Assessment of agricultural information needs in African, Caribbean and Pacific (ACP) States for CTA's Products & Services

Phase 2: Pacific

Country report: Palau

Final report

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on behalf of the

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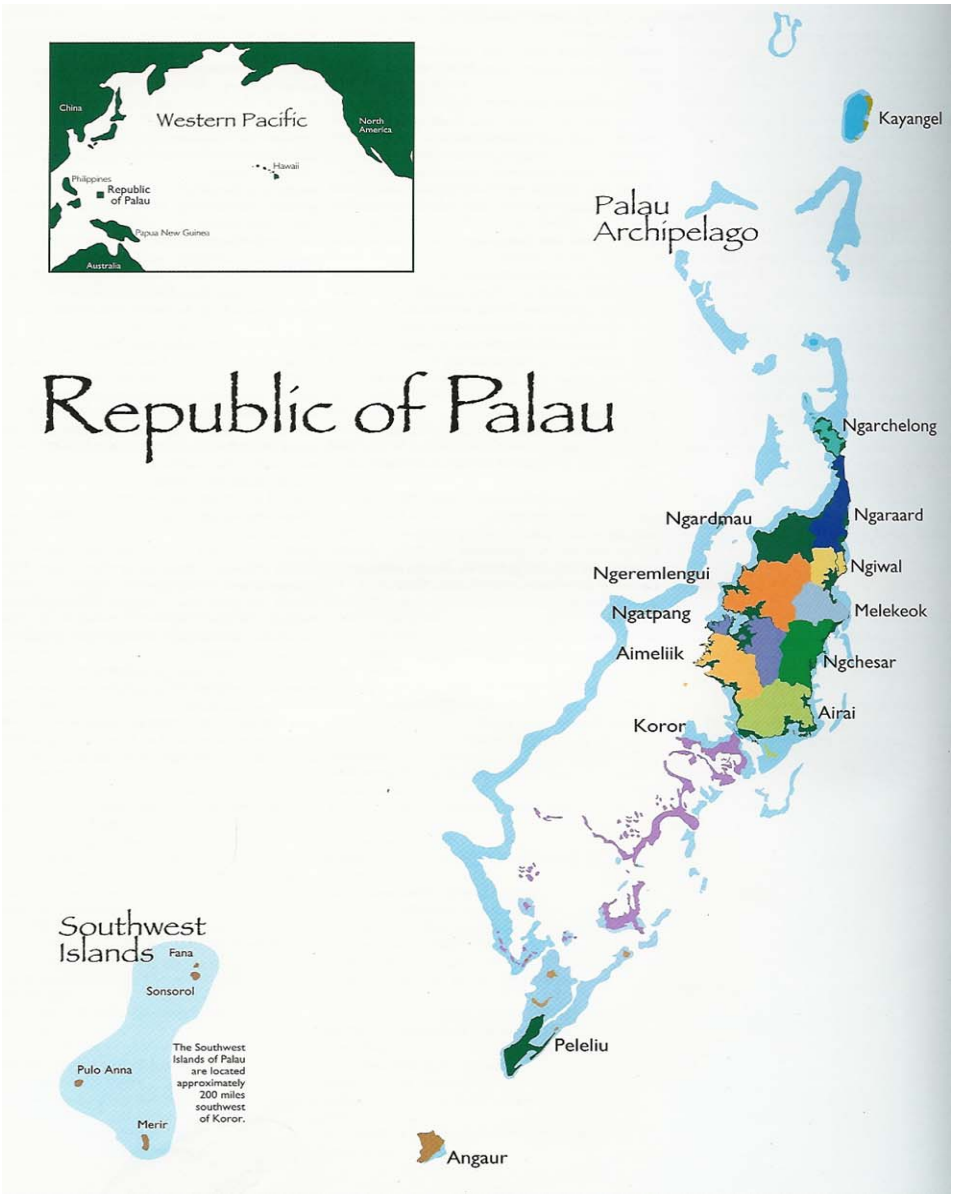
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Airai
Koror
Southwest Islands
Fana
Sonsorol
The Southwest Islands of Palau are located approximately 200 miles southwest of Koror.
Pulo Anna
Merir
Peleliu
Angaur

List of Acronyms

ACP	African, Caribbean and Pacific
BOA	Bureau of Agriculture
BOFM	Bureau of Oceanic Fisheries Management
BMR	Bureau of Marine Resources
BNRD	Bureau of Natural Resources and Development
COFA	Compact of Free Association (Independence Agreement between Palau and U.S.)
COM LGP	College of Micronesia's Land Grant Program
CTA	Technical Centre for Agricultural and Rural Development
DMR	Division of Marine Resources
FSM	Federated States of Micronesia
GDP	Gross Domestic Product
GIS	Geographic Information Systems
ICM	Information and Communication Management
ICT	Information and Communication Technology
IRETA	Institute for Research, Extension and Training in Agriculture
IT	Information Technology
JICA	Japanese International Cooperation Agency
MAREPAC	Marine Resources Pacific Consortium
MRD	Ministry of Resources and Development
NEPC	National Environmental Protection Council
NMDP	National Master Development Plan
NRCS	United States Department of Agriculture – Natural Resource Conservation Service
OEK	Olbiil Era Kelulau (Palau National Congress)
OERC	Office of Environmental Response and Coordination
OISCA	Organization for Industrial, Spiritual and Cultural Advancement
PACER	Pacific Agreement on Closer Economic Relations
PALARIS	Office of the Palau Automated Land and Resource Information System
PAN	Protected Areas Network
PCAA	Palau Community Action Agency
PCC	Palau Community College
PCC-CRE	Palau Community College – Cooperative Research and Extension
PCS	Palau Conservation Society
PICTA	Pacific Island Countries Trade Agreement
PFFA	Palau Federation of Fishing Associations
PICRC	Palau International Coral Reef Center
PMDC	Palau Mariculture Demonstration Center
PNCC	Palau National Communications Corporation
PNRC	Palau Natural Resources Council
REA	Rapid Ecological Assessment
SIDS	Small Island Developing States
SPC	Secretariat of the Pacific Community
SPBCP	South Pacific Biodiversity Conservation Programme
SPREP	Pacific Regional Environment Programme
SOPAC	South Pacific Applied Geosciences Commission

TNC	The Nature Conservancy
UH	University of Hawaii
UOG	University of Guam
UNCLOS	United Nations Convention on the Law of the Sea
USD	United States Dollar
USP	University of the South Pacific

Rates of Exchange

Throughout this report, the rate of exchange used is USD/EUR is 1.2323 USD = 1 euro (European Commission rates of exchange for October 2004, as published at http://europa.eu.int/cgi-bin/make_inforeuro_page/en/USD).

Executive Summary

Introduction

The Republic of Palau is the westernmost archipelago in the Pacific made up of 586 islands stretching across an area of approximately 1,120 kilometers. The total land area of all of the islands in Palau is approximately 487 km^2 (Otobed, 1994). A former U.S. Trust Territory, Palau became an independent nation on October 1, 1994 after over 20 years of negotiations. Although still closely affiliated with the United States, Palauans now control their own destiny. Under the Compact of Free Association (COFA), the 50-year "independence agreement" which governs relations between Palau and the United States, Palau receives trust funds plus 15 years of budgetary support to decline at five year intervals over the15 years. Palau having achieved political independence is now faced with the challenge of achieving economic independence.

Like many Pacific Island Countries and Territories, Palau is limited by its geographic remoteness and small population size (approximately 20,000). Agriculture, forestry and fishing comprise a relatively small share of the total national output and income. While there certainly is potential for growth, especially in agriculture to meet more demand for food and fiber for domestic production, the likelihood of that happening soon is small. The reason for agriculture's limited role is Palau's small market, which cannot take advantages of economies of scale that make commercial agriculture financially successful (Osman, 2000).

The Ministry of Resources and Development (MRD) is the key institution within the national government responsible for developing and implementing strategic planning on natural resources at the national level. Currently the main agencies within the MRD that handle agriculture, forestry and fisheries are the Bureau of Agriculture (BOA), the Bureau of Oceanic Fisheries Management (BOFM), and the Bureau of Marine Resources (BMR). Several semi-government agencies and non-government organizations also play a critical role in Palau's agricultural and rural development. More information on the institutions in Palau's agricultural sector can be found in Section 2.1.1 and Annex 2.

Objectives of the Study

The objectives of the study were: to identify agricultural information needs of key actors / beneficiaries for CTA products and services; to identify needs of potential actors / beneficiaries of CTA activities and services in terms of building capacity for information and communication management; to identify potential partners / beneficiaries for CTA activities and services; and, to develop some baseline data to facilitate subsequent monitoring activities.

The study is intended to assist the three operational departments of the CTA as well as its local representatives to improve and better target interventions and activities aimed at potential partners and beneficiaries (including women, youth, private sector and civil society organisations); to have a more informed picture of their needs and aid in the elaboration of a strategy and framework of action. The study should also highlight where there are specific needs for CTA's products and services thereby enabling improvement in the delivery of the same.

Methodology

The methodology used to gather the information for this report included a desk review of literature and information sources as well as face-to-face interviews conducted with relevant stakeholders using a standard set of questions to facilitate the interviews. There were 21 individuals interviewed from 17 different government and civil society institutions (including private sector).

Findings

As reported in Walton's paper for the CTA Seminar in 2000, in terms of agricultural ICM capacity, Palau too suffers from a lack of resources (staff and materials), non-existent information policies and strategies, and staff with little or no training, a relatively low standard of education and little appreciation (crucially, among senior staff and policy makers) of the role of information in decision-making, research, rural development and public awareness (Walton, 2001).

Regarding human capacity and adequate numbers of staff, nearly all institutions reported a shortage of staff. Several organizations nonetheless reported that they had enough staff in terms of numbers, however the staff did not have the professional capacity to carry out the required functions of their positions. After conducting the interviews it is clear that institutions generally do little or no research and investigation to acquire or develop information when information needs arise. The ability to identify and voice information needs remains a primary constraint for most institutions.

It is clear that the concept of an ICM policy or strategy is new to nearly all agencies and organizations interviewed. Most agencies focus only on the actual work without adequate monitoring and evaluation of the effectiveness and efficiency of their work. Thus, ICM issues rarely are addressed. Information needs in Palau for agricultural and rural development are somewhat limitless, however, the problem is more related to the fact that most do not know what their information needs are. Few, if any, understand and have a clear picture of what is needed to improve Palau's production and key institutions do not always agree on which direction to take for agricultural and rural development. Inadequate communication, coordination and collaboration among and between institutions are key problems. Capacity building needs for ICM in Palau begin with the need for an increased knowledge of what ICM is and what purpose an ICM policy or strategy would serve. The priority areas where there are capacity building needs for ICM and ICT are:

- Basic computer skills (MS Word, Access, Publisher, Excel, etc.)
- Improvement in organization planning, administration and management skills;
- Information literacy skills;
- Information systems development and management skills;
- Professional level proficiency in IT, relational database management, database design, programming, GIS, remote sensing; and,
- Skills to develop strategic policies to carry out information activities.

Conclusions & recommendations

There is considerable scope for CTA's programs to enhance the ICM capacity in Palau and to add value to the agricultural and rural development situation. CTA's Information Products and Services, Communication Channels and Services and the ICM Skills and Systems Departments have identified key problems to be addressed which are almost all relevant to Palau's needs. While most institutions are new to the concept of ICM, all agreed that there is a need to improve ICM across all institutions in Palau. The Palau Natural Resource Council (PNRC) may be an appropriate body to play a role in CTA interventions, particularly in creating better awareness of the role ICM plays in formulating policy and meeting objectives of institutions. All agencies interviewed welcome the potential assistance CTA may be able to provide in the future.

1. Introduction

1.1 Background

The following assessment was conducted at the request of the Technical Centre for Agricultural and Rural Development (CTA). CTA's tasks are to develop and provide services that improve access to information for agricultural and rural development, and to strengthen the capacity of ACP countries to produce, acquire, exchange and utilize information in this area. CTA's programs are organized around three principal activities: *providing an increasing range and quantity of information products and services and enhancing awareness of relevant information sources; supporting the integrated use of appropriate communication channels and intensifying contacts and information exchange (particularly intra-ACP); and developing ACP capacity to generate and manage agricultural information and to formulate information and communication management (ICM) strategies, including those relevant to science and technology.*

CTA works primarily through intermediary organizations and partners (non-governmental organizations, farmers' organizations, regional organizations, etc.) to promote agriculture and rural development. Through partnerships, CTA hopes to increase the number of ACP organizations capable of generating and managing information and developing their own information and communication management strategies. The identification of appropriate partners is therefore of primordial importance.

The "Evaluation of the Implementation of the Mid-Term Plan (1997–2000)" emphasized the need for CTA to develop a more pro-active approach and elaborate criteria for decision-making with regard to the choice of partner organizations and beneficiaries. Based on this evaluation, the "Strategic Plan and Framework for Action – 2001–2005" identifies strategic issues for CTA being: improved targeting (including partnerships and beneficiaries), geographical coverage, decentralization, regionalization and thematic orientation. The Plan also expresses concern about: the extent to which CTA's activities are relevant to and reach the poor, gender awareness and how to identify potential partners especially in the independent sectors. Besides partner identification and selection issues, the observation has also been made that, traditionally, the Pacific and Caribbean regions have not received sufficient attention in CTA's programs and activities. This is, for example highlighted in the statistics on the number of individuals and organizations that were receiving CTA's publications or participating in workshops and training courses. Furthermore, the admission of six new Pacific member states under the Cotonou Agreement (one of which is Palau) means not much is known about them, hence the need to develop an intervention strategy and provide more targeted assistance. Finally, various national and regional partners with whom CTA has had a long-standing relationship have requested the current study in order to provide more targeted assistance to their beneficiaries.

1.2 Objectives

The objectives of the study are:

- To identify agricultural information needs of key actors / beneficiaries for CTA products and services;
- To identify needs of potential actors / beneficiaries of CTA activities and services in terms of building capacity for information and communication management (ICM);
- To identify potential partners / beneficiaries for CTA activities and services; and,
- To develop some baseline data to facilitate subsequent monitoring activities.

The study should assist the three operational departments of the CTA as well as its local representatives to improve and better target interventions and activities aimed at potential partners and beneficiaries (including women, youth, private sector and civil society organizations); to have a more informed picture of their needs and aid in the elaboration of a strategy and framework for action. The study should also highlight where there are specific needs for CTA's products and services thereby enabling improvement in the delivery of the same.

1.3 Methodology

This report was conducted through a desk review of the literature available and interviews with individuals from 17 different government and civil society institutions. A total of 21 individuals were interviewed for this report from the following institutions:

1. Bureau of Agriculture
2. Bureau of Marine Resources
3. Palau Community College – Cooperative Research and Extension
4. Bureau of Oceanic Fisheries Management
5. Palau Community Action Agency
6. USDA – Natural Resource Conservation Service
7. International Cooperation and Development Fund, Republic of China (Taiwan), Agricultural Technical Mission
8. Office of the Palau Automated Land and Resource Information System (PALARIS)
9. Palau Conservation Society
10. The Nature Conservancy
11. Palau Federation of Fishing Associations
12. OISCA – International, Palau Chapter
13. Palau Organic Farm
14. Senate Committee on Resources and Development
15. Office of the Minister, Ministry of Trade and Commerce
16. Office of the President
17. Women's Resource Center

2. Country Profile

A former U.S. Trust Territory, the Republic of Palau became an independent nation on October 1, 1994 after over 20 years of negotiations. Although still closely affiliated with the United States, Palauans now control their own destiny. Under the Compact of Free Association (COFA), the 50-year "independence agreement" which governs relations between Palau and the United States, Palau receives trust funds plus 15 years of budgetary support to decline at five year intervals over the 15 years. Palau having achieved political independence is now faced with the challenge of achieving economic independence.

Palau, part of the Western Caroline Islands, is the westernmost archipelago in the Pacific located approximately 250 kilometers north of the equator and about 340 kilometers east of the Philippines (Smith, 1983). The archipelago stretches approximately 1,120 kilometers on a northeast to southwest axis and is made up of over 586 islands of which 12 are regularly inhabited. There are five geological island types found in Palau: volcanic, high limestone, low limestone, atolls, and a combination of volcanic and limestone (Crombie, 1999).

The main archipelago, which lies 7 degrees north of the equator, comprises 14 of the 16 states of Palau. The grouping extends from Kayangel, the northernmost atoll to the volcanic island of Babeldaob, the largest island in Palau (396 km^2). Koror is located south of Babeldaob and is the Republic's administrative and economic capitol. While it is only 18 km^2, approximately 70% of the population resides in Koror. South of Koror are the world famous Rock Islands (several hundred uninhabited limestone islands) where Palau's world class dive sites are found. The Rock Islands are comprised of uplifted limestone reefs and consist of over 500 islands stretching over Palau's southern lagoon area. The main archipelago ends in the South with the low platform and reef islands of Peleliu and Angaur. Total lagoon area in Palau is approximately 1,137 km^2 and the total reef area is approximately 535 km^2. According to the vegetation survey of Palau (which covers most, but not all islands in Palau), the majority of the land area in Palau is covered by native forest, totaling approximately 31,000 hectares. Areas of agroforestry and plantation forest make up a total of approximately 1,135 hectares (Cole, 1987).

Some 300 – 500 kilometers Southwest from the main archipelago, accessible only by ship, lie the sparsely populated and ethnically distinct Southwest Islands (Otto, 1998). These islands are made up of reef flats that have been subjected to uplift. The Southwest Islands are the most geographically isolated and comprise the remaining two states of Sonsorol and Hatohobei (Tobi).

With the exception of Kayangel, Angaur, and the Southwest Islands, all of the Palau islands are located within one barrier reef. Palau's exclusive fishing zone is 22.2 kilometers, 5.5 kilometer territorial seas, with a 375 kilometer extended fishing zone, which comprises an area of approximately 600,900 square kilometers (OERC, 2002).

Like many other Pacific nations, Palau is limited by its geographic remoteness and small population size. Tourism is the greatest contributor to Palau's economy. Agriculture,

livestock, forestry and fishing comprise only a small share of the total national output and income. While there certainly is potential for growth, especially in agriculture to meet more demand for food and fiber for domestic production, the likelihood of that happening soon is small. The reason for agriculture's limited role is Palau's small market, which cannot take advantages of economies of scale that make commercial agriculture financially successful (Osman, 2000).

As pointed out in a recent presidential task force on agricultural development, it costs less to import food and fiber than to produce them in Palau. While exceptions do exist, this situation of imports meeting more of the demands for food and fiber is common to the Small Pacific Island economies where small markets and small landmasses prevent the establishment of large commercial agricultural enterprises (Osman, 2000).

In rural Palau, most households earn a part of their livelihood from subsistence farming and fishing. Women grow staple crops such as taro, cassava and sweet potato. Men provide the protein for the household's diet by catching fish. Rice has recently become an important staple food. Bread made of imported wheat flour has gained popularity as a staple also mainly in urban Koror, where several commercial bakeries operate (Osman, 2000).

Among the most pressing problems agriculture faces, especially in small economies, is the availability of adequate labor willing to work on farms and capital to invest in both skills and facilities. As agriculture is always subject to uncertainties dictated by nature, and demand for food does not necessarily go up with rising income, its earning potential is both limited and unpredictable (Osman, 2000).

A bill was recently passed in the national congress to provide tax incentives to agriculture/aquaculture projects, however it is limited in that only five projects are allowed in the first five years and all require a minimum investment of USD 50,000 (40,575 euro), not including land value.

2.1 Agriculture, Fisheries and Forestry

The traditional agriculture system in Palau is broadly similar to those found elsewhere in Oceania. Female produced agricultural products together with male and female harvested marine and forest products provided a self-sufficient food system with in-built security against natural and economic disasters. Today remnants of the traditional system still remain. Virtually all mature rural Palauan women and many urban women produce some of their households food needs through cultivation of a garden or gardens (mainly taro and cassava). Typically a woman will have one or more taro gardens (wetland) and at least one dryland garden for cassava (other crops are grown in and around these primary crops, such as sweet potato, *kangkum* (a local spinach), banana, coconut, papaya, pineapple and others). Most crops produced in this informal economy are used for family food and customary exchange. Only small amounts reach the market and still smaller amounts are reflected in official economic statistics (Otto, 1998).

Palau is unusual in the Pacific in that agriculture contributes little to the GDP. The contribution of agriculture to the GDP went from 9.8% in 1983 to only 1.2% in 1999 when the GDP from agriculture was USD 1.4 million (1.14 million euro). This significant decline may be more related to the lack of consistent and systematic agricultural data collection. In addition to this, under-representation of the informal

sector in official economic statistics further complicates the analysis. A 1996 survey placed the value of the informal sector (consisting primarily of agricultural products) at five million dollars, which is twice the value of agricultural products being recorded in official economic statistics. Another survey estimated the betel nut trade (consisting of domestically produced nuts, leaves and lime, and imported tobacco) to be valued at USD 9.8 million (7.95 million euro). Clearly, there is a great deal more agricultural productivity in Palau than recorded officially. Despite this, statistical measures demonstrate that agriculture is declining in importance in comparison to other economic sectors (Bishop, 2001).

Agriculture, Fisheries and Forestry are recognized as important sectors to the development of Palau. However, the institutional framework and political will for the development of these sectors is weak. This is evidenced by the lack of staff and materials provided to key institutions responsible for agricultural development. For example, the Bureau of Agriculture currently operates with approximately 50% of positions vacant. The annual budget appropriated to the Bureau is barely enough to cover the salaries of those positions filled (31 employees in total). The annual budget given to the Bureau for FY2004 was approximately USD 345,000 (279,964 euro) of which over 80% of this amount is used to cover salaries leaving very little for operational expenses including utilities, supplies, equipment maintenance, fuel, etc.

As stated in the recommendations made in Palau's National Master Development Plan (NMDP), increased emphasis will need to be placed on Agriculture and Forestry if they are to play a meaningful role in Palau's development. (SAGRIC, 1996).

2.1.1 Institutional Framework for Agriculture, Fisheries and Forestry

The Ministry of Resources and Development (MRD) is the key institution within the national government responsible for developing and implementing strategic planning on natural resources at the national level. Currently the main agencies within the MRD that handle agriculture, forestry and fisheries are the Bureau of Agriculture (BOA), the Bureau of Oceanic Fisheries Management (BOFM), and the Bureau of Marine Resources (BMR). Several semi-government agencies and non-government organizations also play a critical role in Palau's agricultural and rural development.

Bureau of Agriculture (BOA)

The Bureau of Agriculture has four main operational departments: Horticulture & Extension, Livestock & Animal Husbandry, Quarantine & Plant Protection Services, and Forestry. The Palau Forestry Unit within the Bureau of Agriculture has five main sub-programs supported by grants from the U.S. Forest Service. These are – (1) Conservation Education, (2) Cooperative Lands Forest Health Protection, (3) Forest Resource Management, (4) Reforestation, Nursery and Genetic Resources, and (5) Urban and Community Forestry. While these programs have been extremely valuable in providing the much-needed support for the forestry program in Palau, the Forestry Unit can only access a limited amount of technical and financial assistance due to program requirements. For example, many programs require a 50% cost share and some require a certain level of capacity that Palau is unable to support (e.g. full time entomologist or pathologist on staff). The Livestock & Animal Husbandry department has only one staff and three vacant positions. The Horticulture & Extension department also has one

extension agent and three vacant positions. The Quarantine & Plant Protection Services department has two vacancies and eight full-time employees however eight staff is not sufficient to handle the responsibilities of quarantine. With the increasing volume of imports coming into Palau at the airport, seaport and post office, Quarantine staff is often overwhelmed and unable to perform their duties to the best of their ability. In addition to the shortage of manpower, all of the programs at the Bureau suffer from a lack of basic necessities to perform their functions such as adequate supplies and equipment (e.g., fuel, paper, printer ink, computers, tractors/tillers, vehicles etc.). The Quarantine and Plant Protection Services department however receive considerable technical and financial assistance from the Secretariat of the Pacific Community (SPC) and as a result are one of the better-resourced departments within the Bureau.

Bureau of Marine Resources (BMR)

The BMR's responsibilities encompass exploring, surveying, developing, managing, and conserving all marine resources. The responsibilities also include the regulation of foreign fishing, including licensing, inspection, port sampling, maintenance of analysis of catch reports and observer programs. The Bureau of Marine Resources is divided into four sections. These are: (1) Fisheries Development, (2) Fisheries Management, (3) Conservation and Protected Areas, and (4) Aquaculture and Mariculture. Administration is under the Director of the Bureau who is responsible for implementation of the overall work plan, the supervision of staff, control of the budget, planning, the training of staff, and for information services and distribution. The Fisheries Development Section of the BMR is divided into four programs: (1) Fisheries Extension Services; Fishing Community Development Projects, (2) Technology Trials, Survey and Training, (3) Vessel Operation and Maintenance, (4) Seabed and Mineral Resources. The Palau Mariculture Demonstration Center (PMDC) is part of the Aquaculture & Mariculture Section of the BMR and has been cultivating giant clams for over 20 years. Since PMDC's establishment, giant clam farms have been established in many states. In 2002, an initiative began to transfer clam-farming technology to state authorities and private individuals. To date, PMDC has assisted the States of Ngaraard, Ngiwal, Ngatpang, Ngchesar, Ngarchelong, Kayangel, Hatohobei, Ngardmau and Peleliu set up clam farms. More support is needed for follow up, monitoring and evaluation of the effectiveness of these initiatives.

Bureau of Oceanic Fisheries Management (BOFM)

The BOFM is mandated by law to handle all of the nation's responsibilities regarding oceanic fisheries management including the licensing of pelagic fishing operations within Palau waters. The BOFM handles the collection of information from local fishing vessels as well as from local enforcement and regulatory agencies such as the Division of Marine Law Enforcement and the Bureau of Marine Resources. The BOFM's main project is to collect pelagic fisheries statistics and maintain a database on target species and by-catch information as reported by fishing vessels. The BOFM's Port Sampling Program requires complete data collection on species, weight and length of all off-loaded catch. The BOFM also operates the vessel communication system whereby fishing vessels can be tracked at all times for monitoring and surveillance purposes. The BOFM also suffers from inadequate resources – human, technical and financial. The Bureau operates with eight staff on a budget of $122,000 per year.

Palau Community College – Agriculture Program

The Palau Community College (PCC) offers a two-year Associate of Science degree in Agricultural Science, a two-year Certificate of Achievement, and shorter term Certificates of Completion for specific areas or skills. With an Associate of Science degree, a further two years would be required at a University or a four-year college to obtain a Bachelor degree in Agriculture. The program began in 1976 but suffered declines in the 1980s and 1990s to the point that in the school year 1992-93, the program had no students. Enrollment went up after 1993 when a new instructor was hired who had a master's degree from the University of Hawaii and experience as a Peace Corps Volunteer in Yap State of the Federated States of Micronesia (FSM). The program is experiencing a decline again as the only instructor is currently on a 2-year Sabbatical leave and the program is being run again without adequate staff. PCC's agricultural program also suffers from inadequate land resources (Miles, 1994).

Palau Community College– Cooperative Research and Extension (PCC-CRE)

PCC-CRE operates the College of Micronesia's Land Grant Program (COM LGP), which is part of a network of USDA Land Grant colleges and universities. The program is administered from a central office in Pohnpei, FSM. PCC-CRE offers both research and extension programs in agriculture and related fields. The mission of the PCC-CRE is to collaborate with partners and clients to generate, develop and disseminate practical relevant and sustainable technologies and knowledge in agriculture, environment, food and human sciences to benefit the people of Palau.

PCC-CRE's principal research programs address critical issues that contributed to the decline of agricultural development in Palau. The programs also work toward the ultimate goal of a sustainable agriculture market economy. PCC-CRE plays a critical role in providing planting material to farmers of disease-free and high yielding varieties of root crops. This is expected to help increase overall productivity. Through the continued maintenance of the germplasm collection of the staple root crops, namely sweet potato, cassava and taro, PCC-CRE has also played a critical role in preserving the genetic diversity of these important crops for Palau.

Palau Community Action Agency (PCAA)

The Palau Community Action Agency (PCAA), a semi-autonomous government agency committed to reducing poverty in all its dimensions among all people in Palau through promoting growth, especially of the sectors which will expand opportunities for the needy and build their human capital to enable them to participate effectively in the growth process. The agency implements empowerment approaches to poverty reduction by facilitating social mobilization.

In conjunction with the government, the agency has adopted a multi-fold strategy to reduce poverty. The key elements of the strategy are interlinked and build on each other. They consist of:

- pursuit of rapid and sound economic growth;
- promotion of human development; and,
- enhancing social capital of the needy by fostering organizations of the poor and their capacity building.

PCAA offers extension education through its programs on food production, nutrition and employment. Their aim is to improve the health of the people of Palau through increased production and consumption of family-grown food. PCAA provides periodic trainings, on-site advice, extension materials, including seeds and other planting material. PCAA also assists small farmers through training in marketing and providing small business advice to help farmers develop and maintain a consistent and profitable product.

CIVIL SOCIETY (NON-GOVERNMENT SECTORS)

The Palau Organic Farm is by far the most commercial farm in Palau and operates at a loss each year. This company mainly grows vegetable crops, particularly Chinese cabbage. It is an affiliated company in a network of over 50 companies mainly located in Japan. Palau Organic Farm is beginning a new venture into the commercial production of Palauan Noni (*Morinda citrifolia*) juice for local consumption and export. This venture is expected to be much more profitable than the current vegetable production.

There are several larger-scale long-line fishing companies however the majority of their catch is exported to Japan and very few Palauans are involved in these operations. The private sector for agriculture, fisheries and forestry is predominantly made up of subsistence farmers and fisherfolk. A large portion of the people living outside of Koror, make at least part of their living by selling crops or marine products (taro, cassava, fruit and vegetables, fish, sea cucumber, clams, etc.). People who make up this informal sector often times are part of cooperative fishing and farming associations in their respective State.

There are many small-scale markets in Koror for farmers and fisherfolk to sell their produce and fish/seafood products. However, domestic markets are hampered by a lack of steady produce supply, fluctuating commodity prices, periodic marketplace surpluses, variability in produce grown, profits limited by consignment and scarce information on market outlets, size, production and prices (Del Rosario, 2001)

Palau Federation of Fishing Associations (PFFA)

The PFFA is a national federation of locally based fishing and farming cooperatives that was initially incorporated as a non-profit organization through the High Commissioner in 1974 during U.S. Trust Territory times. PFFA is dedicated to providing quality fisheries-related services to the general public through close coordination and collaboration with Palauan fishermen and their respective chartered state fishing cooperative associations. Operating as a non-profit, membership currently consists of 11 charted community-based fishing and farming cooperatives. PFFA has a Board of Directors, consisting of members from each of the 11 local cooperatives. PFFA was established to serve as both a purchasing and marketing agent for each constituent charter cooperative. While PFFA has the potential to play a critical role in the sustainable development of Palau's fisheries and agriculture, lack of financial and political support has impaired their ability to carry out their very important function.

Palau Conservation Society (PCS)

Since 1994, PCS has been working with Palauan communities to protect natural resources through establishing locally managed conservation areas, developing watershed management strategies and increasing awareness about all aspects of conservation and protection of natural resources. PCS has worked with several states to

create, monitor and manage many marine protected areas over the years. Recognizing the importance of forests and sustainable land use for marine protection, in 2002 PCS began to focus more effort on working with communities and partner agencies on conservation and awareness projects on Babeldaob Island, where much of the new development is occurring. PCS is currently working on a Community Visioning initiative, which aims to help states go through a process to develop a shared vision based on the community's shared core values. This initiative is hoped to assist states in their land-use planning efforts.

The Nature Conservancy (TNC)

The Nature Conservancy has been working in Palau since 1990 and has contributed significantly to conservation efforts in Palau. TNC initially worked in partnership with the national government (primarily with the Division of Marine Resources (DMR), formerly under the Bureau of Natural Resources and Development (BNRD), which reorganized in 2002 to form what is now called the Bureau of Agriculture and the Bureau of Marine Resources); moving to assisting establish the Palau Conservation Society (PCS); then ongoing collaboration, support and services to local partner organizations. Examples of activities since 1990 are:

- coordinated and conducted rapid ecological assessments (REAs) of the main and southwest islands to identify key species, habitats, and communities requiring conservation.
- assisted the Division of Marine Resources in advocating for policy and regulatory reform for the harvest of Palau's marine resources, with an emphasis on the comprehensive Marine Resources Protection Act, passed in 1994.
- coordinated surveys and studies into saltwater crocodiles, dugongs, and sea turtles, grouper spawning aggregation sites, and current modeling.
- assisted Koror State in management of the Rock Islands, including development of a comprehensive management plan and establishment of a mooring buoy program for Palau (resulting in the current capability of the Koror State Rangers to install and maintain mooring and demarcation buoys at all major dive and tourist sites, and marine conservation areas); and,
- assisted in the development of the Protected Areas Network (PAN) legislation and currently supporting its implementation.

COORDINATION BODIES

Palau Natural Resources Council (PNRC)

Created in 2001, the Palau Natural Resources Council (PNRC) is an informal group comprising of all the key land management agencies, both government and non-government including private sector members. The council promotes cooperative efforts working with local communities, governments, agencies, NGO's, and others to achieve our goals and to increase public awareness on issues relating to soil, water, plant, and related natural resource conservation. The major objectives of the PNRC relate to: Agricultural Sustainability, Biodiversity Protection, Invasive Species Control, and Water Quality and Quantity Protection.

The members of Palau Natural Resource Council include: Bureau of Agriculture, Bureau of Lands and Surveys, Bureau of Marine Resources, Bureau of Public Works, Community Members/Farmers, Council of Chiefs, Environmental Quality Protection

Board, Natural Resource Conservation Service (USDA), Office of Environmental Response and Coordination, Palau Association of Governors, Palau Community Action Agency, PALARIS, Palau Community College Agriculture Science Program, Palau Community College - Cooperative Research and Extension, Palau Conservation Society, The Environment Inc., and The Nature Conservancy.

MAREPAC

Palau's Marine Resources Pacific Consortium (MAREPAC) is one of nine entities that make up the Marine Resources Pacific Consortium (MAREPAC). MAREPAC was formed in 1999 to address issues relating to the marine environment in the Pacific. MAREPAC's mission is to work cooperatively to achieve the conservation of coastal and marine environments and the sustainable use of marine resources for the benefit of the present and future generations of our islands.

The local MAREPAC-Palau group has three main goals: 1) to promote the wise, appropriate, and sustainable use of coastal and marine resources to ensure present and future generations enjoy the benefits of these resources; 2) to better understand the status of our commercial and non-commercial marine resources in order to provide policy makers and private sector managers with up-to-date information so they can implement sustainable environmental practices; and 3) to enhance communication and coordination between all the stakeholders regarding Palau's marine resources.

The members of MAREPAC-Palau include: the Bureau of Marine Resources, Community Centered Conservation, Community Conservation Network /Helen Reef Resources Management Project, Coral Reef Research Foundation, Global Coral Reef Monitoring Network, Koror State Department of Conservation and Law Enforcement, Division of Fish and Wildlife Protection, Office of Environmental Response and Coordination, Palau Community College Cooperative Research and Extension, Palau Conservation Society, Palau International Coral Reef Center, Office of PALARIS, The Environment, Inc., and The Nature Conservancy.

National Environmental Protection Council (NEPC)

The National Environmental Protection Council (NEPC) is a high-level policy council recently created in 2002 by Executive Order 205. The NEPC is mandated to provide for better planning and coordination of environmental initiatives within the Republic as well as ensuring that Palau fulfills its obligations under various international environmental agreements and treaties that have been ratified.

2.1.2 Agricultural Produce Sector

Agriculture in Palau appears to be entering an 'extended dualism' phase [what on earth does extended dualism mean, and where did this term come from?]. That is, crops are produced for subsistence and for sale in typical dual-economy mode, but traditional crops of importance to both social activities and subsistence, principally taro, are now often produced with the assistance of hired, foreign labor (Bishop, 2001).

Increasingly, Palauan farmers and landowners (many of whom have full-time jobs) are hiring foreigners (mainly Filipino, Chinese, Korean or Bangladeshi) to farm their plots of land. Most often, local landowners provide very little oversight or direction to their farmers. One individual reported during an interview that this trend is resulting in

foreign workers becoming the main decision-makers regarding land-use practices for agriculture. Language barriers between resource agencies and these foreign workers add an additional challenge to the agriculture situation in Palau.

The availability of arable land in Palau exceeds current needs. Approximately 14% of Palau's land is classified as arable by virtue of soil type and slope (6,475 hectares out of a total of 48,562 hectares). In 1994, 2% (11 km^2) of all land was farmed. Ten years later, only a slight increase (if any at all) can be expected. There is considerable potential for expanded production of vegetables, fruits and staple crops without further clearing of forested land. Subsistence crop production is the predominant agricultural activity in Palau, with the main crops being taro, cassava, sweet potato, banana and coconut. Betel nut (Areca catechu) and betel pepper leaf (Piper betle) are also commodities of considerable importance as are 'backyard' chickens and pigs. Commercial agricultural activity in Palau however is limited with less than five commercial farms operating in the Republic (Otto, 1998).

2.1.3 Marine Produce Sector

Palau's marine resources include 1,706 km2 of reefs, lagoons, passes and mangroves, at least 70 marine lakes, and the open sea with more than 600,000 km2 of exclusive economic zone. Marine resources include more than 3,500 species. At least 270 fish and invertebrates are sources of food. At least 250 species are sold in the aquarium trade and at least 100 species have medicinal use (The Environment, Inc., 2003).

Traditionally, every Palauan family produced much of its protein requirements by the harvest of in-shore and near-shore marine resources. This practice continues today. As is the case for agriculture, much of this productivity is not recorded in official statistics. Statistics on marketed production show that catch rates are generally declining despite growing domestic demand and high market prices. Depletion of inshore fishery resources is a primary reason for declining catches. Depletion results from: (1) over-harvest; (2) abrogation of traditional conservation practices; and (3) ineffectual management of fishery resources by traditional, state, and national leaders (The Environment, Inc., 2003).

Although Palau has extensive deep-water fish resources, the offshore fishing industry contributes only marginally to the economy. In 1992, fisheries (primarily off-shore) were valued at $13 million (16% of GDP). In 1999, fisheries were valued at only $3 million (2.6% of GDP). Disappointing catch rates, low domestic returns on profits earned by foreign fishing companies operating in Palau, and inability of local entrepreneurs to develop a value-added fish-based industry and shore-based support facilities for foreign fishing fleet are all factors contributing to the low economic value of fisheries to the domestic economy at the present time (The Environment, Inc., 2003).

2.1.4 Forestry Sector

Currently, there is little commercial forestry activity in Palau. Most of Palau's timber needs are met through imported timber from the U.S. and Australia. An estimated 75% of Palau's land area is covered with native forest, with upland, mangrove and swamp forest types predominating. Most of the grassland/savanna areas of Palau were probably forest before being converted to grassland through shifting agriculture, clearing and

burning. A large proportion of these areas could again support forestry activities with appropriate rehabilitation and management.

The U.S. Forest Service prepared an inventory of the timber resources of Babeldaob. The inventory shows where the majority of the nation's forest resources are found. Reference to the inventory shows that commercial timber resources are quite limited. Due to the relatively small area of natural forest, steep and highly erodible soils and the strong need to maintain forest cover for watershed protection and biodiversity conservation reasons, there is limited scope for a sustainable large-scale commercial forestry industry in Palau. There is however, scope for a sustainable commercial industry of other secondary forest products, such as furniture, storyboards, wooden bowls, etc. The way in which the nation's forests are managed will have profound effects on the sustainability of other resources including marine.

3. Overview of Information Management Issues: Capacity, Services and Needs

3.1 Information and Communication Management Capacity

Like many other Pacific nations as reported in Walton's paper (2001) for the CTA Seminar in 2000, in terms of agricultural information and communication management capacity, Palau suffers from a lack of resources (staff and materials), non-existent information policies and strategies, and staff with little or no training, a relatively low standard of education and little appreciation (crucially, among senior staff and policy makers) of the role of information in decision-making, research, rural development and public awareness.

Of all of the institutions interviewed none reported to have any information and communication policies or strategies. Nor did any indicate any plans to develop such policies and/or strategies with the exception of the Office of the Palau Automated Land and Resource Information System (PALARIS), the National GIS. In Palau, basic essentials for running an organization effectively are in many cases not recognized by those in management positions. For example, organizational planning is something that most institutions devote little or no time to as the norm in Palau is to operate on a day to day, 'crisis by crisis' basis. Many institutions operate without any strategic direction; many do not have an organizational chart or one that is up-to-date and functional. This outlook is rather bleak; however, it is encouraging to note that several institutions are now investing the time and effort in strategic and organizational planning including the development of staff work plans. Several key institutions have embarked on developing concrete goals and objectives that are linked to their overall mission and to formulate medium term strategic plans and annual staff work plans. These organizational planning efforts have been made possible through assistance provided in training and facilitation of the strategic planning process for these institutions by The Nature Conservancy (TNC).

With these efforts and efforts such as the "performance based budgeting" procedures within the national government, it is hoped that this trend of improving organizational planning efforts will filter out to all institutions creating a new standard that more and more institutions in Palau will adopt.

Many (if not all) institutions conduct some public awareness and education/extension work that requires the development of education/extension tools and materials. However the only two institutions interviewed that considered themselves to be in the 'agricultural information and communication sector' were PCC-CRE and the Bureau of Marine Resources (BMR). Due to the weak institutional framework for agricultural and rural development in Palau including very limited publishing capacity, the 'agricultural information and communication sector' is consequently non-existent. Palau does not have an agriculture library. The main public library administered by the national government is under-resourced and of all institutions interviewed none of the individuals

reported any use of the main public library to meet their information needs. Some individuals however, reported use of the Palau Community College library, which has a more extensive collection relevant to agriculture, fisheries and forestry.

3.1.1 Current Capacity Issues and Needs (human, financial, technical)

The majority of agencies and organizations interviewed reported limited human, financial and/or technical capacity. Too few staff available to perform required functions was reported to be the major constraint, especially among government agencies. Human capacity issues are strongly linked to limited financial capacity. In general, institutions in Palau do not have sufficient financial resources to hire enough staff to carry out their mandates, nor are they able to finance the needed training and capacity building for existing staff. Part of the problem stems from the fact that those who ultimately make budgetary decisions (both in allocating and spending budgets) have limited or no professional level qualifications in the area of administration and/or agricultural and rural development. Consequently, they have little understanding of what is needed for this development to occur. These higher-level decision-makers (national congressmen, ministers and senior-level managers, etc) also lack an understanding and appreciation of the need for capacity building and as a result they choose not to invest in it. In general there is a lack of understanding and appreciation of the role of information in agricultural and rural development and overall decision-making.

All institutions interviewed have at least one computer and printer and all have access to the Internet, however Internet use is very expensive in Palau. There is only one service provider, Palau National Communications Corporation (PNCC), which is a semi-government agency. Unlimited DSL access is USD 500 (406 euro) per month for one to five computers. The rate goes up when more than five computers are using the Internet. The only institutions that enjoy unlimited use are PALARIS and PCC. Most institutions pay USD 15 (12 euro) per month for email service that allows for four hours of free Internet use. After the four hours is used, accounts are charged USD 2.50 (2 euro) per hour.

While there is at least one or two staff in most institutions with some form of higher-level education (either Bachelors or Masters level degrees), they are the minority and almost always over-tasked. For the few qualified staff in each institution, a relatively large portion of their time is devoted to providing support for both senior management as well as secretarial level staff. Organization management skills are one of the priority needs for Palau in terms of human capacity for improving ICM and agricultural and rural development. All institutions have needs in terms of building capacity for ICM. These needs range widely from basic writing skills and computer skills to using appropriate ICTs for establishing and managing information systems. However, the first step must be to develop and promote an understanding of what ICM is and what purpose an ICM policy and/or strategy would serve.

3.2 Agricultural Information and Services

Presently, agriculture, fisheries and forestry related services in Palau are very fragmented. There is little coordination, collaboration and joint program planning of activities between key institutions involved in agricultural and rural development. Few

services are participatory and most are limited in scope. Few involve stakeholders, which results in lack of ownership and most are "one-time" training activities with no follow-up. There is no regular schedule of training. In general, there is little coordination or sharing of funding sources and there is a need to do a better job in publicizing what services are available (Bishop, 2001). While coordination bodies such as the Palau Natural Resources Council (PNRC) and the Palau MAREPAC are a step forward in that they provide a forum for communication among key institutions, there is still much room for improvement of overall coordination, collaboration and joint program planning.

3.2.1 How Information Needs are Currently Met

Information needs are satisfied mainly through queries to regional organizations, Internet searches and most frequently, searches through unorganized stacks or shelves of books and semi-organized files. The library at Palau Community College (PCC) was reported to have the best literature resources on island. Most individuals interviewed reported that if they are unable to source information on island they meet their information needs through email queries to various regional contacts. These contacts were mainly from the Secretariat of the Pacific Community (SPC), the South Pacific Regional Environment Programme (SPREP), the South Pacific Geosciences Commission (SOPAC) and/or University of Hawaii (UH), University of Guam (UOG) and to a smaller extent University of the South Pacific (USP). Internet searches using Google and other search engines were commonly reported as a means of sourcing information. There were also a few individuals who regularly use databases available on the Internet.

Several individuals reported use of a six-CD digital library set to meet some of their information needs. This digital library was put together by a Peace Corps Volunteer as a one-year project under the Palau International Coral Reef Center (PICRC). The volunteer scanned over a thousand documents on Palau and organized them into two categories – culture and environment. This digital library (a ProCite database) includes maps and scanned aerial photos and is searchable by title, author, journal, subject and keyword.

3.3 Needs Analysis

3.3.1 Information Needs

Information needs reported during interviews with various agencies and organizations ranged from very specific to very general information. Overall, information needs focused around needs relevant for improving production and decision-making especially in the area of land use planning and agricultural policy development (including fisheries and forestry). Information needs include:

Agriculture and Forestry

- Basic agricultural research and information necessary to support agricultural development (including fisheries and forestry);
- Current and accurate agricultural census information;
- Information to support the development of nutrient management plans;
- Information on nutrient requirements;
- Crop yields in various soil types for Palau;

- Management/maintenance information (and any relevant information) related to tissue culture and germplasm collections;
- Information on what crop varieties are best for Palau's climate and soil types;
- Best practices information for cultivation of certain crops (e.g., pineapples);
- Growth rates for various timber trees in various soil types for Palau; and
- Updated geographic layer information (updated base maps with attribute data and information about land use, infrastructure, etc.).

Fisheries

- Fisheries management information on certain species in Palau (e.g., reef fish, sharks, turtles, giant clams, etc.);
- Scientific information to determine total allowable catch levels for fisheries that is sustainable;
- Fish stock information (pelagic fish) – (what do we have and how much?); and,
- Information on potential aquaculture and mariculture development suitable for Palau.

Marketing and Production

- Information on potential export markets for Palau;
- Information on local markets and how to assist in furthering their development;
- Information on value-adding for potential product for local use and export for Palau; and,
- Information on how to set and develop standards for local production and export.

One individual commented that the information needs for agricultural and rural development in Palau are almost limitless, yet the problem is more about not knowing what information is needed. A key problem in many institutions is the limited ability to identify what their information needs are, which relates to lack of information literacy skills. This is in many cases also related to the lack of a clear agricultural policy for Palau and the subsequent lack of direction for agricultural and rural development to occur. An interesting note is that many agencies reported that they are always able to find the information they need if it exists. Much of the information needs reported such as crop yields and nutrient requirements are specific to Palau and currently do not exist. This type of information requires research and investigation in order for it to be acquired. Most agencies either do not have the technical capacity to conduct the necessary research or often times due to limited human and financial capacity simply do not have the necessary resources to do this type of work. Another individual commented that when research activities are proposed and included in budget requests, they are often one of the first items to be rejected. As stated earlier, there is a general lack of understanding of the importance of information and the role of information in decision-making. Due to this there is little appreciation for research.

3.3.2 Capacity Building Needs

In order to improve capacity for ICM for agricultural and rural development in Palau, there must be acknowledgement by those in positions of power that it is important to manage information and communication activities in a somewhat organized and consistent manner. It does not seem that this acknowledgement has happened yet in Palau. None of the institutions have an ICM policy or strategy and only one had plans to

create one. Lack of financial resources to hire capable staff or adequate numbers of capable staff, and poor management at senior levels results in ineffective and inefficient ICM efforts of many institutions.

In addition to this, unqualified and unproductive staff are often allowed to continue their employment and perform at sub-standard levels without any consequences. Poor management skills among senior level managers and a lack of proper documentation of work performance make terminating these employees a difficult task. Due to Palau's relatively small population, personnel issues often become highly political and as a result, terminations are infrequent.

General capacity building needs for ICM include:

- Improvement in organization planning, administration and management skills;
- Information development skills (research and analysis);
- Skills for information systems establishment and management;
- Professional level proficiency in IT, relational database management, database design, programming, GIS, remote sensing;
- Skills to develop strategic policies to carry out information activities;
- Social marketing skills;
- Skills in analyzing, processing and packaging of information;
- Basic computer (MS Word, Access, Publisher, Excel, etc.); and,
- Basic office management skills.

Technical capacity needs identified during interviews included:

- Agricultural research and development skills (including for fisheries and forestry);
- Market research and development skills (both local and export);
- Professional level entomology proficiency for pest/disease management;
- Farm management and marketing skills;
- Aquaculture and mariculture development skills;
- Skills necessary for effective ICM;
- Expertise for appropriate agricultural policy development;
- Project identification and design and reporting skills; and,
- Facilitation skills.

In addition to these capacity needs described above, in Palau there is no publishing sector or distribution infrastructure specifically for agricultural and rural development and therefore, there is a shortage of relevant published information on it.

4. Conclusions and Recommendations

4.1 Conclusions

In Palau where there is little information, expertise and human capital, significant investments must be made upfront to build the needed capacity of Palauans to ensure sustainability of Palau's agricultural and rural development. Agriculture, although a high-risk business, should be viewed as a high priority by Small Island Developing States (SIDS) as it is inextricably linked to food security. Due to its high priority status, agriculture often receives subsidies in most economies (U.S., Japan, Europe, etc.) (Osman, 2000).

Unfortunately, due to the lack of awareness and recognition of this important condition for successful agriculture, in addition to Palau's financial constraints, the government provides little in terms of assistance programs and no subsidies are provided for agriculture (including fisheries and forestry).

The current information needs and capacity building needs are similar across institutions in Palau. Of the information needs reported, the three key priority needs are:

- basic agricultural research and information necessary to support agricultural development including fisheries and forestry (e.g., crop nutrient requirements and yields, sustainable allowable catch rates for fisheries, current and accurate agricultural census information);
- information related to the development of appropriate agricultural policies, and
- information related to market research and development for both local and export markets.

In addition to the numerous organizational and management problems plaguing institutions in Palau, a lack of information and expertise relating to these three items above is a key obstacle for increasing agricultural productivity.

Technical capacity building needs include knowledge, skills and expertise for:

- agricultural policy development;
- ICM policy and strategy development;
- agricultural research and development (including for fisheries and forestry);
- market research and development (both local and export);
- farm management and marketing; and,
- aquaculture and mariculture development.

Capacity building needs for ICM must begin with an increased knowledge of what ICM is and what purpose an ICM policy or strategy would serve. The priority areas where there are capacity building needs for ICM are:

- basic computer skills (MS Word, Access, Publisher, Excel, etc.)

- improvement in organization planning, administration and management skills;
- information development skills to create the information that needs to be managed and communicated (such as crop nutrient requirements) ;
- information systems management skills;
- professional level proficiency in IT, relational database management, database design, programming, GIS, remote sensing; and,
- skills to develop strategic policies to carry out information activities.

It is clear that the concept of an ICM policy or strategy is new to nearly all agencies and organizations interviewed. Most agencies focus only on the actual work without adequate monitoring and evaluation of the effectiveness and efficiency of their work. Thus, ICM issues rarely are addressed. As stated earlier, information needs in Palau for agricultural and rural development are somewhat limitless, however, the problem is more related to the fact that most institutions do not know what their information needs are. Few, if any, understand and have a clear picture of what is needed to improve Palau's production and key institutions do not always agree on which direction to take for agricultural development. Inadequate communication, coordination and collaboration among and between institutions are key problems.

4.2 Recommendations

Creating awareness of ICM is the first priority for Palau decision makers in the agriculture sector. This greater awareness of ICM might lead to improved networking and coordination, which despite the PNRC, MAREPAC and NEPC has not wholly been successful. One of the major constraints is the lack of access to Palau resources, therefore there is a clear need for a more thorough information audit (resources available and specific needs of each institution).

Limited availability of publications that support decision-making in the agricultural sector and limited knowledge of sources of information and the type of products and services that are available are key issues that CTA could help address. Also, any assistance to improve information dissemination and overall communication with the increasing number of non-Palauan farm workers may be an area where CTA could provide support.

Palau's agricultural and rural development could benefit greatly from CTA's Information Products and Services Department. The following are recommendations of how this operational programme could add value to the agricultural situation in Palau:

1. Ensure that institutions in Palau are aware of CTA's institutional publications and the Publications Distribution Service through direct contact with the appropriate institutions;
2. Ensure that appropriate institutions in Palau are aware of CTA's other information products and services (e.g., CD-ROM Programme, Co-publications, Series, Rural Radio Programme and Resource Packs, Question and Answer Service, etc.);
3. Ensure that all institutions (especially those involved in research) that meet the criteria for the Selective Dissemination of Information Service (SDI) are aware of the service and have the opportunity to apply such as (PCC-CRE, Bureau of

Agriculture, Bureau of Marine Resources, Palau Conservation Society, The Nature Conservancy, PCAA, etc); and,
4. Ensure that Spore is available to all institutions in Palau through direct contact with the institutions.

There are very few newsletters, websites and other networking services being utilized by institutions in Palau to increase information exchange and open up new communication channels for agricultural and rural development. It is apparent from the interviews conducted that most have contacts at various regional organizations however, few reported contacts with other ACP stakeholders and experts from other countries outside of the region. There is very limited first hand experience of pertinent developments in other countries and regions. The extent of the use of ICTs for networking and dialogue is primarily limited to individual email communications. None of the institutions interviewed reported participation in any electronic discussion fora or other ICTs for information sharing. While many institutions do some radio, TV and other non-print media, most do not take full advantage of opportunities in non-print media for communicating agricultural information and knowledge or for advertising their programs and services. Palau could benefit greatly from CTA's Communication Channels and Services Department as it tackles these key problems. The following are recommendations of how this operational program could add value to the agricultural situation in Palau:

1. Ensure that institutions in Palau are aware of CTA's activities aimed at increasing information sharing and have the opportunity to participate in activities or programs that will enhance information exchange.
2. Ensure that institutions in Palau are aware of the Centre's website as a resource for information (especially the four major windows on priority topics for agricultural and rural development – agricultural policy, agricultural trade, ICTs, and the resource center or 'virtual library')
3. Provide copies of proceedings from relevant seminars co-organized and co-financed by CTA that have been conducted in the past to the appropriate institutions in Palau.
4. As financial resources are limited for most institutions, Palau would benefit from CTA's Seminar Support Programme to assist appropriate individuals attend regional and international conferences on topics relevant to their area of work.

Any assistance in promoting the exchange of experiences of ACP experts and partners to local institutions would be highly beneficial.

The three-broad thematic areas of the 'seminars and study visits' program component (market-led development, increased agricultural productivity, environmental protection and natural resource management) are highly relevant to Palau's needs. It would be valuable for key institutions in Palau to be involved (as appropriate) in seminars and/or study visits.

All of the key problems to be addressed under the ICM Skills and Systems Department are relevant to Palau. Information systems management in Palau for agricultural and rural development is limited by the lack of expertise in ICM skills, limited opportunities to acquire ICM skills and little or no knowledge of management techniques for establishing and implementing ICM projects and services. ICM policies and strategies

are virtually non-existent in Palau and therefore any of CTA's activities relevant to increasing the knowledge of the design of cost-effective and participatory ICM systems would be highly useful. The following are recommendations of how this operational programme could add value to the agricultural situation in Palau:

1. Collaborate with national and regional institutions to develop and implement training courses on ICM to suit Palau's needs and to help institutions make better use of appropriate ICTs;
2. Ensure that all institutions in Palau are aware of CTA's virtual library of resources that includes information on training materials, inventory of trainers and trainees, and a list of training opportunities.
3. Provide support for Palauan nationals to attend appropriate short ICM courses given by other institutions when opportunities arise;
4. Provide information on distance learning courses for ICM that may be beneficial for institutions in Palau based on the needs identified.

The Palau Natural Resource Council (PNRC) may be an appropriate body to play a role in CTA interventions particularly in creating better awareness of the role ICM plays in formulating policy and meeting objectives of institutions.

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Annex 1. Terms of Reference

ASSESSMENT OF AGRICULTURAL INFORMATION NEEDS IN AFRICAN, CARIBBEAN & PACIFIC (ACP) STATES
Phase 2: Pacific

1. Introduction

The Technical Centre for Agricultural and Rural Cooperation (CTA) was established in 1983 under the Lomé Convention between the ACP (African, Caribbean and Pacific) Group of States and the European Union Member States. Since 2000, it has operated within the framework of the ACP-EC Cotonou Agreement.

CTA's tasks are to develop and provide services that improve access to information for agricultural and rural development, and to strengthen the capacity of ACP countries to produce, acquire, exchange and utilise information in this area. CTA's programmes are organised around three principal activities: providing an increasing range and quantity of information products and services and enhancing awareness of relevant information sources; supporting the integrated use of appropriate communication channels and intensifying contacts and information exchange (particularly intra-ACP); and developing ACP capacity to generate and manage agricultural information and to formulate information and communication management (ICM) strategies, including those relevant to science and technology. These activities take account of methodological developments in cross-cutting issues (gender, youth, information & communication technologies – ICTs, and social capital), findings from impact assessments and evaluations of ongoing programmes as well as priority information themes for ACP agriculture[1].

In January 2002, CTA's Strategic Plan (2001-2005) was implemented and CTA's activities were distributed among three operational programme areas / departments:

- Information Products and Services
- Communication Channels and Services
- Information and Communication Management Skills and Systems

These operational departments are supported by Planning Corporate Services (P&CS) which is charged with the methodological underpinning of their work and monitoring the ACP environment in order to identify emerging issues and trends and make proposals for their translation into programmes and activities. This current exercise, therefore, falls within the mandate of P&CS.

2. Main issues

CTA works primarily through intermediary organisations and partners (non-governmental organisations, farmers' organisations, regional organisations, …) to promote agriculture and rural development. Through partnerships, CTA hopes to increase the number of ACP organisations capable of generating and managing information and developing their own information and communication management strategies. The identification of appropriate partners is therefore of primordial importance.

[1] Priority information themes for ACP agriculture have formed the basis of various several studies, workshops and seminars bringing together various stakeholders, organisations and institutions active in the field of agriculture and rural development. The documents (or extracts thereof) will be provided to the consultants.

The "Evaluation of the Implementation of the Mid-Term Plan (1997 – 2000)" emphasised the need for CTA to develop a more pro-active approach and elaborate criteria for decision-making with regard to the choice of partner organisations and beneficiaries. Based on this evaluation, the "Strategic Plan and Framework for Action – 2001 – 2005" identifies strategic issues for CTA being: improved targeting (including partnerships and beneficiaries), geographical coverage, decentralisation, regionalisation and thematic orientation. The Plan also expresses concern about: the extent to which CTA's activities are relevant to and reach the poor, gender awareness and how to identify potential partners especially in the independent sectors.

Besides partner identification and selection issues, the observation has also been made that, traditionally, the Pacific and Caribbean regions have not received sufficient attention in CTA's programme and activities. This is, for example, highlighted in the statistics on the number of individuals and organisations which receiving CTA publications or participating in workshops and training courses. Furthermore, the admission of 6 new Pacific member states under the Cotonou Agreement means not much known about them, hence the need to develop CTA intervention strategy and provide more targeted assistance.

Finally, various national and regional partners with whom CTA has had a long-standing relationship have requested the current study in order to provide more targeted assistance to their beneficiaries.

3. Objectives and scope of the study

The objectives of the study are as follows:

- to identify agricultural information needs of key actors / beneficiaries for CTA products and services;
- to identify needs of potential actors / beneficiaries of CTA activities and services in terms of building capacity for information and communication management;
- to identify potential partners / beneficiaries for CTA activities and services;
- to develop some baseline data to facilitate subsequent monitoring activities.

The study should assist the three operational departments of the CTA as well as its local representatives to improve and better target interventions and activities aimed at potential partners and beneficiaries (including women, youth, private sector and civil society organisations); to have a more informed picture of their needs and aid in the elaboration of a strategy and framework of action. The study should also highlight where there are specific needs for CTA's products and services thereby enabling improvement in the delivery of the same.

4. Methodology

The consultant will use a combination of qualitative and quantitative rapid appraisal methods including:

- the desk review of available literature and information sources including the findings of programme evaluations;
- the conduct of face-to-face interviews with relevant stakeholders / concerned parties;
- the limited use of questionnaires.

The rapid appraisal approach will allow a general overview of the key issues and company / organisational profiles on a per country[2] basis and may give rise to more in-depth studies as and when needed in the future.

[2] Out of 30 countries comprising the Caribbean and Pacific regions, only selected number will initially be the subjects of studies, with domestic consultants conducting country-specific assessments. Country selection will be done by CTA on the basis of specific criteria.

5. Expected outcomes / output

One main report per country not exceeding 20 pages according to the following table of contents:

Main report

1. Executive summary
2. Introduction
3. Country profile – summary structure and economic characteristics with particular attention to agricultural sector (includes fisheries and forestry):
   - Summary of how agriculture, fisheries and forestry is organised in the country
   - Summary of the information and communication management capacity
   - The current source of agricultural information and services (synthesise Annex 3)
4. Needs analysis
   - Information needs
   - Capacity building needs (skills, training, media, ICT, equipment)
5. Conclusions and recommendations
6. References

Annexes

1. Terms of reference

2. Country profile

2.1 General agricultural profile (*from available documentation*)

- Size of agricultural population (male / female / youth)
- Farmed land, forests, fishing areas
- Agricultural systems
- Agriculture in the economy (percentage GDP)
- Main agricultural produce and secondary products
- Main export markets
- Trade agreements that include agriculture
- Sectoral policy related to agriculture, fisheries and forests

2.2 Socio-economic profile (*from available documentation*)

- Total active population, demographic breakdown
- Literacy level and languages
- Access to services (health, schools, electricity)
- Rural urban drift

2.3 Media and telecommunications *(update / check)*

- Newspapers, periodicals, magazines, radio stations, television channels,
- Telecommunication services (fixed, mobile, etc.)
- Computers and Internet access

3. Profile of institutions

- List of all institutions involved in agriculture and rural development activities, including private sector and civil society organisations, with name, contact details, type and role of institution
- Select list of key institutions involved in agriculture and rural development, with extensive data and information on the institution, the problems faced and why it is considered a key actor

It is also expected that the results of this study will lead to identification / update of some priority agricultural information themes which will feed into a possible priority-setting exercise in the Pacific in 2004.

6. Reporting

The country reports will not exceed 20 pages (excluding annexes). The annexes should include a list of acronyms, of persons/institutions interviewed with addresses, phone, fax numbers, e-mail addresses (if any) as well as bibliography.

7. Timing

- Draft final report is to be submitted within two months after contract signature by CTA
- Final report due two weeks after receipt of comments from CTA.

8. Expertise needed

The overall coordination will be carried out by Ms Christine Webster, Deputy Head, Planning and Corporate Services CTA, assisted by Mrs Lola Visser-Mabogunje, Project Assistant.

Mr. Peter Walton will ensure the regional coordination and lead a team of local consultants to be identified per country[3]:

Local Consultant	**Country**
Mr. Nga Mataio	Cook Islands
Ms. Makelesi Tavaiqia	Fiji
Mr. James T. Movick	Federated States of Micronesia
Dr. Mareko Tofinga	Samoa
Mr. Pita Taufatofua	Tonga
Ipul Powaseu	Papua New Guinea
Fred Peter	Solomon Islands
Nancy Vander Velde	Marshall Islands
Tarita Holm	Palau
To be identified	Vanuatu

The expert should have a university degree or equivalent by experience. In addition, he/she should have at least 10 years experience in field of agriculture, rural development or social / economic sciences. He/she must have in-depth knowledge of the agricultural sector in his/her country and be able to identify key players and institutions / organisations active in this area. The ability to communicate and write clearly in English is essential, while knowledge of at least one of the local languages for communication / interview purposes is an added advantage.

9. Implementation schedule (CTA)

- Preparation/Finalisation of ToR; Identification/ short-listing of (potential) consultants; Call for offers (15 September – 10 November)
- Selection of consultants: (11 – 15 November)
- Contractual arrangements/ briefing (16 November – 10 December)
- Start date of contract: 11 December 2003
- Implementation period 11 December 2003 – 9 April 2004
- End date of contract: 10 April 2004

10. Key documents to be made available to consultants

Documents include:

- Cotonou Framework Agreement
- Excerpts of relevant sections of CTA's Strategic Plan and Plan of Action (2001-2005)
- Annual Reports
- Documents on priority information themes identified for the Caribbean & Pacific region
- Documents on products & services provided by CTA

11. Role of Regional Coordinator

- Attend briefing meeting at CTA

[3] Final list of countries to be confirmed by 31/01/04.

- Review the terms of reference
- Finalise questionnaires and methodological approach after due consultation with CTA Team
- Draw up briefing notes and guidelines for local consultants to ensure accurate and consistent application of the agreed methodology in data collection
- Responsibility for the implementation of the study and interpretation of technical queries to local consultants
- During the study, monitor and provide technical assistance to the local consultants
- Review preliminary country reports and findings and send comments back to local consultants
- Coordinate and ensure consistency of country reports
- In conjunction with the CTA Team, prepare the overall report taking into account the findings and recommendations of all the Pacific country reports (table of contents to be agreed by 31/01/04).

12. Role of Local Consultants

- Familiarise themselves with background documents received from CTA; including the Terms of Reference
- Conduct interviews and gather in countries specified in the contract
- Undertake field visits in countries specified in the contract
- Draft initial country reports and send to Regional Coordinator for initial comments
- Based on comments received from Coordinator, revise country reports and send draft report to CTA
- Finalise country reports based on comments and observations received from CTA and send back to CTA

13. Role of CTA (Overall coordination CWE, assisted by TVI)

- Establish contacts with the Regional Coordinator and the ACP Local Consultants
- Draw up Terms of Reference and other relevant documents
- Invite the Regional Coordinator for Briefing Meeting
- In consultation with the Regional Coordinator, draft questionnaires
- Provide relevant background documents to the Team
- Draft budget and discuss contractual obligations with the Team
- Overall responsibility for the supervision and implementation of the studies
- Appoint the Regional Coordinator and the ACP Local Consultants
- Bear the agreed costs of expenditure in respect of the evaluation (economy class tickets for approved visits to CTA's Headquarters, hotel accommodation and subsistence allowances during briefing meeting, or during agreed and specified field visits)
- In conjunction with the Regional Coordinator, prepare the overall report taking into account the findings and recommendations of all the Pacific country reports (table of contents to be agreed by 31/01/04).

Annex 2. Country Profile

A2.1 General Agricultural Profile

A2.1.1 Size of Agricultural Population

According to the 2000 Census on Population and Housing, of Palau's total population of 19,129, 69.5% (13,364) were Palauans. 67.5% of Palau's residents age 16 years old or over are in the labor force. 74.9% of the male population and 58.1% of the female population are in the labor force. 29.1% of the labor force are government workers, while 15.7% work in the service industries and 5.1% do subsistence activities.

Of the 9,383 employed persons 16 years and over, 743 persons (88 females, 497 foreigners) or 8.4% listed their occupation as "Farming, Forestry and Fishing." The median income for a full-time worker in this category was $4,622, compared to $10,810 for a National Government Worker.

Under the "service" category, 601 persons (399 females, 419 foreigners) listed their occupation as "Food Preparation and Service." Their median income was $3,724. It is most likely that the majority of Palauan producers who add value to their produce by preparing it, e.g., box lunches, packaged cooked root crops, etc. would list themselves under the "Food Preparation and Service" occupation.

Under 'Industry and Class,' 167 persons (53 females, 97 foreigners), listed themselves in 'Agriculture,' 501 persons (56 females, 381 foreigners) in 'Forestry and Fisheries' $6,855.[8]

A2.1.2 Farmed Land, Forests, Fishing Areas

Palau's land resources are abundant as there are more than 44 species of trees used for timber and firewood, at least 82 medicinal plants and more than 80 varieties of taro, 17 varieties of sweet potatoes and many varieties of cassava, banana and other fruit.

In 1994, 11km² or 2% of all land was farmed. Approximately 14% of Palau's land area (or 16,600acres out of a total of 120,000 acres) is classified as arable by virtue of soil type and slope. The availability of arable land in Palau exceeds current needs. There is considerable potential for expanding the cultivated area of vegetables, fruits and staple crops without further clearing of forested land.[10] Mangrove areas comprise approximately 11% of Palau's land area. As is true in most other countries, mangrove areas are under considerable stress from development, especially in the densely populated Koror-Airai area.[8]

According to the vegetation survey conducted using 1976 aerial photos, primary forest (inclusive of mangroves) covered approximately 75% of Palau. Plantation forest in Babeldaob is approximately 60 hectares. Palau's native forests are the most species rich in Micronesia and include at least 1,258 species and varieties of plants of which, approximately 839 are native and approximately 200 are endemic. There are also 141

birds (of which 9 are endemic), 46 species of freshwater fish (of which two are endemic candidates), two species of bat, and an estimated 5,000 species of native insects. Habitat protection must therefore be a significant part of any development or land-use strategy.

Marine Resources

Marine Resources include 1,706 km^2 of reefs, lagoons, passes and mangroves, at least 70 marine lakes and the open sea with more the 600,000 km^2 of exclusive economic zone. Marine resources include more than 3, 500 species (probably more than 10,000). At least 270 fish and invertebrate species are a source of food. Marine habitats are living resources. Activities such as dredging of reefs, sand mining the lagoon bottom and reclamation of reefs for development. Quarries may also indirectly degrade reefs if sediments flow onto the reefs. Reclamation of mangroves causes loss of living marine resources and nursery areas for marine organisms. Use of explosives for building channels causes localized fish kills. Illegal fishing with dynamite and Clorox also depletes fish stocks. Ship groundings and anchor damage by recreational and fishing boats cause reef damage and impact the fisheries.[10]

Sea Farming

Sea farming has been proposed to promote sustainable food production of marine species. In the past 20 years, Palau has conducted aquaculture projects for milkfish, rabbitfish, groupers, giant clams, trochus, freshwater prawns and mangrove crabs. To date, the only ongoing project is the giant clam project. No community giant clam project has resulted in successful export of clam. There have been chronic problems such as poaching, poor site selection and storms. Sea farming primarily serves as a supplemental food source for the community. Sea farming is costly, labor intensive and requires ongoing market studies. An independent study of the effectiveness of sea farming as a supplemental food source is needed. In addition, feasibility studies for targeted species are needed. In 2003, EQPB drafted new requirements for proposed aquaculture projects to ensure that the environment is not impacted by aquaculture activities. [10]

A2.1.3 Agricultural Systems

Traditionally, Palauan agriculture featured an environmentally sustainable multi-story agroforestry system in which tree crops provided a protective canopy, which supported the intensive production of 40-50 plant varieties. The Palauan system was broadly similar to traditional agricultural systems elsewhere in Oceania. Traditionally, every Palauan woman had a garden (or gardens). Female-produced agricultural products together with male and female harvested marine and forest products provided a self-sufficient food system with in-built security against natural and economic disasters, pest intrusion, and old age.[4]

Today, remnants of the traditional system still remain although less than three percent of land is now under agro-forestry production. An additional one percent of land is estimated to be under non-traditional cultivation (e.g., without tree cover). Virtually all mature rural women and many urban women produce some of their household's food needs through cultivation of a garden or gardens. Typically, a woman will have one or more taro gardens and at least one dry land garden for tapioca. The taro gardens most closely resemble the traditional agro-forestry system although contemporary gardens are less intensively cultivated than those of the past. Although traditional methods of composting and mulching are still used, imported agricultural chemicals are also in use. Most crops produced in this informal economy are used for family food and customary

exchange. Only small volumes reach the market and still smaller volumes are reflected in official economic statistics.[4]

The agriculture and forestry sectors have not been accorded national priority in Palau since the Japanese occupation of the nation in the inter-war period. Consequently, agricultural and forestry development is beginning from a low base and is typified by limited technical and managerial skills, while there has been limited private or public investment in the sector.[8]

A2.1.4 Agriculture in the Economy

Nominal GDP (1997-2003)

	Nominal Gross Domestic Product						
Particulars	**1997**	**1998**	**1999**	**2000 p**	**2001 p**	**2002 p**	**2003 f**
Agriculture	1,312	1,398	1,358	1,372	1,399	1,385	1,399
Fisheries	2,057	2,038	3,148	3,274	3,372	3,271	3,271
Mining & Quarrying	138	176	218	229	240	233	236
Manufacturing	1,403	1,702	1,609	1,690	1,774	1,650	1,666
Electricity, Gas and Water	-388	2,360	3,393	3,563	3,741	3,591	3,663
Construction	8,834	10,389	8,249	8,661	9,181	8,722	8,896
Trade	23,913	24,837	23,165	23,860	24,337	22,390	22,838
Hotels and Restaurants	13,986	12,370	11,938	12,057	12,419	11,301	11,527
Transport and Communication	8,734	9,191	9,846	10,338	10,855	10,095	10,297
Finance and Insurance	6,573	5,706	4,297	4,511	4,647	4,368	4,412
Real Estate and Business Services	6,298	6,555	4,611	4,842	5,036	4,683	4,777
Public Administration	29,401	28,462	29,374	30,255	30,860	31,478	31,478
Other Services	9,211	9,907	9,691	9,982	10,381	9,550	9,741
Subtotal	111,471	115,091	110,897	114,634	118,242	112,717	114,201
Less: imputed bank service charge	2,101	2,640	2,384	1,250	1,250	1,250	1,250
Plus: import duties	3,842	4,869	4,972	3,842	3,842	3,842	3,842
Gross Domestic Product	**113,212**	**117,320**	**113,485**	**117,226**	**120,834**	**115,309**	**116,793**
GDP growth rate	4.6%	3.6%	-3.3%	3.3%	3.1%	-4.6%	1.3%
Population (mid-year) /**3**	18,061	18,494	18,882	19,129	19,626	19,976	20,304
GDP per capita ($)	6,268	6,344	6,010	6,128	6,157	5,772	5,752
				Percentage			
Agriculture	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Fisheries	1.8	1.7	2.8	2.8	2.8	2.8	2.8
Mining & Quarrying	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Manufacturing	1.2	1.5	1.4	1.4	1.5	1.4	1.4
Electricity, Gas and Water	-0.3	2.0	3.0	3.0	3.1	3.1	3.1
Construction	7.8	8.9	7.3	7.4	7.6	7.6	7.6
Trade	21.1	21.2	20.4	20.4	20.1	19.4	19.6
Hotels and Restaurants	12.4	10.5	10.5	10.3	10.3	9.8	9.9
Transport and Communication	7.7	7.8	8.7	8.8	9.0	8.8	8.8
Finance and Insurance	5.8	4.9	3.8	3.8	3.8	3.8	3.8
Real Estate and Business Services	5.6	5.6	4.1	4.1	4.2	4.1	4.1
Public Administration	26.0	24.3	25.9	25.8	25.5	27.3	27.0
Other Services	8.1	8.4	8.5	8.5	8.6	8.3	8.3
Subtotal	98.5	98.1	97.7	97.8	97.9	97.8	97.8
Less: imputed bank service charge	-1.9	-2.2	-2.1	-1.1	-1.0	-1.1	-1.1
Plus: import duties	3.4	4.2	4.4	3.3	3.2	3.3	3.3
Gross Domestic Product	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Sources: UNDP-Public Sector Development (PSD) Project Office, Ministry of Finance, and IMF staff.

p Provisional.

f Forecast.

Note: Population for 2000 is actual; 2001, 2002, and 2003 are projections.

Agriculture is usually a lead sector in small island and other less developed countries. Palau is unusual in that agriculture is a minor sector, with the contribution of agriculture to the GDP being 9.8% in 1983, with this figure falling to only 1.2% in 1999 when the GDP from agriculture was $1,357,374.

Under representation of informal production greatly complicates analysis of agriculture productivity. A 1996 survey placed the value of the informal sector (consisting primarily of agricultural products) at five million dollars or twice the value of agricultural products recorded in official economic statistics. Another survey estimated the betel nut trade (consisting of domestically produced nuts, leaves and lime and imported tobacco) to be valued at $9.8 million. Clearly, there is a great deal more agricultural productivity in Palau than recorded officially. Despite this, statistical measures clearly demonstrates that agriculture is declining in importance in comparison to other economic sectors as evidenced by:

- Share of the GDP;
- Market share;
- Share of total employment;
- Earnings per worker;
- Land under cultivation.[4]

Agriculture in Palau appears to be entering an 'extended dualism' phase. That is, crops are produced for subsistence and for sale in typical dual-economy mode, but traditional crops of importance to both social activities and subsistence, principally taro, are also now often produced with the assistance of hired, foreign labor.[8]

A2.1.5 Main Agricultural Produce and Secondary Products

The availability of arable land in Palau exceeds current needs. There is considerable potential for expanded production of vegetables, fruits and staple crops without further clearing of forested land. Subsistence crop production is the predominant agricultural activity in Palau, with the main crops being taro, cassava, sweet potato, banana and coconut. Betel nut and betel pepper leaf are also commodities of considerable importance. 'Backyard' chickens and pigs are also important. Commercial agricultural activity is quite limited.[4]

A2.1.6 Main Export Markets

Palau's only significant commodity export is tuna, while its greatest "service export" is tourism. In general, Palau does not "add value" to many products and consequently, exports very few, if any, manufactured goods. There is much desire on the part of Palauan farmers and fishermen to develop products for export. A lack of knowledge and expertise (as well as limited staff) within the Ministry of Commerce and Trade about how to develop these markets is a key constraint for expanding exports. The Palau Organic Farm (POF), however is currently developing a project for the export of bottled *noni* juice (*Morinda citrifolia*). Staff at the POF stated that after conducting tests in Japanese laboratories on the quality of *Morinda* in Palau, it was apparent that the Palauan *noni* juice was of better quality than that from other markets, specifically French Polynesia. Palau is also much closer in proximity to Japan, which is an advantage for tapping into Japanese markets.

A2.1.7 Trade Agreements that Include Agriculture

Palau has signed the Pacific Agreement on Closer Economic Relations (PACER), and the Olbiil Era Kelulau (OEK), Palau's national congress, is currently ratifying the accession. Palau is considering joining the Pacific Island Countries Trade Agreement (PICTA). This trade pact would pave the way for the eventual establishment of a Free Trade Agreement among the Pacific Island Forum Countries. It is expected that the Free Trade Agreement would increase trade among the Pacific islands, bringing with it cheaper goods, and positively influencing the diversification and specialization of the member economies. Palau is a member of the African/Caribbean/Pacific ("ACP") grouping of nations working toward trade with the European Union (EU) under the Cotonou Agreement. At the present time, Palau is not likely to take advantage of any trade with Europe that might be developed under this agreement. It is our understanding that the EU is taking steps to address these capacity deficiencies by providing grants and technical assistance to the ACP countries.

A2.1.8 Sectoral Policy Related to Agriculture, Fisheries and Forests

Development policies and priorities are set forth in the Palau National Master Development Plan (NMDP) which by joint action of the OEK (national congress) and Executive branch was officially adopted in April 1996. This is a strategic plan, which outlines "pro-growth," "pro-people," and "pro-nature" strategies for achieving economic self-reliance by 2020. The NMDP identifies the overall goal of development as being a substantial increase in the quality of life of Palauans and future generations of Palauans. This is to be achieved by a three-pronged approach which:

- Increases real economic growth per capita on a sustained basis;
- Distributes the benefits of economic growth on an equitable basis;
- Enriches and enhances confidence in the Palauan culture, raises national consciousness, and protects the natural environment.

To translate these goals into action, the plan sets forth twenty-one priority strategies, which give high priority to establishing a policy framework supportive of private sector development. Tourism and marine resources are proposed as the lead economic sectors with agriculture and forestry having critical, albeit supportive roles.

NMDP recommendations are further supported by a sectoral plan for Agriculture, Livestock and Forestry (1997-2001) and by an Agriculture Marketing Plan. These plans identify priorities as follows:

For Agriculture:

- Construct a permanent farmer's market;
- Improve stock of agriculture equipment (especially tractors and tillers) held by the Ministry of Resources and Development;
- Increase land availability for farming;
- Increase loans (capital) available to farmers;
- Establish a farmer's cooperative.

For Livestock:
- Lower cost of animal feeds;
- Diversify breeding stock;

For Forestry:
- Increase number of extension agents;
- Increase quantity and variety of seedlings;
- Develop mangrove and wetland conservation plans.

There are four other policy documents, which propose policies, strategies and action relevant to the food and nutrition sector. All are in the form of recommendations for government action but none have been officially endorsed by the President or submitted for OEK action. These are:

- A report by JICA (Japanese International Cooperation Agency) which outlines strategies for sustainable development;
- Reports of the National Task Force on Agricultural Development;
- National Plan of Action for Nutrition;
- National Plan of Action for the Prevention and Control of Non-Communicable Diseases.

Japanese International Cooperation Agency (JICA)
The year 2000 marks the beginning of a new economic era for Palau. The first "step-down" in Compact (COFA) funding occurs in the 2000 fiscal year. This coincided with the depression of the tourism industry due to the Asian economic crisis. While implementation of the National Master Development Plan has begun, the rate of implementation, especially with respect to key fiscal and economic policies has been slow. As a result of these factors, there is a growing awareness of the urgent need to take bold and substantive measures to create a more vibrant and sustainable national economy.[8]

To give impetus to the changes required to achieve economic self-sufficiency, the President recently requested assistance from Japan. Under the auspices of JICA, a team of development experts recently reviewed the economy, the status of master plan implementation, and the national development project portfolio. While focusing on the macro-economy, the report underscores the importance of achieving a higher degree of national food security through increased domestic food production. Specific recommendations echo those found in the Master Plan and in sectoral planning documents.[8]

For Agriculture:
- Increase production by providing better extension support to farmers;
- Improve marketing facilities for agricultural products (inclusive of meat);
- Eradicate the oriental fruit fly;
- Strengthen quarantine control activities.

For Fisheries:
- Support subsistence and semi-commercial fisheries by providing improved fish handling facilities in each state fishery complex;
- Develop new value-added fish products for the local market (e.g., dried, salted, smoked and ground fish meat products);
- Improve licensing system for foreign fleets given access to Palau's waters;
- Develop a recreational fishing industry;
- Develop aquaculture for milkfish and abalones.[8]

National Task Force on Agricultural Development

Recognizing the importance of agriculture in economic development, the President (Nakamura) in April 1999 created a National Task Force on Agriculture. This Task Force was mandated to "review national government public policies regarding agriculture and aquaculture and to (recommend actions for) strengthening and implementing public policies that could lead to diversified and increased agriculture and aquaculture production.

The Task Force addressed both medium-term and long-term issues in agriculture development. Medium-term issues of concern include:

- Dependence on imported foods;
- Absence of a central market for local products in Koror;
- Impact of fruit flies;
- Dependence on imported chemical fertilizers;
- Inadequate financial support services for farmers;
- Landscaping of the "Compact Road;"
- Outdated plant and animal quarantine regulations.

Thirty long-term issues were addressed in the final report albeit at a very general level. The major recommendation was that agriculture be developed as a separate government ministry with relevant bureaus and divisions.[8]

A2.2 Socio-Economic Profile

A2.2.1 Demographics (Total Active Population, Demographic Breakdown)

Palau's population in 2000 was 19,129 persons - an increase from 17,225 in 1995. By ethnicity Palauans were 13,120 in 1995 and increased by only 244 individuals to 13,364 in 2000. Non-Palauans however, were 4,105 in 1995 and increased by 1,660 individuals to 5,765 in 2000.[4] Between 1990-1995, Palau's population grew at an average annual rate of 2.4% - high by international standards (global average 1.5%). However, the population is characterized by negligible growth among resident Palauans (average 0.6% per year); this reflects the combined effects of declining fertility and high rates of out-migration to the United States. The resulting scarcity of Palauan labor fuels demand for foreign workers and is reflected in the high rate of growth in the non-Palauan residential population (average growth rate, 9.8% per annum). Of non-Palauan residents, 89% are workers or dependents of workers, the majority being of Asian origin, predominately from the Philippines and China.[4]

A2.2.2 Literacy Level and Languages

[4] Ministry of Administration, 2001. *Republic of Palau 2001 Statistical Yearbook.* Government of the Republic of Palau, Division of Planning and Statistics.

There are two indigenous languages in Palau: Palauan, which is spoken on the main islands and Sonsorolese-Tobian spoken on the Southwest Islands. English is the language of government and commerce and is spoken by the majority of the people. Many older people are also fluent in Japanese.[4] Current adult literacy statistics are not available, however according to Palau's Human Development Index calculated by UNDP-Suva in their 1994 Pacific Human Development Report, Palau received a 98% for adult literacy (literacy of Palauan or English or both) which was based on 1990 census data.

A2.2.3 Access to Services (health, schools, electricity)

All in Palau have access to public health services and public education. Public elementary schools (Grades 1-8) exist in all states and are free. Health services in Palau are subsidized by the national government making them very affordable for local Palauans. Foreigners (including foreign laborers and non-Palauan residents) however pay higher rates for health services. Electricity is now accessible in all States of Palau with the exception of the two States located in the Southwest Islands, Hatohobei (Tobi) and Sonsorol.

A2.2.4 Rural-urban Drift

With the opening of the "Compact Road", a 53-mile road project to circumnavigate the island of Babeldaob, the concentration of population in urban Koror is expected to be lessened. Currently there are approximately 4,000 people living on the island of Babeldaob, which is Palau's largest island (second largest island in Micronesia). Limited access to this island over the past decades has prevented its large-scale development. With this new road and the relocation of Palau's Capitol from Koror to Melekeok State in Babeldaob, development is expected to occur at a rapid pace and many Palauan landowners are expected to move to Babeldaob. It is uncertain how quickly this shift in population density will occur, but it is eagerly anticipated by most as is expected to help alleviate the environmental pressures on urban Koror and spark an increase in economic development activities for Palau. The challenge Palau faces is to ensure that this rapid development occurs sustainably and in line with a shared vision of Palauans based on shared core values.

A2.3 Media and Telecommunications

A2.3.1 Newspapers, Periodicals and Broadcast Media

There are two newspapers in Palau – The Palau Horizon and Tia Belau News. Tia Belau News is published once a week (Fridays) while the Palau Horizon is published twice a week (Tuesdays and Fridays). Tia Belau sells between 1,300 to 1,500 newspapers per week and Palau Horizon sells 3,000 to 4,000 per week. Currently there are five radio stations in Palau. Two are religious, two are privately owned and operated and one is run by the national government. Eco-Paradise FM/ TA88 (Ngerel Belau) is run by the national government under the Bureau of Domestic Affairs and broadcasts 24 hours a day. The station's programming includes a diverse variety of music as well as providing free announcement services to make general announcements to the public such as reports about weather, environmental hazards (e.g., sewage spills), health reminders, etc.

Announcements regarding traditional customs are also frequently made through this radio station free of charge (i.e., funerals, house parties, etc.). The radio station also provides slots for 'talk shows' for various government agencies for public awareness purposes. This is the only station on the AM dial and therefore the only station that can reach far beyond the main Koror area. The two privately owned stations are WPKR 88.9 FM (KRFM), owned by KR Enterprises and WWFM 89.5 operated and owned by Mr. Alfonso Diaz. WPKR 88.9 FM is the most popular radio station among young Palauans as they play contemporary Palauan and American music. WWFM 89.5 has a regular morning talk show hosted by Mr. Diaz that is very popular among Palauans. This station is the only local station receivable via the Internet and Palauans living abroad can listen to the station (live) and call in to participate in discussions during talk shows.

A2.3.2 Telecommunications Services

The Palau National Communications Corporation (PNCC) and PNCC-Wireless are the two telecommunications companies in Palau. Both are semi-government institutions. PNCC also houses the Island Cable Television (ICTV), which provides cable television services to over 5,000 subscribers. All local (land line) calls in Palau are free and the minimum telephone service is USD$11 per month. Mobile calls are on average 20 cents per minute. There are over 10,000 fixed subscribers and over 4,000 mobile subscribers. Phone networks provide coverage to all of Palau with the exception of the Southwest Islands.

A2.3.3 Computers and the Internet

Information regarding the number of computers per 1,000 people is not available for Palau, however computers are commonly used in all government, NGO and private sector offices. There is only one Internet service provider in Palau, the Palau National Communications Corporation (PNCC) that is a semi-government agency. Unlimited DSL access is USD$500 per month for one to five computers. The rate goes up when more than five computers are using the Internet. The only institutions that enjoy unlimited use are PALARIS and PCC. Most institutions pay USD$15 for email service that allows for four hours of free Internet use per month. After the four hours is used, accounts are charged $2.50 per hour. As of July 2004 there were 1,858 Internet subscribers in Palau. All government agencies have computers and most have Internet access however it is limited.

Annex 3. List of Institutions in the Agricultural, Forestry and Fisheries Sectors

		Institutions	*Type*	*Role*
1.	**Name**	**Bureau of Agriculture (BOA)**	GOV	EX, PP, TR, RG
	Contact	Mr. Herman Francisco, Director		
	Address	P.O. Box 460 Koror, PW 96940 REPUBLIC OF PALAU		
		Tel: (680)488-2504 **Fax:** (680)488-1475 **Email:** boagri@palaunet.com		
	Website:	None		
2.	**Name**	**Bureau of Agriculture – Forestry Unit**	GOV	EX, PP, RD, TR
	Contact	Marcello Brel, Head Forester		
	Address	P.O. Box 460 Koror, PW 96940		
		Tel: (680)488-2504 **Fax:** (680)488-1603 **Email:** palauforestry@palaunet.com		
	Website:	None		
3.	**Name**	**Bureau of Marine Resources (BMR)**	GOV	EX, IN, PP, RG, TR
	Contact	Mr. Theo Isamu, Director		
	Address	P.O. Box 359 Koror, PW 96940 REPUBLIC OF PALAU		
		Tel: (680)488-3125 **Fax:** (680)488-3555 **Email:** tekoilchei@palaunet.com		
	Website:	None		
4.	**Name**	**Bureau of Oceanic Fisheries Management (BOFM)**	GOV	IN, PP, RG
	Contact	Mr. Silas Orrukem		
	Address	P.O. Box 117 Koror, PW 96940		
		Tel: (680)488-3997 **Fax:** (680)488-4394 **Email:** tunapal@palaunet.com		
	Website:	None		
5.	**Name**	**Office of the Palau Automated Land and Resource Information System (PALARIS)**	GOV	IN, PP, TR
	Contact	Ms. Kelly Raleigh-Moses, Manager		
	Address	P.O. Box 100 Koror, PW 96940		
		Tel: (680)488-6654 **Fax:** (680)488-3195/3380 **Email:** palaris_palau@hotmail.com		
	Website:	None		
6.	**Name**	House of Delegates, Committee on Resources and Development	GOV	PP
	Contact	Del. Noah Idechong, Chairman		
	Address	P.O. Box 8		

		Institutions	***Type***	***Role***
		Tel: (680)488-1291 **Fax:** (680)488-2787 **Email:** oek-speaker@palaunet.com		
	Website:	None		
7.	**Name**	**Senate, Committee on Resources and Development**	GOV	PP
	Contact	Sen. Lucius Malsol, Chairman		
	Address	P.O. Box 8		
		Tel: (680)488-2455 **Fax:** (680)488-2633 **Email: none**		
	Website:	none		
8.	**Name**	**United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS)**	GOV (U.S.)	EX, IN, TR
	Contact	Ms. Robin DeMeo, Resource Conservationist		
	Address	P.O. Box 6057 Koror, PW 96940 REPUBLIC OF PALAU		
		Tel: (680)488-5843 **Fax:** (680)488-5842 **Email:** rdemeo@palaunet.com		
	Website:	None		
	Name	**USDA Rural Development**	GOV (U.S.)	EX, FS
	Contact	Mr. Joe Diego, Area Director		
	Address	P.O. Box 430		
		Tel: (680)488-2499 **Fax:** (680)488-1373 **Email:** none		
	Website:	***None***		
9.	**Name**	**ICDF – Agricultural Technical Mission (Republic of China – Taiwan)**	GOV (Taiwan)	EX, RD, TR, TM
	Contact	Mr. Ming-Lii Hseu, Mission Head		
	Address	P.O. Box 9087		
		Tel: (680)488-2585; (680)544-1012 **Fax:** (680)488-8151 **Email: none**		
	Website:	www.icdf.org		
10.	**Name**	**JICA- Japan International Cooperation Agency**	GOV (Japan)	EX, PP, RD, TR
	Contact	Mr. Yoshio Notsu, Resident Representative, JICA Palau		
	Address	P.O. Box 6047		
		Tel: (680)488-5370 **Fax:** (680)488-3656 **Email:** jicapalau@palaunet.com		
	Website:	www.jica.go.jp		
11.	**Name**	**Palau Community College – Cooperative Research & Extension (CRE)**	EDU	EX, IN, RD, TR
	Contact	Mr. Thomas Taro, Director		
	Address	P.O. Box 9 Koror, PW 96940 REPUBLIC OF PALAU		
		Tel: (680)488-4983 **Fax:** (680)488-3307 **Email:** thomastaro@yahoo.com		
	Website:	www.palau.edu		
12.	**Name**	**Palau Federation of Fishing Associations (PFFA)**	NGO	EX, PS-S, TM
	Contact	Mr. Victorio Uherbelau, Board of Directors Chairman		
	Address	P.O. Box 586 Koror, PW 96940		
		Tel: (680)488-5004 **Fax:** (680)488-3112 **Email:** paltrading@palaunet.com		
	Website:	None		

		Institutions	*Type*	*Role*
13.	**Name**	**Palau Food Processors Group**	NGO	IN, TR, TM,
	Contact	Joyce Isechal, Spokesperson		
	Address	P.O. Box 941		
		Tel: (680)488-6509 **Fax:** none **Email:** palauopal@yahoo.com		
	Website:	None		
14.	**Name**	**Palau Oisca Farm**	NGO	EX, TR
	Contact	Mr. Itaru Kishikawa, President		
	Address	P.O. Box 5		
		Tel: (680)488-2978/1253 **Fax:** (680)488-3155 **Email:** jonnypk@palaunet.com		
	Website:	None		
15.	**Name**	**The Nature Conservancy (TNC)**	NGO (U.S.)	EX, PP, RD
	Contact	David Hinchley, Palau Country Program Director		
	Address	P.O. Box 1738		
		Tel: (680)488-2017 **Fax:** (680)488-4550 **Email:** dhinchley@palaunet.com		
	Website:	www.nature.org		
16.	**Name**	**Palau Chamber of Commerce**	CCI	IN, TM
	Contact	Ms. Kathy Francisco, Executive Director		
	Address	P.O. Box 1742 Koror, PW 96940		
		Tel: (680)488-3400 **Fax:** (680)488-3401 **Email:** pcoc@palaunet.com		
	Website:	none		
17.	**Name**	**Kabekl Market**	AS-F, PRV	PS-P
	Contact	Ms. Angie Aikuharu		
	Address	P.O. Box 309 Koror, PW 96940		
		Tel: (680)488-4121 **Fax:** none **Email:** none		
	Website:	None		
18.	**Name**	**Market Klemat**	AS-F, PRV	PS-P
	Contact	Ms. Mae Taima		
	Address	P.O. Box 805 Koror, PW 96940		
		Tel: (680)488-4600 **Fax:** none **Email:** mtaima@palaunet.com		
	Website:	None		
19.	**Name**	**Blue House Market**	AS-F, PRV	PS-P
	Contact	Ms. Ebil Inabo		
	Address	P.O. Box 217 Koror, PW 96940		
		Tel: (680)488-1701 **Fax:** none **Email:** none		
	Website:	None		
20.	**Name**	**Happy Fish Market**	PRV	PS-P
	Contact	Mr. Philip Reklai		
	Address	P.O. Box 6021 Koror, PW 96940		
		Tel: (680)488-4581 **Fax:** (680)488-2732 **Email:** reklai@reklai.com		
	Website:	None		
21.	**Name**	**Palau Modekngei Co., Inc. Market**	PRV	PS-P
	Contact	Mr. Mike Wilkins		

		Institutions	*Type*	*Role*
	Address	P.O. Box 368		
		Tel: (680)488-2387 **Fax:** (680)488-6353 **Email:** pmci@palaunet.com		
	Website:	None		
22.	**Name**	**Sanko Bussan Co., Ltd. (Kuniyoshi Fishing Company)**	PRV	PS-P, PS-E
	Contact	Mr. Hisae Kuniyoshi		
	Address	P.O. Box 293 Koror, PW 96940		
		Tel: (680)488-2113 **Fax:** (680)488-2115 **Email:** snkgrhm@palaunet.com		
	Website:	None		
23.	**Name**	**Palau Marine Industrial Corporation (PMIC)**	PRV	PS-E, PS-P, PS-S,
	Contact	Mr. Simon Yang		
	Address	P.O. Box 1525		
		Tel: (680)488-2396 **Fax:** (680)488-2108 **Email:** pmic@palaunet.com		
	Website:	None		
24.	**Name**	**Albatross Palau**	PRV	PS-S
	Contact	Mr. Efram Polycarp, Manager		
	Address	P.O. Box 12 Koror, PW 96940		
		Tel: (680)488-6555 **Fax:** (680)488-2834 **Email:** psata@palaunet.com		
	Website:	None		
25.	**Name**	**Palau Organic Farm, Inc.**	PRV	PS-P, PS-E, RD, TM
	Contact	Ms. Sachko Hayashi		
	Address	P.O. Box 74 Koror, PW 96940		
		Tel: (680)488-2012/8012 **Fax:** (680)488-2012 **Email:** pofi@palaunet.com		
	Website:	www.pof.com		
26.	**Name**	**Palau National Communications Corporation (PNCC)**	GOV (Semi)	IN
	Contact	Mr. Richard Misech, Acting General Manager		
	Address	P.O. Box 99 Koror, PW 96940		
		Tel: (680)587-9000 **Fax:** (680)587-1888 **Email:** pncc@palaunet.com		
	Website:	www.palaunet.com		
27.	**Name**	**Palau National Cellular Corporation (PNCC-Wireless)**	GOV (Semi)	IN
	Contact	Mr. Baulus Kingzio, Manager		
	Address	P.O. Box 10065 Koror, PW 96940		
		Tel: (680)488-9174 **Fax:** (680)488-9173 **Email:** wireless@palaunet.com		
	Website:	None		
28.	**Name**	**Palau Horizon Newspaper**	PRV	IN
	Contact	Mr. Abed E. Younis, Publisher		
	Address	P.O. Box 487 Koror, PW 96940		
		Tel: (680)488-4588 **Fax:** (680)488-4565 **Email:** hprinting@palaunet.com		
	Website:	www.mvariety.com (sister company in Saipan, CNMI)		
29.	**Name**	**Tia Belau News**	PRV	IN

		Institutions	*Type*	*Role*
	Contact	Mr. Moses Uludong, Publisher		
	Address	P.O. Box 10247 Koror, PW 96940		
		Tel: (680)488-6365 **Fax:** (680)488-4810 **Email:** tiabelau@palaunet.com		
	Website:	None		
30.	**Name**	**Ngaremlengui Fishing Coop**	AS-F	PS-P, TM
	Contact	Mr. Oingerang Rengiil, Manager		
	Address	P.O. Box 74		
		Tel: (680)733-1011 **Fax:** none **Email:** none		
	Website:	None		
31.	**Name**	**Peleliu Fishing Coop**	AS-F	PS-P, TM
	Contact	Mr. Kent Giramur		
	Address	P.O. Box 6035		
		Tel: (680)345-1040 **Fax:** (680)345-2967 **Email:** none		
	Website:	None		
32.	**Name**	**Ministry of Commerce and Trade**	GOV	PP, TM
	Contact	Hon. Otoichi Besebes, Minister		
	Address	P.O. Box 1471 Koror, PW 96940		
		Tel: (680)488-2111 **Fax:** (680)488-3207 **Email:** mincat@palaunet.com		
	Website:	None		
33.	**Name**	**Office of the President of the Republic of Palau**	GOV	PP, TM
	Contact	Mr. Roman Yano, Agriculture/Aquaculture Advisor to the President		
	Address	P.O. Box 100 Koror, PW 96940		
		Tel: (680)488-2541 **Fax:** (680)488-3555 **Email:**		
	Website:	None		
34.	**Name**	**National Development Bank of Palau**	BNK (semi GOV)	FS
	Contact	Mr. Kaleb Udui, Jr.		
	Address	P.O. Box 816 Koror, PW 96940		
		Tel: (680)488-2578/3955 **Fax:** (680)488-2579 **Email:** ndbp@palaunet.com		
	Website:	None		
35.	**Name**	**Pacific Savings Bank, Ltd.**	BNK	FS
	Contact	Mr. John DeVivo, Manager		
	Address	P.O. Box 399 Koror, PW 96940		
		Tel: (680)488-1859/1860 **Fax:** (680)488-1858 **Email:** bank@palaunet.com		
	Website:	www.palaunet.com/bank.htm		
36.	**Name**	**Women's Resource Center**	GOV	
	Contact	Ms. Koretti Masayos		
	Address	P.O. Box 100 Koror, PW 96940		
		Tel: (680)488-3929 **Fax:** (680)488-4502 **Email:** giss@palaunet.com		
	Name	**Ekei Women's Group**	AS-W	IN
	Contact	Ms. Anna Ramarui		
	Address	unknown		
		Tel: (680)488-2184 **Fax:** none **Email:** none		
	Website:	none		
	Name	**Club Kebruka Youth Organization**	AS-Y	IN

		Institutions	*Type*	*Role*
	Contact	Mr. Bradley Kumangai		
	Address	unknown		
		Tel: (680)488-1401 **Fax:** none **Email:** none		
	Website:	none		
	Name	**Palau National Youth Congress (PNYC)**	AS-Y	IN
	Contact	Mr. Joe Aitaro, President		
	Address	unknown		
		Tel: 488-3344 **Fax:** none **Email:** none		
	Website:	none		
	Name	**WPKR 88.9 (KRFM)**	PRV	IN
	Contact	unknown		
	Address	unknown		
		Tel: (680)488-0889 **Fax:** none **Email:** none		
	Website:	none		
	Name	**WWFM 89.5**	PRV	IN
	Contact	Alfonso Diaz		
	Address	unknown		
		Tel: (680)488-4848 **Fax:** none **Email:** none		
	Website:	none		
	Name	**Eco-Paradise/TA88 Ngerel Belau**	GOV	IN
	Contact	Bureau of Domestic Affairs		
	Address	P.O. Box 100, Koror, PW 96940		
		Tel: (680)488-3477 **Fax:** unknown **Email:** none		
	Website:	none		

Key

Type		Role	
AS-F	Farmers' association (includes co-ops)	EX	Extension and outreach
AS-W	Women's association	IN	Information services
AS-Y	Youth association	FS	Financial services
BNK	Bank or credit institution	PP	Policy and planning
CCI	Chamber of commerce and industry	PS-E	Private sector – exporter (fresh, frozen and dried produce)
CHU	Church-based group	PS-M	Private sector – manufacturer (e.g. tannery, bottler, refiner, roaster)
EDU	Educational institution	PS-P	Private sector – producer (e.g. commercial farm, fishing company)
GOV	Government department / ministry	PS-S	Private sector – supplier (e.g. chemicals, seeds) (what about public / state-owned enterprises in this area?
NGO	Non-government organisation	RD	Research and development
PRV	Private enterprise, company	RG	Regulation (compliance, standards)
REG	Regional organisation or network	TR	Training (tertiary and vocational level)
STA	Statutory body	TM	Trade and marketing (include development)

Annex A3.1. Select list of key institutions involved in agriculture and rural development

Name: Bureau of Agriculture

Mission/Objective: The Bureau of Agriculture's mission is to assist families to have the skills, resources and opportunity to ensure sustained food production, nutrition, food security and wise stewardship of land-based natural resources and ecosystems.

Field of Specialization: Agriculture, Animal Husbandry, Forestry, Quarantine & Plant Protection
Number of Staff: 31

Branches and other sites:
Main Branch: Malakal, Koror
Field Station: Nekken Agriculture and Forestry Station, Aimeliik, Babeldaob

Annual budget: Approximately USD$345,000 **Source of funding:** Palau National Government USDA Forest Service

Programs:

- **Horticulture and Extension Program** – provides advice and conducts trainings and demonstrations on proper methods for cultivating agricultural crops throughout the year. The program also provides planting material and tractor tilling services to local farmers.
- **Forestry Program –** manages the nursery at the Nekken Agriculture and Forestry Station on Babeldaob. Forestry extension staff propagate tree seedlings of important timber species (such as mahogany) and distribute these seedlings to interested individuals free of charge. They also helped to establish community nurseries in seven of the 16 states by providing technical assistance and facilitating the provision of grants through the Urban & Community Forestry Program. The Urban & Community Forestry Program also has on-going projects such as the Ngardok Nature Reserve – Ecotourism Trail and Boardwalk, the Palau Plants Photographic Database, etc. The Forest Health Program supports the Bureau's efforts to control and eradicate priority invasive weed species found within the Republic. Currently, there are on-going efforts for the control and/or eradication of three priority invasive weeds: *Mikania micrantha*, *Imperata cylindrica*, and *Merremia peltata*.
- **Animal Husbandry Program –** provides services and advice on proper animal husbandry. These services include designing suitable livestock buildings, proper animal feeding instructions, veterinary services, waste management and utilization, breeding, and overall management of livestock and poultry. All services are free of charge.
- **Plant Protection and Quarantine Program** – works to protect the natural environment and agricultural activities in Palau by preventing the introduction and further spread of injurious insects, pests and diseases into and within the Republic of Palau and to fulfill international obligations to prevent the movement of pests in international trade and traffic.

Key projects outside of main program areas:

- FAO Joint Project: *Capacity Building in Farm Management, Marketing and Value-Adding Technologies for Sustainable Livelihood.s* **(Completed)**
- FAO Joint Project: *Feasibility Study for the Development of a Central Market in the Republic of Palau.* **(Current)**
- Criteria and regulations development for tax incentives law for agriculture and aquaculture. **(Completed)**
- Data collection for the agriculture census. **(Completed)**
- Development of a Land-Use Plan for Nekken Agriculture and Forestry Station. **(Current)**
- Development of appropriate agriculture and forestry policies for Palau. **(Current)**
- Development of a Forest Management and Mangrove Management Plan. **(Current)**
- Development of an effective forest-monitoring program. **(Current)**
- Native tree propagation trials and reforestation and rehabilitation trials for degraded lands. **(Current)**
- Development and maintenance of a database on Palau plants. **(Current)**

Name: Bureau of Agriculture

What is the target audience (plus number actual or estimated)? Landowners, policymakers, farmers and general public. Forestry and Agriculture extension work targets approximately 500 individuals per year. Quarantine and permitting functions of the Bureau provide services to over 100,000 individuals per year as they service all ports, all travelers and process incoming and outgoing shipments.

What is the extent of interactions with CTA? The Bureau reported few in any interactions with CTA however, one employee stated that he attended a Regional Workshop on Operation Safety and Maintenance of Agricultural Tractors and Implements, sponsored by IRETA but funded by CTA, Aug. 26-30 2002.

What is the extent of collaboration/interaction with other institutions (name/nature)?
International and Regional institutions include: FAO, IRETA, SPC, UOG, UH, USDA-Forest Service.
The Bureau recently finished a joint project with FAO and is currently working on another joint project. Collaboration with IRETA is mostly limited to receiving newsletters and the Pacific Island Food Composition Table. Bureau staff stated in interviews that the extent of their collaboration is that they receive questionnaires from IRETA to fill out to provide information for their publications. SPC provides technical assistance and has funded experts to come to Palau to provide food processing and value-adding training. SPC also provides critical support to the Plant Protection and Quarantine Program of the Bureau through trainings, equipment and technical advice. They are also currently assisting with identification of an invasive musk shew on the island of Angaur. UOG extension staff have come to Palau to provide training in the past on post-harvest handling and value-adding. UOG staff along with SPC also provided critical support for pest management such as Palau's response to the Papaya Mealy Bug outbreak last year. UH does not provide much support to the Bureau, however they have provided support to the Forestry Unit of the Bureau through coordination by the U.S. Forest Service for Forestry staff to attend short courses at UH-Hilo.

Collaboration/interaction with local institutions:

- PCC-CRE – collaborate in extension work and provided assistance in determining local plant names for their work on plant varieties in Palau.
- PCAA – collaborate in extension work.
- Palau Visitors Authority – promotion of the annual Green Fair, working with PVA to revive the annual agriculture fairs. PVA helps communicate various information from the Bureau to local hotels and restaurants.
- ICDF Agricultural Technical Mission – Very little collaboration and interaction, despite the fact that the Bureau is suppose to play an oversight role.
- State Governments
- USDA-Farmers' Service Agency – help determine estimation of crop yields for applications for farm loans.
- USDA-NRCS – collaborate in developing the Nekken Agriculture and Forestry station land use (conservation) plan. Help with policy advice regarding buffer zones and erosion control.
- The Nature Conservancy (TNC)– collaborate on the development of appropriate forest policy and the forest and mangrove management plan. TNC is currently providing support for training in conservation area planning (Efroymson Workshops) for one staff at the Bureau. TNC has also assisted greatly in the Bureau's strategic planning efforts by providing a professional facilitator and organizational planning expert to facilitate Bureau staff through the process.
- Palau Conservation Society (PCS) – work with PCS on Efroymson workshop team for Babeldaob for conservation area planning of Babeldaob. Also work with PCS on their Important Bird Areas project, providing technical support for vegetation type and plant species identification.
- Bureau of Marine Resources – work together on committee for Protected Areas Network implementation.

How are information needs currently met?
Emails to regional contacts. Books and resources on the bookshelves in the office and at Nekken however, much of the information is outdated. PCC library and Internet searches.

Name: Bureau of Agriculture
What are the main information needs not satisfied? Best varieties for Palau's soils and climate. Pest and disease management information. Information on management and propagation of fruit trees. Best equipment prices and sources for purchasing equipment appropriate for Palau's agricultural development.
What are the main problems faced in terms of information and communication management? Lack of funds to hire much needed additional staff to fill vacancies. Need more staff with appropriate skills for information and communication management. Need to improve management skills at senior management levels within the Bureau.
Why was this institution selected as a key institution? The Bureau of Agriculture is the main agency responsible for agricultural development in Palau, including forestry. This agency is actively working to provide assistance to landowners, state governments, farmers and the general public.

Name: Bureau of Marine Resources

Mission/Objective: To provide support and a favorable environment for the sustainable use of marine resources of Palau by the subsistence, commercial, mariculture, and recreational fisheries sectors for the benefit of the people of Palau.

Field of Specialization: Fisheries and marine resources management and conservation
Number of Staff: 37

Branches and other sites: Main Office: Malakal, Koror and substations in Kayangel, Ngarchelong and Angaur States

Annual budget: $430,000 **Source of funding:** Palau National Government

Programmes/projects undertaken:

Fisheries Development Branch:
- Fisheries Extension Services; Fishing Community Development Projects
- Technology Trials, Survey and Training
- Vessel Operation and Maintenance
- Seabed and Mineral Resources

Fisheries Management Branch:
- Fisheries Statistics and Database
- Research and Resource Assessment
- Fisheries Sampling and Inspection
- Permits and Licensing

Marine Conservation and Protected Areas Branch:
- Ngaremeduu Conservation Area (NCA) project includes monitoring and awareness programs
- Turtle conservation program
- Protected Areas Network support

Aquaculture and Mariculture Branch:
- Operation of the Palau Mariculture Demonstration Center (PMDC)
- Aquaculture extension and training programs
- Marketing and Exhibition
- Hatchery and Rearing Projects

What is the target audience (plus number actual or estimated)? Fishing community (estimate: 5,000+ individuals)

What is the extent of interactions with CTA? None known

What is the extent of collaboration/interaction with other institutions (name/nature)?
Type of collaboration with local institutions:
- Palau Federation of Fishing Associations – support their efforts to get financial and technical assistance from Japan.
- State Governments – support role, information supply and training.
- Palau Conservation Society (PCS) – collaboration in community visits and education efforts.
- PCC-CRE – aquaculture efforts.
- The Nature Conservancy (TNC) – Dugong survey and Protected Areas Network.

Type of collaboration/interaction with regional institutions:
- SPREP – Pacific Region Action Plan, SPBCP – South Pacific Biodiversity Conservation Programme and the Conservation Area Support Officer (CASO) project for Ngaremeduu Bay.
- SPC – Aquaculture development, technology transfer – use of FADs (Fishing Aggregation Devices)

Name: Bureau of Marine Resources

- SOPAC – assistance with boundary delineation for EEZ.
- Forum Fisheries Association (FFA) – exchange of fisheries data (tuna), vessel monitoring and surveillance, strategic action program for oceanic fisheries management.

Type of collaboration/interaction with international institutions:

- FAO – aquaculture project, legislation review and policy advice.
- U.S. Department of Interior – boundary delimitation with guidance from UNCLOS.
- U.S. Fish and Wildlife Service – Turtle and Crocodile project.

How are information needs currently met?

BMR has one of the best libraries in their office. It is alphabetical but not electronically searchable. Despite this library, the majority of information needs are met by contacting relevant regional organizations (SPREP, SPC, FFA, etc.). Also the Western and Central Pacific Fisheries Management Council based in Honolulu under the U.S. Department of Commerce. PIMRIS – Pacific Islands Marine Resource Information System, accessible via the Internet.

What are the main information needs not satisfied?

All information can be found. Never have problems with not being able to find information. Information needs are always satisfied.

What are the main problems faced in terms of information and communication management?

Need more staff that have basic computer skills and expertise in information management and dissemination. Need to have one office that is mandated to handle all coastal fisheries data (collection and dissemination) thus information is scattered.

Why was this institution selected as a key institution?

The Bureau of Marine Resources is the key government institution mandated to facilitate sustainable fisheries in Palau.

Name: Office of the Palau Automated Land and Resource Information System (PALARIS)

Mission/Objective: The Office of the Palau Automated Land and Resource Information System (PALARIS) has the responsibility to develop the National Geographic Information System (GIS), a centralized land and resources system to inventory and support the management of human, economic and natural resources of the Republic of Palau. The National GIS will be a unified and integrated network system that will be used in support of decision making and enhance the formulation of policies for the development of the Republic of Palau. The Office of the PALARIS has been mandated to provide services to government agencies and affiliates relating to the National GIS and coordinate with government agencies and affiliates with respect to geographic information systems. The system will provide coordination and a common view of data in a geographic context between programs.

Field of Specialization: Geographic Information Systems **Number of Staff:** 7 (10 vacancies)

Branches and other sites: Main office located in Koror.

Annual budget: Approx. $150,000 **Source of funding:** Palau National Government

Programs and projects:

- Main project is the development of the National Geographic Information System which will contain digital information about virtually all resources of the Republic.
- To actively pursue the collection of imagery and remotely sensed products that can be used to generate baseline geographic information and to update and develop base layers.
- Coordination with various agencies in Palau and U.S. to meet the increasing demand for geographic information and critical baseline information on Palau's resources.
- Capacity-building for users of GIS through the provision of a series of courses in coordination with the Palau Community College to enhance the capabilities of various agencies to participate in the development and use of the national GIS.

What is the target audience (plus number actual or estimated)? Government and private institutions, NGOs and all who use GIS.

What is the extent of interactions with CTA? None known

What is the extent of collaboration/interaction with other institutions (name/nature)?
PALARIS is currently working with over 70 institutions (mainly local, regional and foreign government agencies)
U.S. Federal Agencies include – USDA – NRCS and Forest Service, USGS, NOAA, National Geodetic Survey, National Ocean Service.

How are information needs currently met?
Because most of their work is related to local geographic information, information needs are met mainly by local institutions.

What are the main information needs not satisfied?

An updated base map that has updated layer information including information about land-use and infrastructure to support facilities management and maintenance programs.

What are the main problems faced in terms of information and communication management?
Not enough staff, currently operating with ten vacancies. Not enough funding to hire more staff or to buy needed equipment. Need technical capacity building for current staff. Not enough local staff at the professional level (none have degrees). Most have gone through some training but none have professional level proficiency in IT. Need more expertise in areas such as relational database management, programming, GIS, and remote sensing.

Why was this institution selected as a key institution?
PALARIS provides geographic layer information, GIS training and technical support critical to many key institutions.

Name: Office of the Palau Automated Land and Resource Information System (PALARIS)
PALARIS is the only institution currently working on developing an ICM policy.

Name: Palau Community College – Cooperative Research and Extension

Mission/Objective: The mission of the Cooperative Research and Extension of the Palau Community College is to collaborate with partners and clients to generate, develop and disseminate practical relevant and sustainable technologies and knowledge in agriculture, environment, food and human sciences to benefit the people of Palau.

Field of Specialization: Research and Extension **Number of Staff:** 18

Branches and other sites: Administrative office located in Koror at PCC. Research and development station in Ngermeskang, Ngaremlengui State.

Annual budget: $500,000
Source of funding: U.S. Federal grants (USDA), some funding from Palau National Government.

Programmes/projects undertaken:
Three main sections of work for PCC-CRE are: Agriculture, Family and Consumer Education, and Natural Resources and Environmental Education.

Agriculture:

- Biological control

1. Importation and release of bio-control for Siam weed (*Chromolaena odorata*), Creeping Sensitive Plant (*Mimosa diplotricha*), Taro leaf hopper, Cassava spider mite, and evaluation of the Papaya Mealy Bug.

- Medicinal Plant in Palau (publication)
- Evaluation of Root Crop Varieties
- Micropropagation and In Vitro Conservation of Taro
- Preservation and Improvement of Taro Production Systems
- Development of Control Strategies Against Taro Corm Rot.

Family and Consumer Education:

- Personal Sewing
- Food Safety and Quality
- Human Nutrition

Natural Resources and Environmental Education:

- Giant Freshwater Prawn Aquaculture
- Irrigation Practices
- Agriculture Internship
- Compost
- Summer Marine Science
- Outdoor Wildlife
- Water Quality
- After-School Science
- Watershed Management and Protection

What is the target audience (plus number actual or estimated)? Palauan farmers and rural community (all of Palau, 20,000 people)

What is the extent of interactions with CTA? Have received some communications (newsletter). One staff attended a Agriculture Communication Workshop in Kiribati in 2003, partially funded by CTA)

What is the extent of collaboration/interaction with other institutions (name/nature)?

International Institutions:
FAO – work indirectly with FAO for development of the agriculture survey for the feasibility study for establishing a central market in Palau.

Name: Palau Community College – Cooperative Research and Extension

U.S. Federal Agencies:
USDA – Land Grant program supports all of the programs at PCC-CRE
USDA-NRCS – Collaborated to develop the Conservation Plan for the Research and Development Station at Ngermeskang, Ngaremlengui.
ICDF – sometimes share resources (plant material) and information.

Local Institutions:
Some collaboration exists with many of the local institutions mainly members of the Palau Natural Resources Council. (PCC-CRE staff is current Chairperson for PNRC)

How are information needs currently met?
PCC library and through email queries to contacts within region and the College of Micronesia network of professionals. Also conduct Internet searches on occasion. When possible, searches at libraries off-island (University of Philippines and University of Hawaii). Some staff reported that their vacations are often times "working vacations" as they use this time to search for information needs that they are unable to source on-island.

What are the main information needs not satisfied?
Agricultural research literature. Have a hard time getting information related to aquaculture. Also need peer review of publications, project proposals and information on what is happening in agricultural development in other parts of the region – "who's doing what?"

What are the main problems faced in terms of information and communication management?
Not enough staff and staff with skills for ICM. No one strategy or policy exists for ICM and ICM policies are currently organized informally within the different sections. Need to improve skills for establishing and managing information systems.

Why was this institution selected as a key institution?
PCC-CRE is the only established local agricultural research institution. PCC-CRE staff have the skills and expertise to take agricultural techniques and modify them to a level that Palauan farmers can adopt. All technical staff do extension work to bring these modified techniques to the Palauan farmers and rural community.

Name: Palau Community Action Agency (PCAA) – Food Production and Employment Program

Mission/Objective: To provide comprehensive demonstrations, advice and plant materials to families, farmers, groups and individuals to promote and improve healthy lifestyles, economic opportunities, and to utilize local resources in an environmentally friendly way.

Field of Specialization: Agriculture and Fisheries / Food Production **Number of Staff:** 2

Branches and other sites: Main office located in Koror.

Annual budget: Approx. $40,000 **Source of funding:** Grants and Palau National Government

Programmes/projects undertaken:

- Farm management training for rural communities – over 70 individuals participate per year.
- Demonstration farm – this is a key component of program activities. This farm is used for trainings and to provide seedlings to farmers.
- Nursery and Fruit tree distribution program – this program focuses mainly on the propagation and distribution of citrus species (mainly orange and tangerine). These are reported to have once been abundant in Palau but now only around ten trees exist which have not been properly maintained and as a result are no longer fruiting properly.
- Vector control – this program focuses efforts on rat control in and around farmed areas.
- Farm emergency mitigation – this program works to assist farmers learn the necessary techniques to prevent total loss of crops during natural disasters and phenomena such as typhoons, long droughts, etc.
- Extension and small business – working with the rural communities throughout Palau to assist farmers to establish a consistency product that can be grown and maintained for profit. This program also helps farmers put together appropriate farm designs. For example, advises farmers to have plots for family, customs and profits. This is to eliminate the practice of using profit plots to offset customs and family obligations.
- General extension – the program provides extension services to the rural communities on call and conducts visits to farms to learn about farmers problems first hand. PCAA staff of the Food Production and Employment program believes that the more face to face contact the better because farmers will learn more and will trust them to help with their farms.

What is the target audience (plus number actual or estimated)? Rural community, local farmers and fishing community. (Estimated between 250 and 500 individuals per year)

What is the extent of interactions with CTA? None known

What is the extent of collaboration/interaction with other institutions (name/nature)?
Mainly collaborate with Bureau of Agriculture, PCC-CRE, state governments, as well as youth and women's groups in the implementation of their programs.

How are information needs currently met?
Searches through semi-organized files and stacks of books. Limited Internet searches. Some email queries to regional contacts.

What are the main information needs not satisfied?
Best varieties of crops for Palau's climate. Best practices for farming certain species with potential market production in Palau (e.g., pineapples)

What are the main problems faced in terms of information and communication management?
Lack of enough staff, limited computer skills for ICM and lack of a clear policy.

Name: Palau Community Action Agency (PCAA) – Food Production and Employment Program
Why was this institution selected as a key institution? PCAA is one of the oldest community organizations in Palau and one of the few working directly with the rural communities for agricultural and rural development, with the ultimate goal of alleviating poverty. PCAA is highly influential and arguably has the best rapport with the rural communities for agricultural development.

Name: Palau Conservation Society

Mission/Objective: To work with communities to preserve the nation's unique natural environment and perpetuate its traditional conservation ethic for the economic and social benefit of present and future generations of Palauans and for the enjoyment and education of all.

Field of Specialization: Conservation and natural resource management **Number of Staff:** 15

Branches and other sites: Main office located in Koror. Community Conservation Officers stationed in Ngaremlengui and Ngarchelong States.

Annual budget: Approx. $350,000 **Source of funding:** Grants, membership fees, corporate sponsors, U.S. Federal grants, private foundations and individual donors

Programmes/projects undertaken:

- *Terrestrial Program* – Development of the Ngerikiil watershed plan, work with Ngardok Nature Reserve Board to help establish nature trail, provide support to Ngaremeduu Watershed through Community Conservation Officer stationed in Ngaremlengui State. Member of the Protected Areas Network committee to implement the Protected Areas Network Act.
- *Education Program* (cross-cutting) – school and community visits, production of factsheets and awareness materials (publications, newspaper articles, radio and video. Conducted Conservation Education Campaigns for the Palau Fruit Dove, turtles, dugongs and the on-going longer term Education Campaign for watersheds "Rigdge to Reef Campaign."
- *Marine Program* – Working with communities to establish and manage marine protected areas throughout Palau. Member of the Protected Areas Network committee to implement the Protected Areas Network Act.
- *Development Program* – Main work includes institutional development and fundraising, managing PCS membership, PCS quarterly newsletter, seeking opportunities (capacity building, grants, etc.) and the maintenance of donor relationships.
- *Research Program* (cross-cutting) – Development of research grant proposals. Coordinates U.S. Federal grants. Recent projects include a Community Consultation Study on Resource Use for the development of Palau's NBSAP (National Biodiversity Strategy and Action Plan). Organization of an Aquaculture workshop in collaboration with experts from the University of Hawaii. Currently working on the development of a 3-year medium – large sized grant proposal to support ecosystem based management for the island of Babeldaob.

What is the target audience (plus number actual or estimated)? Communities, primary school students, youth, key decision makers, senior citizens. (estimated 25,000+ which includes all of Palau, Palauans living abroad and key development and conservation partners around the world)

What is the extent of interactions with CTA? None known.

What is the extent of collaboration/interaction with other institutions (name/nature)?

International:

- Birdlife International – PCS is the only member organization of Birdlife International in Micronesia. Current work is the Important Bird Areas (IBAs) Project which seeks to determine the status of bird populations in Palau with the ultimate goal of establishing protected areas (as communities designate) based on areas that have been identified as important to birds.
- The Nature Conservancy – Provides funding to PCS for two conservation officers, provides institutional development support, collaborate on work for the Protected Areas Network (PAN).
- UNESCO – Currently managing the Small Islands Voice (SIV) program in Palau (the Community Visioning Initiative).
- EU – PCS is the institution designated to manage the Cotonou Agreement's NSA (non-state actors) grant which is a portion of the Economic Development Program.

U.S. Federal Agencies:

- US Fish and Wildlife Service (USFWS) – PCS partnered with USFWS to conduct a workshop on the Variable Circular Plot (VCP) methodology for bird survey work. Will be working together on re-conducting the 1991 bird

Name: Palau Conservation Society

surveys to get a sense of the status of bird populations.
- USDA Forest Service – Collaboration on development of the Ngardok Nature Reserve trail.
- USDA Natural Resource Conservation Service (NRCS) – Working with NRCS to develop the Ngerikiil Watershed Management Plan.

Regional:
- SPREP – Development of social marketing training. PCS participated in SPREP's South Pacific Biodiversity Conservation Programme (SPBCP) for the Rock Islands Conservation Area in Palau. (funded by UNDP)
- Foundation for the Peoples of the South Pacific – Member of FSP.

Local:
PCS plays a key role in facilitating and coordinating key players for sustainable development in Palau including working with the Governor's Association, Traditional Council of Chiefs, community organizations, state governments including the state legislatures. Their collaboration/interaction with agencies in Palau is extensive. Below are a few examples of collaboration/interaction:
- Office of the President – Provide advisory support (e.g., accompanied the President's delegation to lobby for Palau's membership in the U.S. Coral Reef Task Force).
- Bureau of Agriculture – Collaborate on IBAs work, invasive species work, PAN work, PCS provides input into Bureau's strategic planning and vice-versa.
- Bureau of Marine Resources – Provides support to the Bureau's Marine Conservation and Protected Areas Program through providing assistance from the Community Conservation Officer stationed in Ngaremlengui.
- PICRC – Collaborate for the development of the ecosystem based management grant for Babeldaob.
- PALARIS – Information exchange. PALARIS also provides IT training, technical support and advice related to GIS.
- Palau Mission to the UN – Provided advisory support to Palau's Ambassador to the UN for the Prepcom for BPOA + 10 in April in New York.
- Office of Environmental Response and Coordination (OERC) – PCS is a member of the committee to develop Palau's National Biodiversity Strategy and Action Plan (NBSAP) coordinated by the OERC. PCS was also hired as a consultant to conduct the Community Consultation on Resource Use study for the NBSAP's development.

How are information needs currently met?
PCS has an exceptional library for Palau standards. It is electronically searchable however the Procite database is rarely used and needs to be updated. PCS' Research Officer plays a large role in sourcing information. Information needs are also met through queries to colleagues and partners at the local, regional and international levels. PALARIS provides key geographic layer information. Main type of information needed is basic statistical data, biological data, contact information, information on various institutions and organizations and information on opportunities for capacity building and funding.

What are the main information needs not satisfied?
PCS sometimes finds it difficult to get information from other agencies on their work. There are also numerous scientific information needs (such as habitat requirement for various species in Palau, etc.) however these information needs are mainly due to the fact that the scientific research has not yet been done.

What are the main problems faced in terms of information and communication management?
Lack of a clear policy or strategy for ICM. PCS reported that they have adequate numbers of staff with the needed skills and equipment but simply lack a clear written policy or strategy for ICM.

Why was this institution selected as a key institution?
PCS is an influential institution as it is the main local NGO working directly with communities for rural development in Palau, particularly as it relates to conservation and natural resource management.

Name: The Nature Conservancy

Mission/Objective: To preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the land and waters they need to survive.

Field of Specialization: Conservation and natural resource management **Number of Staff:** 5

Branches and other sites: Palau program office located in Koror. Home office for the Pacific Region is in Brisbane, Australia.

Annual budget: between $400,000 to $500,000 per year
Source of funding: Mainly grants from U.S. foundations and individuals and some U.S. Federal grants.

Programmes/projects undertaken:
Examples of activities since 1990 are:

- Coordinated and conducted rapid ecological assessments (REAs) of the main and southwest islands to identify key species, habitats, and communities requiring conservation.
- Assisted the Marine Resources Division in advocating for policy and regulatory reform for the harvest of Palau's marine resources, with an emphasis on the comprehensive Marine Resources Protection Act, passed in 1994.
- Coordinated surveys and studies into saltwater crocodiles, dugongs, and sea turtles, grouper spawning aggregation sites, and current modeling.
- Assisted Koror State in management of the Rock Islands are, including development of a comprehensive management plan and establishment of a mooring buoy program for Palau (resulting in the current capability of the Koror State Rangers to install and maintain mooring and demarcation buoys at all major dive and tourist sites, and marine conservation areas); and,
- Assisted in the development of the Protected Areas Network legislation and currently supporting its implementation.

What is the target audience (plus number actual or estimated)? Partners – PCS, PALARIS, PICRC, Bureau of Agriculture, Bureau of Marine Resources, Koror and Kayangel State governments, Palauan decision-makers. Work directly with approximately 50 individuals, but indirectly TNC's work targets the entire population in Palau.

What is the extent of interactions with CTA? None known.

What is the extent of collaboration/interaction with other institutions (name/nature)?
International:

- Conservation International (CI) – TNC joint work with CI through their Conservation Ecosystem Partners Fund program (CEPF).
- FAO – TNC conducted a forest legislative review for FAO.

U.S. Federal Agencies:

- U.S. Fish and Wildlife Service – TNC participated in the Variable Circular Plot (VCP) methodology workshop for bird surveys, co-hosted by USFWS and PCS.
- U.S. Forest Service – collaborate on various forest related work (e.g., Ngardok Nature Reserve Nature trail, Palau Forest Inventory Assessment and work to assist in providing input into the development of Palau's National Biodiversity Strategy and Action Plan (NBSAP) etc.
- National Oceanic and Atmospheric Assocation (NOAA)/Australian International Marine Science (AIMS) - currently working on modeling for protected areas resilience study.

Regional:

- SPC and SPREP – have worked in the past on a study regarding the live reef food fish trade. Reports and awareness materials were produced with this study.

Local:

- Koror State Government – TNC provides technical support for the development and implementation of the Rock Islands Conservation Area (RICA) management plan.
- Kayangel State Government – TNC provides ongoing implementation support for the Ngeruangel and other northern

Name: The Nature Conservancy

reef conservation areas.

- Bureau of Marine Resources – Crocodile report and management planning.
- Bureau of Agriculture – Support for strategic planning initiative and forest/mangrove management planning.
- Palau International Coral Reef Center – some collaboration on scientific work and assistance with strategic planning.
- PALARIS – collaborate mainly for information exchange. PALARIS provides geographic layers information as well as technical support for GIS use.

How are information needs currently met?
Information needs are mainly scientific. TNC commissions scientific studies as needs (and funding) arise. Information needs are also met through talking with partners and various contacts. Local partners provide information related to communities – proper protocol, cultural norms and policy/politics.

What are the main information needs not satisfied?
Need more scientific information on marine and terrestrial ecosystems and species in Palau, such as habitat requirements for certain species, information on rare and endangered species, and all other information necessary for effectively designing the Protected Areas Network.

What are the main problems faced in terms of information and communication management?
Lack of enough staff to carry out ICM functions. Have skills, equipment and some financial resources but not enough time for effective ICM due to heavy workload and few staff. The decline in the U.S. economy has led to flat budget lines over the past few years.

Why was this institution selected as a key institution?
The Nature Conservancy is one of the largest (if not the largest) conservation NGO in the United States. TNC is influential at the policy level and has historically contributed significantly to Palau's efforts in conservation and natural resource management.

Name: Palau Federation of Fishing Associations (PFFA)

Mission/Objective: The Palau Federation of Fishing Associations is dedicated to providing quality fisheries-related services to the general public through close coordination and collaboration with Palauan fishermen and their respective chartered state fishing cooperative associations.

Field of Specialization: Fisheries development **Number of Staff:** 5

Branches and other sites: Main office located in Malakal, Koror.

Annual budget: None
Source of funding: Previously supported through national government assistance which was abruptly cut. Currently, main source of funding is from membership and shareholders fees, sale of fuel and ice and the provision of cold-storage services, etc.

Programmes/projects undertaken: Coordination and support for local fishing and farming cooperatives in over ten states throughout Palau.

What is the target audience (plus number actual or estimated)? Shareholders and members of the fishing and farming cooperatives. (estimated number of target audience: 150)

What is the extent of interactions with CTA? None known.

What is the extent of collaboration/interaction with other institutions (name/nature)?
Bureau of Marine Resources – BMR is assisting in securing funding from Japan. PFFA also collaborates with BMR regarding catch data for reef fish.

Little or no collaboration/interaction with regional and international institutions.

How are information needs currently met?
Bureau of Marine Resources is the main source of information for PFFA.

What are the main information needs not satisfied?
Need a good model for the organization. Need a good organizational structure that takes into account the financial constraints and the developmental needs of the organization so it can develop and function effectively. Also need contacts abroad where there is potential for export and market development.

What are the main problems faced in terms of information and communication management?
Lack of a good system for information flow. Lack of management skills at the management level. No library or databases have been developed and no staff with skills for this development. Mediocre file systems.

Why was this institution selected as a key institution?
This institution acts as a purchasing and marketing agent for the cooperatives in the various states. This institution has great potential to have a significant impact at the grassroots level in Palau. PFFA if operational, could drastically improve farming, fisheries and overall agricultural and fisheries development in Palau.

Name: OISCA Palau (Organization for Industrial, Spiritual and Cultural Advancement)

Mission/Objective:

Field of Specialization: Agriculture and Conservation training **Number of Staff:** 20 Board members, 2 staff

Branches and other sites: Aimeliik State at Nekken Agriculture and Forestry Station.

Annual budget: $3,500

Source of funding: Previously subsidized by the national government assistance, which was abruptly cut after a fire burned down classrooms in 1989. Since this time, the organization has not been operating to its full potential. Currently, main source of funding is profits from selling produce and livestock maintained by the two staff at the OISCA center. Currently seeking sources of funding and have recently submitted two proposals to Japan.

Programmes/projects undertaken:

Agriculture Training Center – This program was started by the Japanese in the 1970s and operated as an agricultural boarding school for students after completing high school. Training focused on skills for forestry, agriculture and livestock for one year in Palau and then offered another year of training for qualified students in Japan.

Children's Farming and Forestry Program – This involved students from schools in Palau (mainly primary level) to take field trips to OISCA to observe the farm and plant timber trees and learn techniques for developing farms and timber plantations.

What is the target audience (plus number actual or estimated)? Mainly Palauan and other Micronesian Youth (ages 18 – early 40s)

What is the extent of interactions with CTA? None known.

What is the extent of collaboration/interaction with other institutions (name/nature)?

PCC – students from PCC used to come to observe and conduct research projects at OISCA.

PCC-CRE – used to act as a liaison between OISCA and students of the various other Micronesian States.

Japan OISCA – provides information and invites Palau OISCA board members to attend seminar and workshops in Japan.

Little or no collaboration/interaction with regional and international institutions.

How are information needs currently met?

Mainly by information provided by the Japan OISCA office.

What are the main information needs not satisfied?

Need information related to institutional development. Also need information on potential sources of funding.

What are the main problems faced in terms of information and communication management?

No funding and no equipment for effective ICM. Currently there are around 12 active board members and most do not have basic computer skills or skills necessary for effective ICM. The two staff are foreign laborers that oversee the farm and livestock operations at the OISCA farm.

Why was this institution selected as a key institution?

This institution acts as a purchasing and marketing agent for the cooperatives in the various states. This institution has great potential to have a significant impact at the grassroots level in Palau. PFFA if operational, could drastically improve farming, fisheries and overall agricultural and fisheries development in Palau.

Name: United States Department of Agriculture – Natural Resources Conservation Service (NRCS)

Mission/Objective: To provide progressive leadership and to work with partners for wise use and protection of our islands' natural resources.

Field of Specialization: Natural Resources Conservation **Number of Staff:** 1

Branches and other sites:
Guam, CNMI, U.S.

Annual budget: Approx. $200,000 **Source of funding:** U.S. Federal Government

Programmes/projects undertaken:

- Soil Assessment for Peleliu and Angaur
- Ngardok Nature Reserve Conservation Plan (Reforestation Plan)
- Soil Assessment for Ngaremeduu Management Plan
- Ngerikiil Watershed Project
- Assessment of Resource Problems in the Ngerikiil Watershed
- Conservation Plan for Nekken Agriculture and Forestry Station

What is the target audience (plus number actual or estimated)? Landowners and people who make decisions about resources. Due to having only one staff the estimated number of individuals in the target audiences are approximately 200 per year.

What is the extent of interactions with CTA? None known

What is the extent of collaboration/interaction with other institutions (name/nature)?
Collaboration is mainly with local agencies (PALARIS, Bureau of Agriculture, Palau Conservation Society, and PNRC and NEPC) on various programs and projects listed above and to provide technical assistance and advice in developing conservation plans, resource assessments and land-use planning, etc.

How are information needs are currently met?
Books, journals and other resources on the bookshelves in the office, emails to specialists off-island but within the agency (USDA-NRCS), occasional Internet searches.

What are the main information needs not satisfied?
Crop requirements and yields information for various soil types in Palau. Information needed to support the development of nutrient management plans.

What are the main problems faced in terms of information and communication management?
Not enough funds to hire more staff. U.S. war efforts in Iraq have had a negative financial impact on the agency's budget preventing the hiring of additional staff. Not enough support staff to carry out ICM functions. Need at least three more full-time staff.

Why was this institution selected as a key institution?
NRCS is actively providing much needed support to local agencies and farmers. The national government in Palau relies heavily on the expertise and advice provided by NRCS, which is seen as a key resource agency in Palau (especially for land resources). It is important to note that despite their being funded by the U.S. Federal Government, they too suffer from inadequate resources to adequately fulfill their mission like many of the local institutions.