

# Agriculture Strategic Action Plan 2011–2015

## Pohnpei State

Federated States of Micronesia

Healthy Eating, Healthy Living for Healthy Families



Growing the Pacific.  
Growing our future together.  
L'Océanie, le terrain de notre avenir.

**SPC Land Resources Division**

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and the Secretariat of the Pacific Community

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The Strategic Action Plan was finalized by the Administrator of the Pohnpei Office of Economic Affairs, Mr Valerio Hallens; Chief of Pohnpei Agriculture, Mr Adelino Lorens; Program Manager for Agriculture and Forestry, FSM Government's Department of Resources and Development, Division of Resource Management and Development, Mr Gibson Susumu; and the Secretariat of the Pacific Community's Land Resources Division Pohnpei-based Participatory Extension Officer, Mrs Mereseini Seniloli.

# Foreword

It gives me great pleasure to present the five-year Strategic Action Plan 2011–2015 for Pohnpei State Agriculture. The Strategic Action Plan will be the road map for agricultural development in Pohnpei State. There are identified challenges that need to be met and overcome in order for agriculture production to be sustainable. There are also identified opportunities that need to be explored in order to better use the agricultural resources that the State has been blessed with.

I look forward to the implementation of the Strategic Action Plan on all levels of management. That is, from the executive management, middle management down to the field level where activities are carried out. Field level implementation of activities is crucial for our farmers to benefit, improve and sustain their healthy livelihood. I am also keen to see how the Strategic Action Plan may improve both domestic and export markets.

My hearty congratulations to all our partners and stakeholders who contributed to the development of this Strategic Action Plan. This is a job well done. Let us work together to ensure that the Strategic Action Plan is implemented so that we can eat healthy nutritious food, live healthy, and have healthy families.



Mr Valerio Hallens  
**Administrator, Office of Economic Affairs**  
**Pohnpei State, Federated States of Micronesia**

# Executive Summary

This Strategic Action Plan (SAP) provides the vision and direction for Pohnpei State Agriculture over the five-year period 2011–2015. The overall goal of this SAP is to identify concerns that are specific to agriculture and which need to be addressed over the next five years through a coordinated and practical approach to increase food production in Pohnpei, while also promoting environmentally sound farming practices. The SAP has been developed in consultation with key stakeholders, including the private sector, non-governmental organizations, communities, and national and municipal government representatives. Building on previous work by the Secretariat of the Pacific Community's Development of Sustainable Agriculture in the Pacific project, four priority areas have been identified, which will be the basis for program of work over the next five years.

The priority areas include: 1) human and institutional capacity building; 2) food and nutrition security; 3) limited market opportunities and lack of competitiveness of agricultural products; and 4) public awareness and collaboration. To fulfill its vision, the Pohnpei Agriculture Office of Economic Affairs (AOEA) is committed to pursuing a number of strategies towards achieving these priority areas, and has agreed on four sector goals: 1) Pohnpei Agriculture is fully resourced to carry out its operations effectively; 2) enhance production, increase productivity, and resilience of crop and livestock systems for food security, nutrition, and income generation; 3) improve marketing systems and market access to local produce; 4) Increase public awareness of the importance of agriculture, and strengthen collaboration with stakeholders and communities.

The Pohnpei State Agriculture office on its own cannot effectively implement the strategy due to human resource and financial constraints, and is forming partnerships with other stakeholders. Hence, this SAP identifies specific concerns related to agriculture, which will be addressed over the next five years or more. Accordingly, as resources and priorities change over time and additional information is gathered, we envision that the SAP will be updated and revised as needed. This SAP will be monitored and evaluated annually by the AOEA and updated as necessary. AOEA will take the lead in monitoring and reporting the progress of this SAP to relevant stakeholders.



# Abbreviations

AES	-	Agriculture Experiment Station
AOEA	-	Agriculture Office of Economic Affairs
CBD	-	Convention of Biological Diversity
COM	-	College of Micronesia
CRE	-	Corporate Research and Extension
CSP	-	Conservation Society of Pohnpei
DLNR	-	Department of Land and Natural Resources
DSAP	-	Development of Sustainable Agriculture in the Pacific
EPA	-	Environmental Protection Agency
FAO	-	Food Agriculture Organization
FSM	-	Federated States of Micronesia
GDP	-	Gross Domestic Product
IFCP	-	Island Food Community of Pohnpei
JEMCO	-	Joint Economic Management Committee
JOCV	-	Japanese Overseas Cooperation Volunteers
NGOs	-	Non-Governmental Organizations
NOAA	-	National Oceanic Atmospheric Administration of the United States
NPOs	-	Non-Profit Organizations
NRCS	-	Natural Resources Conservation Services
PFA	-	Pohnpei Farmers Association
PSBDC	-	Pohnpei Small Business Development Center
SAP	-	Strategic Action Plan
SARE	-	Sustainable Agriculture Research and Education
SBD	-	Small Business Development
SPC	-	Secretariat of the Pacific Community
SPREP	-	Secretariat of the Pacific Regional Environment Programme
TNC	-	The Nature Conservancy
UNICEF	-	United Nations Children Fund
UOG	-	University of Guam
USDA	-	United States Department of Agriculture
USP	-	University of the South Pacific

# State Profile

The island of Pohnpei is one of the four states of the Federated States of Micronesia (FSM). It is located at 6054' N latitude and 158014' E longitude in the Caroline Islands group, about 4,900 km southwest of the Hawaiian Islands (Fig. 1.1). It is the highest (772 m) and second largest (355 km<sup>2</sup>) in the group and one of the few high islands (Raynor and Fownes 1993) in FSM. The island is of volcanic origin and is about five million years old (Keating et al. 1984). Average rainfall is approximately 4,800 mm and is evenly distributed over 300 days of the year according to the United States National Oceanic Atmospheric Administration (1987). Temperatures average 27°C and relative humidity is high.

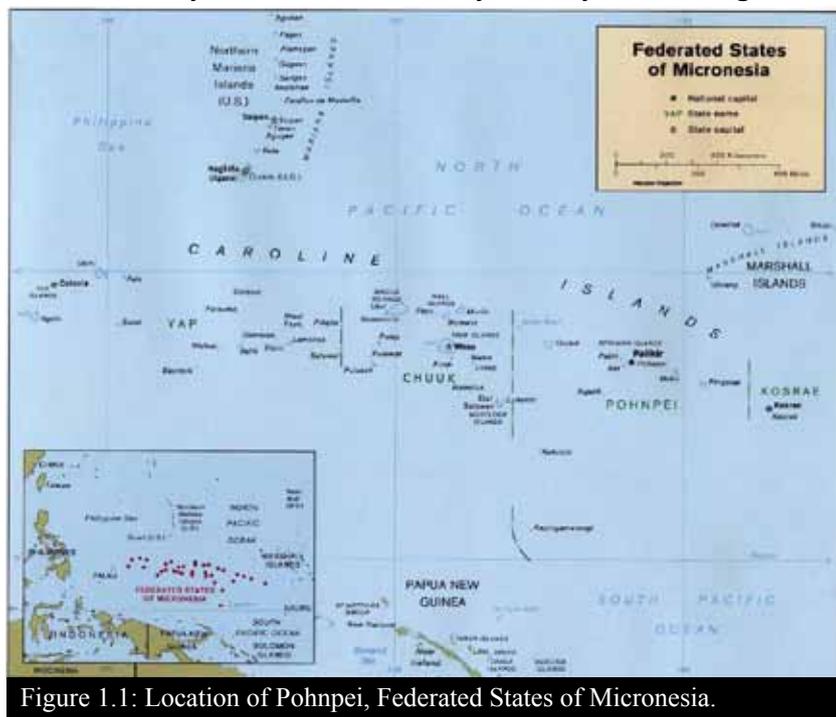


Figure 1.1: Location of Pohnpei, Federated States of Micronesia.

A study by the Asian Development Bank (1996) reported that 15% of Pohnpei Island is covered by intact upland forests, with an additional 15% consisting of disturbed upland forests. Drew (2008) recorded that traditional agroforestry areas cover 37% of the island, with coastal forests (16%) and secondary forests (12%) comprising much of the remainder of the island. Extensive mangrove forests and a fringing reef surround much of the island. In the lowlands, highly weathered oxisols are the most common soils, whereas inceptisols are more commonly found in the interior and upland regions of the island (Laird 1987).

The upland forests are very rich in biodiversity, with high numbers of flora and fauna found only in Pohnpei (i.e. endemic) because of the island's relative age and isolation. According to Merlin et al (1992), approximately 34% of the 767 plant species that have been recorded on Pohnpei are native to the island's upland forests. One hundred and eleven plant species are endemic to the island and 90% of these are found in upland forests. In addition, 16% of the island's bird species are endemic (Merlin et al. 1992). Pohnpei remains one of the most biologically diverse of any island in Micronesia (Merlin and Raynor 2005).

Pohnpei has 8 inhabited atolls, 25 smaller islands within a barrier reef, and 137 widely-scattered coral atolls. Pohnpei has a population of 34,400; 32,100 on the main island and 2,300 on the outer islands (Government of the Federated States of Micronesia 2002). Pohnpei's population is estimated to increase to over 48,600 by 2014. The age distribution is heavily skewed toward younger ages, with over 50% of the total population under the age of 25 (Government of Federated States of Micronesia 2002). The island's eight inhabited atolls include Mwoakilloa, Pingelap, Kapingamarangi, Nukuoro, Sapwuafik, Ant, Pakin and Oroluk (Fig. 1.2). Pohnpei is divided into five municipalities. The island's main urban area is Kolonia located within Nett municipality (Fig. 1.3).



Figure 1.2. Pohnpei and its outer islands.

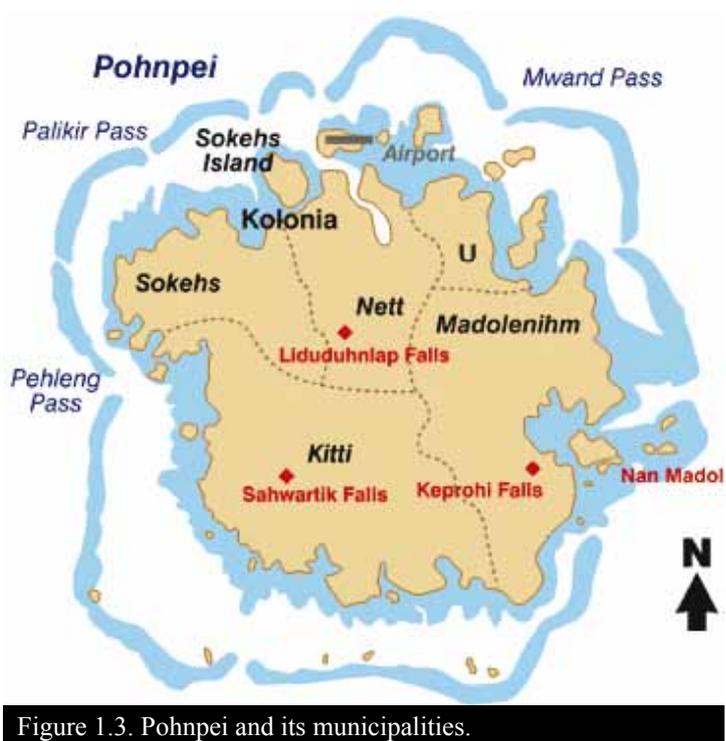


Figure 1.3. Pohnpei and its municipalities.

# Agriculture Office of Economic Affairs

Pohnpei State Agriculture reports to the Administrator of the Office of Economic Affairs. Its current roles and functions include the following:

- Responsible for the Pilot Farm, which is a technical assistance project funded by the People's Republic of China. Five Chinese agriculturalists are provided by the government of the People's Republic of China to work with local counterparts to pass on new and appropriate methods of vegetable production.
- Provides services in conducting meetings, farm and/or office visits, telephone enquiries, equipment services and inputs sales to farmers. Supports and collaborates with the College of Micronesia Corporate Research and Extension (Pohnpei Campus) for extension services.
- Maintains a gene-bank collection of the main traditional food crops, including swamp taro (*Cyrtosperma chamissonis*) and bananas (*Musa sp.*).
- Coordinates agricultural functions with partner agencies to promote local agricultural production for health, food security, and environmental and cultural benefits.
- Establishes and supports the marketing of local commodities, a new and important partnership function to promote marketing of local farm produce.

The Agriculture Office of Economic Affairs (AOEA) employs 10 permanent employees and 6 contract workers. The technical team includes a Chief of Agriculture, Agriculturist IV, Agriculturist III, Agriculturist II, Equipment Operator III, Equipment Operator II, and three farm laborers.

## Our vision

*The people of Pohnpei are living healthy, full and prosperous lives through a strong and vibrant agriculture sector that provides for self-sufficiency through increased production and abundance of locally grown nutritious food in a culturally and environmentally sustainable manner.*

## Our mission

*To work in partnership with agricultural communities and agencies to enable an environment for a more dynamic and vibrant agricultural sector that is inclusive and shared to bring about change that results in food security, income generation, environmental and public health improvements.*

## Our goals

*The overall goal of this Strategic Action Plan (SAP) is to identify specific agriculture-related concerns that should be addressed over the next five years through a coordinated and practical approach towards increased nutritious food production while promoting environmentally sound farming practices.*

## Our role

AOEA will act as the key facilitator for all actions specified in this SAP.

## Our stakeholders

Our key stakeholders will be the Pohnpei general public, private sector and the Pohnpei State government.

## Our target audience

All of our activities will focus on agricultural development with regards to the following specific target audiences.

### Municipalities

- Villages
- Schools
- Churches
- Non-profit organizations (NPOs) and non-governmental organizations (NGOs)
- Grass roots level (men/women/youth/farmers)
- Local governments

## State

- Importers
- Exporters (agricultural products that can be produced locally)
- Policy-makers
- State government
- NGOs and NPOs
- Public market owners

## Our values

*Excellence and professionalism:* We shall strive to achieve the highest standards in service delivery and shall actively explore opportunities to improve on those standards. We shall also ensure that performance management, as a service delivery culture, will be integrated into all our operations.

*Commitment:* We commit ourselves to being an effective agent of agricultural transformation and, therefore, will embrace a culture of customer service. The farmer, service providers and all our stakeholders will be central to our operations.

*Diligence and courtesy:* We shall be at our places of work during official hours of duty and shall diligently devote ourselves wholly to our work. We shall treat all our valued clients and colleagues with courtesy.

*Integrity:* We shall uphold high moral integrity in the provision of our services. To this effect, we shall refrain from seeking, offering or accepting favors or inducements, financial or otherwise, in the course of discharging our duties. We shall not use public property or official time to fulfill private needs; and we shall not use information acquired in the course of official duties to gain personal advantage.

*Gender equity:* Taking cognizance of the key role of women in production and marketing of agricultural products, we shall endeavor to promote gender-sensitive practices and culture within our staff and the wider agricultural stakeholders.

*Partnership-building:* We will promote and embrace partnerships and participatory processes in project formulation and implementation of our activities. Active participation of our stakeholders, especially the private sector and grassroots communities, will enhance ownership of programs and projects.

*Accountability and transparency:* We shall be accountable and transparent to the government and to the people of Pohnpei.

*Efficiency and responsiveness:* We will serve our clientele in an efficient manner, ensuring that all requests are dealt with as promptly as possible.



# Background

## Pohnpeian agroforestry

Agriculture has been an important part of life on Pohnpei, which is known as the “Garden Island” of FSM. According to Haun (1984), indigenous agroforestry is a dominant feature of both the landscape and culture of Pohnpei, and has been practiced for thousands of years. Raynor and Fownes (1993) stated that traditionally, almost all production — be it for subsistence, local market, or export — is by family units using localized agroforestry systems, providing employment, food security, and income while maintaining the cultural and ecological integrity of the island and its population. Numerous crop types and varieties have been introduced through migration and agricultural development projects. This trend was identified by Barrau (1961), Ragone et al. (2001) and the European Union-funded Development of Sustainable Agriculture in the Pacific (DSAP) project (2009). For example, new varieties of vegetables such as okra (*Abelmoschus esculentus*) and eggplant (*Solanum melongena*) are now included in traditional agroforestry systems on Pohnpei.

Micronesian agroforestry can be separated into two distinct types (Clarke and Thaman 1993). The first is practiced on the higher and larger islands (e.g. Pohnpei). The general characteristics of the Pohnpeian agroforestry system are an extensive, permanent overstory of tree crops, forest trees above fruit and multipurpose trees, and an understory of shrubs, root crops, and herbaceous plants (Clarke and Thaman 1993). The upper main canopy species include coconuts (*Cocos nucifera*) and breadfruit (*Artocarpus altilis*). Ylang-ylang (*Cananga odorata*) and yams (*Dioscorea* spp.) are both common in between the main canopy and sub-canopy layers. Within the sub-canopy, bananas and plantains (*Musa* spp.), hibiscus (*Hibiscus tiliaceus*), noni (*Morinda citrifolia*), yam vines (*Dioscorea* spp.), and soursop (*Annona muricata*) dominate planting activities. Below 2.5 m, sakau (*Piper methysticum*) is very common, in addition to root crops such as wild taro (*Alocasia macrorrhiza*), sweet taro (*Colocasia esculenta*) and swamp taro (*Cyrtosperma chamissonis*) (Raynor and Fownes 1991a,b). *Hibiscus tiliaceus* is the multipurpose tree, because it is used for firewood and light construction, poles or whole trees are used for yam trellises, its leaves are used as green manure in soil pits dug for yams, its bark for rope, and its inner bark includes the best fibers for straining mashed *Piper methysticum* roots for drinking (Raynor and Fownes 1991a,b).

The second type of agroforestry is practiced on atolls, where environmental constraints are extreme (e.g. tidal waves, rising sea levels, salt water intrusion into taro patches, drought). These are all factors of climate change that do not isolate the eight inhabited atoll islands of Pohnpei from their devastating effects. The composition of mixed tree gardening on the atolls would be similar to that of highland Pohnpei with the inclusion of pandanus (*Pandanus* spp.), which is a multipurpose tree.



## Crops grown in Pohnpei

Locally produced indigenous food crops cultivated within agroforests dominate Pohnpei's agricultural sector. Home food gardens are a common feature of most households with pigpens built on riverbanks and coastal shores. These provide households with a ready source of food, fruit, spices, herbs and in some cases, medicinal plants (Clarke and Thaman 1993). In urban areas of Kolonia, these gardens are the main supplement to wage incomes.

Research conducted by Drew (2008) confirmed that all participating households cultivated multiple crops within their home food gardens, including coconuts (*Cocos nucifera*), bananas (*Musa spp.*), yams (*Dioscorea spp.*), breadfruit (*Artocarpus altilis*), sakau (*Piper methysticum*), swamp taro (*Cyrtosperma chamissonis*), and betel nut (*Areca catechu*). All participating households stated that their agroforests were currently producing enough food crops for household consumption needs. The three main crops used for ceremonial purposes were yam, sakau and breadfruit. The majority of households sold at least some of the crops for income.

Other crops grown on home food gardens include root crops: sweet taro (*Colocasia esculenta*), sweet potatoes (*Ipomoea batata*), cassava (*Manihot esculenta*); fruit trees: papaya (*Carica papaya*), citrus (*Citrus spp.*), soursop (*Annona muricata*), mangoes (*Mangifera indica*); fruits: pineapple (*Ananas comosus*), watermelon (*Citrullus lanatus*); vegetables: cabbages (*Brassica spp.*), eggplant (*Solanum melongena*), cucumber (*Cucumis sativus*), bell peppers (*Capsicum spp.*), tomato (*Lycopersicon esculentum*), okra (*Abelmoschus esculentus*). These crops are usually grown in small quantities by households. A few of these crops are cash crops and sold in local markets and supermarkets such as Palm Terrace and Ace Commercial. The most common ones are cucumber, bell pepper and eggplant. Export crops for niche markets include black pepper (*Piper nigrum*), betel nut (*Areca catechu*), bananas, sakau and small amounts of pepper leaves (*Piper betle*).



# Challenges and Priorities

## Challenges

Locally produced indigenous food crops have played an important role in food security, maintenance of availability of diverse cultivars and social status (Barrau 1961; Raynor and Fownes 1991 a,b). However, since the beginning of the Compact of Free Association funding, there has been increasing levels of imported food because Pohnpeians have become increasingly accustomed to the convenience of cooking processed foods (dominated by imported rice), and more western appetites (Drew 2008).

Reliable estimates of the annual economic value of all agricultural products produced on Pohnpei are few. Available estimates state that in 1997, the agricultural sector was responsible for approximately 9% of Pohnpei's gross domestic product (GDP), while other sectors made up the majority of the remaining GDP during the same year: wholesale and retail trade (30%), government services (30%) and transportation, storage and communications (9%) (Pohnpei Statistical Office, 1998). Table 1.0 shows the agricultural sector contribution to the GDP over the last 10 years for FSM.

Pohnpei's agricultural sector contributed 9% and 16% to Pohnpei's GDP in 1997 and 2002, respectively. GDP growth rates ranged between 0.3% and 3.0%. One of the key challenges is the unavailability of baseline data that an agricultural census could easily provide.

Given the long history of agriculture on Pohnpei and the uncertainties about its economic prospects, future developments of Pohnpei's agricultural sector should be based on a more informed understanding of agriculture's current role, and how future development strategies may influence farmers' decisions (Pohnpei Office of Agriculture and Forestry 1996). A stated objective of the national and state governments is to promote import substitution policies to reduce dependence on imported food and increase household incomes (Office of the Governor 1996; Government of the Federated States of Micronesia, 1999). Yet specific strategies have not been identified, largely due to a lack of baseline data about the production and economic value, and use of existing agricultural systems for which comparisons can be made (Drew 2008).

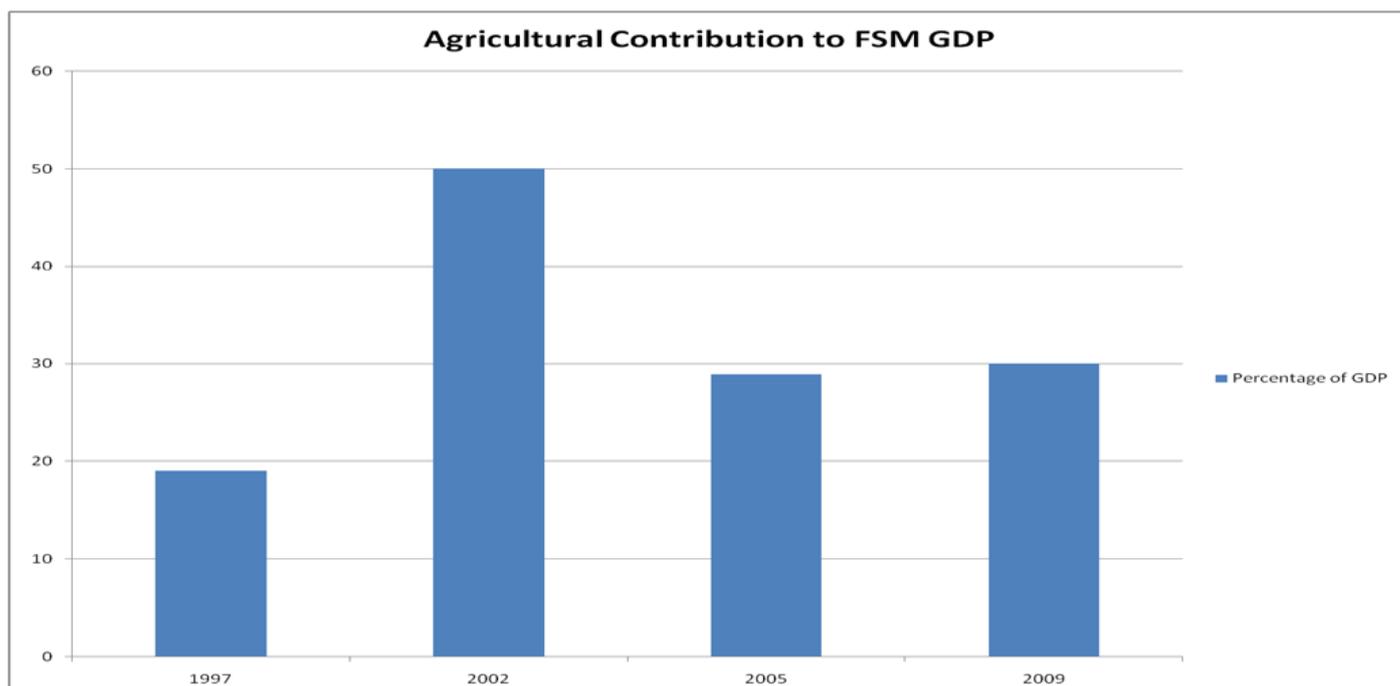


Figure 1.3. Pohnpei and its municipalities.

Sources: <http://www.economic.expert.com>  
<http://www.en.wikipedia.org/wiki/Economy>  
<http://www.state.gov>

<sup>1</sup> The Compact of Free Association between the Federated States of Micronesia and the United States provide for US economic assistance (including eligibility for certain US federal programs), defense of FSM, and other benefits in exchange for US defense and certain other operating rights in FSM, denial of access to FSM territory by other nations, and other agreements.

Pohnpei has its share of serious nutrition-related diseases, which include vitamin A deficiency, anemia, diabetes, heart disease and cancer (FAO 2009). These nutritional problems are mainly linked to the types of food eaten, which is influenced not only by personal choice, but also by cost, ease of preparation, availability and accessibility. Increased production of local nutritious foods and strengthened local markets are important outcomes to be achieved.

Therefore, agricultural production for food security, income and livelihoods is crucially important, but must be addressed by a socio-culturally sensitive, community-based approach that addresses the different priority needs of communities. Building on from previous work by the Secretariat of the Pacific Community's DSAP project (2005), through a participatory appraisal approach, some key issues affecting the agriculture growth in Pohnpei were identified (see Annex 1). In July 2008, a group comprising Pohnpei State Agriculture staff, with key stakeholders, gathered to conduct a comprehensive assessment of Pohnpei's agricultural sector in order to identify problems, constraints, challenges and opportunities, and to make recommendations for the way forward (Annex 2). The two completed assessments identified key issues, which were combined and used for the development of the agricultural sector logical framework (see Annexes 3, 4 & 5).

### **Key issues and priority areas**

The identified key issues were clustered into four priority areas that will be the basis for program work in the next five years.

#### **Human and institutional capacity**

- Lack of funding to support sector activities
- Lack of support for farmers' association
- Lack of human resources
- Lack of training opportunities

#### **Food and nutritional security**

- Increased consumption of imported foods
- Increasing levels of food and nutrition-related diseases
- Lack of crop and livestock production systems
- Lack of access to improved varieties
- Lack of nursery and/or gene banks
- Poor soil fertility
- Climate change and sea level rise
- Increase incidence of pests and/or diseases and lack capacity in pest management
- Lack of guidelines for sustainable production practices and loss of traditional knowledge

#### **Limited market opportunities and lack of competitiveness of agricultural products**

- Lack of farmers market
- Poor pricing of local produce
- Lack of transportation
- Lack of farm management and marketing skills

#### **Public awareness and collaboration**

- Poor dissemination of information
- Poor communication between farmers and extension agents



# Agricultural Logical Framework

## Goal

To ensure food security and a healthy livelihood for Pohnpeian families.

## Performance indicators

The performance indicators for the goal are:

- Contribution of agriculture to household incomes and GDP increased
- Prevalence of non-communicable diseases reduced
- Adoption rate of sustainable agricultural practices increased

## Objectives

- Agriculture Office fully resourced
- Sustainable crop and livestock production increased
- Increased market opportunities provided
- Improved awareness program on agriculture



## Logical Framework Summary Matrix

Narrative	Performance Indicators	Means of Verification
<b>Objective 1: Agriculture Office fully resourced</b>	<b>Effective administration and operational activities demonstrated</b>	AOEA annual reports
Output 1.1: Adequate funds for agricultural operations secured	Increased rate of implementing activities Efficiency and effectiveness of services to clients increased	AOEA annual reports Budget reports
Output 1.2: Current activities evaluated and improved	Increased adoption of recommended appropriate technologies	AOEA annual reports
Output 1.3 Collaborative efforts with relevant partners strengthened and improved	Increased number of relevant partners Increased adoption of integrated participatory approach	AOEA annual reports
Output 1.4: Capacity building for human resources provided and enhanced	Improved skilled staff Increased knowledge attained Improved attitudinal approach to clients	Training reports
<b>Objective 2: Sustainable crop and livestock production increased</b>	<b>Increased crop area and production</b> <b>Increased adoption of sustainable management systems</b> <b>Increased livestock numbers and production</b>	AOEA annual reports <b>Crop and livestock census</b>
Output 2.1: Appropriate crop management practices developed and promoted	Increased adoption of appropriate crop husbandry practices Increased crop area and production	AOEA annual reports
Output 2.2 Pests and diseases management improved	Pests and diseases identified Adoption of control measures increased	AOEA annual reports
Output 2.3: Appropriate livestock management practices developed and promoted	Improved breeding stock Adoption of appropriate livestock husbandry practices increased Increased livestock production	AOEA annual reports
Output 2.4: Increased support for farmers provided	Number of farmers served increased Increased crop and livestock production Increase in household income	AOEA annual reports Local market reports
<b>Objective 3: Increased market opportunities provided</b>	<b>Increased trade (domestic and export)</b>	AOEA annual reports <b>Trade reports</b>
Output 3.1 Suitable domestic and export market support systems strengthened	Increased number of domestic and export markets Increased supply of and access to food (locally grown and imported) Increased consumption of nutritious food (locally grown and imported)	Trade reports Statistics reports Health reports AOEA annual reports
Output 3.2 Domestic marketing structures improved	Increased sale of farm produce Viable local markets Increased supply of and access to locally produced crops and livestock Increased household income for farmers	AOEA annual reports Statistics reports
<b>Objective 4: Improved awareness program on agriculture</b>	<b>Increased number of Pohnpeians planting crops and raising livestock</b> <b>Increased number of youths sensitized to do agricultural activities</b>	AOEA annual reports <b>Youth reports</b>
Output 4.1: Capacity of research and extension outreach strengthened	Adoption of recommended agricultural practices increased Skilled research and extension staff On-farm demonstration plots increased	AOEA annual reports Training reports
Output 4.2: Capacity of information services to public improved	Farmers' radio broadcasts improved Agricultural news items on Kaselehlie Press strengthened Regular TV programs developed	Radio programs News articles TV programs Brochures Posters

A detailed logical framework is in Annex 5, which can be used for mobilizing financial resources and monitoring and evaluation purposes. Annex 6 shows an annual plan that helps facilitate the implementation of activities.

### Way Forward

This SAP covers the five-year period from 2011–2015. It will be monitored and evaluated by Pohnpei's AOEA using the format proposed in Annex 6 and updated as necessary. A review of this plan should be conducted in 2015 to develop a revised plan. AOEA will take the lead in monitoring and reporting the progress of this SAP to relevant stakeholders.

### Conclusion

AOEA faces the challenge of implementing the SAP but can capitalize on its excellent collaborative networks with its partners to successfully implement it. A monitoring and evaluation component has been added to the SAP to enable AOEA to gauge its progress of operational activities.





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## Annexes

### Annex 1: Problems Identified in Pohnpei (by DSAP FSM and Pohnpei Agriculture Team)

Problems clustered into subject groups

#### Genebank

Lack of access to seeds around the island  
Lack of nursery banks around the island to supply planting materials  
Shortage of planting materials

#### Soil fertility

Improper use of fertilizer  
Unavailability of fertilizer  
Poor soil fertility

#### Food security

Increased consumption of imported foods instead of local foods  
Changing lifestyle that affects eating habits  
Local food is too expensive  
Low nutritional value of imported foods  
Too lazy to farm and prepare recipe for local food  
Dislike for local foods by younger generation  
Not quick to prepare and cook local foods  
Men and women lack cooking skills

#### Farm equipment

Lack of agricultural tools  
No fence built around farms  
Lack of farming equipments

#### Extension communication

Poor communication between farmers and extension agents  
Poor dissemination of agricultural information from national to state government  
Poor coordination among extension agents towards serving farmers  
High cost of communication

#### Training

Lack experience in farming  
Lack of training in agricultural production

#### Farm cooperative

No establishment of cooperative development

#### Market

Bias in buying and selling  
Poor price for agricultural produce  
No transportation  
Lack of market opportunities to sell produce  
Gasoline too expensive  
Lack of markets around the island  
Weak private sector

#### Farm management

No planning for farm work  
No record keeping  
Lack of area to plant  
Do not have time to work on farm (women)  
Poor family planning  
No money to do agricultural work  
Not enough cash to start farming

#### Pests and diseases

Lack of alternate solutions for diseases and pest problems  
Increased incidence of pests and diseases  
Poor pest management

#### Water supply

Limited water supply

#### Resources

Lack of funds or financial resources  
Inadequate human resources  
Lack of personnel  
No plan or Strategic Action Plan to give direction

#### Media

Lack of awareness program on agriculture

#### Land

Land degradation

#### Climate

Adverse weather effects

#### Transport

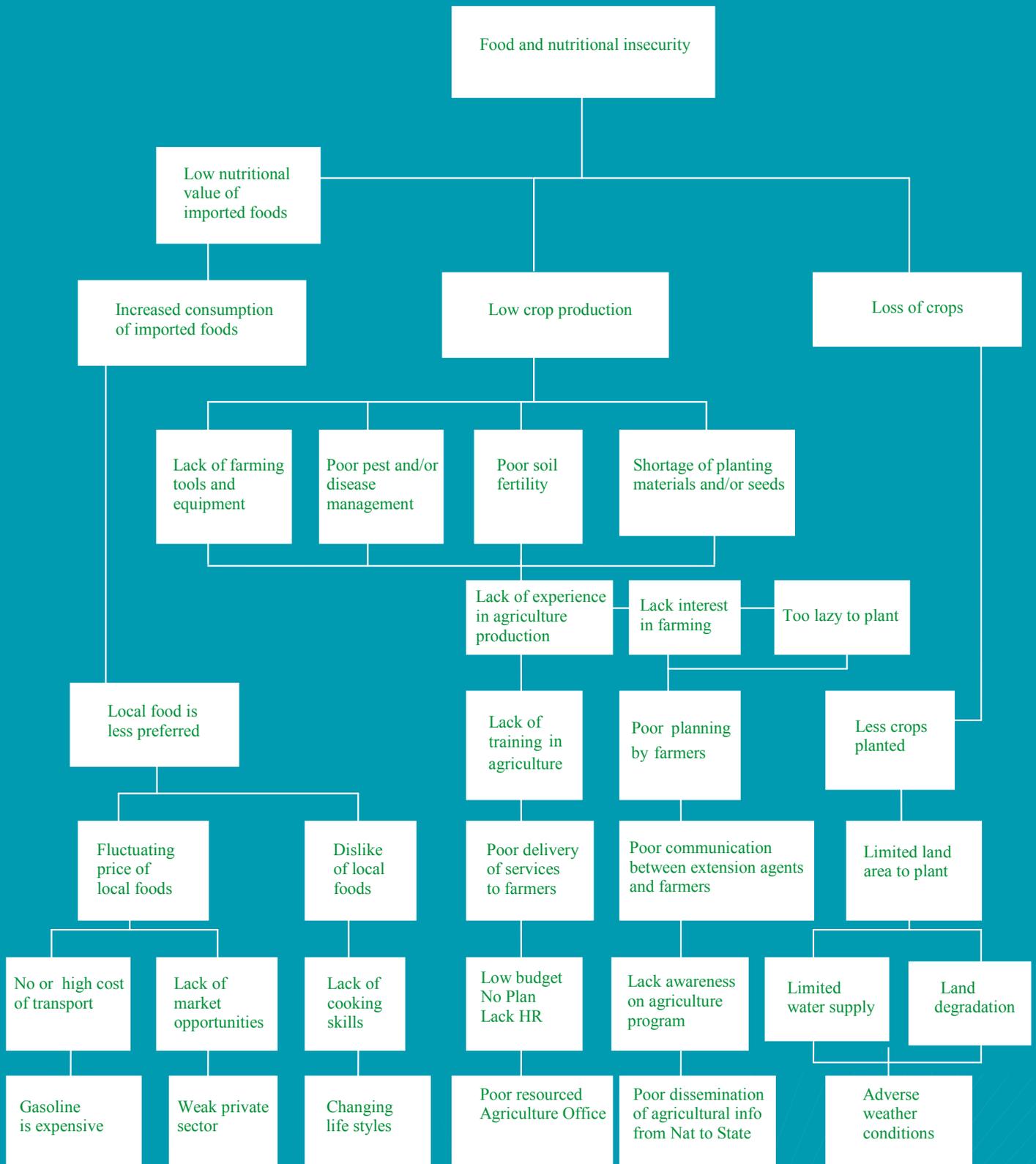
High cost of transportation

## Annex 2: Strengths, Weaknesses, Opportunities and Threats Analysis

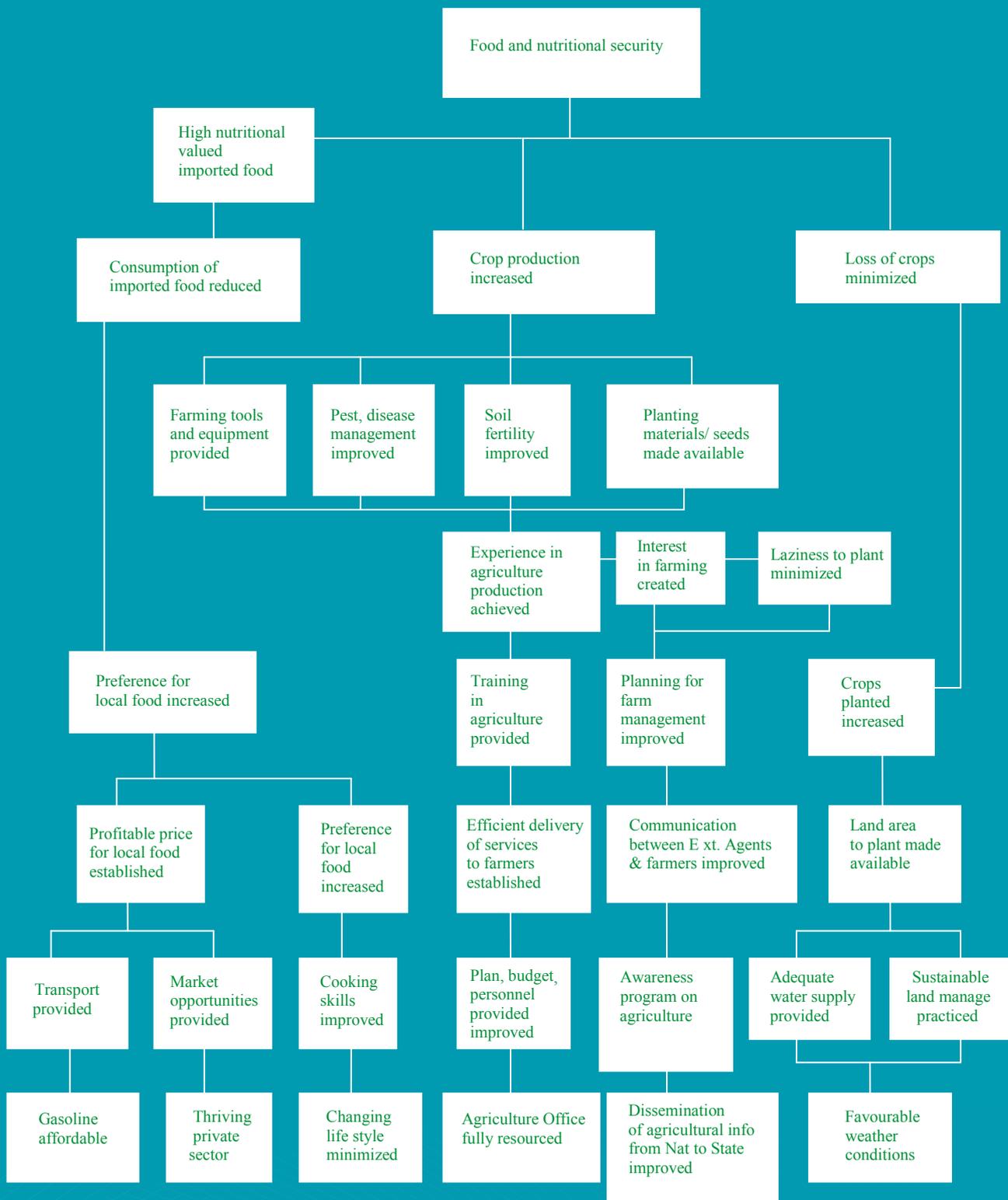
Internal Strengths and Weaknesses	
<p><i>Strengths</i></p> <ol style="list-style-type: none"> <li>1. Land</li> <li>2. Capacity</li> <li>3. Embassies/Regional Offices/COM - FSM</li> <li>4. Priority sector</li> <li>5. Tradition</li> <li>6. Capacity building</li> <li>7. Proximity to export markets</li> <li>8. Niche products</li> </ol>	<p><i>Weaknesses</i></p> <ol style="list-style-type: none"> <li>1. More funding for personnel than programs/projects</li> <li>2. Disconnect when transferring to farmers</li> <li>3. More resources required</li> <li>4. Machines to make work faster</li> <li>5. Not enough to do what we want</li> <li>6. Not good communication; lack of direction; no plan</li> <li>7. Need to work on improving the “image” of agriculture</li> <li>8. Less kids want to go into agriculture today</li> <li>9. Need to improve collaboration between service providers “coordinated collaboration”</li> <li>10. Image-cultural practices</li> <li>11. Lack of specialist (dedicated individuals) to market findings that would benefit agriculture</li> <li>12. Aging staff</li> </ol>
External Opportunities and Threats*	
<p><i>Opportunities</i></p> <ol style="list-style-type: none"> <li>1. Funding (SARE, FAO, USDA, JEMCO, Embassies, other competitive grants)</li> <li>2. International support (e.g. Peace Corps, Canadian volunteers, JOCV, CBD, UNICEF)</li> <li>3. Regional organizations (TNC, SPREP, SPC, USP, UOG, Australian training institutions)</li> <li>4. Export markets</li> <li>5. Partners (NGOs, TNC, COM Land Grant, CES Land Grant PFA, CSP, SPC DSAP, IFCP, NCRS)</li> <li>6. Agriculture training institutions (long and short term training)</li> <li>7. Community</li> <li>8. Expert consultations</li> <li>9. Micronesian Challenge</li> <li>10. Research; students and scientists</li> <li>11. Agriculture exchange programs</li> </ol>	<p><i>Threats</i></p> <ol style="list-style-type: none"> <li>1. Fuel crisis</li> <li>2. Climate change</li> <li>3. JEMCO</li> <li>4. Weak Private Sector</li> <li>5. High cost of transportation(freight)</li> <li>6. Out-migration</li> <li>7. High cost of communication</li> <li>8. Emigration</li> <li>9. Imported products</li> <li>10. Invasive species (pest and diseases)</li> </ol>

\* For definitions of the following agencies and organizations, see the list of abbreviations at the front of this report.

### Annex 3: Problem Tree



## Annex 4: Objective Tree



## Annex 5: Logical Framework

	<b>Intervention Logic</b>	<b>Objectively Verifiable Indicators</b>	<b>Sources (Means) of Verification</b>	<b>Assumptions and Risks</b>
<b>Overall Objective (Goal)</b>	To ensure food security and a healthy livelihood for Pohnpeian families	By 2015 at least 40% of Pohnpeian families have improved health livelihood	Department of Health Report (non-communicable diseases)	
<b>Project Purpose</b>	To improve food and nutritional security and health status of Pohnpeian families	By 2015 at least 40% of Pohnpeian families are eating nutritious food	Dept. of Health report Agriculture Office report	Socio-economic status of Pohnpei remains unchanged
<b>Results (Outputs)</b>	1.0 Agriculture Office fully resourced	By 2015 at least \$300,000 is secured annually by successful project proposals	AOEA annual report Budget report	Donors available in Pohnpei
	2.0 Sustainable crop and livestock production increased	At least a 50% increase in crop area and production by 2015. At least a 40% of farmers adopted recommended sustainable crop and livestock management practices. At least a 50% increase in livestock numbers and production by 2015.	AOEA annual report Livestock and crop census Farmers' records	Farmers agricultural production problems and opportunities remain unchanged
	3.0 Increased market opportunities provided	At least 5 high-value commodities exported by 2015 At least a 40% increase of commodities supplied to the domestic markets by 2015	AOEA annual report Trade report Statistics report	Private sector remains viable
	4.0 Improved awareness program on agriculture	At least 26 news article published in the Kaselehlie Press annually by 2015. At least 52 radio agricultural programs broadcasted annually by 2015. At least monthly agricultural TV programs shown on local TV annually by 2015.	Kaselehlie Press Radio programs Local TV programs	Media supports agricultural initiatives

Activities	Inputs	Costs	Time Frame	Responsibility*
<b>Result 1.0</b>	<b>Agriculture Office fully resourced</b>			
1.1 Identify available funding sources and submit proposals	Contractual services of proposal writer	2,500	September 2010	AOEA COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, DLNR
1.2 Evaluate current activities, identify and develop prioritized activities and work plan	Personnel Meetings Refreshments Materials and supplies	500	June 2010	AOEA COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, DLNR
1.3 Strengthen existing collaborations with partners	Personnel Networking Volunteer (JOCV, Peace Corps) Materials	3,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, EPA, NRCS, DL&NR
1.4 Identify and secure new additional collaborative efforts	Personnel Networking Materials Partners	5,000	Ongoing	AOEA, COM FSM CRE AES, FSM RD, IFCP, PFA, SPC, EPA, NRCS, DLNR
1.5 Establish a Pohnpei State Agricultural Council	Personnel Meetings Refreshments Materials and supplies	500	June 2010	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, EPA, NRCS, DLNR
1.6 Train staff in technical skills through workshops and on-farm demonstrations	Trainers/facilitators Personnel Venue/farms Resource materials Refreshments	5,000	Quarterly	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, EPA, NRCS, DLNR
<b>Result 2.0</b>	<b>Sustainable crop and livestock production increased</b>			
2.1 Conduct research and production field trials for selected vegetables	Chinese technicians Pilot farm Seeds Fertilizer Pesticides	20,000	Ongoing	AOEA, Pilot Farm, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, EPA, NRCS, DLNR
2.2 Establish, maintain, distribute and document collection of staple food crops (breadfruit, yam, bananas, taro, etc.)	Chinese technicians Pilot farm Seeds/ planting materials Personnel	10,000	Ongoing	AOEA, Pilot Farm, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, EPA, NRCS, DLNR
2.3 Establish on-farm demonstrations of recommended crop husbandry practices	Chinese technicians Pilot farm Seeds/ planting materials Personnel	50,000	Ongoing	AOEA, Pilot Farm, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, EPA, NRCS, DLNR
2.4 Facilitate the establishment of nurseries or gene banks in selected farming communities	Personnel Seeds/ planting materials Transportation	10,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, EPA, NRCS, DLNR
2.5 Conduct trainings on control of pests and diseases and integrated pest management	Personnel Training materials Farmers	20,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, EPA, NRCS, DL&NR, PIST
2.6 Facilitate trainings on traditional agro-forestry agricultural farming systems	Personnel Training materials Farmers	25,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, EPA, NRCS, DLNR
2.7 Introduce and distribute improved breeds	Personnel Training materials Farmers	50,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, PFA, SPC
2.8 Facilitate trainings on livestock waste management	Personnel Training materials Farmers	15,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, PFA, SPC, EPA, NRCS, DLNR
2.9 Conduct research on local feed supplements	Chinese technicians Pilot farm Local feeds Personnel	10,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, PFA, SPC
2.10 Provide sales of farm inputs to farmers	Personnel Seeds/ planting materials Fertilizer	100,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, PFA

<b>Result 3.0</b>	<b>Increased market opportunities provided</b>			
3.1 Conduct farmers' survey on farming practices used, crops grown, produced and harvested	Personnel Farmers Transport Survey materials	20,000	August 2010	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, USDA NRCS
3.2 Conduct market survey for export and domestic commodities	Personnel Market vendors Survey materials	20,000	January 2011	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, USDA NRCS, PSBDC, CSP
3.3 Identify 5 high value crops or commodities for export market	Personnel Commercial farmers Market vendors	10,000	February 2011	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, USDA NRCS, PSBDC, CSP
3.4 Facilitate trainings on farm management and post harvest handling	Personnel Training materials Farmers Market vendors	10,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, USDA NRCS, PSBDC, CSP
3.5 Facilitate the establishment of the supply chain from farms to markets	Personnel Commercial farmers Market vendors	10,000	November 2010	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, USDA NRCS, PSBDC, CSP
<b>Result 4.0</b>	<b>Improved awareness program on agriculture</b>			
4.1 Develop awareness programs for young people to pursue careers in agriculture	Personnel Awareness Materials/programs Youth organizations	10,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, USDA NRCS, PSBDC, CSP
4.2 Create awareness on agricultural recommendations via radio broadcasts and newspapers, TV	Personnel Awareness Materials/programs Media (Kaselehlie Press, Radio broadcasts, local TV)	10,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, USDA NRCS, PSBDC, CSP
4.3 Translation of awareness materials into Pohnpeian language	Personnel Awareness Materials/programs Media (Kaselehlie Press, Radio broadcasts, local TV)	10,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, USDA NRCS, PSBDC, CSP
4.4 Create awareness on PFA and CHEEF benefits to communities and schools	Personnel Awareness Materials/programs Media (Kaselehlie Press, Radio broadcasts, local TV)	10,000	Ongoing	AOEA, COM FSM CRE AES, FSM R&D, IFCP, PFA, SPC, USDA NRCS, PSBDC, CSP
<b>Result 5.0</b>	<b>AOEA activities properly monitored and evaluated at State level</b>			
5.1 Produce monthly updates of activities to Pohnpei State Agricultural Council	Personnel Materials/ supplies Equipment	5,000	Ongoing	AOEA/COM FSM CRE
5.2 Provide quarterly progress and financial	Personnel Materials/ supplies	5,000	Ongoing	AOEA/COM FSM CRE
5.3 Conduct quarterly meetings of the Pohnpei State Agricultural Council	Personnel Materials/ supplies Equipment	3,000	Ongoing	AOEA/COM FSM CRE
5.4 Conduct participatory monitoring and evaluation of on-farm demonstrations with farmers	Personnel Materials/ supplies Equipment	3,000	Ongoing	AOEA/COM FSM CRE
5.5 Provide six monthly progress and financial reports	Personnel Materials/ supplies Equipment	5,000	Ongoing	AOEA/COM FSM CRE
5.6 Provide annual reports on progress of activities, success stories, lessons learned and recommended way forward	Personnel Materials/ supplies Equipment	10,000	Ongoing	AOEA/COM FSM CRE

\* For definitions of the following agencies and organizations, see the list of abbreviations at the front of this report.

## Annex 6: Annual Workplan

AOEA ANNUAL WORKPLAN											
Results	Activities	2010									
		Quarter 1		Quarter 2		Quarter 3		Quarter 4			
<b>Output 1</b>	<b>Agriculture Office fully resourced</b>										
1.1	Identify available funding sources and submit proposals										
1.2	Evaluate current activities, identify and develop prioritized activities and work plan										
1.3	Strengthen existing collaborations with partners										
1.4	Identify and secure new additional collaborative efforts										
1.5	Establish a Pohnpei State Agricultural Council										
1.6	Train staff in technical skills through workshops and on-farm demonstrations										
<b>Output 2</b>	<b>Sustainable crop and livestock production increased</b>										
2.1	Conduct research and production field trials for selected vegetables										
2.2	Establish, maintain, distribute and document collection of staple food crops (e.g. breadfruit, yam, bananas, taro)										
2.3	Establish on-farm demonstrations of recommended crop husbandry practices										
2.4	Facilitate the establishment of nurseries or gene banks in selected farming communities										
2.5	Conduct trainings on control of pests and diseases and integrated pest management										
2.6	Facilitate trainings on traditional agroforestry farming systems										
2.7	Introduce and distribute improved breeds										
2.8	Facilitate trainings on livestock waste management										
2.9	Conduct research on local feed supplements										
<b>Output 3</b>	<b>Increased market opportunities provided</b>										
3.1	Conduct farmers' survey on farming practices used, crops grown, produced and harvested										
3.2	Conduct market survey for export and domestic commodities										
3.3	Identify five high-value crops or commodities for export market										
3.4	Facilitate trainings on farm management and post harvest handling										
3.5	Facilitate the establishment of the supply chain from farms to markets										
<b>Output 4</b>	<b>Improved awareness program on agriculture</b>										
4.1	Develop awareness programs for young people to pursue careers in agriculture										
4.2	Create awareness on agricultural recommendations via radio broadcasts and newspapers, TV										
4.2	Develop farmers' posters and brochures on recommended agricultural practices										
4.3	Translation of awareness materials into Pohnpeian language										
4.4	Create awareness of PFA and cultural, health, economic, environmental and food security benefits to communities and schools										

Output 5	<b><i>AOEA activities properly monitored and evaluated at State level</i></b>													
5.1	Produce monthly updates of activities to Pohnpei State Agricultural Council													
5.2	Provide quarterly progress and financial reports													
5.3	Conduct quarterly meetings of the Pohnpei State Agricultural Council													
5.4	Conduct participatory monitoring and evaluation of on-farm demonstrations with farmers													
5.5	Provide six monthly progress and financial reports													
5.6	Provide annual reports on progress of activities, success stories, lessons learned and recommended way forward													

