



# **NATIONAL AGRICULTURE STRATEGIC PLAN**



**Ministry of Agriculture, Rarotonga**

January 2001

*Note: this document will soon be replaced when the FAO-sponsored review work now being undertaken is completed by December 2007 (inserted here by Nga Mataio, Secretary of Agriculture, October 2007)*

## CONTENTS

	<i>Page</i>
Foreword .....	3
1. OBJECTIVES .....	4
2. GOAL .....	4
3. ISSUES .....	4
4. SWOT ANALYSIS OF THE AGRICULTURE SECTOR .....	4
5. FIVE-POINT NATIONAL AGRICULTURE DEVELOPMENT STRATEGY .....	7
6. NATIONAL AGRICULTURE STRATEGIC PLAN MATRIX .....	9
7. CONCLUSION .....	20

## **FOREWORD**

*The bulk of the material contained in this document is the result of an FAO technical assistance project (TCP/CKI/8921A): Formulation of National Agriculture Strategic Plan for the Cook Islands. A wide consultation process was undertaken on two occasions during 2000 (April/May, and September/October) with farmers and stakeholders on both Rarotonga and the outer islands to elicit their perceptions on agriculture sector development in the country. The process culminated in a 3-day seminar to discuss the findings of the consultancy; the result was this refined national strategic plan on which the future work programmes and activities of the Ministry of Agriculture will be based.*

*Tackling agriculture sector development is a concerted effort by all players; the Ministry, farmers, suppliers of agricultural inputs, financial institutions, agrofood processors, transport agencies, distributors and marketing agents. It is expected that this document will act as a blue-print to guide the roles of the different players so as to maximise their contributions to the development of such an important sector of the economy.*

*Kia Manuia.*

.....  
*Nga Mataio*  
**Secretary of Agriculture**

## **1. OBJECTIVE**

The objective of the National Agriculture Strategic Plan (NASP) is to enhance agriculture development and investment that will enable the Government of the Cook Islands to secure a greater and sustained contribution of the agriculture sector to the national economy and particularly to food security and outer islands development.

## **2. GOAL**

The overall goal of NASP is to provide every citizen of the Cook Islands, economic and physical access to sufficient food to sustain a healthy and productive life in the absence of malnutrition, and to ensure that food is produced from efficient and effective agriculture systems that are compatible with sustainable use and management of its natural resources.

## **3. ISSUES**

Identification, formulation and implementation of strategic plans and to put them into action to achieve the above objective and goal, depends on all relevant parties, individuals households, local communities, civil society, local and national governments and the international communities taking appropriate actions. It also requires a solid understanding by all parties of the priority needs, limitations and opportunities for development.

The following key issues are interlocking and must be addressed together:

1. Food security and nutrition development
2. Economic growth
3. Technical, institutional and human resource development
4. Supply and demand of food (including consumption patterns and dietary changes)
5. Infrastructure, marketing, trade and investment development

## **4. SWOT ANALYSIS OF THE AGRICULTURE SECTOR**

The strengths, weaknesses, opportunities and threats (SWOT) of the agriculture sector are as follows:

### **4.1 STRENGTHS**

- Small population with relatively large size tourism industry
- Infrequent cyclones and favourable climatic conditions to produce counter-season fruits and vegetables
- Access to lucrative markets (e.g. New Zealand, Australia, USA, Canada) for high value agricultural products
- Presence of clean environment and isolation by natural sea barriers to produce organic food products

- Suitability of fast growing tree species for lumber on the higher elevations not suitable for cultivation of crops
- High literacy rate using English as an official language, and good communication with internet access
- Good soil fertility for crop cultivation and livestock farming & intensive past experience and knowledge on plantation crops such as pineapple, orange and banana which can be revitalized at least to cater the domestic tourist market
- Access to bilateral and multilateral agencies for grants and loans

#### **4.2 WEAKNESSES**

- Scarcity of labor for commercial large-scale farming
- Absence of a land use policy and planning with complicated land ownership system and inability of government to enforce existing land laws
- Pre-dominance of small part-time farmers and small farm holdings
- Poor-utilisation of advanced agriculture and livestock technologies
- High interest rates for agricultural credit and financing
- Lack of basic agricultural infrastructure facilities: irrigation, transportation to markets, wholesale marketing and market information services, post harvest and processing facilities
- Lack of proper extension services and collection of agricultural statistics, due to insufficient government support and funding to MoA
- Lack of fertilizer and agro-chemicals especially in the outer-islands
- Lack of systematic communication (among growers/among ministries/among outer islands)
- Water scarcity and access to irrigation
- Poor information coordination and distribution
- Inadequate agriculture curriculum in schools
- Unco-operative attitude among growers and between growers and wholesalers/retailers
- Lack of machinery for land development

#### **4.3 OPPORTUNITIES**

- Growing domestic food market with growing tourism
- Availability of basic technology for the production of food
- Crops and counter season fruits and vegetables
- Proven commercial viability of plantation crops such as citrus, pineapple, papaya, nono, vanilla, coffee
- Presence of small-scale food manufacturing enterprises
- Fruit export organization
- Established financial institutions (Cook Islands Development Bank, and Development Investment Board)
- Entrepreneurs and farmers
- Availability of local technology for livestock farming and slaughter house management
- Emergence of new world trade order under WTO regulations

#### **4.4 THREATS**

- Sustaining food security
- Widening disparity of incomes among islands
- High import food cost reduces security for health and education expenses
- Malnutrition due to change of diet patterns, particularly over dependence on imported processed food items
- Threatened multi- functionality of agriculture
- Migration (inter-island to Rarotonga as well as abroad) and changing attitude of younger generation
- Environmental degradation through use of agro-chemicals and inappropriate agronomic practices
- High cost of living will have negative impacts on tourism with competition from other low-cost destinations
- Natural disasters
- World Trade Organization regulations
- Political interference
- Water supply shortages

#### **4.5 STRENGTHS-OPPORTUNITIES STRATEGY**

- Provide incentives and create a business atmosphere which will encourage investment by private entrepreneurs individually or in joint venture with food manufacturing firms in fruits and vegetables and meat processing for domestic and export markets
- Undertake intensive commercial crop production with the application of advanced agricultural and irrigation practices through aggressive investment promotion program
- Promote small and medium agro-based industrial projects
- Making use of locally available raw materials
- Set-up agro-processing centers, slaughter houses and cold storage facilities in Rarotonga and other logistic islands making full use of the respective comparative advantages
- Provide more attractive incentives and short-, medium- and long-term loans to small farmers, both full-time and part-time

#### **4.6 STRENGTHS-THREATS STRATEGY**

- Strengthen research, development and extension services of MoA to technically assist small farmers
- Set-up agriculture data collection and market information systems and disseminate these information nation-wide on a regular basis
- Develop commercial private farms based on individually oriented but horizontally integrated producers associations
- Provide dis-incentives or penalize through higher taxes on importation of food items which are not nutritionally beneficial and available locally
- Strictly enforce environmental standards

#### **4.7 WEAKNESSES-OPPORTUNITIES STRATEGY**

- Establish a program through association (e.g. papaya grower's association) to enable small farmers to enter into contract farming for both livestock and agriculture
- Encourage food and meat processors/wholesalers/retailers to enter into contract with small farmers by providing incentives, which could either be in kind or in cash
- Re-align relevant bilateral or multi-lateral loan projects for the establishment of post-harvest processing and marketing facilities in Rarotonga and other strategic islands
- Provide assistance to shipping lines to improve their operation and to schedule regular shipping programs linking outer islands with Rarotonga and nearby countries
- Launch investment survey missions and other activities (e.g. advertisement) to aggressively promote comparative and competitive advantages of the Cook Islands

#### **4.8 WEAKNESS-THREATS STRATEGY**

- Undertake holistic approach to multi-functionalities of agriculture
- Conduct educational and information dissemination campaign on food and nutrition tapping the media, school curricula, religious sector, NGO's and other groups
- Provide dis-incentives or penalize persons farming in environmentally fragile areas with un-sound agricultural practices but at the same time provide agricultural or other livelihood opportunities in other areas
- Provide special privileges and full incentives to private entrepreneurs to set up technically advanced model commercial farms e.g. organic farms, fertigated/hydroponic farms, plastic-tunnel counter-season crop farms) which can be duplicated by others
- Encourage community based micro-income generating projects and link the producers to the market (e.g. leave garlands to Hawaii)
- Encourage organic farming

Complementary programs and strategies to develop the agriculture sector, based on the SWOT analysis, are as follows:

### **5. FIVE-POINT NATIONAL AGRICULTURE DEVELOPMENT STRATEGY**

The following five-point strategy, put together after consultations with stakeholders (through an FAO-funded project in 2000) is identified for the national agriculture development to be implemented in the next five years:

#### **I Intensification Strategy**

1. Cropping area and intensity expansion
2. Crop yield increase
3. Livestock and poultry up-grading, expansion and productivity increase

#### **II Diversification Strategy**

1. Food crop diversification
2. Promotion of high value crops
3. Development of agro-forestry on sloping lands

4. Development of goat and other livestock farming
5. Development of feed crops

### **III Strategy for Sustainable Commercial Agriculture Development**

1. Intensive commercial crop production with the application of advanced agricultural and irrigation practices
2. Organic farming and application of bio-technology (EM, GMO) and IPM technology
3. Development of integrated farming practices

### **IV Post-harvest and Processing Facilities Development Strategy**

1. Packaging sheds which include facilities for cleaning, sorting, grading, packing and storage (both conventional and cold storage) and processing of fruits and vegetables
2. Triple "A" slaughterhouses and cold storage facilities together with meat processing facilities
3. Establishment of small-scale feed mills to produce blended feed using imported and locally available ingredients

### **V Institutional and Behavioral Development Strategy**

1. Development of private commercial agriculture and livestock farming based on individual oriented but horizontally integrated producers associations, grouping in accordance with their choice of crops or livestock with comparative advantages (technical, economic and agro-ecological)
2. Development of diversified consumption and dietary patterns with increased awareness on health and nutrition
3. Development of agricultural marketing and market information systems through better cooperation between government agencies and private sector operators in order to upgrade and further expand existing markets and develop new domestic and international market opportunities
4. Establishment of a 'national extension network' under MoA with systematic linkages with outer islands administrative bodies



## 6. NATIONAL AGRICULTURE STRATEGIC PLAN MATRIX

	DEVELOPMENT STRATEGY	PRIORITY NEEDS	LIMITATIONS
I	<p>CROP INTENSIFICATION IN TERMS OF AREA EXPANSION AND YIELD INCREASE</p> <p>1. Area &amp; intensity expansion of domestic production through efficient utilization of domestic resources to exploit the opportunities that exists</p>	<ol style="list-style-type: none"> <li>1. Land use planning by Agro –Ecological Zoning (AEZ) for all the Agricultural lands of the country</li> <li>2. Technical recommendations on cultivation of the following groups of crops and crop practices based on respective AEZ should be published:- <ul style="list-style-type: none"> <li>• field crops,</li> <li>• fruit tree plantation or plant on boundaries</li> <li>• vegetables, ornamentals, and cut flowers</li> <li>• agro-forestry</li> <li>• crop cultivation under cover (green house cultivation)</li> <li>• Organic farming</li> </ul> </li> <li>3. Long-term credit for farm development &amp; livestock farming</li> <li>4. Irrigation development and water-harvesting technologies</li> <li>5. Contour bands on slopes</li> <li>6. Small dams, weir systems and ground water</li> <li>7. Enforcement of Land Use Act 1969 and at the same time unused land tax or other appropriate legal or administrative measures should be improved upon consultation with communities</li> <li>8. Provision of incentives and technical support to active farmers making full use of the land potential</li> <li>9. Cropping systems research for different AEZs to increase cropping intensities</li> </ol>	<ol style="list-style-type: none"> <li>1. Land tenure and lack of enforcement of land management Acts already enacted</li> <li>2. Lack of land use planning</li> <li>3. Irrigating crops during dry months particularly for larger commercial farming</li> <li>4. Lack of data collection system for cropping areas, harvested areas and production of crops on a regular basis, e.g. annual records compiled by proper crop estimations and surveys</li> <li>5. Owners of available land have moved or living overseas and land is idle to avoid tax</li> <li>6. Lack of machineries for land and irrigation development particularly in the outer islands</li> <li>7. Fragile eco-system especially in the small outer islands</li> </ol>

	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
2.	Crop yield increase	<ol style="list-style-type: none"> <li>1. Establishment of a national extension network under MoA, making use of available information technology and internet facilities to disseminate technology to farmers</li> <li>2. Varietal improvements, cropping systems development and introduction of new technologies and varieties</li> <li>3. Improved cultivation practices and post harvest technology to increase yield and reduce crop losses</li> <li>4. Establishment of on-farm applied research and demonstration sites on all islands</li> <li>5. Seasonal and short-term credits for small crop and livestock farmers</li> <li>6. Farm mechanization appropriate on small holdings</li> <li>7. Crop calendar to motivate producers to get higher prices by avoiding over production and cultivating in the right season</li> <li>8. Introduce incentive and subsidy schemes for import and distribution of inputs such as seeds, fertilizers, agro-chemicals, irrigation equipment and farm machineries</li> <li>9. Encourage local production of organic fertilizers by introducing modern technologies</li> <li>10. Mobilization of funds from farmers or growers associations to finance short-term and seasonal loans for small farmers under the supervision or guidance of relevant government agencies</li> </ol>	<ol style="list-style-type: none"> <li>1. Agro-processing and storage facilities for perishable items</li> <li>2. Absence of regular land use records and crop surveys for forecasting of crop production and availability</li> <li>3. Regional recommendation for cropping patterns and application of inputs</li> <li>4. High external inputs, e.g. agrochemical and improved varieties</li> <li>5. Insufficient supply of bio-mass for making organic fertilizers</li> <li>6. Limited research and development on new varieties as well as improved cultivation practices</li> <li>7. Lack of water resources development and irrigation facilities</li> </ol>

	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>3.</b>	Progressive upgrading and expansion of livestock & poultry farming for productivity increase	<ol style="list-style-type: none"> <li>1. Strengthening of a extension and veterinary services and technology</li> <li>2. Establishment of central breeding stations for pig and goats/sheep either using AI or natural breeding</li> <li>3. Establishment of a layer and broiler parent stock flock to supply fertilized eggs and a hatchery to supply day-old chicks to farmers for both chicken and ducks</li> <li>4. Encourage on-farm type feed milling with the constitution of locally available ingredients</li> <li>5. Formation of Livestock Farmers Association</li> <li>6. Provision of incentives and technical support (e.g. tax and tariff exemption and tax holidays)</li> <li>7. Provide information on production and marketing/ price</li> <li>8. General education on livestock farming and inclusion of the subject in school curriculum</li> </ol>	<ol style="list-style-type: none"> <li>1. Scarcity of land, labour and major feed ingredients</li> <li>2. Lack of systematic abattoir, processing and marketing facilities</li> <li>3. Lack of logistic infrastructure, e.g. regular inter-island shipping and cold storage facilities</li> <li>4. Market attitude i.e. lack of understanding of the operational costs and profit margins on commercial farming</li> <li>5. In-sufficient research and development activities due to limitations of budget and funds allocated by Government</li> </ol>

	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>II</b>	<b>CROP &amp; LIVESTOCK DIVERSIFICATION</b>		
<b>1.</b>	<p>Food crops diversification for food security and foreign exchange savings. Reduced dependence on imported foods.</p> <ul style="list-style-type: none"> <li>• Oilseeds such as groundnut and sunflower oil for human consumption of vegetable oil and cake for animal feed</li> <li>• High protein crops (peas and beans) such as grams, lentils, kidney bean</li> <li>• Feed crops such as maize and sorghum</li> <li>• Green leafy crops high in vitamin and mineral content (e.g. bele, drumstick winged beans)</li> </ul>	<ol style="list-style-type: none"> <li>1. Land use planning: -agro-ecological zoning, and technical recommendations</li> <li>2. Market information system</li> <li>3. Strengthen applied research and extension services</li> <li>4. Cropping pattern and varietal experiments</li> <li>5. Recommended cropping calendars to adjust supply and demand</li> <li>6. More detailed market surveys on domestic and export market potentials</li> <li>7. Launching of educational programs using mass media on production, marketing and nutritional aspects of diversification</li> </ol>	<ol style="list-style-type: none"> <li>1. Lifestyle tastes and diet patterns (less starch and more meat, fruits and vegetables, with higher income and changes in lifestyle)</li> <li>2. Socio-economic factors; attitudes to information, market attitudes, lack of understanding of the operational costs of running businesses on large scales</li> <li>3. Lack of research &amp; development, and expertise</li> </ol>

	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>2.</b>	<p>Promotion of high value crops for the tourism industry and for exports, including cut flowers, seeds, seedlings &amp; mushrooms</p> <ul style="list-style-type: none"> <li>• Exotic fruits such as mangosteen, rambutan, dragon fruit, pomelo</li> <li>• Cut flowers such as roses, orchids, chrysanthemums, gladiolus, anthuriums</li> <li>• Vegetables and flower seeds; Chrysanthemum seedlings for potted plants</li> </ul>	<ol style="list-style-type: none"> <li>1. Institutional establishments for farmers groups, e.g. cooperatives, contract growers associations</li> <li>2. International market surveys and market promotions</li> <li>3. MIS and assistance in post-harvest handling, grading and packaging</li> <li>4. Quality control and protocol development (Codex Alimentarius/FAO should be followed)</li> <li>5. Creating favourable environment for investors (both local and foreign)</li> <li>6. Establishment of processing industries</li> <li>7. Introducing improved crop production technologies (greenhouses and plastic-houses, organic fertilizers and effective microbes, hydroponics, efficient irrigation systems, application of fertigation and chemigation technologies)</li> <li>8. More on-farm regional adaptability research to effectively transfer technology to farmers</li> </ol>	<ol style="list-style-type: none"> <li>1. Infrastructure/logistics, e.g. transport, cold store facilities, processing facilities</li> <li>2. Tariff protection in initial stages for new agro-businesses</li> <li>3. In sufficient research and development activities</li> <li>4. Lack of expertise and skilled workers</li> </ol>

	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>3.</b>	Development of agro-forestry on sloping lands in in-land regions to control soil erosion, improve management of watersheds, enhance sustainable agricultural production, environmental and natural resource conservation	<ol style="list-style-type: none"> <li>1. Adoption of an agro-forestry systems of crop production (e.g. crop cultivation in coconut plantations and in forest plantations)</li> <li>2. Identify slope areas =&lt;10% that are ideal for agriculture</li> <li>3. Adoption of Sloping Agriculture Land Technology (SALT) by identifying the types of crops that can be grown to maintain ecological balance and give good returns to growers</li> </ol>	<ol style="list-style-type: none"> <li>1. Poor/inadequate understanding by farmers of soil erosion control and management methods</li> <li>2. Lack of understanding of the importance of watersheds and their management aspects</li> <li>3. Importance of conserving bio-diversity and natural/indigenous species/resources</li> <li>4. Land tenure</li> <li>5. Lack of infrastructure</li> <li>6. Lack of technology, e.g. SALT and agro-forestry</li> </ol>
<b>4.</b>	<p>Goat &amp; other livestock farming development</p> <ul style="list-style-type: none"> <li>• Goat farming</li> <li>• Sheep farming</li> <li>• Duck farming</li> <li>• Dairy farming</li> <li>• Beef farming</li> </ul>	<ol style="list-style-type: none"> <li>1. Upgrading or introduction of better breeds</li> <li>2. Set up experiment farms and field demonstration farms with progressive farmers to transfer husbandry practices to them</li> <li>3. Establish marketing mechanisms, particularly for small farmers</li> <li>4. Provide medium and long-term credits and other incentives to encourage small farmers</li> <li>5. Regional recommendation in production of feed and forage</li> <li>6. Strengthen extension and veterinary services of MoA</li> </ol>	<ol style="list-style-type: none"> <li>1. Land tenure system</li> <li>2. In sufficient research and development on feed production and husbandry practices</li> <li>3. Inter-island transport for live animals</li> </ol>

	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>5.</b>	<p>Development of feed crops by identifying appropriate agro-ecological zones</p> <ul style="list-style-type: none"> <li>• Increase production of existing crops such as cassava</li> <li>• Introduce new crops such as maize, sorghum and also some oil seeds such as groundnut and sunflower which can provide oil cake as a high quality protein supplement for animal feeds</li> </ul>	<ol style="list-style-type: none"> <li>1. Introduction of appropriate varieties and crop production technologies through applied research</li> <li>2. Regional adaptability experiments and field trials for varietal and cultivation methods</li> <li>3. Introduce small scale processing facilities (e.g. cassava pelting, oil extraction)</li> </ol>	<ol style="list-style-type: none"> <li>1. High cost of production which may affect price competitiveness on the local and overseas markets</li> <li>2. In effective processing technologies</li> <li>3. In sufficient human resources to effectively carry out the task</li> <li>4. Available local human resources may spread out too thinly thereby restricting proper growth of the industry</li> </ol>
<b>III.</b>	<p><b>DEVELOPMENT OF SUSTAINABLE AGRICULTURE THROUGH HIGH TECH AND ENVIRONMENTALLY FRIENDLY AGRONOMIC PRACTICES</b></p>	<ol style="list-style-type: none"> <li>1. Introduction of appropriate technology through applied research</li> <li>2. Introduction of organic fertilizers and effective micro-organisms (EM)</li> <li>3. Strengthening of applied research and training (both in-country &amp; abroad)</li> <li>4. Create environment for private sector investment and particularly encourage foreign investment to bring in advanced technology and provide access to international markets</li> <li>5. Market surveys and promotions particularly for organic products</li> <li>6. Quality control and quarantine protocol</li> <li>7. Medium and long-term credit</li> <li>8. Self-sufficiency in crop production (vegetables, tree, and root crops)</li> <li>9. Produce sufficient vegetables during the summer months</li> <li>10. Application of optimum water required by the plant/crop-reduce excessive application and water wastage</li> </ol>	<ol style="list-style-type: none"> <li>1. Availability of organic manure</li> <li>2. Skilled labour shortage and registration</li> <li>3. Proper regulations</li> <li>4. In-sufficient knowledge</li> <li>5. Understanding and technical expertise of GMO's and products</li> <li>6. High capital investment required for the development of GMO's</li> <li>7. High investment/capital cost required for set-up of plastic-houses and watering systems</li> <li>8. Low water pressure in certain areas of the main island and in-adequate water supply on some of the outer islands</li> <li>9. Increased incidence of pest and disease development as a result of sufficient host availability from intensive cultivation</li> <li>10. Lack of research &amp; development</li> </ol>
<b>1.</b>	<p>Intensive crop production with the application of advanced agriculture and irrigation practices under controlled environment (such as green houses, plastic tunnels with drip/sprinkler irrigation)</p>		
<b>2.</b>	<p>Organic farming, application of bio technology, (EM, GMOs and IPM)</p>		

	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>3.</b>	<p>Development of integrated farming practices for sustainable agriculture and livestock production, with main emphasis on regional food self sufficiency and food security</p> <ul style="list-style-type: none"> <li>• Crop &amp; livestock farming</li> <li>• Cultivation of seasonal crops in perennial crops plantations</li> <li>• Pig &amp; poultry farming with aquaculture</li> </ul>	<ol style="list-style-type: none"> <li>1. Introduction of appropriate integrated farming systems</li> <li>2. Setting up of demonstration farms (crop &amp; livestock) by organizing progressive farmers in different islands/regions</li> <li>3. Establishment of regular information and technical exchange with regional organizations and programs through internet</li> <li>4. Dissemination of information and technology to farmers through available telecommunication networks and mass media</li> <li>5. Lack of proper technology for different AEZ of the country</li> <li>6. Insufficient applied research and extension services</li> </ol>	<ol style="list-style-type: none"> <li>1. Some farmers may lack the knowledge for proper and adequate maintenance of the system</li> <li>2. Availability of resources such as animal feed, plant nutrients and water to maintain an effective and functioning system</li> </ol>
	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>IV.</b>	<p><b>POST-HARVEST AND PROCESSING FACILITIES DEVELOPMENT FOR THE PRODUCTION OF VALUE ADDED AGRICULTURE AND LIVESTOCK PRODUCTS</b></p>	<ol style="list-style-type: none"> <li>1. Identify appropriate (size and function) facilities for packaging, storage, processing and quarantine facilities</li> <li>2. Facilities should be adequate to provide packaging, storage, and processing of multiple crops (vegetables, fruit, and root), and animal products</li> <li>3. Conduct market feasibility study/survey to identify appropriate/high value added product types, both for domestic and export markets</li> <li>4. Assessment and implementation of bilateral quarantine agreements</li> <li>5. Development of small and medium scale food processing facilities through positive research and encouragement of private sector investment (e.g. frozen and dried root crops, fruit juices, jams and purees, pickled, frozen and</li> </ol>	<ol style="list-style-type: none"> <li>1. High capital investment for establishment of such facilities</li> <li>2. Relatively high running cost in terms of electricity and maintenance</li> <li>3. High cost of operations may significantly increase cost of the product and reduce market price competitiveness</li> </ol>
<b>1.</b>	<p>Establishment of post-harvest facilities such as packaging sheds for fruits and vegetables which include facilities for cleaning, sorting, grading, treatment (heat, chemical etc.), packing, and storage (both conventional and cold storage) and processing</p>		



		<p>dehydrated vegetables), chicken and pork sausages, bacon and ham)</p> <ol style="list-style-type: none"> <li>6. Support of Government towards quality improvement of products, confidence building between producers and buyers, sustainable and consistent supply of products</li> <li>7. Establishment of regular information and technology exchange programs between the islands</li> <li>8. Promotion of foreign investment and identification of export markets</li> </ol>	
	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>2.</b>	Triple "A" slaughterhouses and cold storage facilities together with meat processing facilities	<ol style="list-style-type: none"> <li>1. Up-grading of present abattoir and cold shore facilities in Rarotonga</li> <li>2. Introduce meat grading and standardize the pricing of carcasses</li> <li>3. Set-up a system to cooperate and coordinate retailers and butchers</li> <li>4. Central marketing outlet (or marketing authority) to manipulate quantity, quality and price</li> <li>5. Establishment of abattoirs in the outer islands</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of consistent supply of live animals</li> <li>2. Absence of marketing regulation and pricing system</li> <li>3. Attitude of producers on marketing and profit margins</li> <li>4. Support from importers</li> <li>5. Lack of systematic meat inspection and trained personnel for inspection</li> </ol>
<b>3.</b>	Establishment of small-scale feed mills to produce blended animal feed using imported and locally available feeds, particularly for commercial pig farming	<ol style="list-style-type: none"> <li>1. Establish small experiment mills in Rarotonga and some outer islands where availability of local ingredients are of comparative advantage</li> <li>2. Transfer of technology from other island countries for developing appropriate technology</li> <li>3. Provide incentives and award to entrepreneurs through tax and tariff exemptions, introduction of technology and machineries</li> </ol>	<ol style="list-style-type: none"> <li>1. Availability of quality raw materials</li> <li>2. High domestic production cost of local ingredients</li> <li>3. Higher production cost of feed due to high transportation cost of raw materials</li> </ol>

	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>V</b>	<b>INSTITUTIONAL AND BEHAVIORAL DEVELOPMENT STRATEGY</b>		
<b>1.</b>	Development of private commercial agriculture and livestock farming based on individual oriented but horizontally integrated producer associations, (grouping in accordance with their choice of crops or livestock with comparative advantages)	<ol style="list-style-type: none"> <li>1. Formation of relevant associations under the initiation and policy guidance of concerned government agencies</li> <li>2. Creating appropriate atmosphere for private sector investment (both local and foreign) through further realization of tax and tariffs and application procedures</li> <li>3. Provision of direction, recommendation and assistance to private sector by setting up specialized section/agency under MoA for investment in agriculture &amp; livestock sectors in coordination and cooperation with other ministries, development banks and organizations concerned</li> <li>4. Creation of incentive schemes/measures by Government using policy tools such as tax and tariff exemptions and subsidies for export promotion and import substitution associations which will have large impact on the national economy</li> <li>5. Survey and dissemination of domestic and international market information on potential agricultural commodities with comparative and competitive advantages by MoA</li> <li>6. Regulation of more favorable interest rates on loans and credits for producers associations</li> <li>7. Put into practice the Primary Producers Federation Act (1980) in accordance with recent policy changes of Government</li> </ol>	<ol style="list-style-type: none"> <li>1. Economies of scale for commercial plantations as well as processing facilities particularly in the case of joint ventures involving foreign investment</li> <li>2. People's attitudes towards production and marketing associations</li> <li>3. Insufficient support and guidance by Government</li> </ol>

	<b>DEVELOPMENT STRATEGY</b>	<b>PRIORITY NEEDS</b>	<b>LIMITATIONS</b>
<b>2.</b>	Development of diversified consumption and dietary patterns with increased awareness on health and nutrition	<ol style="list-style-type: none"> <li>1. Consumers selection of products at their own preference giving priority to domestically produced products through mass media education campaigns</li> <li>2. School curriculum development</li> <li>3. Health clinic demonstrations</li> <li>4. Introduction and promotion of crops for protein, minerals and vitamins supplement in the daily diet e.g. peas and beans for protein and bele (spinach), aquatica (leafy spinach-type vegetable), taro leaves, drum-stick trees for vitamins and minerals (those rich in iron)</li> <li>5. Aggressive promotion of healthy traditional foods by improving preparations to match with changing lifestyles and diet patterns</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of research on production of new crops rich in protein and vitamin supplements</li> <li>2. Developed recipes utilizing plants which are available locally or can be produced in the home-yard gardens</li> <li>3. Attitude of young generation towards traditional foods</li> </ol>
<b>3.</b>	Development of agricultural marketing and market information systems through better cooperation between government agencies and private sector operators in order to expand existing markets and further develop new opportunities	<ol style="list-style-type: none"> <li>1. Establishment of a Market Information Service Section (MISS) within MoA</li> <li>2. Dissemination of market information collected by MISS on a regular basis</li> <li>3. Training programs on marketing and market information systems for MoA staff and relevant private sector organizations</li> <li>4. Nation-wide public awareness campaigns</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of wholesale market systems in the outer islands</li> <li>2. Lack of crop production data</li> <li>3. Lack of trained staff in marketing and market information system</li> <li>4. Lack of communication among Government agencies and between public and private sectors</li> </ol>
<b>4.</b>	Establishment of a national extension network under the Ministry of Agriculture with systematic linkages with outer islands development and administrative bodies	<ol style="list-style-type: none"> <li>1. Strengthening of extension services for all the islands (both for crops and livestock)</li> <li>2. Training of extension staff</li> <li>3. Production of extension materials with assistance from UN and regional bodies like USP</li> <li>4. Strengthening of agricultural policy services under MoA</li> <li>5. Formulation of long-term plans for sustainable agriculture development with emphasis on food security</li> <li>6. Establishment of linkages with UN &amp; regional bodies</li> </ol>	<ol style="list-style-type: none"> <li>1. Insufficient budget allocations</li> <li>2. Shortage of trained personnel</li> <li>3. Lack of proven technology for different agro-ecological zones</li> <li>4. Insufficient agricultural and nutritional statistics</li> </ol>

## **7. CONCLUSION**

A dramatic decentralization and transition in the role of government has been already underway in the Cook Islands in recent years, but considerable confusion and disagreement about what this role should be still remain, particularly in agriculture. Current efforts to downsize some major activities of MoA to be devolved to the outer islands and the private sector must parallel necessary institutional changes and a strengthening, rather than a weakening, of the capacity of MoA to implement the activities it should undertake.

If MoA loses capability and funding is insufficient, there is a serious risk that MoA will be unable to perform its appropriate functions effectively. The case in point is the extreme downsizing of research and extension services without necessary parallel institutional changes either under OMIA or island administrations. An expanded investment in agricultural research and extension with high pay-offs to society is of a public goods nature and should be undertaken by public organisations or institutions under MoA.

In the outer islands where agricultural research and extension is urgently needed, private sector agriculture research and extension activities are virtually non-existent and are unlikely to happen in the near future because of limited opportunities for deriving benefits from such activities.

But at the same time delegation of policy responsibility and authority from national to local government and fuller participation by local people in outer islands decision-making must be fully recognised and supported. While local governments in outer islands will continue to have a critical role in implementing the policies, strategies and programs for agricultural development, the capabilities and contributions of MoA in the transfer of technology through research and extension must be strengthened. It will make national policies and public sector spending more effective and responsive to local needs.

Government, in recognising the tremendous opportunities the agriculture sector offers for accelerating broad-based economic growth, increasing income in the outer islands and improving food security, should pursue through research, technology, infrastructure and competitive market, the opportunities for enhancing efficiency and reducing costs in the food system (including production, processing and distribution). Government should;

- Complete on-going efforts to phase out inefficient public firms in agricultural input and output markets and create an environment more conducive to effective and active participation of the private sector to provide efficient and effective services to all consumers;
- Establish or strengthen necessary institutions or units on agriculture policy, extension, applied research & development, data collection and agricultural marketing and enhance its capacity to perform these roles while disengaging itself from functions to be undertaken by the private sector;
- Provide incentive policies and regulations that favor small scale technology intensive agriculture and livestock farming;

- Develop market infrastructure of a public goods nature such as transportation and communication facilities, market information services, wholesale market and processing facilities by:
  - (a) Public sector investment including priority allocation of bilateral and multilateral financial assistance; and
  - (b) Regulation of private sector investment.
- Develop and enforce legal instruments such as Intellectual Property Rights, Plant Varietal Protection and Seeds Law, Pesticides Law, Plant Quarantine Law and other standards and regulatory instruments (e.g. organic produce, weights and measures) essential for effective and efficient functioning of markets;
- Facilitate the development of small farmer credit schemes and provide efficient and effective administrative and technical assistance to create private sector associations and enterprises investing in production, processing and trading of agricultural and livestock products;
- Establish natural resources utilisation plans and enforce clearly specified systems of right to use and manage land, water, forests, and other natural resources in close consultation and collaboration with local communities, specifically;
  - (a) Enforcement of zoning orders for the use of agriculture land under the Land Use Act (1969);
  - (b) Undertake comprehensive land use planning for all islands to make better use of agriculture land in accordance with different agro-ecological regions by providing incentives to users and possibly penalising non-users; and
  - (c) In collaboration with the Water Supply Dept., undertake comprehensive water policy to make use of existing water supplies by improving procedures for water allocation and to tap other water resource potentials by providing appropriate incentives to water users making use of ground water, construction of small reservoirs and other water-harvesting methods.
- Promote environmentally friendly agriculture by providing incentives to farmers and communities to implement integrated pest management (IPM), integrated soil fertility management, and sloping agriculture land technology (SALT) programs;
- Promote and provide necessary support through technical and administrative assistance, the development of organic farming and establishment of markets for organic products produced by the private sector under strict quality control standards and specifications;
- Facilitate the transition to more open international markets and increased trade, including;
  - (a) Adopting policies and regulations to facilitate diversification in agricultural production to better reflect the emerging markets and changing relative prices;

- (b) Improving the competitiveness of agricultural systems through utilisation of improved technology;
- (c) Developing and expanding small-scale technology-intensive private sector production and processing through better incentive schemes;
- (d) Adopting necessary legal frameworks for permitting the use of skilled labor-cum-trainers by private sector in agriculture production and processing; and
- (e) Promotion of off-season crops and other areas of agricultural production which will have comparative and competitive advantages.