation and/or promulgate regulations for the control of rubbish collection and disposal.

f. Allocate funds for the expansion of the rural sanitation program for those States/communities which have not yet received the benefit of the program.

PROGRAMS AND PROJECTS

The following programs and projects are to be undertaken during the Plan period for the improvement of wastewater collection, treatment and disposal systems and the collection and disposal of solid wastes to keep Palau a clean and healthy place to live and work.

17.11 Koror Sewer Collection System Expansion
New satellite sewer systems will be constructed to serve those areas in Koror State presently unsewered, including lower Ngemid, lower Ngereksoaol, Ngerias, and Diberdii; and extension of existing sewer lines to enable more homes and commercial establishments to be connected to the system.

Estimated cost: $2,500,000
Source of funds: Compact funds

17.12 Upgrade Sewage Pump Stations

To upgrade the existing 36 sewage pump stations in the Koror system, adequate funds must be allocated during the Plan period.

Estimated cost: $150,000 per year
Source of funds: OEK appropriations

17.13 Development of an Alternative Public Dump Site

An alternate waste transfer and recycling station plus a solid waste dump away from the sea will be developed to effect an appropriate landfill operation for the proper disposal of solid waste properly. This project entails purchasing of landfill operations and rubbish collection equipment and the cleanup and closure of the M-Dock public dump.

Estimated cost: $1,500,000
Source of funds: Japanese grant aid

17.14 Expansion of the Rural Sanitation Program

The rural sanitation program will be extended during the Plan period to those outlying States/communities which have not received the benefit of the program.

Estimated cost: $150,000 per year
Source of funds: U.S. EPA, FmHA funds and OEK appropriations

Table 17.1 outlines the planned allocations of funds for programs and projects for the improvement of wastewater and solid waste disposal systems.

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TABLE 17.1: Planned Development Allocation for Sewer and Solid Waste Facilities Improvement, FY 1995 - FY 1999 ($000)
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<td>1,800</td>
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<td>5,000</td>
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CHAPTER 18
GOVERNMENT FACILITIES

CURRENT SITUATION

The Trust Territory of the Pacific Islands (TTPI) Administration transferred all the government-owned facilities, including housing units to the Government of Palau.

18.1 Educational Facilities

The TTPI Administration, in the 1960's to 1970's, through its Capital Improvement Program (CIP), constructed elementary classroom buildings and houses for expatriate teachers in most of the states throughout Palau. In Koror State, both a public high school and three elementary schools were constructed. The majority of the elementary schools in the outlying states are constructed of concrete hollow block walls, wood truss framing covered with corrugated galvanized tin sheets for roofing system, concrete floors and glass louvered windows. The Palau High School complex and Koror Elementary School complex are structurally more permanent being constructed of reinforced concrete; however, these school buildings were originally roofed with wood shingle roofing material (wood singles are not appropriate for climates such as Palau's) which recently has been replaced by corrugated galvanized tin sheets.

The Palau Community College (PCC) formerly known as Micronesian Occupational College (MOC) is located in Koror. Buildings for the institution's administration, classrooms, vocational shops, dormitories and cafeteria are of different types of construction, including reinforced concrete walls with structural frames and wood shingle roofing for some, concrete hollow block walls with steel structural framing and corrugated sheet metal roofing for others. Most of the vocational shop buildings are pre-engineered metal structures.

A good number of existing educational and support facilities at the elementary, secondary and post-secondary school levels throughout Palau need repair. Major renovations are needed to be carried out at PCC to include student dormitories, cafeteria, trade shops, laundry, classroom and administration buildings. In addition, a new classroom building and staff housing facility are needed for the college as well as improvements to parking facilities, landscaping, fencing and outdoor lighting.
At the Palau High School, a dormitory complete with a cafeteria will be constructed to accommodate students from the outlying states. Other improvements at the high school include complete renovation of the existing toilet facilities and classroom buildings. The whole high school complex needs to be fenced.

New classroom buildings are needed at various elementary school sites throughout Palau. Existing support facilities as well as classroom buildings at various elementary school sites need to be renovated. In addition, some sport facilities are also needed at these schools.

The Ministry of Education office complex needs to be renovated and properly equipped.

There are also non-government parochial schools, both elementary and high schools, notably those operated by the Lutheran Church, the Roman Catholic Church and the Seventh-Day Adventist Church. These parochial schools deserve governmental assistance, as they help educate a good number of Palauan youth.

The following table indicates the number of classrooms in public elementary and high schools in the various states throughout Palau.

<table>
<thead>
<tr>
<th>STATENO. OF STATE</th>
<th>NO. OF CLASSROOMS</th>
</tr>
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<tbody>
<tr>
<td>Aimeliik 7Ngardmau</td>
<td>5</td>
</tr>
<tr>
<td>Airai 8Ngaremlengui</td>
<td>8</td>
</tr>
<tr>
<td>Angaur 8Ngatpang</td>
<td>3</td>
</tr>
<tr>
<td>Kayangel 6Ngchesar</td>
<td>8</td>
</tr>
<tr>
<td>Koror 77Ngiwal</td>
<td>8</td>
</tr>
<tr>
<td>Melekeok 7Peleliu</td>
<td>8</td>
</tr>
<tr>
<td>Ngaraard 8Sonsorol</td>
<td>4</td>
</tr>
<tr>
<td>Ngarchelong 8Hatohobei</td>
<td>2</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>129 46</strong></td>
</tr>
</tbody>
</table>

Source: Bureau of Education
A new 80-bed modern hospital was inaugurated in December of 1992. Planning for this health care facility started in the early 1980's, but funding for construction did not become available until 1988. Subsequently, some $25 million were appropriated by the U.S. Congress over four years to complete the construction, furnishing and equipping of the new Belau National Hospital. With the exception of the services performed by the Division of Public Health Services, all the functions of the Ministry of Health are housed in the new hospital.

The new Hospital complex consists of 13 buildings with a total floor area of 82,700 square feet. It occupies a site of 7.5 acres with ample parking available. The buildings are constructed of reinforced concrete framing, concrete panel roof covered with concrete roofing tiles, finished insulated concrete hollow block walls, concrete floor and awning type windows made of aluminum frame and glass panes. The buildings are connected with roofed walkways.

The new Hospital has its own water processing plant and receives most of its water supply from rain. Rainwater caught off the roofs is drained into two 300,000-gallon underground cisterns, and water from one of these cisterns is processed (pre-chemical treatment, rapid sand filtering and chlorination) to supply the hospital. Water stored in the other tank is reserved for fire fighting purposes.

The new Hospital central core, public health, administration, dental area and intensive care units are air conditioned by a central airconditioning system. A 500 KW auxiliary power generating unit is available to provide power to selected equipment and areas of the hospital during island-wide power outage. A four-chamber refrigeration unit is available at the hospital morgue.

It has become apparent that certain modifications/remodeling as well as construction of support infrastructure/facility are necessary at the Belau National Hospital to enhance the efficiency of provision of health care services and to accommodate visiting medical specialists. These improvements include expansion/remodeling of the hemodialysis, physical therapy and mental health areas; construction of an apartment facility for temporary housing of visiting medical specialists; and repair of the old jetty/pier for receiving patients coming to the hospital by boats from the outlying states.
Of the 16 states, 13 states have dispensaries but only 7 are operational with a permanent assigned staff. The standard dispensary building has over 700 square feet of floor space and is constructed of prefabricated panels of thin aluminum skin sandwiching an inner core of honeycombed insulation material. This type of structure is subject to the detrimental effect of the salt laden atmospheric conditions prevalent in island settings. As a result, most of these dispensary buildings need to undergo major repair since they were constructed under the TTPI some 18 years ago.

Some of the northern states in Babeldaob are relatively far from the Belau National Hospital, thus a need for a central Babeldaob clinic which when properly constructed, equipped and manned by a team of professional doctors and nurses would provide primary, preventive as well as emergency services to patients prior to evacuating them to the Belau National Hospital in Koror for further medical attention. In addition, the existing dispensaries in the outlying states will be completely renovated.

18.3 Government Administrative Facilities

Administrative facilities for the three Branches of the Government are located in Koror State. Some of these administrative facilities are of reinforced concrete construction, some are prefabricated steel structures, and still others are wooden structures with corrugated tin sheet roofing. A few of the facilities were constructed by the Japanese prior to World War II for purposes other than that for which they are presently being utilized. Notable among these buildings which survived the war are the brick and tin roof structure constructed by the Japanese as a telecommunication center which currently houses the Palau National Congress; the former headquarters for the Japanese administration of the Palau District which now serves as the Judiciary building housing the Palau Supreme Court, the Courts of Common Pleas, and the offices of the Attorney General, Public Defender and Immigration; the Japanese weather observation station which presently houses the entomology office and the Belau National Museum; and, the present PCC administration building which was built as a hospital during the Japanese regime.

Each state government has a state administration building where the Governor or State Administrator maintains an office. Such buildings are also utilized by the state legislatures when they are in session, and for public meetings. In addition, some states or hamlets have their own public meeting houses. A considerable number of the outlying states maintain liaison offices in Koror State, normally in rented spaces. The structural makeup of the state administrative buildings vary considerably from modern reinforced concrete.
structures to old wood and tin structures.

In addition to judiciary, health and education facilities, other important government facilities in Koror include: the telecommunication center, the museum, the weather observation station, the post office, the civic center, the Malakal power plant; warehousing facilities, and; facilities housing the various governmental functions such as finance, public safety, education administration, public works, land management, marine resources, etc.

18.4 Other Public Facilities

One of the most critically important public facilities to the economic development of Palau is a new airport terminal facility (New Airport Terminal Construction Project) to replace the existing terminal facility at the Palau International Airport. The need to construct a new terminal facility and related improvements are discussed under the Air Transportation Sector in Chapter 13.

Republic of Palau Public Law No. 1-70 mandates the relocation of the seat of Palau Government from Koror State to Babeldaob Island with Melekeok State being the designated site. The decision as to whether the new capital (Palau National Capital Construction Phase I Project) will consist of a complex of buildings to house only the administrative functions of the three branches of the national government and not the necessary support facilities such as residential housing for government officials has not yet been determined. The financial capability of the Government will be a deciding factor in this decision. In any event, additional funds are needed to supplement the presently available CIP funds for the first phase of the development of the capital complex at the designated site at Melekeok State.

Another important facility (Palau National Gymnasium and Sports Facilities Project) is the proposed gymnasium and the improvement of existing sports facilities. This is needed for the Palauan people for recreational and sport opportunities and is also critical for hosting the 1998 Micronesian Games. This national multi-sports and recreation facility will also be fully utilized to host community functions such as meetings, graduation ceremonies, etc. In addition to construction of the new gymnasium, existing sport facilities including tennis courts, swimming pools, track fields, etc. will be improved.

The development of each of the sixteen (16) states has not been uniform. Each state has its own unique problems and needs. To address the special needs (State Projects) of each of the states, Compact funds will be allotted for the financing of projects which meet the unique needs of each state.
Different states need such diverse projects as community buildings for state functions, small scale piers and docks, etc.

18.5 Housing

During the TTPI Administration of the Micronesian entities (1960's to mid-1970's), a number of housing units were built to meet the housing needs of the Government. Modern 3-bedroom housing units built to western standards (indoor kitchens and bathrooms) were constructed in some of the outlying states specifically to house expatriate teachers. Other housing units and apartment buildings were constructed in Koror to house expatriate government employees. Many of the original housing units for teachers in the outlying states have been taken over by landowners on whose lands the houses were built. Koror State government has taken most of the original 39 government built houses and apartment complexes located in Koror, with only a few being retained by the National Government. Similarly, much of the old Hospital complex (MacDonald Memorial) is currently being used by Koror State Government.

Financing construction of private homes in Palau is generally handled by the individual homeowner. Commercial banks fund a very small part of the private home construction industry. Some individuals borrow money from credit unions to finance home repair projects.

Through the U.S. Federally funded Community Development Block Grant (CDBG), the Palau Housing Authority has, since 1978, financed the construction/renovation of a considerable number of low-income-family housing units. CDBG grants have also been used for financing community projects such as classroom construction and road building projects.

The U.S. Farmers Home Administration (FmHA) has been in operation in Palau since 1977. Under the Section 504 Program administered by FmHA, low-income families are eligible for loans up to a maximum of $2,500 for partial rehabilitation of their dwellings, at one percent interest per year with a repayment period of up to 15 years. In addition, FmHA grants up to $5,000 to eligible elderly individuals for the rehabilitation of their dwellings. Since the inception of the FmHA program in Palau, a total of over $5,000,000 has been spent on over 1,000 loans and grants.

The great majority of homeowners finance the construction of their houses through the traditional "Ocheraol" and, more recently, the system of "House Parties" has been instituted as an accepted way of soliciting financial assistance from friends and relatives for financing private house construction
at this writing, it is reported that in a most recent Women’s Conference, a resolution was adopted to ban House Parties). The Ocheraol is a system of financial assistance among clan members to contribute money to a particular clan member who is building a house. It is not an uncommon occurrence for clan members to contribute as much as $25,000 to their kin folk who is building a house.

Since World War II, there has been a marked movement away from the use of traditional construction materials towards more permanent and less labor-intensive substitutes such as imported plywood, treated lumber and corrugated roofing tin sheets. A significant number of new houses constructed in Koror are of concrete hollow block walls, concrete floor slab, wooden truss roof structure covered with galvanized corrugated roofing tin sheets. Others are of the reinforced concrete structural framing and roofing slab, concrete floor and concrete hollow block wall construction.

The table that follows indicates the number of houses by states according to the 1990 Census of Population and Housing.

<table>
<thead>
<tr>
<th>STATENO</th>
<th>STATENO OF HOUSES</th>
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</thead>
<tbody>
<tr>
<td>Aimeliik</td>
<td>100</td>
</tr>
<tr>
<td>Airai</td>
<td>283</td>
</tr>
<tr>
<td>Angaur</td>
<td>63</td>
</tr>
<tr>
<td>Kayangel</td>
<td>42</td>
</tr>
<tr>
<td>Koror</td>
<td>2,096</td>
</tr>
<tr>
<td>Melekeok</td>
<td>71</td>
</tr>
<tr>
<td>Ngaraard</td>
<td>108</td>
</tr>
<tr>
<td>Ngarchel</td>
<td>100</td>
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<tr>
<td>Ngarchel</td>
<td>100</td>
</tr>
<tr>
<td>Ngardm</td>
<td>34</td>
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<tr>
<td>Ngarem</td>
<td>64</td>
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<tr>
<td>Ngatp</td>
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<tr>
<td>Ngches</td>
<td>81</td>
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<tr>
<td>Ngiwal</td>
<td>59</td>
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<tr>
<td>Peleliu</td>
<td>156</td>
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<tr>
<td>Sonsorol</td>
<td>28</td>
</tr>
<tr>
<td>Hatchob</td>
<td>24</td>
</tr>
<tr>
<td>Totals</td>
<td>2,864</td>
</tr>
</tbody>
</table>
18.6 Government Organization

The Palau Housing Authority (PHA) was established by the Palau District Legislature in 1970 and was later reorganized by the former Congress of Micronesia under Public Law 5-37, the Housing and Community Development Act of 1971. With the advent of the Constitutional Government in 1980, the PHA, through Administrative Directive No. 11, was transferred to the Ministry of National Resources (now the Ministry of Resources and Development). The PHA was to maintain the status mandated by Public Law 5-37 as an autonomous governmental agency. PHA is governed by a five-member Board of Directors, who are appointed by the President with the advice and consent of the Senate of the National Congress. The appointments are for a 4-year term and are made to reflect traditional division of Palau as well as a cross-section of the community. The day to day operation of the PHA is managed by an Executive Director and staff.

The primary function of the PHA is to provide decent, safe and sanitary housing for low-income families. As such, the PHA applies for and receives grants and loans from U.S. Federal Grant sources and legislative appropriations from the Palau National Congress for its operations.

PHA has been a recipient of U.S. Federal Grants for community projects other than those for housing. Examples of community projects for which grants have been received by PHA include village roads, community water systems, recreational facilities, and other projects related to community development.

The U.S. FmHA offers low interest loans, grant funds of limited amounts to eligible elderly individuals for the rehabilitation of their dwellings, including providing improved sanitary facilities. Funding policies, administration, organization and control of the local office of FmHA are directed from Washington, D.C., through Hawaii and Guam. The FmHA in Palau is headed by an area supervisor who is assisted by staff members.

Funding for the improvement/development of government facilities in Palau is mainly derived from U.S. Congress annual appropriations and, to a lesser extent, through appropriations of locally collected revenues by the Palau
National Congress. Appropriations for improvement of government facilities from the U.S. Congress are part of the annual Capital Improvement Program (CIP) appropriations. The Ministry of Resources and Development, through its CIP office, is responsible for the administration of the planning, design/engineering and construction of CIP.

PROBLEMS AND ISSUES

The following problems and issues have been identified as constraints to the development and maintenance of government facilities and the development of the housing sector:

18.7 Maintenance Efforts

A more systematic maintenance program needs to be developed through which an adequate yearly budget for the repair and maintenance of all the governmental facilities such as schools, hospital, dispensaries, administration offices and other facilities is determined. Sufficient funding is needed for the implementation of an aggressive maintenance program to protect government facilities from deterioration.

18.8 Lack of Zoning and Building Codes

The lack of uniform building and zoning codes for Palau is a problem that needs to be resolved. Only Koror State adheres to some form of zoning regulation. Although the formulation and implementation of a building code is necessary, the standard for such a code must be set by taking into account the high cost of building materials and absence of low cost financial resources for financing housing development. However, the safety provisions of the building code should not be sacrificed because of cost especially for buildings or structures to be constructed of reinforced concrete. Strict code control of electrical wiring, sanitary facilities, structural design and insulation for conservation of energy should be major requirements of the code.

18.9 High Cost of Building Materials

The high cost of both imported and the locally processed building materials have contributed to the slow progress of the housing sector in Palau. Prices of imported lumber, cement, reinforcement steel, hardware, electrical and plumbing supplies and other building materials are likely to continue to increase in the future.

18.10 Financing Sources for Construction
Federally funded programs such as the U.S. Community Development Block grant and the FmHA may be discontinued during the Compact period. Bank loans are normally short-term with high interest rates which is the major reason why individuals are reluctant to obtain bank loans to finance home construction. Credit unions, although charging lower interest rates, do not have sufficient capital to adequately service those who seek loans for housing construction.

18.11 Real Estate Development

Real estate development is minimal in Palau. This may, in part, be due to the constitutional ban on foreign investors owning real property in Palau and the lack of clear title to much of the land in Palau. Foreign real estate companies and financial institutions are also reluctant to invest in housing development projects because of property ownership restrictions, lack of roads into Babeldaob where housing development could possibly be undertaken, and the lack of utilities such as electric power, sewer, water and telecommunication facilities in the area.

18.12 Ownership Status of Many Government Facilities

Koror State has acquired both housing and government facilities originally granted to the Palau National Government from the TTPI Administration. The legal status of land on which some public facilities are located is also unresolved.

18.13 The proposed Capital of the Republic

The decisions regarding the extent of the project scope and an adequate budget for the development of the proposed capital are yet to be determined/secured.

DEVELOPMENT OBJECTIVES

18.14 Government Facility and Housing Development Objectives

The Government's objectives for the government facility and housing sector are to:

a. Allocate adequate financial resources for a cost effective maintenance program with the objective of saving the existing government facilities from further deterioration. This will be a maintenance program which
is preventive in nature;

b. Allocate adequate financial resources for the development/improvement of educational facilities, health facilities, administrative facilities, sports facilities and state projects which have been identified to be of high priority status;

c. Formulate a uniform building code and zoning code for Palau;

d. Resolve the problems with the states of Airai and Koror regarding the legal ownership of housing units and other major facilities formerly owned by the TTPI Administration;

e. Encourage the construction of safe and sanitary housing in good living environments for all persons in the Republic, particularly the low-income families; and

f. Find ways and means to have the kind of programs presently provided by PHA and FmHA continue after such programs are no longer made available by the U.S. Government.

POLICIES AND STRATEGIES

To achieve the above objectives in the government facilities and housing sector, the following policies and strategies will be promulgated or implemented:

18.15 Implementation of an Aggressive Maintenance Program

The National Government will make a major effort to launch a comprehensive maintenance program to renovate government facilities to prevent premature and further deterioration of the structures.

18.16 Development of Critically Needed National and State Facilities

Allocate funds for a construction development program for critically needed national and state government facilities.

18.17 Formulation of a Uniform Building and Zoning Code

The Government will formulate a uniform building and zoning code and promulgate regulations to control real estate development and the construction industry in the Republic.
18.18 Defining the Extent of the Proposed Capital Relocation Project and Finding Additional Financial Resources for Completing the Project and Other Government Facilities

The Government at the present has only $2.6 million available for the capital relocation project which might cost anywhere from $45 - $55 million for a basic facility including buildings to house the three branches of the government, site preparation and development of water, sewer, power and telecommunications, road system, parking areas, and the cost for preparation of the construction contract documents. It will be necessary to develop the capital’s own water and sewer systems complete with water and sewage treatment plants and a standby power generation plant.

If funds can be made available, this project would also include construction of additional government facilities including a Supreme Court Annex, Ministry of Administration office complex/Computer Center, Bureau of Natural Resources & Development offices, as well as Senior Citizens Centers, Babeldaob and outer-island police substations, and expansion and relocation of the Agriculture Station to Aimeliik State.

18.19 Creation of a Housing Revolving Fund

Seek capital from outside sources to create a revolving fund from which citizens could obtain loans for the improvement of their homes, and effectively replacing the functions of PHA and FmHA.

PROGRAMS AND PROJECTS

The following programs and projects will be undertaken during the Plan period to enhance the maintenance of existing and development of proposed Government facilities and housing units:

18.20 Facilities Maintenance Fund

Allot adequate funds from the government operations account to maintain existing operations and maintenance program to enable the intensification of the maintenance of existing government facilities to ensure their preservation.

Estimated cost: $300,000 per year
Source of funds: OEK appropriations

18.21 Palau National Gymnasium and Sports Facilities

Allocate Compact funds for the construction of a new multi-sports and recreation facility complex and improvement of existing sports facilities which are critically needed for Palauan people for recreational and sport opportunities and also for hosting the 1998 Micronesian Games.
Estimated cost: $3,500,000
Source of funds: Compact funds

18.22 New Terminal Facility Construction

A new terminal facility is needed to replace the existing one at the Palau International Airport.
Cost estimate and funding source are reported under Airport Transportation Sector of Chapter 13.

18.23 Palau National Education Facilities Renovation, Construction and Equipment Replacement

Allocate Compact funds for the renovation of existing and construction of new critically needed educational and support facilities. This educational facility improvement program entails the following: major renovations of facilities at both the Palau Community College (PCC) and at the Palau High School (PHS); construction of a new dormitory building; improvement of parking and other facilities at both schools; renovation of the Ministry of Education office; construction of new classroom buildings at various states throughout Palau; improvement of sports facilities at certain elementary schools throughout Palau; and replacement of existing old furnishings with new ones at various schools and educational facilities throughout Palau.

Although the cost for a renovation/construction program for upgrading the existing and construction of proposed national educational facilities to meet the needs of the Ministry of Education in the Plan period and beyond is estimated at $19,950,000, including a new Palau High School, only $6,000,000 of the Compact CIP funds will be allotted for the program during the Plan period.
Estimated cost: $6,000,000
Source of funds: Compact funds

18.24 National Health Facilities Improvement
Allocate Compact funds for the construction of an apartment facility at the Belau National Hospital site for the purpose of housing visiting medical specialists. Certain necessary improvements to be carried out at the Belau National Hospital include expansion/remodeling of the hemodialysis, physical therapy and mental health areas and the repair of the existing old jetty and pier behind the hospital for receiving patients coming to the hospital by boat. Part of the allocated funds will be used for the construction of a new central Babeldaob clinic and the renovation of existing dispensaries throughout Palau.

Estimated cost: $3,500,000
Source of funds: Compact funds

18.25State Projects

Allocate Compact funds for the implementation of a construction program designed to enhance the development of various states. Candidate projects include but not be limited to the community buildings, small scale boat landings, etc.

Estimated cost: $4,000,000
Source of funds: Compact funds

18.26Palau National Capital Construction, Phase I

As mandated in the Constitution, and laws of the Republic, the Palau national capital must relocate to Babeldaob Island. Presently, some $2.60 million CIP funds are available for the capital relocation project. To supplement these available funds, additional funds will be allocated from the Compact funded sources to allow the construction of the first phase of the project. Phase II of the project is estimated to cost $12,500,000; however, funding source for this future construction phase has not been identified.

Estimated cost: $5,000,000 (Phase I)
Source of funds: CIP and Compact funds

18.27Uniform Building and Zoning Code

Draft a uniform building and zoning code to be implemented for the control of the construction industry.

Estimated cost: $50,000
Source of funds: Palau Master National Development Plan project.

18.28Housing Development Fund
Obtain from an appropriate financial institution such as the Asian Development Bank a long-term, low interest rate loan for the Palau National Development Bank to create a revolving fund for the purpose of development of private housing.

Estimated cost: $3,000,000
Source of funds: Asian Development Bank or unidentified

The following table reflects the planned development expenditures for the Government Facility and Housing Sector.

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<tbody>
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<td>Facilities Maintenance Funds</td>
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<tr>
<td>Palau National Gym and Sport Facilities</td>
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<td>Palau National Education Facilities Renovation/Construction/Equipment Replacement</td>
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<td>National Health Facilities Improvement</td>
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<tr>
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<td>9,008</td>
<td>40</td>
<td>5,900</td>
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CHAPTER 19

ENVIRONMENT AND POLLUTION CONTROL

INTRODUCTION

Protecting Palau's natural environment is critical to maintaining the value and beauty of Palau's resources and cultural heritage. Palau depends on its natural environment as the primary foundation for growth and development. Fishing, tourism, and agriculture are all closely linked to our environment. Palauan culture is also heavily dependent on the environment—particularly the marine environment. Palau's bio-diversity, including both flora and fauna, is an important component to achieving the goals of economic, social and cultural development.

Palau's environment is fragile and complex. It consists of many highly interdependent ecosystems and subsystems. Activities which take place in one area can have tremendous impact in other areas.

CURRENT SITUATION

19.1 Development and the Environment

Certain historical economic development activities had, and continue to have, significant and long lasting impacts to the environment. For example, some of the mining activities (bauxite in Ngardmau, phosphate in Angaur) affected both land and water resources. Some of this is still apparent to this day, several decades after the original activities ceased. Ongoing sand and coral dredging in the lagoons have impacted, and continue to impact, fish foraging grounds.

More recently, a variety of economic development activities have had significant impact on the environment. If not properly conducted with appropriate protective and mitigative measures in place, large earthmoving activities can lead to severe erosion with resulting siltation of adjacent waterways. This can ultimately impact on the marine waters, associate marine life and reef systems. The growth of the commercial fisheries industry is apparently leading to increases in pollution of the harbor and adjacent areas with oil, refuse, and other waste products from fishing boats and the fishery operations.

In addition, increasing population results in greater stress to the local infrastructure. This creates a need to improve existing, and develop additional, infrastructure resources. Such stress can result in damaging impacts on the surrounding environment and have negative public health impact. Improper disposal of all types of solid waste (household garbage, construction, industrial, etc.) can
CHAPTER 19
ENVIRONMENT AND POLLUTION CONTROL

INTRODUCTION

Protecting Palau’s natural environment is critical to maintaining the value and beauty of Palau’s resources and cultural heritage. Palau depends on its natural environment as the primary foundation for growth and development. Fishing, tourism, and agriculture are all closely linked to our environment. Palauan culture is also heavily dependent on the environment—particularly the marine environment. Palau’s biodiversity, including both flora and fauna, is an important component to achieving the goals of economic, social and cultural development.

Palau’s environment is fragile and complex. It consists of many highly interdependent ecosystems and subsystems. Activities which take place in one area can have tremendous impact in other areas.

CURRENT SITUATION

19.1 Development and the Environment

Certain historical economic development activities had, and continue to have, significant and long lasting impacts to the environment. For example, some of the mining activities (bauxite in Ngardmau, phosphate in Angaur) affected both land and water resources. Some of this is still apparent to this day. Several decades after the original activities ceased. Ongoing sand and coral dredging in the lagoons have impacted, and continue to impact, fish foraging grounds.

More recently, a variety of economic development activities have had significant impact on the environment. If not properly conducted with appropriate protective and mitigative measures in place, large earthmoving activities can lead to severe erosion with resulting siltation of adjacent waterways. This can ultimately impact on the marine waters, associate marine life and reef systems. The growth of the commercial fisheries industry is apparently leading to increases in pollution of the harbor and adjacent areas with oil, refuse, and other waste products from fishing boats and the fishery operations.

In addition, increasing population results in greater stress to the local infrastructure. This creates a need to improve existing, and develop additional, infrastructure resources. Such stress can result in damaging impacts on the surrounding environment and have negative public health impact. Improper disposal of all types of solid waste (household garbage, construction, industrial, etc.) can
Contribute to pollution of the land and waters. The existing wastewater treatment and collection system can result in discharges of untreated or inadequately treated wastewater into the ocean. Inadequate water treatment systems can result in unsafe water being served to the population. Spills and discharge of petroleum products from power plants can end up in surrounding wetlands and marine waters.

19.2 Organization

The primary organization charged with the responsibility for protecting the environment of Palau is the Palau Environmental Quality Protection Board ("PEQPB"). In April 1981 the Republic of Palau enacted the Environmental Quality Protection Act (EQPA). This Act, RPPL No. 1-58, codified as Title 24 of the Palau National Code, created a central agency to effectuate the national environmental policy, protect and enhance the environment and promote public health. RPPL 1-58 specifically recognizes the profound impact that human activities have on the interrelations of all components of the natural environment. Under the EQPA, it is the responsibility of the National Government to:

a. Use all available means to create and maintain conditions under which man and nature can coexist in productive harmony is achieved.

b. Fulfill the responsibility of each generation as trustee of the environment for succeeding generations.

c. Assure all Palauans safe, healthful, productive and aesthetically and culturally pleasing surroundings:

d. Gain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable or unintended consequences, and,

e. Preserve important cultural, historical, and natural aspects of the Palauan heritage, and maintain wherever possible an environment which supports diversity and a wide variety of individual choices.

Accompanying the enactment of a national environmental policy, RPPL 1-58 also created the PEQPB to administer environmental programs to fulfill the national policy. The PEQPB is a semi-autonomous executive agency operated by a 7-member Board appointed by the President for staggered 3-year terms. The Board elects its own Chair and Vice-Chair from among its members and appoints an Executive Officer to supervise the PEQPB Staff and to handle the day-to-day affairs of the PEQPB. The Executive Officer and staff reports directly to the Board, providing the Board with the technical and administrative capabilities to administer the EQPA.

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PROBLEMS AND ISSUES

19.3 Environmental Areas of Major Concern

19.3(a) Drinking Water Quality Issues

PEOPB monitors the bacteriological quality of public water supplies throughout Palau. There are frequent problems with contamination of many of the public water supplies in the rural States. The Koror/Airai public water system has also had intermittent problems with bacteriological contamination. The Koror/Airai system is monitored on a daily basis for chlorine (disinfectant) residual and turbidity. No other drinking water quality parameters are being monitored on a regular basis. Poor drinking water quality still poses a threat to the public health. There needs to be improvement in water treatment capital equipment, including the Koror/Airai system, and in the operation and maintenance of the water systems. There is also a need for training programs for operator certification. Adequate public water supply and safety is a prerequisite for many development activities.

19.3(b) Solid Waste Disposal

The solid waste disposal system, particularly in the urbanized area of Koror State, needs to be improved to ensure public health and the protection of the surrounding environment. The collection of garbage in Koror State is the responsibility of the Koror State government. At present, Koror State Public Works has the transport facilities to collect garbage and other household wastes from homes and dispose the accumulated garbage at the public dump at M-Dock. The Bureau of Public Works has the responsibility for the management of the public dump at M-Dock. Other solid wastes consisting of discarded cars, heavy equipment, and machinery may also be disposed of at the public dump. In the past, waste oil from the Malakal power plant was disposed in an open pond. There are similar problems and concerns with disposal of solid waste in the other States. Increased development activities will result in greater amounts of products, which ultimately must be disposed of in an environmentally appropriate manner.

19.3(c) Water Quality Resource

Ongoing and proposed construction and industrial activities including construction of buildings, roads and factories pose potential long term threats to the environment of Palau. Many of these activities can result in degradation of fresh and marine water quality, with impact on associated plant and animal life. Significant degradation of the environment can, due to increased soil erosion and sedimentation into fresh and marine waters, yield lower water quality with consequent loss of habitat value for plants, animals, fish, birds, and coral. This threatens the health and vitality of Palau’s reefs and reef ecosystems. Filling of
wetlands can be another significant source of loss and destruction of habitat associated with development.

In the past there have been discharges of oil into marine waters from the main power plant at Aimaliik, and the secondary power plant at Malaik. Similar releases have also occurred at some of the State power generating facilities. Other oil storage facilities, including bulk storage and smaller storage (fuel stations) pose potential threats of release of petroleum products into the environment. After implementation of the Compact, it is anticipated that there will be a marked increase in construction activities with potential significant impact on water quality.

Additional damage to Palau's marine waters can occur as a result of the continued development of the Republic's marine resources, specifically through the presence of increased fishing vessels in Palau's waters. The fishing vessels currently utilized generally lack holding tanks for human wastes which may be discharged directly into the marine waters. Spills and the discharge of oil-laden bilge and fuel also serve to magnify the negative impacts of fishing vessels on the marine environment.

19.3(d) Pesticide and Hazardous Materials Issues

The safe use, transport, and disposal of pesticides and other hazardous materials must be assured. Currently, the Pesticide Program engages in use inspections, import monitoring, market surveillance, monitoring of pesticide container disposal, and pesticide application testing. Unregistered, potentially dangerous pesticides for agricultural pest control need to be controlled. Worker safety is threatened when protection measures are not used. There are currently no specific hazardous substance regulations.

19.4 Impediments to Successful Program Implementation

19.4(a) Interagency Coordination on Environmental Review Process

There is a need for improved interagency review and coordination of projects with potential environmental impacts. Adequate interagency and public input into environmental review is critical to the success of environmental assessment efforts in the future.

19.4(b) Technical and Personnel Resources

Expected increases in development activities throughout all of Palau, coupled with elimination of current funding sources for the PEOPB, will require PEOPB funding from other sources for hiring and training staff and expanding resources to evaluate, monitor, inspect, and enforce regulations throughout the country. There
is a need for an increase in the trained personnel to evaluate project impact, perform inspections, and provide monitoring of both permitted and unpermitted activities.

Some U.S. Federal agencies have provided a great deal of technical assistance and advice which has benefited Palau in the past regarding important environmental issues. For example, U.S. EPA is providing advice and assistance on how to deal with the solid waste disposal problem, and has provided funding and technical assistance for wastewater disposal problems.

19.4(c) In-Country Environmental Containment Testing Capability

The PEQPB laboratory is equipped to perform limited testing for environmental contaminants. There is a need for increased capability to perform environmental monitoring for a wide spectrum of environmental contaminants which are, or could be, present in the environment of Palau.

19.4(d) Need for Stronger Enforcement Program

There may be a significant number of activities with potential deleterious environmental impacts in Palau. Examples include earthmoving activities, unpermitted filling of wetlands and near shore marine waters for buildings, docks, and other structures, resulting in loss of habitat and decreased water quality; installation of unpermitted fuel storage tanks; use of illegal pesticides for agriculture and pest control (with consequent exposure to workers and consumers), and permitted activities for which the permittees are not following the conditions of their permits, resulting in environmental damage.

In addition, the effectiveness of enforcement actions need to be increased. The use of Notices of Violation to put the regulated community on notice that a violation has been identified needs to be expanded. Potential statutory penalties for violations need to be raised to enhance the deterrent effect which will prevent deliberate violations. The statutory language providing for environmental crimes should be strengthened as should the potential criminal penalties that a violator may face.

19.4(e) Need for Increased Public Education in Environmental and Resource Issues

Currently, public education regarding Palau’s environment and resources, although limited, is growing. Government sponsored events, such as “Earth Day” serve to help create a general environmental awareness on the part of citizens of the ROP. Public education campaigns targeted at specific issues and sectors of the population are required to develop public awareness of more specific concerns such as littering, illegal fishing practices, improper waste disposal, preservation of water
resources, unlicensed use of chemicals and pesticides, and illegal earthmoving activities.

19.5 Regulations and Procedures

The PEQPB utilizes a broad range of environmental regulations covering a variety of areas and potential types of pollutants. Current regulations include those promulgated by the PEQPB and those brought into the Republic through their being in effect as part of the Trust Territory environmental regulation scheme. The EQPB, and both types of regulations are all administered and enforced by the PEQPB. In addition, the PEQPB has authority to promulgate and enforce other types of regulations to further the national environmental policy and the EQPA. Regulations already promulgated by PEQPB under its own statutory authority include:

- Public Water Supply System Supervision Regulations
- Earthmoving, Sedimentation and Erosion Control Regulations
- Toilet Facility and Wastewater Disposal System Regulations
- Marine and Freshwater Quality Standard Regulations
- Environmental Impact Statement Regulations
- Solid Waste Management Regulations

Trust Territory Regulations still effective in the Republic include:

- Air Pollution Control Standards and Regulations
- Pesticide Regulations

Although many of the specific issues and problems which the following sets of regulations would address can already be managed utilizing the existing regulatory scheme, the promulgation or enactment of regulations or laws specific to these areas will greatly enhance the PEQPB's ability to meet the mandates of the EQPA and should ultimately be put into effect:

- Regulations to Control Point Source and Non-Point Source
- Regulations Regarding Discharges of Contaminants to Waters of Palau (similar to US NPDES-type regulations)
- Regulations regarding Hazardous Waste

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15.6 Development Objectives

The long term goal is the protection of the environment for existing and future generations of Palauans. The environment forms the basis for growth and economic development, and also the cultural and societal stability that is a necessary prerequisite for such development. In order to accomplish this goal, the Government of Palau will work to ensure that the following objectives are met:

- Continued implementation of PEQP's (and other National Government agencies') environmental protection programs with necessary funding.
- The development and maintenance of a safe, effective, and environmentally sound infrastructure with the capability of meeting the long term solid waste disposal, wastewater treatment and drinking water needs of the Republic with the minimum negative impact on Palau's environment.
- Strengthening the technical expertise of the PEQP to study, monitor, and control the impact of development activities on the environment.

POLICIES AND STRATEGIES

Addressing Environmental Areas Of Major Concern

The environmental issues presenting the greatest threat to the health, safety and well-being of Palau, its citizens and its environment must be addressed to protect the health and safety of Palauans and the environment of Palau.

19.7(a) Drinking Water Quality Issues

Improvement of drinking water treatment facilities servicing Koror and Airai states are needed. The filtration and treatment capabilities of water from this
system must be safe for drinking. The National Government must ensure that an adequate supply of chlorine for disinfection of the water supply is obtained and utilized. The existing distribution system must receive routine maintenance.

Each of the water systems in Palau needs to be operated by qualified individuals. The watersheds of each source of drinking water must be protected to ensure an adequate long term supply of drinking water for all of Palau. A wellhead protection program needs to be established and groundwater resources need to be identified and protected.

19.7(b) Solid Waste Disposal

To address solid waste disposal issues, PEQPB has requested assistance from USEPA and funding from OTIA to develop a program to include evaluation of health hazards associated with the existing solid waste site in Koror, possible cleanup options, and development of specific siting criteria for placement of future solid waste disposal sites for various States. USEPA has already begun assisting in this program by performing limited sampling of soils and water in and around the Koror dump.

Until a new landfill can be sited to meet the solid waste disposal needs of the population centered in Koror, the existing Koror dump needs to be managed and controlled to prevent the escape of solid waste into the marine environment and to ensure that the solid wastes are adequately covered with soil to control vectors and the potential for the spread of disease. Waste minimization, as well as waste reuse and recycling efforts must be incorporated and implemented to reduce the increased stress that solid waste will create on the environment and infrastructure of Palau as development brings greater numbers of tourists into Palau.

Some of these steps have been taken as the Bureau of Public Works is instituting a security system at the Koror Dump which will control the indiscriminate placement of solid waste in the dump and prevent fires from being started at the dump.

19.7(c) Water Quality Resource Degradation

The National Government in general and the PEQPB must continue to implement strong programs to assure that marine and fresh water quality is maintained and preserved. The following components are necessary for a successful water quality protection program:

a. Implementation and enforcement of existing regulations, including water quality standards, earthmoving regulations, and environmental impact regulations to assess potential projects.
b. Completion of a Marine and Fresh Water Resources Water Quality Map designating the water quality status to be maintained for each area of Palau.

c. Increased recognition of the need to consider all impact of every activity within a given watershed on the waters within that area, in order to better protect waters from degradation.

d. Increased efforts at environmental education for citizens, individuals and public bodies.

e. Adoption of regulations to better protect important wetlands from filling.

f. Adoption of regulations to control point source and non-point source discharge of contaminants to waterbodies, including wastewater, industrial discharges, oil spill prevention programs, and other types of discharges.

g. Revised Pesticide Regulations to prevent contamination of surface and groundwater.

h. Adoption of Hazardous waste regulations.

i. Adoption of Ocean Dumping Regulations.

j. Revised Toilet Facilities Regulations to better protect groundwater and surface waters.

k. Development of "best management practices" guide, including planning, design, engineering, and other measures, to minimize the impacts of large development projects on the environment.

l. Continuation and expansion of existing marine water quality monitoring and development of fresh water quality monitoring programs.

19.7(d) Pesticide and Hazardous Materials Issues

Discussions have begun, and need to continue, to formalize arrangements between the PEOPoP and the Division of Customs and the Division of Agriculture & Mineral Resources to protect Palau from the importation of illegal and extremely toxic pesticides. Enforcement of pesticide regulations is being increased and will include an education component to ensure that all operators are aware of the requirements of Palau’s pesticide regulations. Worker protection issues are being addressed and the entirety of Palau’s Pesticide Regulations are currently being updated.
IMPEDEMENTS TO PROGRAM IMPLEMENTATION

19.8(a) Environmental Review Process

The main agency charged with the protection of the environment is the PEQPB. However, the relationships with other Governmental agencies involved in environmental and resource issues need to be clarified and formalized in order to allow the Board to better exercise its control functions. A formal mechanism should be adopted to assure that all National Governmental agencies, Boards, and Commissions whose mandate involves environmental, resource conservation, socio-cultural impacts, or other appropriate areas, be incorporated into the review and comment process on those projects with potential significant impacts.

19.8(b) Increased Technical and Personnel Resources

PEQPB must continue to strive to maximize staff levels and qualifications to assure it is capable of monitoring and enforcing all activities mandated under the Environmental Quality Protection Act. PEQPB must seek out, hire and train more high caliber staff and expend sufficient resources to evaluate project impacts, monitor permitted and unpermitted activities, perform inspections, and enforce regulations throughout the country.

Currently, 100% of the funding for PEQPB is provided by the USEPA. After implementation of the Compact EPA funding will begin a step-down decreased of 25% per year. The Republic will continue to request U.S. Federal agency technical assistance if such assistance is discontinued.

19.8(c) In-Country Environmental Contaminant Testing Capability

The PEQPB must seek out and obtain capital resources and technical expertise to increase the capability of its laboratory to perform monitoring for a wide spectrum of environmental contaminants which could be present in the environment of Palau.

19.8(d) Strengthening Enforcement Program

The PEQPB is currently funding and employing an Assistant Attorney General with substantial environmental enforcement experience who is on full-time assignment to the PEQPB. The enforcement program has moved forward and in the last year penalties of nearly $100,000 were assessed by the PEQPB in enforcement actions. In addition to the financial penalties, the PEQPB also imposed substantial remediation, pollution abatement and pollution prevention requirements on regulated entities.

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The monitoring and compliance officers (the field staff of the PEQPB), the technical staff, and the legal staff are all working together to improve the process of information gathering and the cataloguing and enforcing of violations. Plans are being developed to provide officers with increased enforcement authority to assess violations and issue citations in the field as part of their normal responsibilities. The PEQPB is also developing an organized Enforcement Initiative to remedy multiple violations in a specific area. Finally, the PEQPB is, as outlined below, working to improve and refine the regulatory framework under which the environment of Palau is protected.

19.8(e) Strengthening Public Education in Environmental/Resource Issues

More comprehensive, issue-specific and aggressive public education programs are required to raise public awareness and participation in decision making regarding environmental concerns. Current and future issues addressing resource preservation and degradation will call for a well informed, actively participating general population. Specific sectors and groups to be targeted include, but are not limited to, private businesses, government, rural communities, grass roots organizations (mens, women, youth groups), and traditional leaders. Environmental public education programs must be encouraged.

POLICIES AND PROCEDURES

Although existing environmental regulations are able to address most of the requirements of the EQPA, this is often accomplished by using different aspects of different regulations to address the issue. For example, while there is no specific set of Ocean Dumping Regulations in effect in Palau, these types of problems can be remedied through the use of regulations governing both earthmoving and solid waste. Likewise, issues of discharges of pollutants into the waters of Palau can be addressed through the Marine and Fresh Water Quality Standards Regulations. At the same time, however, the PEQPB and the environment of Palau would be greatly serviced by developing specialized regulations to address some of these types of issues.

The PEQPB has retained a full-time staff attorney, on assignment from the Office of the Attorney General, to work on both the enforcement and the regulation promulgation agendas.

PROGRAMS AND PROJECTS

The PEQPB currently administers programs in the following areas: Public Water Supply Supervision, Water Pollution Prevention (including permitting and surveillance of earthmoving activities, and issuing water quality certifications for activities which impact on receiving water quality), Waste Management Programs
PEQPB also has received supplementary grants from USEPA to develop programs to protect Near Coastal Waters and to further the goals of Watershed Protection.

While Palau remains under the Trust Territory status, the United States Environmental Protection Agency (USEPA) directly implements and enforces certain U.S. Federal environmental statutes and regulations, including aspects of the Clean Water Act, Safe Drinking Water Act, Pesticides Act (FIFRA). EPA issues and enforces point and non-point source wastewater discharge (NPDES) permits; requires oil spill prevention, control, and countermeasure (SPCC) programs be developed for bulk oil storage facilities; and enforces dredging and filling operation permits issued by the US Army Corps of Engineers. EPA also has oversight and input into and over PEQPB's Public Water Supply Supervision Program, and Pesticide and Hazardous materials program.

In addition, the US Army Corps of Engineers currently administers the program of assessing the impacts, and issuing permits for activities which result in the discharge of fill materials into waters within Palau (rivers, streams, wetlands, marine waters), also under the authority of the U.S. Clean Water Act. The U.S. Coast Guard enforces certain marine protection activities. Other U.S. Federal agencies, such as U.S. Fish and Wildlife Service, National Marine Wildlife Fisheries Service, have important roles to play in reviewing and commenting on proposed development activities with potential environmental impacts.

After implementation of the Compact of Free Association, USEPA and other U.S. Federal agencies will no longer have the authority to assure implementation and enforce compliance with many of these important environmental protection programs. The National Governments committed, in accordance with Section 161 et seq. of the Compact, to develop appropriate environmental protection standards.
CHAPTER 20

HEALTH

INTRODUCTION

The direction for the development of health care services and facilities is drawn from the mandates of the Republic’s Constitution and laws which are:

"The National Government shall take positive action to attain these national objectives and implement these national policies...protection of the safety and security of persons and property; promotion of the health and social welfare of the citizens through provision of free or subsidized health care..." (Responsibilities of the National Government, Article VI, Constitution of the Republic of Palau).

"...To maintain and improve health and sanitary conditions, minimize and control communicable diseases, establish standards of medical and dental care and practice, encourage scientific investigation in the field of health, supervise and administer all government owned hospitals, sanitariums, clinics, dispensaries and such other medical and dental facilities..." (Duties in general, 34 PNC 101).

In this sector plan for Health Services goals and objectives are developed in response to particular pressing health problems and issues as identified by policy makers, leaders and health professionals, within the broad framework of the above mandates. The policies and strategies for the development of health services as stated in this Plan are consistent with the Republic’s "Five Year Health Plan, 1993-1997".

CURRENT SITUATION

20.1 Health Status

Recent statistics indicate that Palauans are experiencing better health status than in the last three decades. This may have been largely due to improved literacy, economic and living conditions of the general population, as well as the improvement of health care services both preventive and curative. Despite these improvements, prevalence rates of diseases of developing nations are still high in Palau in addition to increasing incidence and prevalence of chronic illnesses.

An assessment of the primary indicators of mortality and morbidity indicates that the birth rate has declined appreciably during the past ten years from
An assessment of the primary indicators of mortality and morbidity indicates that the birth rate has declined appreciably during the past ten years from 25 per 1,000 population in 1983 to 21.4 per 1,000 population in 1993. There may be several factors that have had an impact in this decline. Some of them are: (1) an active family planning program which began about two decades ago; (2) social changes in the attitude amongst Palauan women; and (3) more women are entering the work force than before. However, the infant mortality rate has increased from 22.9 per 1,000 live births in 1983 to 28.1 per 1,000 live births in 1993. The death rate has slightly increased in the same 10 year period from 6.9 per 1,000 population in 1983 to 7.0 per 1,000 population in 1993. See Table 20.a.

### Table 20.a:

**Total Number of Live Births, Deaths, and Infant Deaths**

**Crude Birth Rates, Crude Death Rates and Infant Mortality 1975 - 1993**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Population</th>
<th>Live Births</th>
<th>Birth Rate</th>
<th>Deaths</th>
<th>Death Rate</th>
<th>Infant Deaths</th>
<th>Infant Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>12,792</td>
<td>381</td>
<td>29.0</td>
<td>68</td>
<td>5.3</td>
<td>21</td>
<td>55.1</td>
</tr>
<tr>
<td>1977</td>
<td>12,911</td>
<td>359</td>
<td>27.8</td>
<td>60</td>
<td>4.6</td>
<td>9</td>
<td>25.1</td>
</tr>
<tr>
<td>1979</td>
<td>12,381</td>
<td>315</td>
<td>25.4</td>
<td>62</td>
<td>5.0</td>
<td>14</td>
<td>44.4</td>
</tr>
<tr>
<td>1981</td>
<td>12,131</td>
<td>281</td>
<td>23.2</td>
<td>77</td>
<td>6.3</td>
<td>4</td>
<td>14.2</td>
</tr>
<tr>
<td>1983</td>
<td>12,161</td>
<td>306</td>
<td>25.2</td>
<td>84</td>
<td>6.9</td>
<td>7</td>
<td>22.0</td>
</tr>
<tr>
<td>1985</td>
<td>12,191</td>
<td>337</td>
<td>27.7</td>
<td>95</td>
<td>7.8</td>
<td>9</td>
<td>26.7</td>
</tr>
<tr>
<td>1987</td>
<td>13,873</td>
<td>311</td>
<td>26.0</td>
<td>96</td>
<td>6.9</td>
<td>6</td>
<td>19.3</td>
</tr>
<tr>
<td>1989</td>
<td>14,206</td>
<td>309</td>
<td>21.7</td>
<td>101</td>
<td>7.1</td>
<td>5</td>
<td>16.2</td>
</tr>
<tr>
<td>1991</td>
<td>15,122</td>
<td>350</td>
<td>23.1</td>
<td>102</td>
<td>6.7</td>
<td>3</td>
<td>8.6</td>
</tr>
<tr>
<td>1993</td>
<td>16,642</td>
<td>356</td>
<td>21.4</td>
<td>116</td>
<td>7.0</td>
<td>10</td>
<td>28.1</td>
</tr>
</tbody>
</table>

Source: Bureau of Health Services, 1973/92; Office of Planning and Statistics population data (actual and estimates)

### Table 20.b:

**Number of Deaths By Cause Calendar Year 1993**

<table>
<thead>
<tr>
<th>CAUSE OF DEATH</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseases of the circulatory system</td>
<td>31</td>
</tr>
<tr>
<td>Neoplasms</td>
<td>22</td>
</tr>
<tr>
<td>Drowning</td>
<td>6</td>
</tr>
<tr>
<td>Suicide</td>
<td>4</td>
</tr>
</tbody>
</table>

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In the calendar year ending December 31, 1993, the three leading causes of death were disorders of the circulatory system, neoplasms, and injuries and poisoning (see Table 20.b.). In the same calendar year, prematurity remained the leading cause of infant death. Surprisingly, “assault” has appeared as a cause of death of infants in this year. The five leading causes of illnesses seen at the outpatient department and clinics for calendar years 1992 and 1993 were diseases of the respiratory system, injury and poisoning, diseases of the nervous system and sense organs, infectious and parasitic diseases and diseases of the skin and subcutaneous tissues.

<table>
<thead>
<tr>
<th>Type of Disease</th>
<th>1989</th>
<th>1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Anemia</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Gastroenteritis</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Hep A</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Hep B</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>297</td>
<td>1.17</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>153</td>
<td>0.60</td>
</tr>
<tr>
<td>Gastroenteritis</td>
<td>661</td>
<td>2.61</td>
</tr>
<tr>
<td>Other GI</td>
<td>734</td>
<td>2.90</td>
</tr>
<tr>
<td>Flu/Viral syndrome</td>
<td>3452</td>
<td>13.64</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>152</td>
<td>0.60</td>
</tr>
</tbody>
</table>

Source: Ministry of Health
<table>
<thead>
<tr>
<th>Condition</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other reportable disease</td>
<td>146</td>
<td>96</td>
<td>242</td>
</tr>
<tr>
<td>Eye disease</td>
<td>287</td>
<td>1,53</td>
<td>1,81</td>
</tr>
<tr>
<td>Wound inf</td>
<td>548</td>
<td>2,17</td>
<td>3,65</td>
</tr>
<tr>
<td>Acute cellulitis</td>
<td>643</td>
<td>3,33</td>
<td>5,76</td>
</tr>
<tr>
<td>Dermatitis</td>
<td>302</td>
<td>1,19</td>
<td>4,21</td>
</tr>
<tr>
<td>Other skin dis</td>
<td>1,224</td>
<td>5,11</td>
<td>6,33</td>
</tr>
<tr>
<td>Pelvic inflammatory dis</td>
<td>34</td>
<td>0,13</td>
<td>0,47</td>
</tr>
<tr>
<td>Urinary tract inf</td>
<td>149</td>
<td>0,59</td>
<td>1,08</td>
</tr>
<tr>
<td>Other genito-urinary dis</td>
<td>2,75</td>
<td>1,09</td>
<td>4,64</td>
</tr>
<tr>
<td>Constipation</td>
<td>6</td>
<td>0,02</td>
<td>0,08</td>
</tr>
<tr>
<td>Arthritis/gout</td>
<td>1,16</td>
<td>0,46</td>
<td>2,02</td>
</tr>
<tr>
<td>Joint pain</td>
<td>1,29</td>
<td>0,51</td>
<td>2,80</td>
</tr>
<tr>
<td>Other musculoskeletal</td>
<td>838</td>
<td>3,31</td>
<td>5,72</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>9</td>
<td>0,04</td>
<td>0,09</td>
</tr>
<tr>
<td>Anxiety dis</td>
<td>15</td>
<td>0,06</td>
<td>0,21</td>
</tr>
<tr>
<td>Other psych prob.</td>
<td>21</td>
<td>0,08</td>
<td>0,29</td>
</tr>
<tr>
<td>Allergies (all form)</td>
<td>384</td>
<td>1,52</td>
<td>4,36</td>
</tr>
<tr>
<td>Upper resp. inf</td>
<td>392</td>
<td>1,55</td>
<td>5,47</td>
</tr>
<tr>
<td>Lower resp. inf</td>
<td>215</td>
<td>0,85</td>
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</tr>
<tr>
<td>Asthma</td>
<td>428</td>
<td>1,68</td>
<td>6,04</td>
</tr>
<tr>
<td>Colds</td>
<td>64</td>
<td>0,25</td>
<td>0,89</td>
</tr>
<tr>
<td>Seizure disorder</td>
<td>56</td>
<td>0,22</td>
<td>0,78</td>
</tr>
<tr>
<td>Diabetes</td>
<td>177</td>
<td>0,70</td>
<td>2,47</td>
</tr>
<tr>
<td>Hypertension</td>
<td>331</td>
<td>1,32</td>
<td>4,63</td>
</tr>
<tr>
<td>Otitis media</td>
<td>1,115</td>
<td>4,41</td>
<td>6,56</td>
</tr>
<tr>
<td>Heart dis</td>
<td>1,39</td>
<td>0,55</td>
<td>1,94</td>
</tr>
<tr>
<td>Injuries (all type)</td>
<td>2,441</td>
<td>9,64</td>
<td>12,08</td>
</tr>
<tr>
<td>Gastritis</td>
<td>18</td>
<td>0,07</td>
<td>0,25</td>
</tr>
<tr>
<td>Pharyngitis</td>
<td>56</td>
<td>0,22</td>
<td>0,78</td>
</tr>
<tr>
<td>Sinusitis</td>
<td>30</td>
<td>0,20</td>
<td>0,60</td>
</tr>
<tr>
<td>Tonilallitis</td>
<td>104</td>
<td>0,41</td>
<td>1,45</td>
</tr>
<tr>
<td>Other respiratory dis</td>
<td>605</td>
<td>2,39</td>
<td>8,44</td>
</tr>
<tr>
<td>Intestinal parasite</td>
<td>30</td>
<td>0,12</td>
<td>0,36</td>
</tr>
<tr>
<td>All other</td>
<td>999</td>
<td>31,59</td>
<td>3,99</td>
</tr>
</tbody>
</table>

**Total**: 25,319

Source: Ministry of Health

### 20.2 Public Sector Health Services and Facilities

During the last ten years the Government has made some major advances in the delivery of both preventive and curative health services. These services include health promotion, preventive health services, primary health care, and secondary and tertiary medical services. An off-island Medical Referral Program for tertiary medical care that is not available in the Republic is also provided by the Government. Under the Pacific Islands Health Care Program (PIHCP), Palau refers cases to the Tripler Army Medical Center in Hawaii. However, referred cases have to meet the "learning requirements of interns and residents" who are training under this program. In 1994, the management and administrative oversight of the Medical Referral Program was contracted with Guam Memorial Health Plan (GMHP). This action was due to escalating cost and lack of managed care of referrals to the Philippines. Under the current arrangement, based on the condition of the patient.
three hospitals in the Philippines (St. Luke’s, Makati and Medical City General Hospital) are used as referral sites.

20.3 Public Health and Preventive Measures

The preventive health care measures are undertaken primarily through the Ministry of Health’s Bureau of Public Health. The range of public health services provided include: immunization, maternal and child health, school health, family planning, behavioral health services which include alcohol and drug abuse and mental health, rehabilitation services, control of communicable and non-communicable diseases, health education, sanitation and environmental health services, vector control, pollution control and public education, and other equally important preventive and health promotion services. Current public health and community health medicine activities are handled at the old MacDonald Memorial Hospital in Ngerbeched hamlet of Koror State. Dispensary activities are very limited at this stage due to staff shortage and deteriorating dispensary facilities. However, sick-call services are instituted on timely basis to all the States without dispensary or staff.

School dental programs were instituted several years back. These programs are primary health care oriented. They consist of screening at the schools and at the site, fluoride tablets/rinse, toothbrush and toothpaste distribution and clinical dental care when individual student need is identified through the screening program. The Ministry of Health foresees the continuation of these services until such time that a fluoridated water system is a reality.

20.4 Public Hospital (Belau National Hospital)

In December 1992, the Belau National Hospital opened its doors for operations. This is the only public hospital in Palau and has a bed capacity of 80. There are four major wards: Medical/Pediatric, Surgical, Obstetrics/Nursery and Psychiatric. It is a self-contained hospital with independent water and emergency power systems. The hospital provides services from primary health care such as out-patient care to tertiary care such as hemodialysis. The Ministry of Health, in its effort to contain the continuing rise in medical services costs, has several agreements/arrangements with physicians and physician groups outside of Palau to come and provide specialized medical care in Palau in exchange for payment of their travel, and living allowances while they are in Palau.

In both areas of Public Health and Hospital Services, quality of services is being hampered by a critical shortage of professional staff, from management to clinical services. This is compounded by the use of antiquated medical equipment and lack of spare parts and proper maintenance equipment and tools.

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20.5 Dispensaries

Delivery of primary health care to the population residing outside of Koror and the nearby States within the island of Babeldaob such as Airai, Aimeliik, Ngapang, Ngaremengui, Ngchesar and Melekeok are provided through the dispensary systems. At present there are thirteen (13) dispensaries within the various States of the Republic. However, only seven (7) are operational with a permanently assigned staff. These dispensaries are primarily providers of primary, preventive and health promotional services to the residents of the States. They are staffed by locally trained health care workers (health assistants) who have 24 hour accessibility by short-wave radio to the central hospital. In cases of emergency, the National Government provides services to evacuate patients. With their training in preventive and community health medicine, the health assistants are now better equipped to provide services to the elderly, women and children and conduct sanitary inspections of homes within the States. Outreach efforts by various primary and preventive health programs are facilitated through the efforts and cooperation of health assistants in the field. Expansion of outreach services is planned in 1995 when a team of health care providers (from doctors and nurses to sanitary inspectors) will be traveling to the outer islands and villages to provide enhanced health care services.

20.6 Curative Health Measures

Curative health care, provided under the Bureau of Clinical Services, includes emergency/urgent care, surgical, medical, pediatric, obstetrics, gynecology, hemodialysis, behavioral health services, physical rehabilitation services, dental services and regular outpatient services. Support services present in the hospital are laboratory, radiology and pharmaceutical services.

Approximately 350 to 400 surgeries are performed each year at the Belau National Hospital of which about 49% are major and 51% are minor surgeries. The Outpatient Department experiences around 25,000 to 30,000 patient encounters per year (see Table 20.c) while the Emergency Room averages between 8,000 to 9,000 patient encounters per year. In the past five years the number of off-island medical referral cases to hospitals in the Philippines has been averaging about 100 to 110 patient per year with an average yearly cost of approximately $300,000. The five major diagnosis for hospital admissions for 1989 and 1990 were injury and poisoning, diseases of the respiratory system, diseases of the genital urinary system, complications of pregnancy, childbirth and puerperium and, infections and parasitic diseases. Hospital statistics show that in the past five years, the average daily census has been around 36.40 patients with bed occupancy rate of 55% and average length of stay of 6.6 days. See Table 20.d.

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20.7 Private Sector Health Services and Facilities

Currently there are two private medical clinics: Belau Medical Clinic and SDA Medical Clinic, operating in Palau. The clinics are strictly primary health care oriented and are very self-sustaining in that they have small laboratories, radiology and pharmacy services. Physicians who operate these clinics have hospital privileges and admit patients to the Belau National Hospital for secondary medical care.

The SDA Medical Clinic provides dental and optical services from vision examination to prescription of eye glasses.

20.8 Traditional Medical Practice

Although not officially recognized, use of traditional medicine is a common practice in Palau. Some of these practices are blended in with traditional and spiritual rights. They include physical/mental and spiritual therapeutic care, herbal remedies for internal and external medical care, obstetrics/gynecological care and nutritional therapy. Although tolerant and to some extent encouraging of such practice, the Government has taken care to emphasize the traditional handling of certain types of diseases, mainly communicable diseases, to be reported to the Ministry of Health for immediate medical attention.

20.9 Medical Referrals

The Medical Referral Program has been pursued by the Ministry of Health to ensure that patients requiring tertiary medical care and treatment and other specialized diagnostic care receive the necessary services. Patients requiring tertiary medical/diagnostic care are referred to hospitals in the Philippines for such. Aside from the receipt of these services from the hospitals, the Ministry has a
Coordinator in the Philippines to assure that other support needs of patients while they are away from Palau are adequately met.

Under the Medical Referral Program, the patients and or their families pay their own transportation cost to and from the Philippines. The Government of Palau will initially pay the incurred medical expenses, however, the patient and or his family will pay the government for one half (1/2) of the incurred medical expenses.

Prior to 1989, the Republic was referring tertiary medical cases to Guam and Hawaii. Due to the escalating costs experienced ($588,365 in 1984 and $1,016,980 in 1985 and in excess of $600,000 in 1988), it was deemed necessary that alternative sites be identified. The Philippines was identified as the alternative site based on its proximity to Palau, lower hospital rates and adequate medical care in the area of tertiary services. Because of this, the Government has been able to experience cost savings in tertiary medical care and at the same time assure that quality of care is not sacrificed.

20.10 Health and Human Resources Development

Due to the specialized and stratified professional requirements in the field of health care, the Ministry of Health employs a minimal number of people with different professional backgrounds. The staffing of the Ministry numbered just over 200 in 1993. In the area of health care management, the staff are all Palauans except for three, consisting of the Assistant Administrator, Federal and International Programs Officer and CHC Executive Director.

As the Ministry prepares to expand its services in accordance with the implementation of the Five Year Health Plan, there are plans to employ more professional and paraprofessional staff. Most likely these staff will be hired from outside of Palau as the pool of Palauan professionals is very limited. These additional staff will fill in the gaps in nursing, medicine, and other paraprofessional and support services.

Due to the critical shortage of physicians in the Micronesian region, the Pacific Basin Medical Officers Training Program (PBMOFP) was established, to address the immediate development of physicians specifically educated and trained for the needs of the region. In addition, a formal arrangement has been made with the region and the Fiji School of Medicine for the graduates to complete their internship and residency in Fiji. The Ministry of Health is preparing itself to absorb the graduating physicians from this program. A plan has been completed by the Pacific Island Health Officers Association (PIHOA) to begin the Dental Officers Education Program (DOEP) in Palau to also address a critical shortage of dentists in Micronesia. The philosophy of this program is similar to that of the PBMOFP and
similarly, arrangements with the Fiji School of Dentistry are under negotiation for a formal attachment.

To address the continual shortage of nursing and dental paraprofessional health care workers within the Ministry, a formal program of health assistants, practical nurses and dental assistants training is ongoing. Funding for these training initiatives has been secured through the U.S. Public Health Service Section 301 Grant and the Family Health Plan (FHP) Foundation. Arrangement to begin a nursing and paraprofessional educational program at the Palau Community College is currently under negotiation.

Unfortunately, human resources development activities and funding support in this area of the Ministry of Health has been deficient and therefore negatively affected in the past years. To address this need, the management of the Ministry of Health is currently upgrading the job classification, descriptions and requirements to include a minimum requirement in continuing education credits/contact hours. Funds are being requested from the National Congress (OEK) in FY95 to address this critical need within the Ministry.

20.11 Organization and Responsibilities

The Ministry of Health was reorganized in 1993 in accordance with Executive Order No. 116. The current organization consists of five management offices under the Minister of Health and two Bureaus. The offices are Health Planning and Evaluation, Health Human Resources Development, Federal and International Programs, Health Care Financing, and Health Services Administration. The two Bureaus are Public Health and Clinical Services. Within the Bureau of Public Health, there are five divisions and three in the Bureau of Clinical Services.

In 1993, the Olbiil Era Kelulau passed a bill amending 34 PNC 102 to include the creation of the Board of Health and empowered it with management and administrative responsibilities of the Belau National Hospital. Membership of this board includes the Minister of Health and the Health Services Administrator. Currently, work is taking place to address the line of board responsibilities and those of the Minister and from that, the board bylaws and policies will be formulated.

Other public sector institutions involved in the delivery of health services are: the Environmental Quality Protection Board (EQPB) which administers the U.S. Environmental Protection Agency grants and implements environmental protection regulations of the Republic of Palau and the Palau Board of Licensure which oversees the qualifications of all practicing clinicians and parathath professionals in the Republic of Palau. As mentioned earlier, there are two private medical clinics, however, there are no private dentists practicing in the Republic.
20.12 Deteriorating Health Status Indicators

Although there has been definite positive changes in the health of Palauans in the last few decades, there remains a need to ensure that this trend continues. The major health indicators imply a very changing health status pattern of Palauans. Indicators for communicable diseases (preventable) remains high. At the same time, non-communicable disease indicators are continuing to increase at a very high rate. This trend indicates a society that is experiencing both diseases of developing and developed nations: i.e., uniform increases in gastroenteritis, and diabetes. The Infant Mortality Rate (IMR) which is internationally used as an indicator of national progress and wellness (healthiness of a nation) tends to indicate a less than acceptable rate. i.e., Palau's IMR is similar to those of "Undeveloped Nations" (See Tables 20.a and 20.a). Other health concerns are dental caries and inadequate sanitation. Dental caries among school children have increased in recent years, due largely to poor personal hygiene practices, increased consumption of processed food and limited preventive measures. Sanitary measures from businesses to households remains a concern which must be addressed by policy makers.

### TABLE 20.a:

<table>
<thead>
<tr>
<th>CAUSE OF DEATH</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disorders related to short gestation and unspecified low birthweight</td>
<td>3</td>
</tr>
<tr>
<td>Septicemia</td>
<td>1</td>
</tr>
<tr>
<td>Encephalopathy</td>
<td>1</td>
</tr>
<tr>
<td>Infection specific to the perinatal period</td>
<td>1</td>
</tr>
<tr>
<td>Massive Aspiration Syndrome</td>
<td>1</td>
</tr>
<tr>
<td>Dyspnoea and respiratory abnormality</td>
<td>1</td>
</tr>
<tr>
<td>Assault</td>
<td>1</td>
</tr>
<tr>
<td>Drowning</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

Source: Ministry of Health

With cases of AIDS being identified in the Pacific, Palau has concerns for its citizens. The increase in incidence and prevalence of diseases associated with AIDS, such as tuberculosis is on the rise. Cases of multi-drug therapy resistant T.B. bacteria has been identified. Also preliminary studies indicate that Hepatitis
B is endemic in Palau with approximately 20% of the population identified as carriers of the virus. New cases of Hansen's Disease (leprosy) have also been identified.

Behavioral health illnesses and health problems exacerbated by drugs and alcohol abuse have become major health concerns. Deterioration of the traditional family support system without means to replace it tends to make people find release through the abuse of drugs and alcohol. Resolution and control of these increasing problems will require the involvement of the Palauan society at large, particularly those of parents, guardians, community and church groups, policy makers and experts in the field of alcohol and drug abuse. At the same time, the increase in cases of child abuse (physical and sexual) and spouse abuse are becoming evident.

20.13 Health Care Financing

The ever increasing cost of health care is an issue that faces the Government of Palau, policy makers and consumers. In the last five years, the cost of providing health care in Palau has been increasing and by 1993 has reached 5.1 million U.S. dollars. This figure is inclusive of all international grants-in-aid. Presently, health care is provided on a cost sharing basis with the Government subsidizing at least 50% of the annual cost.

Through concerted efforts of the Ministry of Health, work within the government is taking place to develop a nationalized health insurance plan for all citizens and those others who would wish to participate in the plan.

Grants from U.S. Federal and international agencies have been mainly used to fund preventive and to some extent, primary health care services. These funds amounted to approximately $1.5 million in 1993. The Government of Palau supports these activities through an annual appropriation in the amount not exceeding $300,000. Less than eight (8) percent of the annual OEK appropriation for the Ministry of Health in FY93 was devoted to preventive health care activities. However, the overall Ministerial effort toward preventive and primary health care for 1993 was approximately 35 percent. The remaining 65 percent of the annual appropriation has been used toward secondary and tertiary medical care. Of this figure, 15 percent has been used toward tertiary off-island medical care.

20.14 Accessibility to Medical Facilities

The problem of inadequate accessibility to medical facilities are due to two reasons. One is a funding shortage for upgrading and properly supplying and equipping dispensaries located in States outside of Koror. Another reason is the difficulty of transporting patients to Koror for secondary and tertiary care when the
need arises, due to a poor land and water transportation system. Thirty (30) percent of the population is affected. However, with infrastructure development planned for Babeldao, it is expected that the population will begin moving in-land which will require that health care infrastructure be developed to provide for the need of a bigger population base.

It is a major concern at present that with increased tourism (in the area of diving) and increased boating and diving accidents, that the dock proposed to be built at the Belau National Hospital, to accommodate boats carrying the injured directly to the hospital, be one of the primary goals of the Ministry of Health.

20.15 Deteriorating Dispensaries

The condition of the existing dispensaries has critically deteriorated due to the absence of proper maintenance activities. Most of the dispensaries have not been adequately maintained in the past, and therefore are inadequate for the provision of health care and housing health care providers. In dealing with this problem, along with proper maintenance of the Belau National Hospital, an internal maintenance program has been created to oversee all maintenance activities of government owned health care facilities. However, needed supplies, parts, tools and other working equipment which are necessary for proper implementation of a maintenance program have not been or are currently included in the procurement process. The delays in the acquisition of these items have largely been due to the cash flow problem of the Palau Government.

Renovation assessment of the dispensaries has been completed. This assessment indicates that the total cost of the dispensary renovation will require at least $72,000.

20.16 Funding for Health and Human Resources Development Programs

As stated earlier, due to the concerted efforts of the past Health Directors of the Region, the PBMOPT was created to address the critical shortage of physicians in the region. The Ministry of Health is now absorbing graduates from this medical training institution. Along the same line, the implementation of the Dental Officers Training Program will address the shortage in dental officers and other workers within the field of dentistry.

DEVELOPMENT OBJECTIVES

20.17 Health Objectives

The Ministry of Health has targeted five priorities for the coming year in response to the evolving health care situation:

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a. Human resource development will emphasize strengthening management skills, and career planning advancements.

b. Establishment of a Nursing School and paraprofessional training programs at Palau Community College (PCC).

c. In the Division of Environmental Health and Sanitation, attention will be focused on legislation addressing clear water supplies, solid waste disposal and food sanitation standards.

d. Health prevention and promotion activities aimed at lowering the incidence and prevalence of disease will receive special consideration.

e. Program expansion will occur in the areas of public health, behavioral health, and chronic preventable diseases with an emphasis on the rural health outreach and dispensary project. The overall primary health care programs currently available will be intensified as needs are identified through epidemiological trends.

POLICIES AND STRATEGIES

20.18 Health Policies Changes

The government subscribes to the World Health Organization's mandate for "Health for All," which implies a state of health that will permit all citizens to lead a socially and economically productive life. More specifically, it envisages a well-nourished population with safe drinking water, proper sanitary disposal of animal and human wastes, minimal environmental pollution and hazards, elimination of communicable diseases and any major health problems, reduction in chronic diseases, improvement of psycho-social well-being and healthy lifestyle, regulated fertility to ensure better health and social well-being, and access to appropriate health care for all.

Realizing the above needs, the Ministry of Health continues to work at the arm of the Executive Branch of the Government to promote good health and improve the quality of life in the Republic. However, the Ministry also realizes the need to continue to work within the political framework to make legislative mandates to require changes within and outside of the government toward these two major goals.

20.19 Capital Improvement to the Belau National Hospital

These improvements will be for the repair and renovation of the dock adjacent to the hospital and building of staff housing.
20.20 **Dispensaries**

In the 5-Year Comprehensive Health Plan of the Ministry of Health, the construction of super dispensaries or satellite clinics was addressed. This plan takes into consideration the future migration/movement of the population of Palauans; most likely once the basic infrastructure (electricity, water, and road) is developed in Babeldao, the population in Koror will begin its migration to Babeldao. It is planned that these super dispensaries/clinics will take care of the preventive and primary health care needs while the Belau National Hospital will be a referral hospital for secondary and tertiary medical care needs.

20.21 **Health Information System**

The expansion and coordination of the health information system will provide an infrastructure for more integrated services and lead to comprehensive management rather than fragmented health care delivery.

20.22 **Scientific Research**

The Ministry is committed to continuing participation in scientific research in relation to national health problems.

20.23 **Health Planning**

The national health mandates for Palau will be reviewed and redefined to meet the current situation, analyze future health trends and identify new health priorities. Health policies, regulations and codes will be updated and new legislation will be introduced to establish a foundation for future health initiatives.

20.24 **Staffing**

In order to deliver quality health care services and assure universal access, the Ministry of Health must address the staffing deficit throughout the Divisions.

20.25 **Human Resource Development**

Enhancements in pre-service and in-service training programs will continue to develop staff potential. This will be achieved through acquisition of U.S. Federal and international grants from such agencies as WHO, UNFP, UNICEF, SPC, AIDAB, and other external funding sources. Establishing linkages with post-secondary institutions will assure ongoing career development opportunities for Palauans in the health field. The Ministry will continue to seek assistance from NHSC and related programs for medical and other health professionals and support from UNDP and other related organizations and institutions for medical personnel.
20.26 **Medical Library**

Building internal capacity for resources for staff through the development of a medical library at the Belau National Hospital is planned. This library will be open for public use provided, that a better management system be initiated to provide this service.

20.27 **Personal Classification System**

A revision and reclassification of positions with salary schedule, when implemented is anticipated to overcome the staff retention problems.

20.28 **National Health Insurance Program**

Work has begun on a plan for the National Health Insurance Program project. Financial assistance from DOI is being requested to begin the plan’s development. More work will be needed for development of legislation to enact a legal framework for this program in addition to development of administrative and managerial capacity to implement the program.

**PROGRAMS AND PROJECTS**

20.29 **Outer Islands Dispensaries Energy Systems**

The Ministry of Health will upgrade the power supply to all dispensaries or health clinics to the point of self-sufficiency. These identified dispensaries or health clinics are those located in Kayangel, Peleliu, Angaur and the Southwest Islands. The primary focus of this energy system will be to develop solar energy capability of the existing and planned outer-island dispensaries. Thereafter, there will be a constant cost of not less than $10,000 for annual maintenance and repair of the power systems.

For funding of this project, see section on Programs and Projects in Chapter 19, Energy.

20.30 **Communications System**

The Ministry of Health foresees five (5) main areas of costs in relation to communication development:

a. Major upgrading of the Ministry’s internal telecommunication system;

b. Major upgrading of existing and additional dispensary telecommunication systems as is appropriate to the needs of the expanding health care system;

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c. Initiate a mobile communication system to service all mobile clinic and patient in transit activity;

d. Introduce a telemedicine system linking Palau with a major health care providing facility; and

e. Install E-Mail option into the Hospital Information System network.

Funding will be required for purchasing of equipment, installation, preventive maintenance, repair, education and training and progressive upgrading with technological development.

For an overall telecommunications development to provide upgraded state-of-the-art equipment and services to the outlying States, see Chapter 14, Communications.

20.31 Manpower Development

The Ministry of Health will accelerate the development program of a health workers pool. This includes funds to assist prospective students who wish to enter into health career fields and for support of internship and residency programs of physicians, pharmacists, dentists, nurses, paraprofessionals and specialty training. Funding for manpower development, including health career fields, will be provided through scholarship awards, external grants and through the PBMTA and DOEP.

20.32 Central Babeldoab Clinic and Babeldoab Dispensaries Construction

During the Plan period, a super-dispensary or satellite medical clinic will be constructed in central Babeldoab. Two dispensaries are also planned for construction at a later date.

For funding of this project, see National Health Facilities Improvement Project in Government Facilities.

20.33 Health Regulatory Agencies

The Ministry of Health proposes development and implementation of health regulatory bodies including a Medical Licensure Board, a Medical Services Regulatory System, and a Hospital Accreditation System to allow the hospital to become a teaching institution for the region.

Estimated Cost: $250,000.

Source of Funds: Unidentified.
20.34 **Drug Abuse Master Plan and Drug Rehabilitation Center**

Development of an interagency collaborated master plan for drug abuse prevention, treatment, and rehabilitation programs is planned.

- **Estimated Cost:** $150,000 (master plan)
- **Source of Funds:** Unidentified.

To implement the master plan and concurrently have the facilities to do so, a drug rehabilitation center will be constructed.

- **Estimated Cost:** $250,000
- **Source of Funds:** Unidentified.

20.35 **Use of U.S. Military Medical Facilities**

The Ministry of Health requests that access of the Republic to utilize U.S. Military Medical facilities such as Tripler Hospital for tertiary medical treatments continue to be available.

Table 20.1 reflects certain programs/projects the Ministry of Health plans to implement during the Plan period; however, the sources of funds for subject programs/projects have not been identified.

<table>
<thead>
<tr>
<th>Program/Project</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Regulatory Agency</td>
<td>$250,000</td>
</tr>
<tr>
<td>Drug Abuse and Rehab Master Plan</td>
<td>$150,000</td>
</tr>
<tr>
<td>Drug Rehab Center</td>
<td>$250,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$650,000</strong></td>
</tr>
</tbody>
</table>

**Source:** Ministry of Health

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CURRENT SITUATION

The education sector plan sets out the guidelines for educational development over the Plan period. Developmental objectives are set, problems and issues hindering the progress of educational development are identified, policies and strategies designed for overcoming the constraints and for achieving the developmental objectives are recommended. Programs and projects are identified and proposed for implementation to achieve the objectives of the sector.

The provision of formal education covers elementary, secondary and post-secondary vocational education, and to a limited extent, pre-elementary education.

21.1 Pre-Elementary Education

The Government does not operate any pre-elementary schools, although there are limited educational services at the pre-elementary level provided by private organizations. The Palau Protestant Mission operates a kindergarten school in Koror, where the entrance age of children is 4 years, and the Catholic and Seventh-day Adventist missions run pre-elementary school programs for age groups 3-5 years. On a larger scale, the Palau Community Action Agency (PCAA), a non-profit organization, runs the Palau Head Start Program for children in the 3-5 year age group.

The Palau Head Start Program (PHSP) designed under the model of the United States Head Start Program, has the primary goal of providing services to children in the 3-5 year age group in the areas of health and education, training with an emphasis on parental and community involvement in the PHSP, and motivating and encouraging parents to assume a greater role in the total development of their children. The PHSP helps parents to increase knowledge, understanding, skills and experience in their child’s growth and development.

Currently, PCAA operates PHSP centers in most of the 16 States. At present there are 22 PHSP centers with some States having more than one center.

In 1993 the total enrollment in the PHSP reached 486. The budgetary support for the PHSP, which in Fiscal Year 1993 amounted to $839,000. was provided through a U.S. Federal Program grant. Allocations for direct educational
services under the PHSP are as high as 40.7 percent, indicating the strong emphasis on the program's educational component.

21.2 Elementary Education

It is the policy of the Government to provide free compulsory elementary education to all Palaun children aged six to fourteen inclusively, through an eight-year (grades 1-8) elementary education program. Upon completion of the prescribed courses, students are expected to have acquired a certain level of achievement in the four basic curricular areas of language, science, mathematics and social studies. In addition, the elementary education has the wider objective of fostering the feeling of Palaun identity, integrity and unity, imparted through a supplemental educational program in the areas of Palaun culture, customs and traditions.

The academic curriculum at the elementary school level is an adoption of the American model in terms of the text books used for instructions, the range of major subjects and the hours required. Instruction is in both Palaun and English. In FY 1994, new Curriculum Framework are being piloted. Beginning in 1995, implementation of the new Curriculum Framework is expected to take place with several changes in the academic and vocational curricula at both elementary and secondary school levels being implemented to increase relevancy and suitability of instruction.

Academic performance is assessed through a variety of tests administered at quarterly and annual timetables. Class grades continue to depend on locally developed instruments but will migrate to criterion referenced tests based on the new Curriculum Framework beginning in 1995. General student achievement assessment is also conducted through the Stanford Achievement Test Series Eighth Edition (SAT8), a standardized test administered throughout various parts of the U.S., the Pacific, and Palau annually.

Elementary education is largely provided by the Government which runs 18 public elementary schools. In addition, there are two church elementary schools in each of the 16 States where there is at least one elementary school. The two private church-based elementary schools are geared towards providing religious education and mainstream academic curricula similar to those offered in public schools.

Although enrollment at elementary schools has fallen during the period 1989 to 1993, the proportion of elementary school age group population attending school continues to be high. Within this period, field supervisors have pursued truancy cases and met with parents of out-of-school children in the 5-14 year age group. School children not accounted for in the student enrollment statistics are

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unable to attend school because of legitimate reasons or are enrolled in alternative classes such as special education, etc.

<table>
<thead>
<tr>
<th>School</th>
<th>School Enrollment</th>
<th>No. of Teachers</th>
<th>Rate</th>
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<tbody>
<tr>
<td>Public</td>
<td>2,082</td>
<td>210</td>
<td>10</td>
</tr>
<tr>
<td>Private</td>
<td>416</td>
<td>32</td>
<td>13</td>
</tr>
<tr>
<td>Totals</td>
<td>2,498</td>
<td>242</td>
<td>10</td>
</tr>
</tbody>
</table>

Source: Ministry of Education

The student-teacher ratio, which to some degree can explain the intensity of the classroom instruction received by students, is approximately 10 to one (see Table 21.a), with some difference between private and public schools. The ratio is much more positive compared to that in most developing countries. At present about 47 percent of elementary school teachers have BA/BS Degrees, 35 percent AA Degrees, and 18 percent are working towards Associate Degrees.

21.3 Secondary Education

The primary objective of secondary education is to prepare Palauans for active participation in the country's social and economic development while providing the prerequisite courses required for post-secondary education at vocational institutions, colleges and universities. Although secondary education is not compulsory, the Government encourages all Palauans to complete the full four-year (grades 9-12) course at secondary school level.

The Government runs one public secondary school, the Palau High School (PHS), located in Koror. PHS has 89 percent of the total secondary school enrollment. Apart from taking academic courses, students are given the opportunity to pursue vocational courses such as auto mechanics, carpentry construction, cooperative education, cooking, sewing, agriculture, shop mathematics, drafting and drawing.

For entrance into the Palau High School, a student is required to have graduated from an elementary school, and to have passed the high school entrance examination administered by the Palau High School. The current passing mark is 60 percent. A student scoring below this percentage but achieving a grade mark between 55 percent to 57 percent may be admitted in Palau High School provided the student had maintained a minimum grade point average (GPA) of "C" in his last year of elementary school. In 1985, 60.25 percent of the applicants were in the
passing bracket; 20.1 percent required a GPA of "C" to enter the Palau High School; and 19 percent failed to meet either of these requirements to be eligible for entering Palau High School. Those students who do not pass the entrance examination are eligible to participate in the Palau High School Remedial Program (PHSRP). A student who enrolls in this remedial program and is capable of earning a cumulative grade of 70 percent or above in one semester is transferred over to Palau High School to participate in its regular academic program. Academic assessment of student performance at the Palau High School is done through testing procedures designed by the school and administered to students on a quarterly basis during the school year.

There are five (5) private high schools in Palau, all of which are church-based institutions. These high schools have their own individual curricula, and each of them prepare students to acquire a post-secondary education or to participate in the active job market.

Of secondary schools, four (4) are in Koror, one (1) in Ngeraard, and one (1) in Ngapang. Residents of a State which do not have a high school must relocate to either Koror, Airail, Ngeraard, or Ngapang to pursue their secondary education. Except for one high school in Koror, the rest of the private high schools have boarding facilities for students.

Student enrollment in secondary schools declined (see Tab. 21.b) during the period 1989 to 1993 consistent with a steady decline in the secondary school age-group population. Other more disturbing factors may be contributing to the decline in the rate of enrollment at the secondary education level. The lower attendance may, in part, be due to students not being motivated to pursue secondary school education and inability of students to continue their studies at secondary school level (supported by the statistics showing that about 20 percent of the students taking the Palau High School entrance examination fail to achieve the passing score).

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<tbody>
<tr>
<td>Enrollment</td>
<td>1,035</td>
<td>983</td>
<td>981</td>
<td>965</td>
<td>812</td>
</tr>
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Source: Ministry of Education

The student-teacher ratio at private and public secondary schools for 1993 shows that the overall student-teacher ratio in secondary school is lower than in elementary schools. Compare Table 21.a with Table 21.c.
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**TABLE 21.1:** Students-Teacher Ratio in Elementary Schools, 1993

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<tr>
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<td>965</td>
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Source: Ministry of Education

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21.4 Post-Secondary Education

The number of students pursuing post-secondary education increased from the early 1970's when Micronesian citizens became eligible for U.S. Federal Program Grants for higher education. Since then, a large number of students have obtained their college education on Guam, Hawaii and the United States mainland. In 1984-85, 609 such students were reported to have been attending various post-secondary institutions. Among them, 279 students were enrolled in the College of Micronesia system (Micronesian Occupational College in Palau, Community College of Micronesia in Pohnpei, Extension Program in Pohnpei and the School of Nursing in Saipan). The rest of the students were attending institutions outside the Trust Territory, primarily in Guam, Hawaii and the U.S. mainland.

21.5 The Palau Community College

The Micronesian Occupational College (MOC) was established in 1969 in Koror. In 1977 MOC became part of the newly created College of Micronesia system, a public corporation with its own Board of Regents. In 1993, the College of Micronesia treaty was terminated, and MOC became an independent college named the Palau Community College (PCC).

The PCC, which has full accreditation of the Western Association of Schools and Colleges of the U.S.A., functions as a post-secondary institution emphasizing vocational education to prepare students to acquire the necessary skills and knowledge to actively participate in productive economic activities in Micronesia and elsewhere. The College's mainstream vocational curriculum provides for a two-year program of career-oriented training and basic skills instruction in communications, mathematics, liberal arts and sciences. For school year 1992-93, the following programs were offered:

* Agricultural Science
* Air Conditioning and Refrigeration
* Auto Mechanics Technology
* Business Accounting
* General Office Clerk
* Secretarial Science
* Construction Technology
* Electrical Technology
* General Electronics Technology
* Occupational Home Economics
* Small Engine & Outboard Motor Technology
* Liberal Arts
* Police Science

As a result of a decrease in student enrollment for a number of trade programs, five programs—Appliance Repair, Auto Body Repair, Clothing Construction & Design, Food Service, Masonry Technology and Welding Technology—were withdrawn from the course offerings.

A comparative summary of enrollment at PCC from the fall of 1989 to the spring of 1994 (figures reflected for each school year is cumulative for fall, spring and summer) is reflected in Table 21.d.

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<tbody>
<tr>
<td>Enrollment</td>
<td>1,006</td>
<td>906</td>
<td>827</td>
<td>1,056</td>
<td>509*</td>
</tr>
</tbody>
</table>

*Fall Semester only

Source: Palau Community College

It is to be noted that in the fall of 1993, 58 percent of the enrollment at PCC were Palauan students. Enrollment of male students has been consistently higher than that of female students. In the 1992-93 school year, 22 percent of PCC’s enrollment dropped out of school for various reasons including students leaving to take jobs or transfer to another college (mainly in the United States), while others leave for disciplinary, medical or pregnancy reasons. Few students are dismissed for unsatisfactory academic performance.

21.6 Tertiary Education (Teacher Training)

The Ministry of Education has for the past several years been contracting with several higher educational institutions, such as the University of Guam, the San Jose and San Diego State Universities, and the United States International

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University, to conduct university credit courses in Palau, usually during the summer, for elementary and secondary school (both private and public) teachers.

In the summer of 1993 the University of Guam was contracted to conduct a master’s program for teachers and staff and San Diego State University was contracted to conduct a degree program for vocational education teachers. Funds for the these programs were provided by the U.S. Federal Program (TTAP funds). The modalities of the training programs for teachers have proved to be more economical than sending teachers abroad for training, although this does not rule out the need for teachers to pursue higher education at the university level abroad.

It is the long-term goal of the Government that each teacher possess at least a B.A. degree. The Ministry of Education is currently planning to strengthen year round university courses and other in-service training for teachers to work toward their certification requirements provided that TTAP or other funds continue to be available.

21.7 Educational Programs and Other Support Services

To supplement mainstream educational services and curriculum in the elementary and secondary schools, the Government has arranged for the establishment of several programs and projects such as:

Curriculum: Language, Social Studies, Mathematics, Science, Health, Palauan Studies, Vocational Education, Physical Education, Population education, and Title VII (bilingual);

Special Programs: Special Education, High School Prep., Support Services, Community Education, Long Distance Ed/Teacher Training, Computer Services, Visual Media Services, Material Production Services; and

Support Services provided through specially funded programs: Food Service - a child nutrition program serving U.S. Department of Agriculture type A meals in schools and providing nutrition training for personnel involved in school meals preparation, and Vocational Rehabilitation - a direct service to eligible handicapped individuals with counseling, physical therapy, training, transportation, interpretation, job placement and other assistance.

21.8 Organization of Ministry of Education

The Ministry of Education is directly responsible for the implementation of national policies and regulations pertaining to the development of elementary and secondary education services. The executive functions of the Ministry include research for the development and improvement of school curricula, administration
of personnel, budget preparation, teacher training, testing and evaluation, logistics and maintenance of school and administrative facilities, provision for instructional supplies, materials, equipment and other facilities, and implementation of specific programs. The budgetary support is provided directly by the Government from its annual unified budget and is supplemented by other sources, primarily United States Federal program grants.

The organizational structure of the Ministry of Education consists of the Minister, two Directors responsible for the Bureaus of School Administration and Curriculum & Instruction, and Division Chiefs responsible for specific areas including elementary education, secondary education, curriculum and program development. Each elementary and secondary school is headed by a school principal. Other education programs and activities are administered by the relevant divisions.

The Ministry of Education has no direct responsibility in the operations of non-public or church-based educational institutions. However, non-public schools are required to be chartered by the Government, and they are also required to submit reports of student attendance and other matters of public concern. The Government provides some financial support each academic year to non-public schools.

PROBLEMS AND ISSUES

The problems and issues pertaining to elementary and secondary education and post-secondary vocational education in the Republic are described in the following sections:

21.9 Elementary and Secondary Education

a. Need for Education Policy Guidelines

There is no Board of Education actively engaged in providing guidance for the decisions being made by the administrators of the Ministry of Education. The code for education in Palau needs to be updated. The role of State governments and parents in establishing school policies needs to be expanded.

b. Organizational Structure

The current organizational structure impedes the education administrator’s capacity for exercising sufficient leadership. The administrative structure for planning, decision making and program assessment needs to be more responsive to current school needs and provide greater leadership in identifying and resolving school problems.

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Students need to have a greater role in local school policy decision making a factor considered important in designing school academic and extra-curricular activities.

c. Need to Improve Quality of Education

The quality of instruction at most elementary and secondary schools needs to be improved. The lack of quality instruction has been identified as partially a product of the current method of evaluating staff and the existing method of grouping students which has created an uneven transition between elementary and secondary schools.

d. Need for Upgrading the Curriculum to be more Relevant

The major issues relating to elementary and secondary education curriculum are the following:

i. Shortages in resources and funding for implementation of a new and comprehensive Curriculum Framework

ii. Focus on the improvement of basic skills such as Palauan English, Mathematics, and Social Studies and integrate the teaching of Palauan culture into the overall curriculum.

iii. Withdrawal from school during the ninth grade (i.e., the first year of secondary education). No thorough studies have been done to evaluate the advantages and disadvantages of a formalized transition stage between elementary and secondary schooling in order to counteract this pattern of student withdrawal.

iv. Response to changing demands placed on the youth. In particular, two areas of emphasis are weak or missing at the secondary education level: preparation for entrance to college and for vocational careers (especially job readiness skills), and

v. Incorporation of on-site community experience as well as the involvement of out-of-class community experience in vocational education programs.

e. Students Achievement to be Based on a Set of Minimum Performance Standards

Problems in student achievement have been identified as due to

i. The need to improve the quality and regularity of information available on students’ progress.

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Grading of a student's performance needs to be standardized in order to establish a set of minimum performance standards and

The value of work (self-sufficiency) and community services are not sufficiently stressed as an appropriate yardstick for student achievement.

**Budget and Funding**

Public elementary and secondary education are provided free of charge to students since the Government is committed to providing and encouraging education for all children up to a secondary education level. Such services necessarily entail substantial cost to the Government's budget. In FY 1993 the Ministry of Education's total recurrent expenditure amounted to $3.49 million which was approximately 15 percent of the total Government recurrent expenditure. Approximately 62 percent of the expenditure is financed through U.S. Department of Interior direct grants and local revenues, with the balance provided for by U.S. Federal Program grants which are to be used exclusively for special educational programs. Many of these programs can now legitimately be considered an integral part of the mainstream curriculum of elementary and secondary education. The phasing out of U.S. Federal Program grants under the Compact will have serious adverse impact on the education programs.

In view of the uncertainty of future funding provisions, there is clearly a need to explore and evaluate alternative potential sources of funding. While the Government will continue to bear the direct public educational expenses, there is a need to define the financial responsibility of parents and the community in meeting students' other educational activity related expenses, such as transportation to school, hot lunch programs, residential costs for students from the outer islands, and special educational programs.

**2110 Post-Secondary Vocational Education: Palau Community College**

The long-range plan undertaken by PCC has identified the following major problems and issues:

- PCC applicants often do not have a precise understanding and conception of what is entailed in a career lifestyle, the Micronesian economy and the possibilities of employment after graduation with a vocational certificate. Entering students are often only vaguely familiar with the programs offered by PCC.

- Although the dropout rate has decreased in recent years, there is still a concern about the latest rate of 22 percent. The main reasons for the dropout seem to be lack of motivation. Among women, pregnancy makes a significant contribution to the drop-out rate. The easing of these problems will necessarily require greater counseling of students and monitoring of their progress.
c. The employment and job placement program for PCC graduates needs to be improved. Studies show that a sizable number of PCC graduates have failed to secure productive employment. While graduates' success in securing employment is related to the growth of the economy, it also depends on the extent to which PCC is able to provide information about the job market and job placement. A well-developed job placement program at PCC will help enable graduates to find employment.

d. PCC has limited funds with which to refurbish and expand the buildings and instructional equipment. In February of 1994 the College did begin a dormitories renovation project; however, more funds are needed to continue the renovation program.

DEVELOPMENT OBJECTIVES

21.11 Education Development Objectives

The education of Palau citizens and the development of the education sector will be geared towards attaining the following objectives:

a. Provide equal opportunities and access to elementary and secondary education for all citizens.

b. Educate the population on the need to participate in the nation-building process by instilling in students the value of Palauan identity and by inculcating in them a set of values and attitudes which will contribute to the economic, social, political and cultural development of the nation.

c. Improve the quality of education by upgrading the curriculum at elementary, secondary and post-secondary educational institutions, as well as by raising the performance standards of students and providing higher level of training for teachers.

d. Encourage students to pursue higher education abroad in specialized disciplines contributing towards the enhancement and augmentation of local manpower capability;

e. Provide adequate infrastructural and administrative support by upgrading and expanding school classroom and library facilities and developing the research and planning capacity of the Ministry of Education;

f. Secure greater involvement of students, families, communities and State governments in education; and
Develop and maintain adequate statistics on the education sector and compile and use timely information on manpower and educational needs in existing and potential labor markets for the purpose of planning and developing educational programs and services.

POLICIES AND STRATEGIES

21.12 Development of Elementary and Secondary Education

Policies and strategies to be implemented by the Ministry of Education for the development of elementary and secondary education are as follows:

21.13 Developing Education Policy Guides

a. National Board of Education

A National Board of Education with the specific responsibility of framing policies in those areas concerned with the implementation of the education code at elementary secondary and post-secondary levels will be established. An updated education code will be drafted and officially adopted.

A Board of Education will be established within each State government with the specific responsibility for making policies in those areas concerned with the implementation of the education code at the elementary school level and

The role and responsibility of parents and communities will be increased

b. Strengthening the Organizational Structure

Implement the administrative structure of the Bureau of Education as proposed in a recent reorganization study. Emphasis will be given to the development of an effective planning and evaluation mechanism and data bank recording of the accomplishments of the student, staff and program.

c. Improving the Quality of Education

The quality of instruction will be improved by increasing the skills performance and dedication levels of classroom teachers, and more specifically by:

i. Establishing minimum academic degree requirements for teachers.

ii. Improving staff development, in-service training and the current method of evaluating staff performance.

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iii. Providing more instruction time for basic skills curriculum and maintaining improved records of students performance;

iv. Making the different grade levels in education reflect the changing emphasis of a student's personal development and needs;

v. Determining the feasibility of providing Government-sponsored kindergarten schools to allow children to start formal schooling at an earlier age;

vi. Considering extension of the number of years of mandatory school attendance to the twelfth grade in conjunction with changes in the basic curriculum; and

vii. Creating systematic community experience opportunities which will be provided to students to assist them in learning job survival skills and vocational trades from actual employers in real job settings.

d. Curriculum Development

Improve basic skills instructions and learning techniques by:

i. Implementing new curriculum frameworks;

ii. Identifying successful schools through U.S. Dept of Education programs and adopt those schools’ practices where appropriate; and

iii. Consulting with and getting cooperation from parents and community members in implementing the new Curriculum Framework;

iv. Establishing grades 7-9 as transition years requiring a unique method of instruction which emphasizes individual responsibility, community experience and informal counselling provided by teachers; and

v. Integrating the teaching of Palauan culture by establishing a group of community elders who can assist as teachers of traditional crafts, values, survival skills, arts and music.

e. Student Achievement and Performance

Student achievement and performance will be improved by institutionalizing the following:

i. An annual testing program which will employ locally developed tests and more standardized evaluation methods; and

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ii. Standardized student assessment criteria aligned with the Curriculum Framework will be established, along with the assessment instruments, and procedures and the reporting of grades.

21.14 Post-Secondary Education and Vocational Education

a. Pala’au Community College

The PCC will be required to provide quality instruction in the areas of vocational studies to meet the skill requirements of the economy. An in-depth assessment and forecast of the manpower requirements in the Republic’s economy will be undertaken during the Plan period to assist the PCC in further development of the vocational curriculum.

The Government will endeavor to allocate additional funds to supplement the operational budgetary requirements of PCC. The Government will pursue a cooperative effort with other Micronesian governments to plan for the future financial requirements of PCC.

b. Study Abroad

There is a need to prepare professionals with formal university training in the fields of medicine, health related disciplines, engineering, computer science, education, law, etc. Interested students must pursue such higher studies abroad. The Government will extend financial support, in the form of scholarships or student loans, to eligible students to pursue university studies abroad. Additionally, the Ministry of Education and PCC will assist students to prepare for university entrance examinations and to secure admissions in the university.

PROGRAMS AND PROJECTS

The programs and projects planned to be undertaken during the Plan period for the development of education are described below. Most of the programs are ongoing and their funding are derived from U.S. Federal grants, but their inclusion will highlight their special features in the education development process. For funding of programs/projects 21.9 to 21.14, see Table 21.e.

21.15 Projects under the Education Consolidated Improvement Act (ECIA) of 1981

These are the ongoing education programs, better known as programs under Chapter 2 of the Elementary and Secondary Education Act (ESEA) of 1965. The funds for these programs have been provided exclusively by the U.S. Federal Program grants under several ESEA grant categories. Brief description of the programs and their total cost and source of funding are as follows:

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a. **Chapter 1 Program**: To provide supplemental services to meet the needs of educationally deprived children in basic skill areas. The program is administered by the Bureau of Curriculum & Program Development of the Ministry of Education in both public and private elementary and secondary schools in Palau. The Chapter 1 Program will cover establishment of school libraries and resource centers used in providing strengthened language and mathematics services, establishment of multimedia assisted instructional facilities and training of teachers to utilize these resources to improve instructional delivery.

b. **Chapter 2 Program**: To provide supplemental services to implement effective school practices. The Program is administered by the Bureau of Curriculum & Instruction of the Ministry of Education in both public and private elementary and secondary schools in Palau. Chapter 2 supplements activities to improve student learning in instructional areas (including English, Science, Math, Social Studies, Vocational & Trades, Health, Social Studies, Community Ed, and Physical Ed) by providing coordination, material production support, staff development and training, parent involvement, and implementation of curriculum framework. Chapter 2 also provides supplemental services to improve management of resources, delivery of services to schools, responsiveness of the Ministry to student needs, and the collection and evaluation of student and program data to track program progress.

c. **Special Education**: To provide services to school-aged children and youth with disabilities to enable them to function in the school setting.

d. **Drug Free Program**: To provide educational services aimed at prevention of drug and alcohol abuse and to promote drug free and healthy lifestyles.

21.16 **Bilingual Education Programs**

The purpose of this program is to continue to provide services to all elementary and secondary level students in order to improve their ability to function in an increasingly bilingual world environment.

21.17 **Vocational Rehabilitation Program**

A program designed for disabled persons to enable them to become self-sufficient and thus to have an active participation in the life and development of their communities. Activities of the program include: evaluation of rehabilitation potential, counseling and guidance, job placement, and vocational training services.

21.18 **Food Service Program**

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The program is designed to feed children in grade schools. Palau High School and private schools. It provides breakfast and hot lunches to students. The main purpose of this program is to help the needy parents meet the requirements for their children's growth.

21.19 Teacher Training

A program of continuing capacity building and establishing certification goals aimed at improving instructional service delivery. The program continues the still unfinished tasks of upgrading the teaching level of the educational system and developing avenues for continuing improvement of teachers and instructional personnel.

21.20 School Improvement Project

An effort to improve educational effectiveness through implementation of Curriculum Framework, staff development and teacher certification, technology education and technology assisted instruction, and participation in effective/exemplary school training and workshops.

21.21 National Scholarship Program

Enables eligible secondary school and vocational school graduates to pursue higher studies abroad, leading to university degrees or college diplomas

Estimated cost: FY 1995-99, $1,090,000

Source of funds: OEK appropriations

21.22 Block Grants to Palau Community College

To supplement PCC's budget which has been derived from grants provided by the U.S. Government and student tuition and other fees.

Estimated cost: FY1995-FY1999, $12,500,000

Source of funds: OEK appropriations

21.23 Population Education

This is a program for increasing the awareness of population issues and their impact on the society and economy. The program will continue to develop population education materials and conduct workshops and training for school and out-of-school population in population issues.

Estimated cost: FY 1995-99, $100,000

Sources of Funds: UNESCO and UNFPA.
TABLE 21.e: Ongoing Federally Funded Programs, 1993

<table>
<thead>
<tr>
<th>Program</th>
<th>Funding 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher Training</td>
<td>$185,445</td>
</tr>
<tr>
<td>Special Ed Chapter 1</td>
<td>67,285</td>
</tr>
<tr>
<td>Special Ed Part B</td>
<td>649,032</td>
</tr>
<tr>
<td>Special Ed Personnel Prep</td>
<td>75,000</td>
</tr>
<tr>
<td>Special Ed Preschool</td>
<td>8,863</td>
</tr>
<tr>
<td>National Diffusion Network</td>
<td>72,225</td>
</tr>
<tr>
<td>Math/Science</td>
<td>30,000</td>
</tr>
<tr>
<td>Project LEAD</td>
<td>28,404</td>
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<tr>
<td>Title IV Desegregation</td>
<td>76,145</td>
</tr>
<tr>
<td>School Improvement</td>
<td>365,331</td>
</tr>
<tr>
<td>Chapter 2 State</td>
<td>299,834</td>
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<tr>
<td>Chapter 2 LEA</td>
<td>1,198,354</td>
</tr>
<tr>
<td>Chapter One</td>
<td>947,870</td>
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<tr>
<td>Drug Free Gov</td>
<td>84,017</td>
</tr>
<tr>
<td>Drug Free State</td>
<td>196,181</td>
</tr>
<tr>
<td>Bilingual Elem</td>
<td>140,945</td>
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<tr>
<td>Bilingual Transitional</td>
<td>252,000</td>
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<tr>
<td>Title 7 State</td>
<td>75,000</td>
</tr>
<tr>
<td>Voc Ed Improvement</td>
<td>65,000</td>
</tr>
</tbody>
</table>

Source: Ministry of Education

Table 21.e reflects other program funding requirements of the Ministry of Education and PCC during the Plan period.


<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>PCC Block Grants</td>
<td>2,500</td>
<td>2,500</td>
<td>2,500</td>
<td>2,500</td>
<td>2,500</td>
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<tr>
<td>National Scholarship Program</td>
<td>218</td>
<td>218</td>
<td>218</td>
<td>218</td>
<td>218</td>
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<tr>
<td>Population Education</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
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<tr>
<td>Total</td>
<td>2,738</td>
<td>2,738</td>
<td>2,738</td>
<td>2,738</td>
<td>2,738</td>
</tr>
</tbody>
</table>

Source: Ministry of Education

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Seventh Day Adventist School
Palaia High School
INTRODUCTION

The implementation of programs and projects in the various sectoral Plans will be undertaken by the relevant Government agencies. In most cases there will be interfaces among the various Government agencies for the execution of programs and projects.

There are also Boards, Commissions, and other Authorities which function independently of the mainstream Government administration but nevertheless carry out many of the Government’s executive, administrative, and development activities. The role of some of these Boards, Commissions, and Authorities, such as the Palau Housing Authority and the Palau Visitor’s Authority for example, have been specified in relevant sectoral Plans. Others, such as the Alcoholic Beverages Control Board, have not been treated in the sectoral Plans. The importance of such semi-autonomous institutions is fully recognized, and they will continue to play their development functions on behalf of the Government.

The development role of certain critical Government agencies which do not otherwise appear in the sectoral Plans are treated in this Plan chapter. They include: A. Bureau of Lands and Surveys; B. Public Safety; and C. Legal Affairs and Judicial Services.

22.A BUREAU OF LANDS AND SURVEYS

CURRENT SITUATION

22.A.1 Organization and Development

The Bureau of Lands and Surveys was established by Executive Order No. 116 under the Ministry of State. The Bureau of Lands and Surveys, headed by a Director, is subdivided into three main branches: (a) the Administrative Branch—handling the administrative responsibilities of the Bureau; (b) the Records and Resources Branch—providing land title, land records, and other technical services on all land matters, and records private leases and homesteads; and (c) the Survey and Mapping Branch—providing surveying and mapping services to two independent agencies, the Palau Public Land Authority and the Palau National Land Commission, as well as to the National and State Governments.
The main functions of the Bureau of Lands and Surveys are surveying and mapping of all lands in the Republic. The Bureau offers its surveying, mapping, and other technical services to the Palau Public Land Authority and the Palau National Land Commission, both of which are semi-autonomous government agencies. The main function of the Palau Public Land Authority is to hold the public lands in trust for the citizens of Palau, within their jurisdiction as specified by law, whereas the major responsibilities of the Palau National Land Commission is to register all public and privately owned lands and to determine the ownership of the lands.

Due to budgetary constraints, most of the projects executed by the Bureau of Lands and Surveys have been concentrated on the Koror State cadastral programs, National and State capital improvement projects and other smaller projects.

PROBLEMS AND ISSUES

22.A.2 Logistic Problems

The main task of the Bureau in surveying, mapping and registration is to provide accurate and immediate results of these activities in order for the Palau National Land Commission and its Land Registration Teams to carry out the land adjudication and determination processes.

22.A.3 Concentration of Activities in a Few Areas

Most of the activities of the Bureau of Lands and Surveys are concentrated in the Koror State area, in particular the Cadastral programs and the Capital Improvement Projects of the Government. Little has been done in other States outside of Koror State, and for the public in general.

22.A.4 Need For Further Surveys and Return of Public Lands Program

Land surveying and adjudication is an issue of national importance. The return of public lands to the original owners is mandated by the National Constitution. The need to survey lots has therefore increased since approximately 60% of the total national land area may fall within the definition of "public land."

The social problems caused by land disputes are increasing as measured by the increasing number of court cases involving land ownership claims. Furthermore, potential foreign investors may be reluctant to make major investments in Palau when the legal status of land is not clearly determined.

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DEVELOPMENT OBJECTIVES

22.A.5 Land and Surveys Development Objectives

In order to clarify land ownership issues and improve the registration and survey of all lands in Palau, the Government will continue to improve and upgrade the technical capabilities and staffing of the Bureau of Lands and Surveys.

POLICIES AND STRATEGIES

22.A.6 Land and Surveys Policies and Strategies

To strengthen the surveying, mapping and registration of lands capabilities of the Bureau of Lands and Surveys, the Government’s development strategies will be to:

a. Improve the technical expertise and staffing of the Bureau by providing opportunities for appropriate training of the current staff and, on the basis of a detailed work program, ensure adequate staffing;

b. Continue to provide the Bureau with modern technical equipment for surveying and mapping;

c. Provide for budgetary allocations for outside expertise and consultants whose services will be needed for determining the appropriateness of technical equipment and surveying techniques; and

d. Review the land adjudication process to determine if it can be made more efficient.

PROGRAMS AND PROJECTS

In addition to the ongoing programs and activities, the following programs and projects will be undertaken by the Bureau of Lands and Surveys during the Plan period. The budgetary provisions for the Palau Public Land Authority and Palau National Land Commission were made in the recurrent budgetary allocations since they will mainly incur expenses for current operations.

22.A.7 Training Schemes

Staff will be trained to increase expertise in soil surveying, management and administration of surveying and mapping activities, and computer applications. The cost for upgrading the skills of the staff of the Bureau of Lands and Surveys will be absorbed in the recurrent budgets of the Bureau and the PCC. Actual training of the staff will be handled inhouse as well as at the PCC.

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22.8 PUBLIC SAFETY

CURRENT SITUATION

22.8.1 Development

The major functional components of the Bureau of Public Safety are: the police force (patrol and criminal investigation and narcotics), fire protection, prison services and administration, and marine surveillance. The police, fire, prison services, and marine surveillance functions are executed by the Bureau of Public Safety under the Ministry of Justice. Disaster preparedness is through the National Emergency Management Office under the Office of the Vice President.

a. Police Force

The demand for police services has increased primarily due to a rise in criminal offenses related to the increasing urban population and changing lifestyle and cultural values. The problem has been compounded by alcohol-drinking and drug abuse.

Much of the increase in crime has been conducted by juveniles. Most of the crimes are committed by the male population, but the criminal activity of both adult and juvenile females is on the increase. A number of criminal offenses in the States outside of Koror may have gone unrecorded in the past because of a lack of access of the offended to bring their complaints to the national police force although officers have been stationed in outlying States recently.

The police force, through the Division of Patrol, also maintains traffic law and order, including issuance of vehicle licenses and their registration, and checking the condition of vehicles each year. With the development of road infrastructure and general economic activities during the last four years, the volume of road traffic has increased significantly, requiring manned traffic direction at certain road junctions during peak traffic hours. Criminal offenses relating to road traffic have also increased.

Drug trafficking through the Republic and its territorial waters is an area of major concern of the Government. It is observed that drug trafficking originates in Southeast Asian countries and transits through Palau for Guam and other destinations. It is believed that the destination of smuggled drugs are primarily Guam, Hawaii and the West Coast of the United States (US) mainland. The transportation mode of smuggling is both by sea and air. Two drug detection dogs are used at the airport and seaports to help locate illicit narcotics.

The police force has been deployed to check smuggling in the open sea within the Republic’s territorial waters. The Division of Customs of the Ministry of
Administration and the Division of Immigration of the Ministry of Justice also has responsibility for controlling the illegal traffic of goods at the Palau International Airport.

b Fire Protection

The Division of Fire Prevention currently deploys fire brigade personnel under the supervision of the Fire Chief to attend to all fire incidents as well as to provide service at the international airport during each flight operation. The Division relies on its fire truck and other necessary fire equipment required for an effective operation.

The Division of Fire Prevention advises the Government and private industrial establishments on the installation of appropriate fire protection devices and fire preventive measures.

c Marine Surveillance and Protection

The National Government recognizes the need to protect the marine environment from damage and to control and check the depletion of resources. Laws and regulations have been designed to ensure protection and guard against the depletion of marine resources. To enforce these laws and to check the infiltration of non-licensed foreign vessels in the exclusive economic zone of the Republic, effective marine surveillance is required. Emphasis on marine surveillance and marine resource protection functions are under the Division of Marine Law Enforcement.

Marine surveillance operations need to be increased particularly with aerial surveillance. However, possibilities do exist for requesting the services of the US Coast Guard stationed in Guam as well as the hiring aircraft service from a local air service company.

d Prison Administration Services

The security, supervision and discipline and welfare of all offenders committed to prison are the responsibilities of the Division of Corrections and Rehabilitation.

The National Jail is located adjacent to the Office of the Bureau of Public Safety in the center of Koror. The jail is currently in the process of being expanded and renovated.

For the general welfare of the prisoners, the Division of Corrections and Rehabilitation has devised a wide range of programs for the rehabilitation of
prisoners. These programs include prison maintenance, schooling, woodcarving, fishing, "scared straight" program for juvenile delinquents, and other community services.

**Training Program**

Major developments in training have taken place with police officers undergoing advance training at such academies as the Alaska Trooper Public Safety Academy, the Micronesian Regional Public Safety Academy, and the US National FBI Academy at Quantico, Virginia. The Micronesian Regional Public Safety Academy was instituted in 1985. It is affiliated with the Palau Community College in Koror and provides a range of courses in public safety measures so that public safety personnel from Palau, the Federated States of Micronesia (FSM) and the Republic of the Marshall Islands (RMI) are able to secure training at a minimal cost. Virtually all police personnel have had formal training either at home or abroad.

22.8.2 Organization

The Bureau of Public Safety, managed by a Director who is assisted by a Deputy Director, consist of six separate divisions, each of which is headed by a Chief plus the administration. The divisions are:

- **The Division of Criminal Investigation** is responsible for carrying out investigation of all major crimes committed within the Republic.

- **The Division of Corrections and Rehabilitation** is responsible for the security and management of the National Jail and also for the security and monitoring of juvenile delinquents upon incarceration.

- **The Division of Fire Prevention** is charged with the responsibility of fighting fires which pose a threat to life and property, and for inspecting private industrial and public facilities for possible fire hazards. Fire extinguishers are provided to Government facilities. The Division only recommends the appropriate type of equipment to the general public. The Division deploys a fire truck at the airport. The Division also operates an ambulance service with the Ministry of Health.

- **The Division of Patrol** carries out the major law and order enforcement activity within the Republic. Other specific functions of the Patrol Division include acting as honor guards for official ceremonies; staffing State substations, and enforcing traffic regulations.

- **The Division of Marine Law Enforcement** is responsible for protection of the marine environment. The Division also checks for the infiltration of non-licensed foreign vessels in the exclusive economic zone of the Republic.

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The Division of Narcotics Law Enforcement is responsible for enforcing the laws related to the production, use, sale and transportation of illicit narcotics.

Additionally, Public Safety’s Administration Office handles the general administrative tasks of the Bureau, and the Special Assignment Section is responsible for the court bailiffs, investigation work for the Attorney General and executive security services for the President.

PROBLEMS AND ISSUES

22.B.3 Juvenile Delinquency

Juvenile delinquency is a major social problem and concern of the Government. Its causes are deeply rooted in the dynamics of society which has become increasingly modernized under the influence of Western culture and values. The problem of juvenile delinquency also stems from a lack of adequate economically productive employment prospects for youth, particularly those graduating high school and vocational school as well as school dropouts. The issue of juvenile delinquency has to be addressed in the broader context of manpower development, employment generation and specific programs for youth activities. See Chapter 21 on Education.

22.B.4 Drug Trafficking

The increased flow of smuggled drugs through the Republic and its territorial waters is a concern for the Government. The Bureau of Public Safety, the Division of Immigration and the Division of Customs have increased their activities at airport and seaport including the introduction of drug detection dogs.

22.B.5 Fire Hazard and Protection

The Division of Fire Prevention needs to improve its servicing capacity and repair facilities. Servicing expertise occasionally is sought from Hawaii at very high cost. There is also concern about the capability of the fire fighting equipment to take measures against fire outbreaks in buildings and structures above the second floor level.

22.B.6 Prison Facilities and Services

The existing prison facility needs renovation and expansion. The location of the jail premises in the administrative center of the Republic’s capital is inappropriate. Ongoing programs for the rehabilitation of the prisoners have proved to be effective.
22.8.7 Marine Surveillance

Marine surveillance activities are organized within the Bureau of Public Safety. The marine surveillance activity needs to be supported by aerial surveillance and additional boats.

22.8.8 Maintenance of Criminal Records

Criminal records are currently not maintained by the States outside Koror. Even at the Bureau of Public Safety, criminal record maintenance needs to be improved.

22.8.9 Manpower and Training

With the increase in urban population in the State of Koror and the continuing demand for public safety services, the Bureau of Public Safety needs to upgrade the qualifications of its manpower through advanced training. Training for both police and fire brigade personnel is required on a continuing basis in virtually all areas.

DEVELOPMENT OBJECTIVES

22.10 Public Safety Development Objectives

The objectives for the maintenance of law and order and safety for the public and the use of the nation's resources are to:

a. Ensure compliance with the laws and regulations promulgated by the Government.

b. Protect all persons from unlawful violence and provide for protection against damage to property.

c. Provide for the internal security of the Republic, and provide security for the highest officials of the National Government and foreign dignitaries while in the Republic.

d. Enforce effective measures against trafficking of drugs and other illicit trading within and through the Republic and its territorial waters.

e. Enforce measures against illegal exploitation of living and non-living marine resources including minerals.

f. Provide for an effective fire prevention program and fire fighting services to the general public, including airport operations, and
g. Provide a secure facility for housing prisoners and develop and implement programs and counselling services for the rehabilitation of prisoners so that they can live a normal life and contribute meaningfully to society after their release from prison.

POLICIES AND STRATEGIES

22.8.11 Enhancement of the Manpower Capability of the Police Force

The National Government assumes the responsibility for the safety and protection of the citizens and residents of the Republic. The Bureau of Public Safety will continue to provide the major support for the orderly enforcement of laws and regulations. For the Bureau to implement its public safety measures, it needs to be properly manned with sufficiently well-trained personnel. The Government will provide for adequate funds to employ police personnel and make provisions for training of all personnel.

22.8.12 Increasing Focus on Juvenile Delinquency

The Government will increase vigilance over the juvenile population to prevent them from committing crimes. Special programs in social and economic areas will be devised to restrain and check offenses committed by youth.

22.8.13 Control of Drug Trafficking and Other Illicit Trading

The Bureau of Public Safety, the Division of Customs, and the Division of Immigration will continue to enforce strict measures to check the trafficking of drugs through the Republic and its territorial waters.

The Government will seek the assistance and cooperation of the governments of Guam, the Commonwealth of the Northern Mariana Islands (CNMI), the FSM and the US to identify the drug trafficking routes and assist each other to enforce measures to check and control all types of illicit trading through the Republic. Sufficient number of patrol officers and custom and immigration personnel will be deployed at both the international airport and other ports of entry. Deployment of drug dogs at the airport and seaports will continue.


A fully equipped fire brigade will be developed to ensure adequate measures against potential loss and damage caused by fire incidents. An additional fire truck will be sought, and all fire brigade personnel will be given adequate training in fire-fighting methods.

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Fire protection rules and regulations will be formulated and enforced during the Plan period. All Government and private facilities will be required to install and maintain fire-fighting equipment, including fire extinguishers as specified by the Bureau of Public Safety.

22.B.15 Upgrading of Prison Facilities and Services

The Government is currently upgrading and extending existing prison facilities and accommodations for the prison inmates. During the Plan period, a study will be undertaken to determine the feasibility of relocating the existing prison premises. The prison administration will be strengthened with adequate manpower, and the precise number of prison administration personnel will be determined during the first year of the Plan period.

Existing rehabilitation programs will be further developed, and new programs developed to engage the prisoners in socially and economically productive activities. Counseling programs for the prisoners will be provided for by the Ministry of Health.

22.B.16 Strengthening of Marine Surveillance Operation

For the efficient operation of marine surveillance as well as for emergency marine rescue operations, adequate manpower will be provided, along with a fully equipped surveillance boat. The current Patrol boat has recently been repaired and is now active after some time of inactivity.

22.B.17 Better Maintenance of Criminal Records and Other Public Safety Statistics

The Bureau of Public Safety will develop a computerized data system for recording all vehicles, boats, and criminal records in their appropriate categories. All such statistics are vital for the monitoring of crimes and enforcement of public safety measures.

PROGRAMS AND PROJECTS

Programs and projects to be implemented during the Plan period are for the improvement of public safety services and the continued upgrading of the national jail.

22.B.18 Acquisition of Another Patrol Boat for Marine Surveillance

To enhance marine surveillance, aerial surveillance and additional patrol boat will be acquired for the Bureau of Public Safety.

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22.B.19 **Upgrading and Extension of the National Jail**

To further improve the physical condition of the national jail, major physical renovation and extension of the jail will continue.

Estimated cost: $350,000

Source of funds: Ongoing CIP funds

22.B.20 **A Study to Identify Drug Trafficking Routes and Measures to Control Drug Trafficking**

This is a priority program of the Bureau of Public Safety in view of the Republic's urgent need to stop drug trafficking through the country or its territorial waters. Technical assistance from the US Drug Enforcement Agency (DEA) will be sought to implement this program.

Estimated cost: $30,000.

Source of funds: Technical assistance from a U.S. Federal agency

22.C **BUREAU OF LEGAL AFFAIRS**

**CURRENT SITUATION**

22.C.1 **Historical Development**

Traditionally, clan and community elders were responsible for enforcing community values and resolving disputes by established customs and traditionally accepted norms of behavior. In addition, families were responsible for enforcing a private code of conduct for children.

The German and Japanese administrations introduced European concepts of Justice. The current legal system is modeled after the United States'. With respect to criminal laws, the OEK proscribe certain conduct by statute and the executive branch is responsible for enforcing those laws. All criminal defendants are entitled to counsel and are innocent until proven guilty beyond a reasonable doubt in a court of law. Once proven guilty, the court determines the proper punishment, within the guidelines established by law. Persons may also be subject to criminal prosecution pursuant to local customary law not inconsistent with the written law.

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Palau's civil law is embodied in a mix of statutory, customary, and common law. Thus, recognized customary law, to the extent it does not conflict with the written law, has the full force and effect of law. Additionally, the common law of the United States, to the extent it does not conflict with written law or customary law, also has the force and effect of law.

23.C.2 Organizational Structure

a. Public Sector Services

The Ministry of Justice, through the Bureau of Legal Affairs, is responsible for enforcing the laws of the Republic. The Ministry of State, through the Office of the Public Defender, provides counsel to criminal defendants who cannot afford the services of a private attorney.

b. Private Sector Services

The private bar currently consists of approximately forty lawyers and five trial counselors. Trial counselors are not attorneys, but due to their specialized skills and knowledge are permitted to engage in a limited practice of law. Trial counselors may not represent persons charged with a felony or any party in a civil suit where the amount in controversy is $10,000 or more, absent permission from the client and approval of the judge.

The Micronesian Legal Services Corporation (MLSC) is a Micronesian-wide program which offers free legal services to low-income citizens of Micronesia and the US since (1971). MLSC has a central office in Saipan, and branch offices in Palau, Yap, Chuuk, Pohnpei, Kosrae, Majuro, and Ebeye. Each local office is headed by an attorney, and has one or more staff attorneys and/or trial counsellors, as well as secretarial staff. MLSC is funded principally through U.S. appropriations. It currently faces serious funding shortages and its future funding is uncertain.

Unless appointed by the Court, MLSC is limited to representing clients on civil matters and cannot undertake representation of a person charged with a crime. This limitation is imposed by U.S. statute.

c. Bureau of Legal Affairs

The Bureau of Legal Affairs, headed by the Attorney General, is comprised of the Office of the Attorney General and under it, the Division of Corporate Registry and the Division of Immigration. The Division of Immigration is a separately staffed division with its own Director. The Division of Corporate Registry is a subdivision within the Office of the Attorney General.
i. Office of the Attorney General

The Office of the Attorney General is responsible for enforcing the laws of the Republic and represents the Executive Branch in all civil matters. Thus, the legal functions carried out through the Office of the Attorney General include:

1) Rendering legal services and assistance to all agencies of the Executive Branch of the National Government, reviewing and drafting of Government contracts and legislation, and performing legal research;

2) Representing the Executive Branch in all civil litigation, including administration of personal injury litigation, contract litigation, land, environment, and debt and tax collection cases;

3) Reviewing legal matters concerning operations of all proposed corporations, cooperatives, credit unions and associations chartered in Palau, and providing legal advice to the Foreign Investment Board on matters relating to foreign investment business permit applications;

4) Advising the Chief Executive on actions to be taken on legislative proposals pending before the Dibiil Era Kelau (OEK), State governments, as well as bills enacted by the OEK;

5) Enforcing all existing criminal laws and quasi-criminal laws, and prosecution of criminal cases and other related matters. Perform and coordinate law enforcement related functions and activities, in conjunction with the Bureau of Public Safety; and

6) Enforcing all immigration laws of the Republic.

The Office of the Attorney General has expanded its operations to meet the growing and increasingly complex legal demands of the National Government. Currently, in addition to the Attorney General, there are seven full-time assistant attorneys general. One of the assistants works full-time for the Environmental Quality Protection Board and a second is assigned full-time to the Foreign Investment Board. In addition to the assistant attorneys general, there are two trial counselors.

ii. Division of Corporate Registry

The Division of Corporate Registry, headed by the Registrar of Corporations, issues, receives and holds as custodian all certificates, papers and other required public records of business entities operating in Palau.
iii. Division of Immigration

The Division is headed by a Chief and is responsible for enforcing the Republic's immigration and naturalization laws; processing passports, visa and other entry permit applications to Palau; and performing entry and exit inspections of all passengers for proper travel documents.

DEVELOPMENT OBJECTIVES

22.C.3 Employment of Palauan Citizens

Currently, expatriates provide most of the legal services in the Executive Branch. This is due in large part to the unavailability of qualified local lawyers interested in working for the Government. One of the Republic's long-term development strategies is to replace the expatriate government lawyers with qualified Palauan citizens. To do so, the Government will encourage its citizens to pursue careers in the legal profession through career counselling and by extending scholarships to interested and qualified students to attend law schools in the United States.

22.C.4 Office of the Attorney General

a. Continue to provide effective legal advice to the Executive Branch on all matters relating to legal and legislative issues, and which are in the best interest of the Republic and its people;

b. Assist the Government in all legal matters and in the enforcement of laws, in conjunction with the Bureau of Public Safety, for the protection of the Republic's properties, and the resources of the land and those within the territorial waters and the Exclusive Economic Zone of the Republic;

c. Strengthen the enforcement schemes for immigration matters; and

d. Provide legal advice to the Government for the negotiation of contracts and agreements with all private concerns, agreements with other countries and public agencies, to ensure that the economic and social interests of the Republic are best served.

POLICIES AND STRATEGIES

22.C.5 Overall Policy and Strategy

The overall policy and strategy of legal and judicial services concern the promotion of employment of our people in the legal and judiciary services sector.
At present almost all key legal services positions in the Executive Branch are held by expatriates, which is largely due to the non-availability of qualified citizens. A few very well qualified citizens currently practice law in the private sector.

The replacement of expatriates with qualified citizens in the Government's legal services positions will entail a long term strategy. The Government will encourage citizens to pursue careers in the legal profession by providing financial assistance. Financial support through scholarship programs and career counselling will be extended to interested and qualified students to attend law schools in the US.

22.C.6 Office of the Attorney General

a. Establish a statutory authority in the Bureau of Legal Affairs to conduct immigration inspection, to check the flow of contraband items, including drugs, illegal arms possession and other illicit trading;

b. Provide for additional computer software programs to support the maintenance of legal case records and other data; and

c. Improve access to better research facilities by strengthening the research capability or function of the law library.

PROGRAMS AND PROJECTS

22.C.7 Legal Affairs And Judicial Services

In order to improve and take advantage of education and training opportunities, the Supreme Court will maintain a regular dialogue and coordination with the neighboring countries, in order for the Judiciary staff and judges to participate in the following training programs: 1) judicial education, 2) justice training, 3) judicial administration and continuing legal education. Funding for this program is within the recurrent budget for the Judiciary.
Fire Department, Bureau of Public Safety, Ministry of Justice
Supreme Court Building Housing the National Courts, the Office of the Attorney General, Immigration and the Public Defender