HEALTHY SOILS, HEALTHY FOODS - SUSTAINING OUR COMMON LIVELIHOODS

Agriculture & Food Sector

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Government of the Cook Islands
Ministry of Agriculture
Development Coordination Division, Ministry of Finance & Economic Management

DISCLAIMER

The Agricultural and Food sector in the Cook Islands has been extensively studied and various documents suggesting ways to strengthen and develop the sector have been circulated over the years. The present document's intention is to compile essential baseline information from all these different sources, and to confront it with the findings and suggestion from a participatory planning process with the various stakeholders of the sector. It therefore draws heavily (i.e. when needed copies) on these documents by summarizing the information available and cross-referencing so that further data on specific issues can be readily accessed.

The document was prepared at the request from the MOA and with the direct support of FAO and the DCD/MFEM. It is based on the field work of an independent consultant. During the mission, the consultant met with various private stakeholders (farmers and businesses) and would like to thank all those would took the time either to answer or to attend and share their views during the various mission events. Furthermore, the consultant would like to express his gratitude to the MOA, and especially its PS, and the team of the DCD for their regular support; and patience in waiting for the document; a special mention also for the statistics and customs team of the MFEM which compiled all the recent trade data regarding the agricultural and food sector.

The findings of this report and the proposed after MDG Vision for the agricultural and food sector are the Consultant's Mission's best possible analysis and recommendations. The document is a contribution to the on-going process and is open to comments and suggestions The views it contains thus only represent the his own view and are in no way to be considered as representing either the view of the Government of the Cook islands and of the FAO.

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MAJOR ACRONYMS

ARDA	Adventist Development and Relief Agency
BCI	Bank of the Cook Islands
BITB	Business Trade Investment Board
BMI	Body Mass Index
BTS	Baker Tree Services
CC	Chamber of Commerce
CI DE-TF	Cook Islands Disaster Emergency Trust Fund
CITC	Cook Islands Trading Corporation
CITTI	Cook Islands Tertiary Training Institute
CKI	Cook Islands
DCD	Development Coordination Division
DRFI	Disaster Risk Financing and Insurance
EEZ	Exclusive Economic Zone
ENSO	El Nino Southern Oscillation
FAO	Food and Agriculture Organisation
FAOSTAT	Statistical data base of the Food and Agriculture Organisation
FTP	Financial and Technical Partner
GAP	Good Agricultural Practices
GDP	Gross Domestic Product
GEF	Global Environmental Fund
GFDRR	Global Facility for Disaster Reduction and rceovery
HTFA	High Temperature Forces Air
INTAFF	Internal Affairs
IPCC	Intergovernmental Panel for Climate Change
MOA	Ministry of Agriculture
MFEM	Ministry of Finance and Economic Management
mt	Metric Tons
NCD	Non Communicable Disease
NZAID	New Zealand Aid
NZ$	New Zealand Dollar
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PIC	Pacific Island Countries
PGS	Participative Guarantee System
PMO	Prime Minister's Office
RCC	Recovery Coordinator and Committee
RTF	Reserve Trust Fund
SME	Small & Medium Enterprise
SPC	Secretariat of the Pacific Council
STEPS	WHO's STEPwise chronic disease surveillance programme
TA	Technical Assistance
TF	Trust Fund
TGA	Titikavaka Growers Association
VSA	Volunteer Services Abroad (New Zealand)
UNDP	United Nations' Development Programme
US$	United States Dollar
WHO	World Health Organisation

Strategic Agriculture & Food Sector Plan Cook Islands

EXECUTIVE SUMMARY

INTRODUCTION & METHODOLOGY

At the request of the Government of the Cook Islands the Food and Agriculture Organization (FAO) fielded an initial policy scoping mission in March 2014. As a direct follow-up to report's recommendation: "that a Food Policy Council, with assistance from other Financial and Technical Partners (FTP), develop a new long-term strategic plan and policy for the Cook Islands Ministry of Agriculture (MOA)", the MOA was mobilized to initiate thus process, with the support of FAO.

A second field mission by FAO was mobilized in November 2014 and its major objectives are to: (i) collect and analyze necessary data to assist with policy and planning; and (ii) to assist the MPO in conducting the consultations in order to draft a National Agriculture Sector Strategic Plan. After start-up, it soon became evident that a stepwise approach to developing the strategic sector plan would need to be implemented. Four phases were thus envisaged to complete the preparation of the Sector Strategic Plan: (i) phase one - stakeholder consultations and designing an overall Vision or overall framework with a number of priorities; (ii) phase two - continued stakeholder buy-in leading up to the Vth Development Partners' meeting in early February 2015; (iii) phase three - revisiting the Vision and elaborating a short and medium term action plan in time for the coming 2015/2016 budget planning; and (iv) phase four - official endorsement by all stakeholders of the Vision and abovementioned action plan and official launching of the various councils/clusters and actions envisaged in this plan.

The second FAO field mission thus focused on completing the first phase. Work combined: (i) completion of data and background documentation gathering; and (ii) a participatory planning process alternating individual meetings with public and private stakeholders, various field visits, round tables open to all stakeholders and advertised in the presses, two 'food' task force meetings and one open forum where a preliminary Vision was presented and debated.

After the field mission, the present report was completed. The document tries to reflect as honestly as possible the views and suggestions received. It remains thus an open scoping and working paper.

1. COOK-ISLANDS' AGRICULTURAL SECTOR REVIEW

The Cook Islands (CKI) consists of 15 islands in free association with New Zealand. The climate is a typical tropical climate with two distinct seasons and an average rainfall between 2,000 and 3,000 mm per year. Rarotonga is also the only island that has an abundant water supply. The other islands, particularly the atolls in the northern group suffer from water loss, thus agriculture is limited. Most of the available good agricultural land is located in the Southern group of Islands and it is therefore not

surprising that these islands have traditionally supplied various agricultural products to the capital islands and to the once buoyant fruit export markets of the CKI.

Land availability, limited water resources and inter-island communications & transport logistics are major determinants which directly impact the agricultural sector in the CKI.

1.1 Contribution to the Economy

The gradual market liberalization of the agricultural sector (beginning the 1980's) has led to a steady decline of the competitiveness of Cook Islands products in export markets, which were heavily dependent on trading networks with New Zealand. The loss of these export markets has significantly contributed to the overall reduction and stagnation of the contribution of the agricultural sector to the CKI's GDP which has now reached a mere 2%.

Imports have consistently outstripped the exports in and from the CKI. Since the turn of the millennium, total imports have increased by over 32%, to reach a total of 110 million US$ for 2011. Exports however have witnessed an important decrease over the same period, dropping to around 3.2 million US$ in 2011. The share of food imports remains at around 20-25% of total imports, whilst exports have significantly dropped.

According to the 2011 agricultural census, out of the 2334 households (HH) that took part in the census: (i) 1275 HH declared to be active in agriculture either as subsistence type agricultural (67.5%) or as geared primarily geared at sales (32.5%); and (ii) 1061 HH declared to be keeping livestock either for subsistence (68.6%) or for sale (31.4%).

A major characteristic of the agricultural sector in the CKI is thus that the sector is essentially a part-time and-or subsistence driven one (± 875 HHs); whilst those that are engaged in agriculture for sales represent more or less 400 HH. When further zooming in on this latter group of HHs, the number of effective commercial actors has dropped from 153 to 31[1] between 2006 and 2011, suggesting that a significant move from commercial farming to subsistence with cash.

1.2 Overall productive performance

Crops

The 2011 agricultural census identifies 2028.8 acres (±820 ha) as agricultural land of which only 1233.7 acres (± 500 ha) are at present under crops, leaving more than 795.1 acres (± 320 ha) fallow or under bush. In 2011, tree crops accounted for the major soil occupation (880 acres or 356 ha) followed by root crops (270 acres or 109 ha) and vegetables (71 acres or 29 ha). However trees planted as orchards only account for 261 acres (101 ha), whereas coconut trees (mostly scattered or individual trees) account for 397 acres (161 ha).

In 2012, crop farming in the CKI produced an estimated total of 7 971 metric tonnes of produce (excluding figures for Noni production) of which 1 329 mt of tropical fruits (of which 64% are grown in orchards), 1 820 mt of coconuts, 1 672 mt of various vegetables and 3 150mt of root crops.

[1] *Out of the 27 farmers that declare deriving all their income from farming, 19 are on Rarotonga, 6 in Atiutaki and 2 in Mauke.*

Livestock

The 2011 agricultural census confirms the predominance of the pork, poultry and goat production livestock sub-sectors as already evidenced in previous censuses. In 2011, a total of ± 14 000 pigs, ± 4 400 goats and ± 34 000 chicken were reported. Indigenous species[2] or low productive species seem to predominate.

When assessing numbers of HH and numbers of stock, major production areas of pork and goats are concentrated on the other Southern Islands and to a lesser degree on Rarotonga. Goats are absent from the Northern Islands.

*Disposal of animals is low. According to the 2011 agricultural census, only 20% of total numbers are disposed of, of which 76% were slaughtered[3]. **Sales of slaughtered animals remain the exception (± 10%)**. The informal market (household direct consumption and gifts) seems to absorb the majority of the slaughtered animals.*

In addition to the meat sales, one important sub-sector for poultry is the egg sub-sector. The latter is predominantly established on the Rarotonga Island and streamlined around one major egg producer and a limited number of smaller operators. Imports of eggs have been increasing over the past years as and since 2014 imports tariff on eggs have been discontinued.

2. CHALLENGES AND OPPORTUNITIES

2.1 Food security

Food security is more than just ensuring that sufficient food is available so that nobody is underfed.

The CKI ensure an average diet of 3185 Kcal/day, of which 83.4% is imported. Local food availability has been declining from 250 US$ per person to 114 US$ (and even less if tourists figures are taken into account). Stability of the food security has been gradually eroded as this index now reaches 5.4 times the value of the country's exports.

> *Moreover, high profits and rents earned on large import operations typically become embedded, and so constitute a strong deterrent to the eventual (re-)establishment of local production operations.*
>
> *Milford Bateman (2010)*

2.2 Market challenges and opportunities

Marketing of agricultural products and food is confronted to:

- ***Gradual decline of agricultural/food exports*** *- Over the last decade these exports have represented a total average quantity of 283 metric tonnes, decreasing from 594 tonnes in 2005 to 136 in 2011; value wise these exports represent on average an income of 1.23 Million NZ$, decreasing from 2.3 million NZ$ to around 564 thousand NZ$ in 2011. In 2011, fruits (Noni) juices were the only significant remaining agricultural export, amounting to 531 thousand NZ$.[4]*

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2 *No detailed study of the breeds (importance, performances and improved husbandry techniques) present in the various CKI seems to have been conducted and the potential to improve these three important sub-sectors remains to be verified.*

3 *Most of these slaughters are performed at HH or farm level; the small pig/sheep/goat abattoir is no more operational.*

4 *+ An estimated yearly small export of 50 000 NZ$ of Maire leaves.*

- ***Import dependence and substitution*** - *The Cook Islands major agricultural imports as identified in the import statistics provided by the Customs department of MFEM are by order of importance: (i) meat products (inclusive of poultry and offal) ; (ii) other livestock products (dairy, eggs, …); (iii) cereals and vegetables (inclusive of potatoes); (iv) refined sugar; (v) fruits (inclusive of melons) and oil/fats. According to the customs statistics, average imports of agricultural products and foods have been around 16.3 million NZ$ (2005-2013) have been around NZ$. Import substitution opportunities, import however limited to those that are locally amount over the same decade to livestock products (3.6 million NZ$) followed by vegetables (1.1 million NZ$) and tropical fruits (0.13 million NZ$).*
- ***Fragmented value/marketing chains*** - *Local markets for agricultural products and food remain very fragmented. There are few major producers (31 'commercial farmers' and no significant livestock commercial farmers with the exception of the egg sub-sector) and most of the agricultural activity is part-time on small plots < 2 acres, with low crop volumes and low consistency over time. The only value added exported agricultural crop is noni juice. Some limited local value adding exists such as papaya juice/nectar production (Hugh Baker, Raro-Pacific), chilli and tomato pastes (Blue Pacific/Trader Jack) and the odd fresh smoothies, juices, salads available at the Punauga Nui market. There are no middle men that operate as links between retail and the producers. The retail sector is dominated by one major local supermarket chain.*
- ***Linkage and interaction with Hospitality sector*** - *Tourism remains the largest industry in the Cook Islands, accounting for around 60 per cent of the economy. Arrivals have soared over the past years to reach well over 120 000 annual visitors. Interestingly, almost an equal number of tourists cite their food and beverage experience as the least appealing aspect of their say (12 per cent) as those that cite it has the most appealing (11 percent). The 'food' or 'cuisine' experience is however an important marketing theme of the Cook Islands Tourism Council and Board. It is therefore essential to ensure as far as possible that this 'food-cuisine' experience draws on local products and food traditions.*

  Welcome to the paradise of the Cook Islands.

  Dare to experience the unique culture, food, and lifestyles

  http://instagram.com/cookislands

  The food hospitality (i.e. hotels, restaurants, cafes) sector is a significant consumer of local fresh produce. The previous FAO report suggests that for vegetables approximately 192 tonnes of selected vegetables are required, at a value of over NZ$ 765 thousand; and that for fruits there is demand for 294 tonnes of fruit valued at around NZ$ 867 thousand, every year.

  Whilst some of the hotel/resorts have established preferred supplier arrangements and do provide limited forward indication of their produce demand, formal contracts are not the norm. A consequence of these uncoordinated supply chains for local farmers' produce has been summed up by the food hospitality sector as a situation of 'feast or famine'.
- ***The livestock sector*** - *Direct competition from other Pacific countries reducing viable commercial options seems to have justified the gradual decline and abandonment of this important import*

substitution opportunity; and the recent discontinuation of the protective import tariffs[5]. Other major reasons for this situation are: (i) the cost of imported animal feed and the little use of local available or produced feed; (ii) breeds (mostly indigenous) and the present production and animal husbandry techniques (open air and wandering) are viewed as presenting a major health /consumption hazard; (iii) the environmental concerns regarding animal wastes and production conditions; and (iv) the lack of appropriate local value adding ventures, as small local butchering and pork workshops operating in the early 2000 and the existing abattoir have closed down. Nevertheless, there is scope to try and regain some market shares for livestock 'quality' or 'local labelled' products.

2.3 Other issues challenging production

In addition to the above-mentioned markets weaknesses and constraints Challenge, the agriculture and food sector faces a number of other major challenges:

- *The present contribution of the **outer islands** to the agricultural/food sector is limited by a number of major constraints which represent the major challenges: (i) Transport and communications links are semi-regular; and (ii) Present inadequate capturing of island specific Tourist developments have increased the demand of food which in part is provided locally.*
- *The CKI's Demography Paradigm – 74% of the population is concentrated on the Rarotonga Island. The age pyramid of the 2011 population and housing census reflects an important indent in the 15–29 year age groups, showing a sign of outward-migration at the young ages. More than 70% of 'farmers' are over 40 years in age. Strong urbanization (more than 70%) has major implications in regards to the food consumption and overall quality of life.*

- ***Labour Dynamics of the sector** - According to the 2011 agricultural census a total of 1661 people are working in the agricultural sector, of which 365 are women. This represents 1.30 labour force per agriculture active household. The sector employs some 66 paid labour (of which 14 women). Paid labour is expensive as the minimum wage is set at NZ$ 6 per day and the commercial/part-time 'selling' farmers are thus the ones confronted with these high labour costs and requesting more flexible conditions to mobilize temporary overseas labour. The major constraint facing the agricultural sector is that most young people are escaping agriculture, preferring other employments or migration. They do not view it as an 'innovative", "actual" and interesting income generating activity.*
- ***Lack of contract/associative farming tradition** - Cook Islands experience with farmers' associations is rather limited and needs to be revisited. There have been a number of village level associations which were basically set-up on a demand driven approach, i.e. to access equipments (tractors, …) or specific services (inputs, seeds, …). Most are not business driven and are*

[5] *Other pacific islands maintain high levels of protection of their national livestock productions. For example Fiji maintains a 32% duty on most livestock products. It is thus ironical that an important share of the "duty free" imported eggs in 2014 originates from the "duty" protected Fiji.*

ineffective in developing common development plans or promoting grouped contract farming arrangements with the hospitality sector or SME value-adding businesses.

- ***Land Use*** *- Land used for agricultural purposes has been on the decline on all the major agricultural islands (Rarotonga, Atuitaki, Mangaia, Atiu, Muake and Mitiaro) since 1988. Total figures have shrunk from 6934 acres in 1988[6] to 2029 acres in 2011[22]. Two major factors contribute to this: (i) the continual and gradual decrease of the performance of the agricultural sector; and (ii) the increased competition for land on Rarotonga from the tourism sector and housing sectors. According to the 2011 agricultural census, only 7 % of the land area used for farming is under freehold lease or license. An estimated 65 % of the land being used by commercial farmers is borrowed or customary, with the largest portion being borrowed.*
- ***Capital & Business environment*** *- The previous FAO report describes this sector in more detail. Its review covers : (i) loans and interst rates (on the one hand high rate of interest charged on loans to the agriculture sector; & on the other the existance of the special finacncail window at Bank of Cook Islands (BCI), in partnership with the Business Trade Investment Board (BTIB) for small and low interets loans for the sector); (ii) the importance of providing adequate market information tools and of providing technical support and business mentoring services[7] on business planning and modern farming methods; and (iii) the need to reduce the tax burden on the primary sector in order to encourage a higher level of investment (making capital asset investments 100% depreciable over 2-3 years, tax holidays for specific agribusinesses, and an eventual dual rate VAT system, …)*
- ***Health and Non Communicable Diseases (NCD)*** *– NCDs represent a growing burden in the Cook Islands which subsequently challenges its healthcare system and resources (infrastructure, human, laboratory and pharmacy.) There are 3 725 patients currently registered in the Ministry of Health's NCD registry. Even if food is not the only cause of the NCD crisis, it remains a crucial contributor, as unhealthy diets directly challenge the vision of what food and which agriculture is to be pursued in the CKI. Healthy diets and quality of life depends directly on the production of locally available quality food products made from healthy farm products.*
- ***Environment and climate change*** *- The agricultural sector in the CKI operates in a sensitive environmental environment and will need to prepare to cope with the longer-term effects of climate changes. At present the prevailing monoculture/plantation type agricultural system is a high input driven model which has major impacts on the environment and is directly impacted by the on-going climate changes. On average these imports of fertilizers and chemicals represent an average total value of 670 thousand NZ$ per year (since 2005) or 285 thousand NZ$ in fertilisers and 385 thousand NZ$ in various agri-chemicals.*

  Since 1955 the Cook Islands has experienced a total of 38 natural disasters (of which 34 cyclones) which have resulted in 34 deaths and cost in the region of US$ 47.6 million, equivalent to

6 *Including 1429 acres fallow in 1988 and 795 acres fallow or under bush in 2011.*

7 *The Chamber of Commerce (CC) is currently implementing a business mentoring programme (with support from New Zealand) and would be keen to see this extended to the agriculture sector*

approximately NZ$ 65.4 million[8]*. In May 2011 the Cook Islands Disaster Emergency Trust Fund (CI DE-TF) was established; and joined the Pacific Catastrophe Risk Insurance Pilot in 2013. In order to provide greater security to investment in capital equipment, the government of Cook Islands should investigate the feasbility of establishing a public-private agricultural insurance facility.*

- ***Agricultural water and management*** *- Agriculture is estimated to be the largest single sector user of water on Rarotonga with approximately 40% of overall water usage on the island. Crops are exposed to regular dry spells. Surface water catchment facilities exist but need to be rehabiliated or developed in order to intercept rain water and store it or infiltrate it as much as possible. Appropriate water sources should also be explored for the provision of water, particularly on Rarotonga where treated, reticulated water may be more costly. Improved water management techniques (drip and farming systmes that favour consistent crop coverage of the soil together with mulching and use of compost) need to be developed and extended to farmers.*

  A national water policy is under preparation and is articulated around 9 objectives, of which the three following are directly related to agricultural activities: (i) Reliable, potable water for all who reside in the Cook Islands and the establishment of standards for water quality and resource management; (ii) sustainable management of both inland and coastal water resources; and (iii) Equitable systems for controlling demand and appropriate usage

3. AGRICULTURE & FOOD STRATEGIC INTENT OR AFTER MDG VISION

To turn the sector round, it is important that all stakeholders (private and public stakeholders) agree on three major prerequisites:

- *The first, which is conceptual, is that the agricultural sector is a little more complex than just production.* ***Agriculture is more than just an economic earning sector producing primary inputs for others****. It is a sector where many other societal elements play major roles or interact. It concerns food, it concerns sustainable natural resources management and it concerns quality of island life. It requires a wide approach whereby other stakeholders need to come on board and interact with the farming community and the Ministry of Agriculture.*
- *The second that will be developed in the subsequent sections is that one needs to know and agree on what is expected from and for this important sector; or in other words "W****hat agriculture does Cook Islands want?"****. Before developing more detailed actions plans, policy frameworks and combining it all into a sectoral development plan, all stakeholders need to come together on a strategic intent, in a similar way as the tourism sector has done.*
- *The third derives from the simple finding that this is not the first attempt at revitalizing the sector. Several other missions and reports have suggested different ways forward. But the major problem remain: (i) real and pragmatic commitment to support the sector's turn around by all stakeholders; and (ii)* ***who will be in the driver's seat to impulse and mentor the implementation of the Vision.***

[8] *In 2005 in the 2 months February and March, cyclones Meena, Nancy, Olaf, Percy, and Rae swept the country. Four of these cyclones reached the maximum category five rating causing massive damage to infrastructure and agriculture (Cyclone Recovery Committee 2006).*

3.1 Strategic intent

The after MDG vision statement will focus on turning the sector round from a high-level chemical inputs farming system[9] and struggling against imported foods towards 'agro-ecological' driven farming systems geared mainly towards regaining the local markets and engaging with the future generations.

It is composed of four short but strong statements:

- ✓ *Healthy Soils*
- ✓ *Healthy Foods*
- ✓ *Local and appropriate*
- ✓ *Sustaining our common livelihoods*

It is also reflects the overall commitments made by the Cook Islands in its various environmental and climate change programmes towards implementing 'sustainable agriculture'.

3.2 The four key elements of the strategic intent

To implement the four key elements of the strategic intent or vision, a number of new approaches or major issues will need to guide the various objectives and activities that will form part of the future sector action plan(s).

Healthy soils & Healthy foods

Healthy soils and healthy foods are two key elements of the Vision that go hand in hand. They both imply greater care to the way in which food is produced and processed. The starting point however lies in addressing the soils and the farming techniques. Usage of high rates of chemicals and fertilizers need to be brought under control and radically reduced, if not banned.

*Agro-ecological farming practices and systems need to be pursued in the CKI with determination, as a major approach to fulfil the country's commitment in the Reef to Ridge GEF programme of "**sustainably managing its productive landscape**".*

Agro-ecology is an integrated approach whereby more attention is paid to diversified cropping systems and-or integrated crops-livestock systems. More extension and adaptive research focused on developing and promoting such approaches will need to be part of the Vision.

CKI has already started with activities that have contributed to the awareness raising of the existing soil conditions and the possibilities of integrated pest management through soil schools and farmers' field schools. In Titikaveka the TGA has been engaged since a couple of years, in composting of green waste from the Muri area. In Arorangi, Baker Tree Services (BTS) produces basic shredded mulch from its own green waste which farmers collect for mulching their fields.

The major challenge of the agricultural producers will be to negotiate this 180° turn around. Specific mixes of crops, intercropping and rotations, combined agro-forestry and composting techniques (and formulas) all need to be developed and extended. Improving soil health and quality will imply overall improvements in soil coverage (mulching) which in turn will lead to improved water management and if

[9] *Based essentially on 'monoculture' plantations*

drip irrigation and other modern shading techniques (shade-houses,…) are promoted will further improve the effectiveness of these modern and more costly techniques.

Agro-ecology is a knowledge intensive farming approach, as it implies constant observation and interactions with networks of other practitioners.

Local organic farming trials are on-going on some individual farms, but still need mentoring and observation in order to contribute significantly to this turn around. All these initiatives require support; continued coaching and the development (and agreement) on a number of crop standards and-or Good Agricultural Practices (GAP). These in turn should enable both producers (commercial or part-time farmers) to eventually receive a "differentiated" price for their crop according to their GAP or standard; and consumers to be able to access and buy produce that they 'can trust'. To develop these standards will require stakeholders to come together and engage in a Participatory Guarantee System's (PGS) approach.

Supporting the emergence of an agro-ecological farming model, will need to proceed hand in hand with a more effective implementation of the chemical act and with water quality standards (and levels of polluting agents in rivers, sources, water tables and marine areas), when they will have been defined in the national water strategy. This will require a transitional period during which restrictions will need to be gradually introduced in addition to a number of front-up bans (especially in the field of some agri-chemicals).

Ensuring Healthy foods implies in addition to the standard food safety procedures in relation to collecting, processing, preparing and distributing food products and the definition of the abovementioned GAP or crop standards, the promotion of healthy diets and eating habits. This will require working on:

- *Promoting specific NCD less risky diets and conducting joint campaigns on healthy foods and NCD avoidance together with a number of civil society associations.*
- *Reintroducing a number of traditional crops/livestock breads in the framing systems.*
- *'Extending' agricultural extension to small 'hobby' or 'household' gardeners.*
- *'Extending' agricultural extension to schools*

Small and local & Sustaining the cook islanders livelihoods

*Ensuring that the engagement with healthy soils and healthy food is sustained in the long-run requires a concomitant engagement to fulfil the second part of country's commitment in the Reef to Ridge GEF programme of "**taking into account food security and livelihoods**". This further widens the group of stakeholders, as it involves the 'what to do with the agro-ecological products' and 'the longer-term sustainability' of the entire sector and this in turn points back to its interrelations with its surroundings (both physical and cultural).*

Present agricultural markets' fragmentation needs to be addressed and the prevailing "wait and see attitude" between producers and consumers/buyers changed. Both sides are partners to common value or supply chains; this is a simple concept acknowledged by all; but it is only when effective groups or clusters within these chains come together to develop common win-win operations, that sufficient impulse can be given to ensure consistency in supplies (both quantity and quality); but also sustained and fair revenues to producers.

The level of organisation of such clustering needs to be driven from local to top, i.e. by in initiating a number of small groups/clusters around either one crop or one supply (contract) and in due time federating local cluster initiatives to develop and share a number of services. Top-down clustering does often not work, as it then becomes similar to the 'opportunity' associations that come together to benefit from an equipment or instant market opportunity.

In line with the healthy soil and healthy food approach, there are at present three possible major lines of value-supply chain promotion in the CKI:

1. ***The 'rapid commercial' clusters*** *– which are driven directly as supply chains through contract agreements combined with co-investment build up, or through direct coaching or providing mentoring services, or through specific other investments between a number of local producers and one or several buyers (hospitality and-or retailers).*
   There are at present in the CKI a number of pilot operations, such as the operational framework between TGA and Pacific Resorts or the recently started operational framework between the Atiutaki Fruit farm, Air Rarotonga Atiutaki one day tour and the Manea Nui Plantations in Rarotonga.
2. ***The 'slow health-green' clusters*** *– which would aim at facilitating short circuit deliveries and focus more on promoting 'healthy foods-diets' within the local communities and residents. This approach would need to be implemented gradually as it first needs to build trust relationships and traditional/improved diets/cuisine using existing or traditional crops (vegetables, roots, fruits, fish, livestock etc) will need to de identify and redesigned. It can be implemented either through one producer for a group of consumers.*
   In CKI, adapting such a model might be an interesting way forward to strengthen a number of part-time farmers (subsistence selling part of their crop). Various initiatives exist elsewhere and are often referred to as 'home vegetable/fruit boxes or baskets'; most of these short circuits initiatives originate from the 1960 Teikei groups in Japan.
3. ***The value adding clusters*** *- which are more process oriented and require incorporating more complex procedures as the end product is a processed quality food (that has a significant shelf live) and not so much a fresh primary product that will be consumed rapidly. These clusters are usually difficult to set-up. In view of the few existing overseas' markets for value added products, in the short term, thinking local market and local hospitality sector might be a strong starting point.*

   Value adding clusters may of course combine a number of operations, as the papaya value/tropical fruits chain or the livestock sectors can illustrate. CKI papaya have for years been primarily either consumed locally with little local processing or exported mainly to New Zealand. Turned away crop has at present but little alternatives to a differentiated price (value added juice or jams or chutneys…) and the local 'export' market (the hospitality sector) is not seen as the major 'export market' by the various actors and thus undersupplied by local crops. Papaya remains a major CKI crop and it would need to come together as a value chain, and not just as a producers cum exporters chain and gradually develop and offer other options to the papaya crop in the CKI.

   In the livestock sector clusters would however need to be based on a quality product (small piglets, special hams, cuts, …) and-or a specific local production technique (appropriate use of local feeds and husbandry). These clusters would have to address in addition the selection (and improvement) of local breeds, the support to ensure proper animal health support services. One way forward would be to take example on the poultry and egg sector in Fiji, where one of the major producers, operates with

a number of smaller out-growers. Establishing a cluster run (or cluster shared) hatching facility, which requires adequate technological skills, could serve as an incentive to a number of out-growers, members of the cluster and the group in turn could market together either the eggs or live animals, and gradually move further up the value chain, to prepare or market specific CKI products. This could be repeated in due time with the pork or goats sectors.

CKI needs to give support to this clustering of agricultural/food sector by initiating specific support tools (TA for establishment, mentoring and coaching during the various stages of cluster development, specific financial/macro-economic packages to accompany the scaling up phase of a number of selected 'viable' priority clusters, close monitoring and the provision of wider framework kind support such as combined involvement of health/tertiary education/agriculture/civil society/tourism council in accompanying the development of these clusters)

Sustaining common livelihoods will be a direct consequence of the above small and appropriate clustering endeavours, but it will also need to draw on a series of mutual reinforcing initiatives:

- *By resolutely opting for a 180° turn in farming practices and focusing more on agro-ecologically sound farming techniques, the various clusters will have to be open and engage with for the various environmental programmes and projects planned and on-going in the CKI. This will in turn require a 180° turn from the various environmental agencies that have a tendency to consider agriculture as a damaging activity and not as a sector that can provide environmental services in addition and in combination with environmentally friendly productive activities. Sustainable agriculture is often a major theme in these various projects and can be effectively implemented if small grants from these various programmes can be mobilised to support combined actions and appropriate mitigation plans (inclusive of improved soil & water management) developed together with the clusters.*
- *Trying to address the demographic paradigm through cluster specific private-public partnerships. These specific PPP could build on the present tertiary education/ apprenticeship framework being implemented by the Government through the Cook Islands Tertiary Training Institute. This apprenticeship programme could eventually include a special funding window for special agro-apprenticeship agreements with a specific cluster. These cluster-agreements would concern a number of part-time employees or young unemployed that would have an apprenticeship type contract with the lead partner of a cluster. The apprenticeship contract would include part-time service work (direct income earner) and part-time farming activities.*

3.3 Consistency of the After MDG Vision

Consistency with other major national policies

The after MDG vision for the agriculture/food with its four major focus areas is consistent with this national vision or the National Sustainable Development Plan (NSDP). The MDG vision for the agriculture sector is however defined as larger than just being a part of the National Goal One 'A vibrant CKI economy'. The MDG vision sees the sector as a crossroads or cross-cutting sector where production of food, local economy, livelihoods, health and diets, education, management of natural resources all interact.

During the preparation of the after MDG Vision for the agricultural/sector, a number of other policies and sector plans were still in their own process of discussion and finalisation: (i) the outer islands devolution policy and the various outer island development plans and agricultural opportunities; (ii) the NCD policy; (iii) the Education policy and more particularly its apprenticeship and tertiary education elements; (iv) the labour policy; and (v) the land use policy.

Consistency with the recommendations of the previous FAO report

The previous FAO mission's report made 16 practical/general recommendations under three overarching objectives: (i) facilitating increased investment in the adoption of more efficient farming; (ii) improved marketing and market information capacity; and (iii) improved co-ordination of policy and regulatory framework. The major drive behind the report was to facilitate investment in the sector and to highlight a number of policy or macro-economic framework issues that needed addressing.

Healthy foods and the need to focus more on quality and agro-ecological farming are not addressed as such, but are clearly underpinning the overall thrust of the previous FAO document. Most recommendations do in fact pertain to the overall business and investment environment facilitation. They are in fact relating more to the "how of things" than to "what things need to be encouraged" and will need to be addressed when preparing the detailed 2015-2020 action plan.

3.4 Driving the Vision towards a Pragmatic Action Plan

*During the various discussions, face to face interviews and round tables conducted during the November 2014 field work, a major and recurrent concern of all has been "who will be the driver" or as a previous box concludes "**Agriculture needs a 'champion' a leader, is there anyone waiting in the wings?".***

The previous FAO report suggested the establishments of a Food Policy Council in order to help achieve the implementation of policy and regulatory reforms required to achieve improved food security. It was envisaged to attach this high level, multi-sector (public and private sector stakeholders) statutory body within the NSDC at the Prime Minsiter's Office.

In order to emphasize even more that the sector is essentially a sector fully driven in last resort by the private sector, with the public sector providing services to facilitate and support the sector, it might be worth reconsidering the establishment of a Food Policy Council and prefer instead a model comparable in its concept to the one operating for the tourism and hospitality, sector, where there is a Tourism Council which drives the sector, which is in turn supported by a specialized board.

The sector needs first to be technically re-oriented and marketing/value/supply chain cluster groups initiated. This will require consultations between potential partners and groups, development of ad-hoc strategic partnerships and initiating a number of basic services that will be beneficial to the sector as a whole (intelligence, but also knowledge networking and sharing, grouped access to 'new' inputs, etc). Policies and regulatory frameworks are of course part of this effort, but they need to be responsive to the sector and it is therefore proposed in the after MDG vision that an independent private sector driven council be set up. This might equally be a way to bring people of different political backgrounds (Rarotonga and outer islands, majority and opposition) to work together on long-term sector defined priorities.

Initiating a sector council driven by the farmers and private –sector

It is suggested that this council be gradually established during the coming two or three years. Before formalising a council, it is suggested to spin the council off as a special task force within the Chamber of Commerce. Within this informal task force, a number of thematic groups would be gradually set up to investigate and prepare a number of concrete actions that will mobilize sufficient and dedicated partners to drive these actions through. The motto is "to grow gradually (walk before running)" and to be "professional" in preparing and documenting proposals, suggestions and actions.

Engaging in clustering and cluster building

A specific thematic group of the sector council will need to engage in supporting the emergence of a number of specialise clusters: i) to start at least 2 to 3 'rapid economic 'clusters driven by a major supply contract or specific technical activity such as composting; ii) to establish at least one livestock focused cluster; iii) establishing one or two small 'slow green' cluster or short circuit test groups together with the NCD group within the MOH; iv) examine how to consolidate the existing commodity value chains (Noni, papaya products) and v) support a strategic small scale women in business partnership to support short circuit simple value adding activities.

Cluster development would proceed stepwise, after each step is reviewed by an internal mentoring group: (i) cluster establishment (sensitisation, group formation and initial activity planning); (ii) technical design of the cluster package with the various partners and business plan development (inclusive wherever possible of ad-hoc environmental mitigation plans); (iii) after approval of support, implementation of the first business plan with constant coaching and business and technical mentoring; and (iv) on-going monitoring and development of subsequent activity plans and monitoring of business development.

4 FROM INTENT TO OPERATIONAL SECTOR PLAN

An operational sector action plan will be developed with the various stakeholders during the second quarter of 2015 after the 50 year CKI celebrations and the partner meeting planned in February 2015. An indicative template for this plan is presented in the report to serve as general guideline when developing this more detailed plan. It is articulated around 5 'productive' strategic objectives and 2 more 'structural' strategic objectives:

- **(i)** *Agricultural production moves form high chemical inputs to agro-ecological production modes;*
- **(ii)** *More efficient livestock activities for niche markets underpins the green value chain;*
- **(iii)** *Healthy food habits contribute to reduced NCD incidence;*
- **(iv)** *Small and local geared agri-ventures are commercial reality in the Cook Islands;*
- **(v)** *The demography paradigm is addressed;*
- **(vi)** *The overall governance of the agricultural sector is sector driven;*
- **(vii)** *The institutional framework is supportive of the agricultural sector development.*

Strategic Agriculture & Food Sector Plan Cook Islands

INTRODUCTION & METHODOLOGY

At the request of the Government of the Cook Islands the Food and Agriculture Organization (FAO) fielded an initial policy scoping mission in March 2014. The subsequent report issued in May 2014 'Linking farmers to markets: Realizing opportunities for locally produced food on domestic and tourist markets in Cook Islands' identified a number of core thematic: (i) land; (ii) labour; (ii) capital; (iv) fragmentation or markets and lack of information; vi) streamlining a local 'cuisine experience'& enhancing synergies with health; vii) a number of framework issues such as tariffs and taxes, water, inputs; and (viii) lack of strategic planning and of institutional support. It made 16 recommendations (see in section 3.3.2 and Appendix 5) which indicate a number of policy levels that would need to be implemented. It is essentially focused on improving the business and investment environment to revitalize agricultural production.

As a direct follow-up to the recommendation: "that a Food Policy Council, with assistance from other Financial and Technical Partners (FTP), develop a new long-term strategic plan and policy for the Cook Islands Ministry of Agriculture (MOA)", the MOA was mobilized to initiate thus process, with the support of FAO.

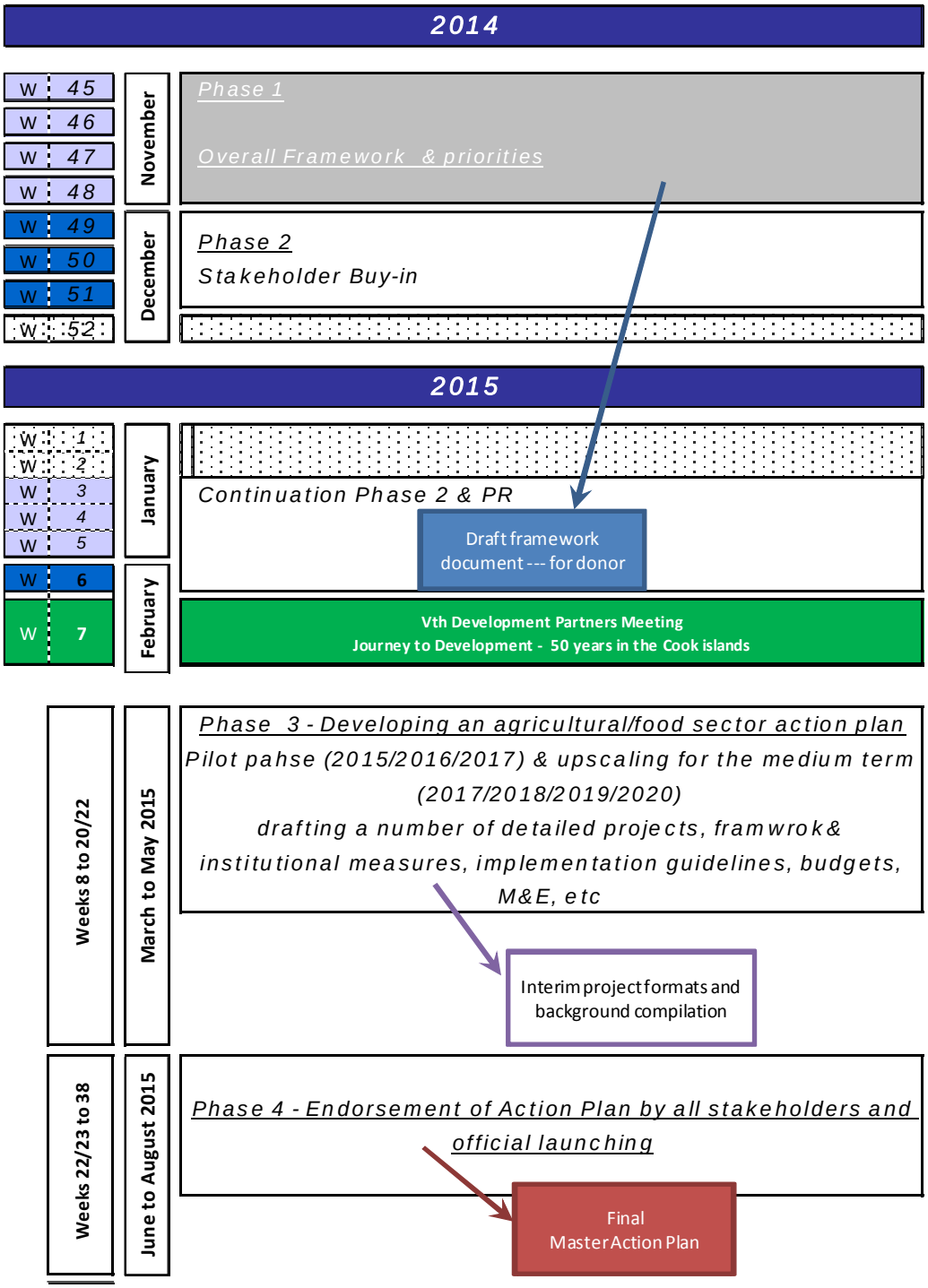
A second field mission by FAO was mobilized in November 2014, see terms of reference in Appendix 8. The overall approach adopted for this mission was to build on a findings and recommendations of the first FAO mission and to engage in wide consultations with all stakeholders involved in the agricultural and food sector and; in order to try and come to an overall consensus on a vision before developing a detailed strategic sector plan.

After start-up discussions with the PS of MOA, the planning department of the Prime Minister's Office (PMO) and the Development Coordination Division (DCD), it soon became evident that the a stepwise approach to developing the strategic sector plan would need to be implemented, bearing in mind the deadlines of the next budget presentation, the planning of the last step (2015-2020) of the National Sustainable Development Plan and the Vth Development Partners' meeting.

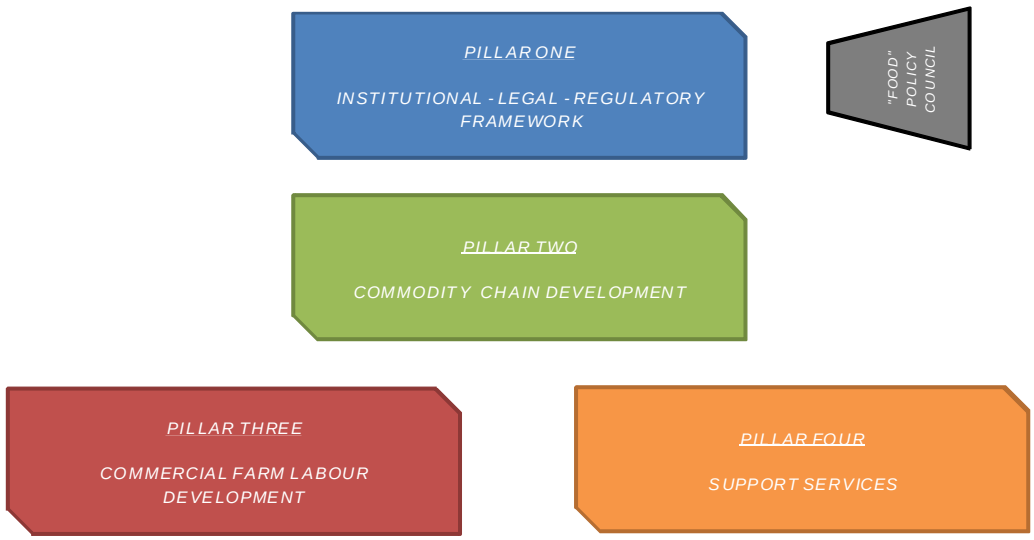
Four phases (see graphs on following page) were envisaged:

- Phase one Stakeholder consultations and designing an overall Vision or overall framework with a number of priorities
- Phase two: Continued stakeholder buy-in and continued public information campaign leading up to the Vth Development Partners' meeting in early February 2015

- Phase three: Revisiting the Vision and elaborating a short and medium term action plan as a first step in implementing the Vision, leading to a draft proposal in time for the coming 2015/2016 budget planning
- Phase four: Official endorsement by all stakeholders of the Vision and abovementioned action plan and official launching of the various councils/clusters and actions envisaged in this plan



The second FAO field mission thus focused on completing the first phase. The mission's approach combined data collection and analysis and participative consultations. The latter were organized around four pillars as shown hereafter (see more detailed breakdown in Appendix 9)



The mission was in the Cook Islands for four weeks in November 2014, each of which was focused slightly differently (see detail calendar and list of persons met in Appendix 10):'s

- The first week focused on the initial documents and organizing and preparing a number of powerpoints for each of the four pillars. It was concluded by a first meeting of a 'food' task force at the MOA where the pillar approach and mission programme was discussed.
- The second week focused on organizing at MOA four round tables open to all stakeholders and advertised in the press. It was conclude by a second meeting of the 'food' task to expand on the findings of the round tables and engage in an initial strategizing exercise.
- The third week was mostly spent in individual consultations and field visits. It was concluded by an open forum organized at the DCD premises where an overall presentation of a strategic intent for the agricultural/food sector was presented and reactions recorded.
- The fourth and last week alternated further individual consultations, completing the data collection and interacting with the team at the Chamber of Commerce to assist in drafting the outline for an FAO trust fund to support the agricultural productive sector. It was concluded by a presentation of the envisaged strategic intent for the agricultural/food sector to the Minister of Agriculture and a team of senior officials of the MOA.

After the field mission, the present report was completed. It is based on: (i) a number of additional trade data compiled especially for the mission by the Customs department of the Ministry of Finance and Economic Management (MFEM); (ii) complementary data research on the web (FAOSTAT, WorldBank and others); (iii) the consultants own findings and the suggestions, comments and reactions from the various stakeholders recorded during the mission; and (iv) various case studies completed for the MOA and DCD and that will be circulated during the Vth Development Partners' Meeting in February 2015.

The document is articulated in four sections:

- Section one which provides a rapid review of the sector as it stands now
- Section two that takes a closer look at ten major challenges that the sector has to confront
- Section three which develops a strategic intent or an "after Millennium Development Goals (MDG) Vision" for the agricultural and food sector
- Section four which present an preliminary template action framework help in streamlining the work envisaged during the third phase of the strategic action plan

The document tries to reflect as honestly as possible the views and suggestion whilst posting them against the present data regarding the sector, and remains thus an open scoping and working paper. Hopefully it will contribute to the future discussions and prompt the various stakeholders to come together and form an independent sector council and thus take the main driver's seat in the entire process.

1. COOK-ISLANDS' AGRICULTURAL SECTOR REVIEW

The Cook Islands (CKI) consists of 15 islands in free association with New Zealand, located northeast of New Zealand, between French Polynesia and American Samoa. They represent a total land area of 237 square kilometres scattered over the Cook Islands' Exclusive Economic Zone (EEZ) which covers 2 million square kilometres of the South Pacific Ocean.

The islands are split geographically into:

- The Southern Group consisting mainly of islands of volcanic origin *(Islands of Rarotonga, Aitutaki, Mangaia, Atiu, Mauke, Manuae, Tukutea and Mitiaro)* lies within 150 nautical miles of Rarotonga and thus has semi-regular transport and communications links with the capital island of Rarotonga.
- The Northern Group of low consisting of atolls *(Palmerston, Pukapuka, Nassau, Manihiki, Rakahanga, Penrhyn and Suwanow)* lies between 1200 to 1500 km away from Rarotonga and are smaller in size. Transport and communications are much less developed and their agricultural production potential is low and directly affected by their remoteness.

The climate is a typical tropical climate with two distinct seasons and an average rainfall between 2,000 and 3,000 mm per year. Rarotonga is also the only island that has an abundant water supply. The other islands, particularly the atolls in the northern group suffer from water loss, thus agriculture is limited.

In 1953, the New Zealand Soil Bureau classified 58% of the total area of the Cook Islands as arable land (33 826 acres or ± 13 700 ha). The major share of this arable land is located on the other southern islands (67%). Rarotonga and the Northern Islands more or less share the remaining area equally (respectively 15.4% and 17.6%). The northern islands' arable land is more limited in suitability and was classified in 1953 as for 'tree crops only'.

Most of the available good agricultural land is located in the Southern group of Islands and it is therefore not surprising that these islands have traditionally supplied various agricultural products to the capital islands and to the once buoyant fruit export markets of the CKI.

Land availability, limited water resources and inter-island communications & transport logistics are major determinants which directly impact the agricultural sector in the CKI.

In 2011, an agricultural census was conducted in parallel with the national population and housing census. This census indicates that the present area which is actually under agricultural usage is 2 026 acres (less than 3.6% of the entire available arable land), of which 795 acres are fallow or under bush.

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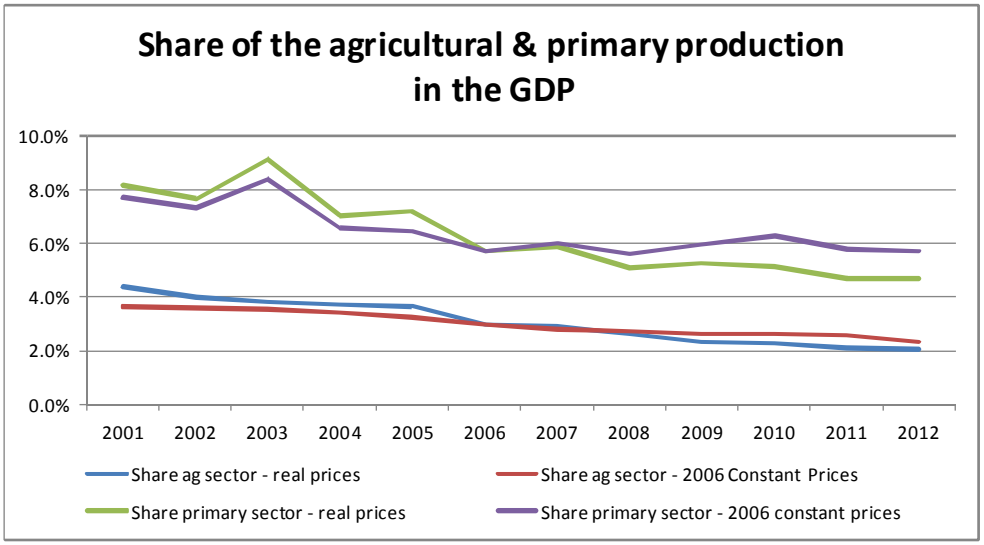
1.1 CONTRIBUTION TO THE ECONOMY[10]

1.1.1 Contribution of the sector to GDP

Ever since 1970, the contribution of the various primary industries in the CKI Gross Domestic Product (GDP) has been slipping from 25% to a narrower band between 5 and 10 % from the early 1980 onwards. The contribution of the agricultural sector itself has been even more limited as shown in the following graph.



Source: *www.kushnirs.org/macroeconomics/agriculture/agriculture_cook_islands*

The combination of significant disadvantages of small agricultural areas & population size, combined with distance from its principal trading partner (New Zealand), has meant that the gradual market liberalization of the agricultural sector (beginning the 1980's) has led to a steady decline of the competitiveness of Cook Islands products in export markets, which were heavily dependent on trading networks with New Zealand. The loss of these export markets has significantly contributed to the overall reduction and stagnation of the contribution of the agricultural sector to the CKI's GDP which has now reached a mere 2%.

1.1.2 Contribution to the CKI's trade

Imports have consistently outstripped the exports in and from the CKI. Since the turn of the millennium, total imports have increased by over 32%, to reach a total of 110 million US$ for 2011. Exports however have witnessed an important decrease over the same period, dropping to around 3.2 million US$ in 2011.

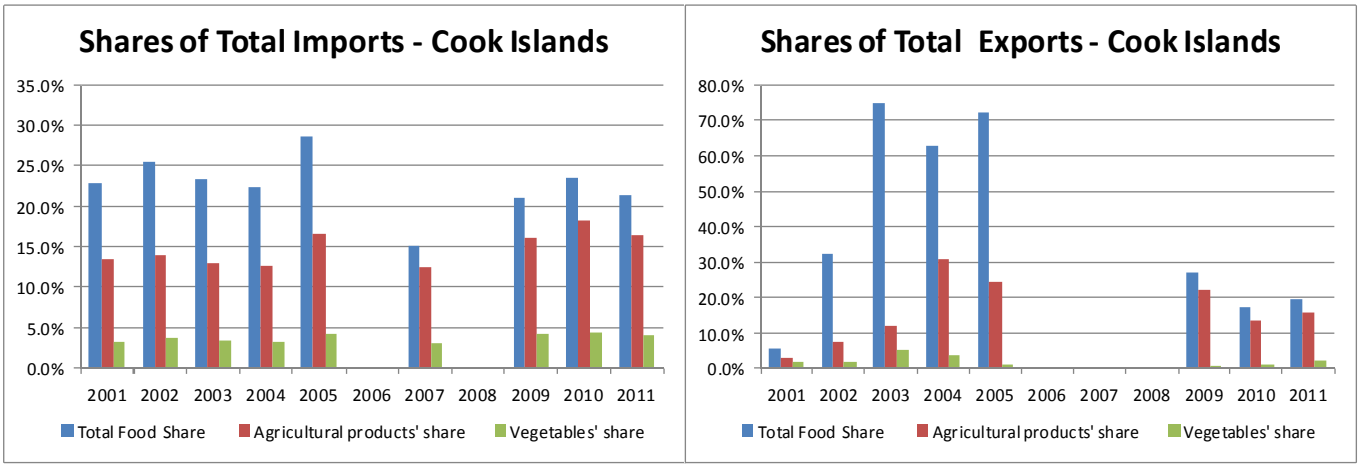
Trade in food, agricultural products and vegetables have followed trends that are even more marked as shown in the opposite table. Most significant are the major drops in

	Average 2001-2007	Average 2009-2011	Indicative trend
	In 1000 US$		
Imports CKI	**71 312.81**	**93 834.14**	**32%**
Total food imports	15 958.19	20 648.66	29%
Agricultural products	9 746.04	15 899.23	63%
Vegetable imports	2 506.54	4 052.53	62%
Exports CKI	**6 585.32**	**3 678.15**	**-44%**
Total food imports	3 348.23	745.45	-78%
Agricultural products	1 019.27	600.75	-41%
Vegetable imports	200.27	48.68	-76%

Source: wits.worldbank.org/country/profile/country/COK

[10] *See more detailed tables and graphs in appendices 1 and 3*

vegetable and food exports and increases in imports of vegetable and other agricultural products. The evolution of their respective share of total imports and exports since 2001 are illustrated in the following graph.



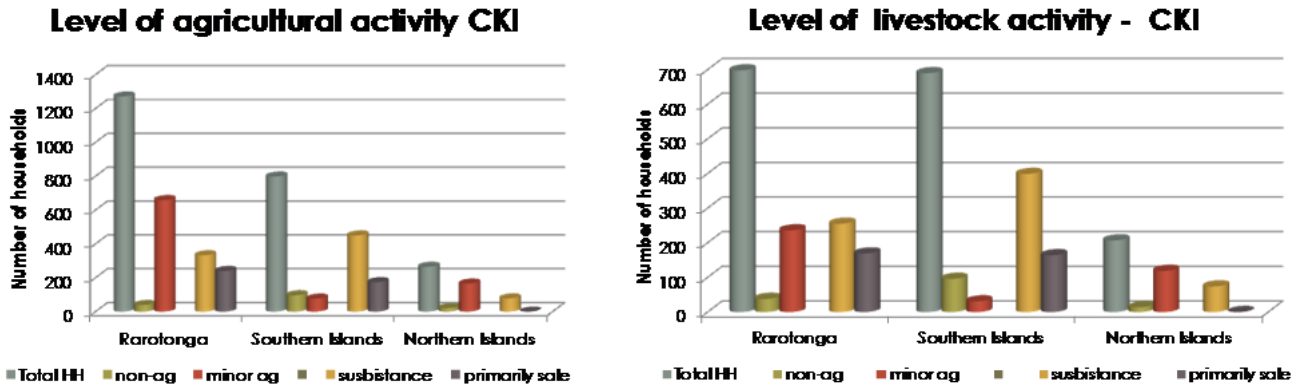
Source: *wits.worldbank.org/country/profile/country/COK*

The share of food imports remains at around 20-25% of total imports, whilst exports have significantly dropped. The share of vegetable imports remains rather constant at slightly below 10%.

1.1.3 Agricultural Activity, Holdings and Employment

According to the 2011 agricultural census, out of the 2334 households (HH) that took part in the census:

- 1275 HH declared to be active in agriculture either as subsistence type agricultural (67.5%) or as geared primarily geared at sales (32.5%).
- 1061 HH declared to be keeping livestock either for subsistence (68.6%) or for sale (31.4%).



In Rarotonga, in addition to these 'active' HH one needs to also consider an important share of HH that declare engaging in minor agricultural activities (house-gardening or 'hobby' gardening). This is also a common feature in the Northern Islands.

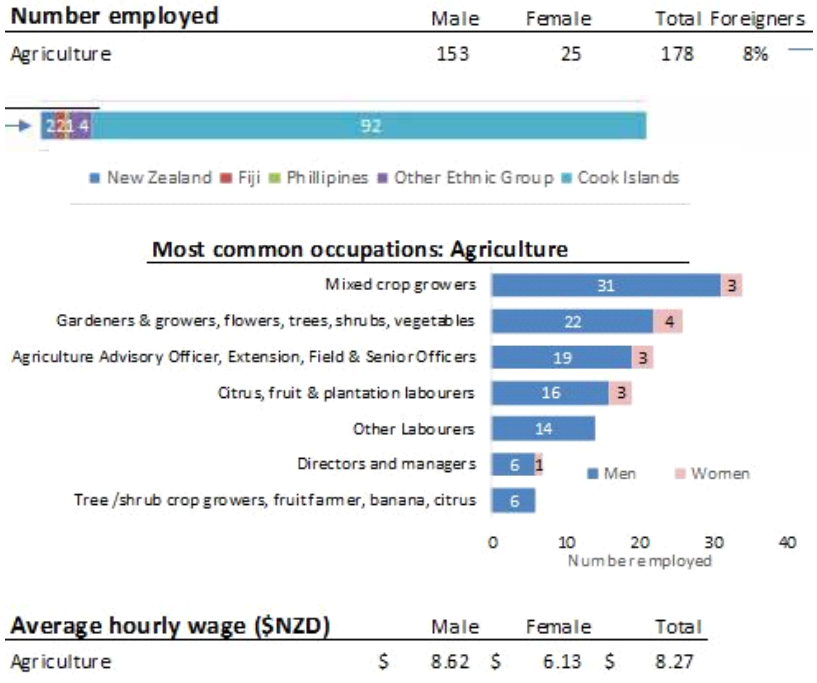
The other Southern Islands concentrate slightly more 'active' crop HHs than on Rarotonga; and are more predominant for livestock activities.

A major characteristic of the agricultural sector in the CKI is thus that the sector is essentially a part-time and-or subsistence driven one (± 875 HHs); whilst those that are engaged in agriculture for sales represent more or less 400 HH.

When further zooming in on this latter group of HHs and comparing figures between the agricultural census of 2006 and 2011, the number of effective commercial actors has dropped from 153 to 31[11], suggesting that a significant move from commercial farming to subsistence with cash.

Agricultural and non-agricultural hhlds in CKI, 2000 and 2011	*2000*		*2011*	
	# of hhlds	Percen-tage	# of hhlds	Percen-tage
Subsistence with cash	255	7%	359	8%
Commercial	153	4%	31	1%
	408		***390***	

Overall employment in the CKI is shared between the private sector[12], with around 3,800 employees (55% of the jobs); the public sector, with around 2,150 employees (31% of jobs) and the remaining 14 percent (around 950) being in other organizations, such as self-employed or sole proprietor businesses, partnerships and religious organizations. Based on the 2011 Population and Housing Census, the Labour department of the Ministry of Internal Affairs (INTAFF) has commissioned a labour monograph, which is a present still being finalised. The draft monograph identifies 178 people who are engaged in agricultural activities, confirming indirectly that this sector is primarily a



Source: Economic activity and labour force of Cook Islands / 2011 Population and Housing census monogrpahe- draft agricultural and pearl sectoral snapshots - Ministry of Internal Affairs-Labour & UNFPA - December 2014

11 *Out of the 27 farmers that declare deriving all their income from farming, 19 are on Rarotonga, 6 in Atiutaki and 2 in Mauke.*

12 *The private sector is most dominant in Rarotonga, where it employs 60 percent the working population, and is strong in the southern group where it employs 45 percent. It is only in the northern group where the private sector plays a minor role, with most jobs (78%) being in the public service.*

part-time and subsistence driven sector.

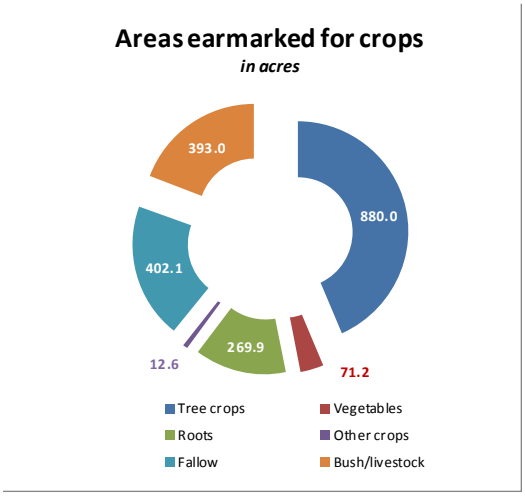
1.2 OVERALL PRODUCTIVE PERFORMANCE

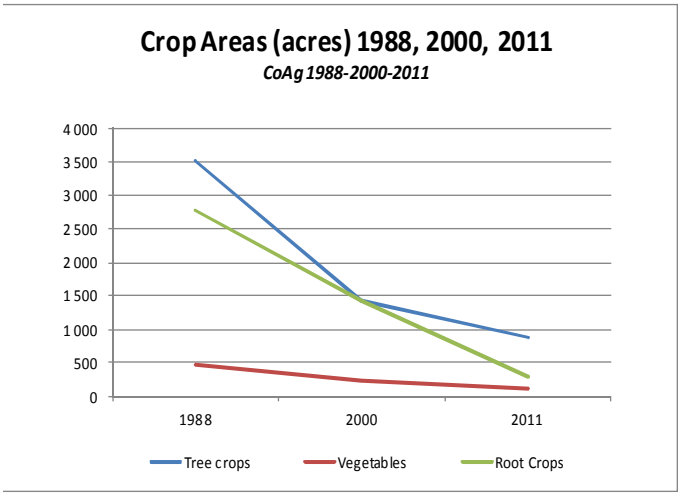
1.2.1 Crops

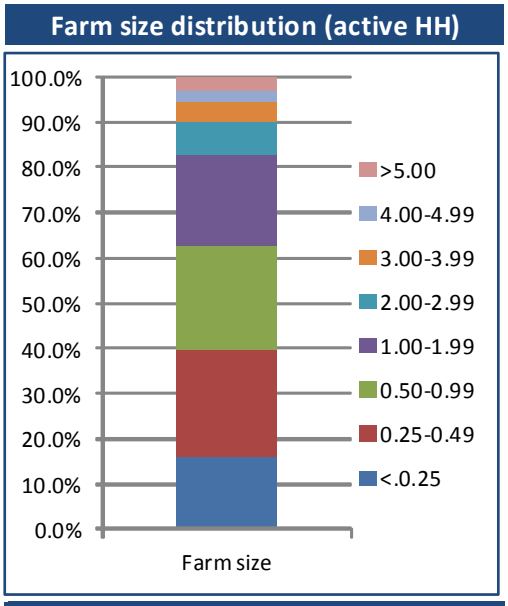
a) Production areas

The 2011 agricultural census identifies 2028.8 acres (±820 ha) as agricultural land of which only 1233.7 acres (± 500 ha) are at present under crops, leaving more than 795.1 acres (± 320 ha) fallow or under bush.

Major crops are root crops, tree crops (fruits+coconut) and vegetables. All three show persistent downward trends since 1990.





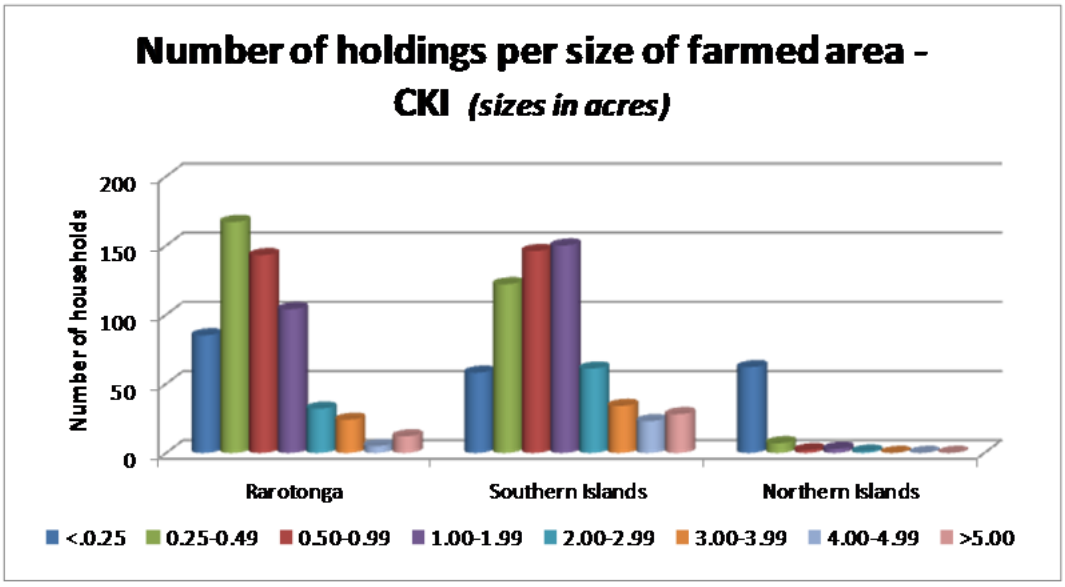


		Cumulated
Less than 2 acres	±0.8 ha	82.7%
Less than 1 acre	±0.4 ha	62.4%
Less than 0.5 acre	±0.2 ha	39.5%
More Than 2 acres =		**17.3%**

In 2011, tree crops accounted for the major soil occupation (880 acres or 356 ha) followed by root crops (270 acres or 109 ha) and vegetables (71 acres or 29 ha).

However tree crop areas include orchards (pure stand), and scattered trees within or outside agricultural plots or individually planted; thus trees planted as orchards only account for 261 acres (101 ha), whereas coconut trees (mostly scattered or individual trees) account for 397 acres (161 ha).

Furthermore the farm size pyramid is characterized by the predominance of small farms or plantations. Around 40% of all farms are smaller than half an acre and just over 80% of all farms are smaller than 2 acres (0.8 ha). Most of the bigger farms (the remaining 17%) are concentrated in the other Southern Islands and Rarotonga Island.



b) *Average Crop production (quantities)*

In 2012, crop farming in the CKI produced an estimated total of 7 971 metric tonnes of produce *(excluding figures for Noni production)* of which 1 329 mt of tropical fruits (of which 64% are grown in orchards), 1 820 mt of coconuts, 1 672 mt of various vegetables and 3 150mt of root crops.

	Cropped area acres	Cropped area ha	Production estimate metric tons
Major fruits			**1 329**
Papaya	47.2	19	600
Noni	58.6	24	*na*
Banana	87.5	35	95
Oranges	59.1	24	65
Pineapple	4.5	2	25
Mangoes	97	39	190
Avocado	16.7	7	26
Limes/Lemons	18.1	7	12
Melon	31.8	13	60
Other	98.6	40	256

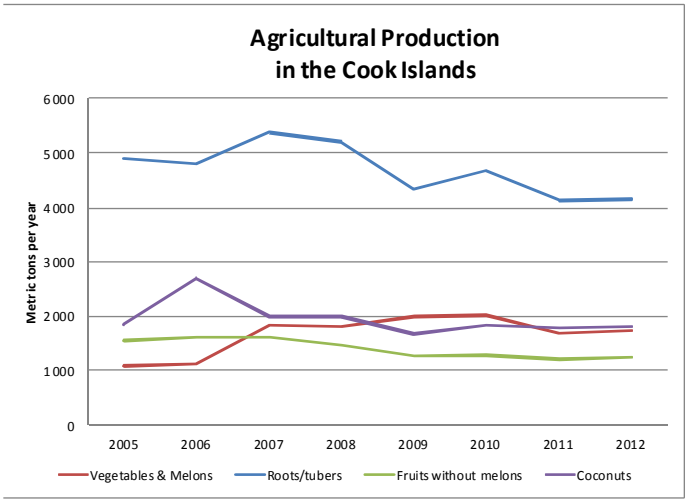
	Cropped area acres	Cropped area ha	Production estimate metric tons
Coconut	397.2	161	**1 820**
Vegetables			**1 672**
Tomatoes	10.2	4	170
Chillies & peppers	0.6	0	2
Other	24.1	10	1 500
Root crops			**3 150**
Taro	156.7	63	*na*
Casava	66.3	27	1 000
Other	46.9	19	*na*

Mostly pure stand or orchard

Sources *Areas* *2011 Agricultural census* *Production estimate* *FAOSTAT 2012 estimates*

Even though no Noni production estimates are available at the time of reporting, Noni is an important export crop as it enjoys organic certification allowing it significant penetration of the Chinese market for Noni juice.

Over the past decade, production of root crops has declined, coconut more or less maintains itself, whereas vegetable production has increased and fruits



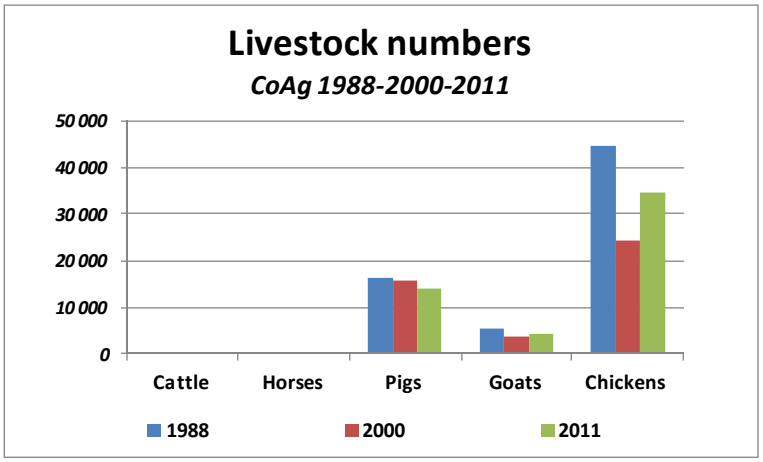
show a downward trend.

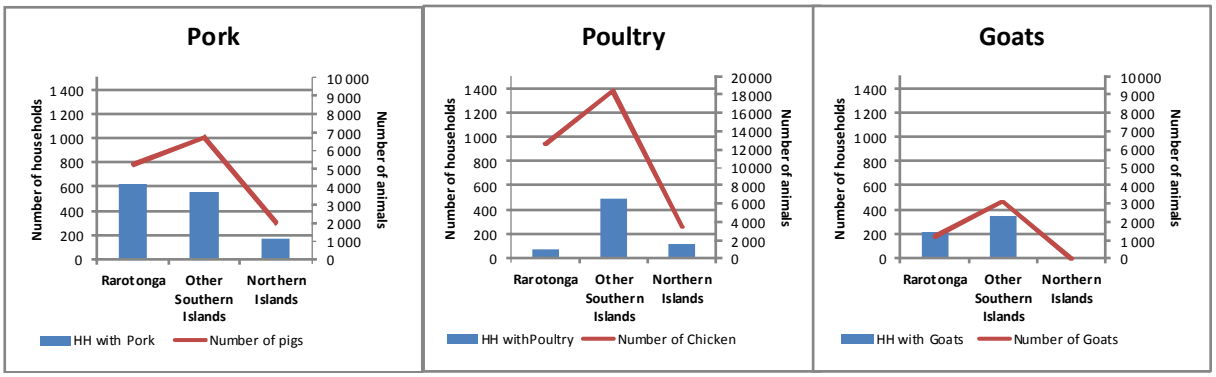
1.2.2 Livestock

a) Livestock numbers

The 2011 agricultural census confirms the predominance of the pork, poultry and goat production livestock sub-sectors as already evidenced in previous censuses. In 2011, a total of ± 14 000 pigs, ± 4 400 goats and ± 34 000 chicken were reported.

When assessing numbers of HH and numbers of stock, major production areas of pork and goats are concentrated on the other Southern Islands and to a lesser degree on Rarotonga. Goats are absent from the Northern Islands.





SHARES OF STOCK (%)	> 20 PIGS HH	> 20 PIGS ANIMALS	> 30 CHICKEN HH	> 30 CHICKEN ANIMALS	> 20 GOATS HH	> 20 GOATS ANIMALS
Rarotonga	3.9%	12.3%	5.2%	34.5%	1.2%	4.5%
Other Southern Islands	7.5%	24.9%	34.3%	41.3%	6.5%	38.2%
Northern Islands	2.2%	6.3%	6.9%	7.0%	0.0%	0.0%

The picture is slightly different regarding Poultry as on Rarotonga Islands, there are fewer households producing poultry products but they produce on a bigger scale. Poultry however remains a major feature of the other Southern Islands.

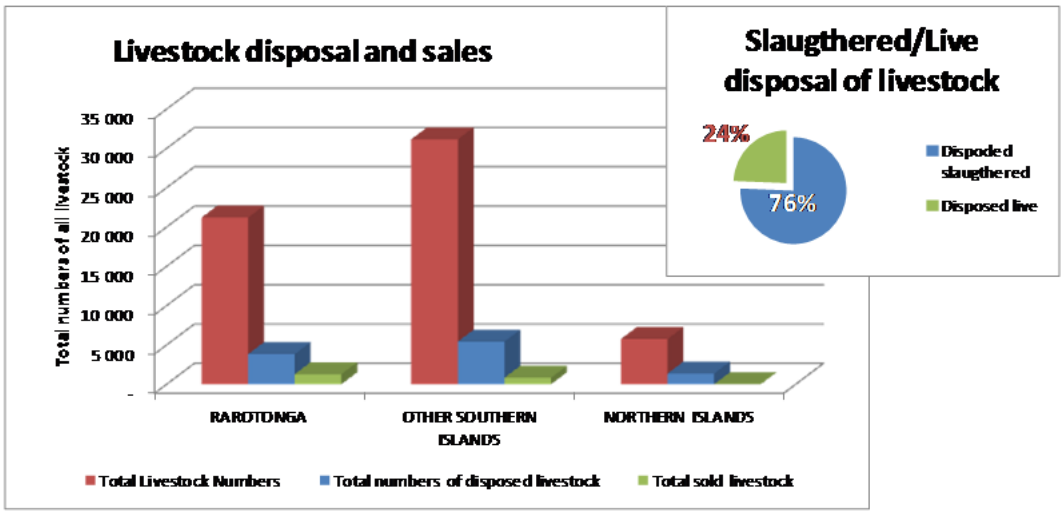
When assessing the average size of the various flocks:

- Those raising more than 20 pigs represent only 13.6 % of HH but control 43.5% of all raised pigs.
- Those raising more than 30 chickens represent 46.4 % of HH but control 82.9% of all raised chicken.
- Those raising more than 20 goats represent only 7.7% of HH but control 472.7% of all raised goats.

Livestock numbers are thus far from insignificant. Indigenous species[13] or low productive species seem to predominate.

b) Average livestock production

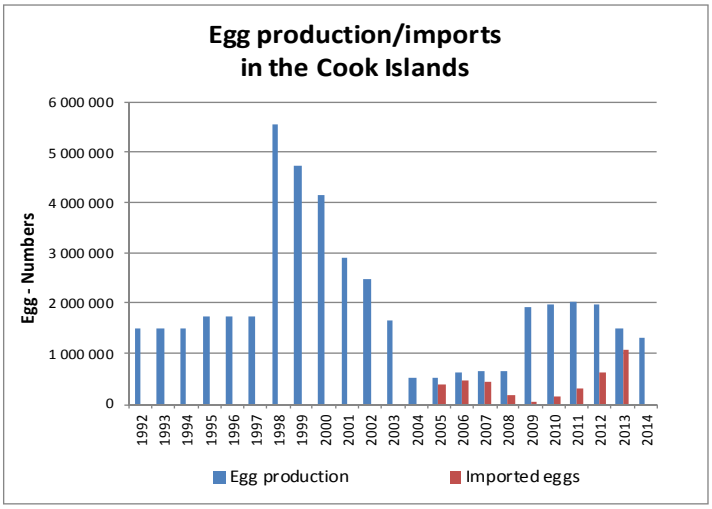
Disposal of animals is low. According to the 2011 agricultural census, a total of 10 618 animals were disposed of out of the 58 116 (i.e. 20%), of which 76% were slaughtered[14].



Sales of slaughtered animals remain the exception (± 10%)[15]. The informal market (household direct consumption and gifts) seems to absorb the majority of the slaughtered animals. As for the disposal of live animals[16], more or less half are sold and the other half are given away.

Most of the livestock sector is thus at present essentially informal and supplying the local ceremonial and household level needs.

In addition to the meat sales, one important sub-sector for poultry is the egg sub-sector. The latter is predominantly established on the Rarotonga Island and streamlined around one major egg producer and a limited number of smaller operators. Imports of eggs have been increasing over the past years as shown in the opposite graph.



Sources - production figures - FAOSTAT 1992-2008; consultants's estimates 2009-2014 and imports from MFEM-Customs

13 *No detailed study of the breeds (importance, performances and improved husbandry techniques) present in the various CKI seems to have been conducted and the potential to improve these three important sub-sectors remains to be verified.*

14 *Most of these slaughters are performed at HH or farm level; the small pig/sheep/goat abattoir is no more operational.*

15 *Sold slaughtered pigs 14.6%; chicken 2% and goats 33.7%.*

16 *Sold live pigs 33.6%; chicken 40.9% and goats 41.2%*

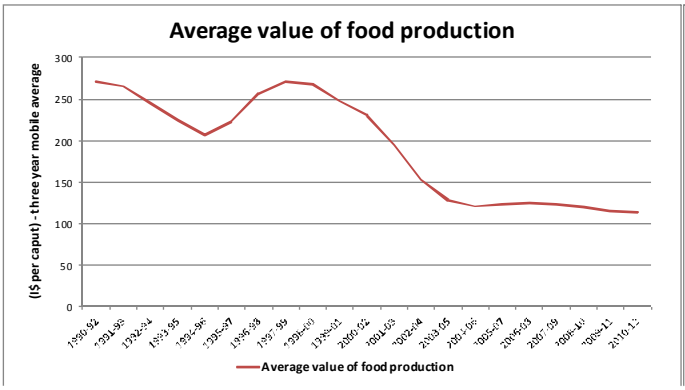
2. CHALLENGES AND OPPORTUNITIES

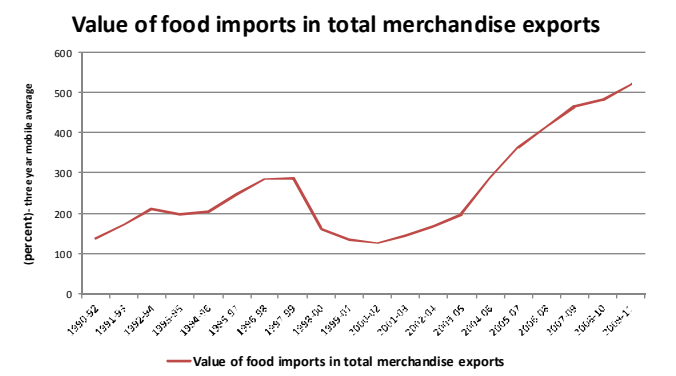
2.1 FOOD SECURITY

Food security is more than just ensuring that sufficient food is available so that nobody is underfed. Food security is thus multi-dimensional and takes into account at least four major dimensions:

- Food availability (sufficient quantities, appropriate quality),
- Access to food (adequate resources for acquiring appropriate foods for a nutritious diet),
- Stability of food availability (no risk of losing access to food as a consequence of events such as economic or climatic crisis)
- Food utilization (essential non-food factors such as clean water, sanitation and health care).

The CKI ensure an average diet of 3185 Kcal/day, of which 83.4% is imported. Local food availability has been declining from 250 US$ per person[17] to 114 US$ (and even less if tourists figures are taken into account). Physical access to food is not a major problem, but communications and transport remain irregular to the most outer islands.





Source: FAO food security indicators - FAOSTAT 1990-2012

Stability of the food security has been gradually eroded as this index now reaches 5.4 times the value of the country's exports[18]. This is in part mitigated by the development of the service sector through the present tourist boom[19], but still remains a major concern for the CKI.

In addition utilization of sufficient, safe and nutritious food depends on a number of factors such as the

> *Moreover, high profits and rents earned on large import operations typically become embedded, and so constitute a strong deterrent to the eventual (re-)establishment of local production operations.*
>
> *Milford Bateman (2010)*

17 *Indicator derived by FAO using the population figures and thus ignoring the tourist effect that has increased to presently doubling the population present on the islands (see data in section that show that on average there are more or less every month as many tourists as inhabitants since 2010)*

18 *The CKI has never been totally able to cover their food imports by their exports as already in 1990 this indicator was 1.4.*

19 *Which benefits from important market support from the Government (the tourist board and air-seat capacity investments …)*

availability of healthy food, accessibility to healthy good, and its use (see section 2.8).

Food security is further impacted by the volatility in the global price of oil, and as the Pacific region is a net importer of oil, this has had a significant impact on local food production costs as well as transport costs for imported food. The combined impact of these factors has markedly increased the vulnerability of most Pacific island communities.

KEY FOOD SECURITY ISSUES IN THE PACIFIC REGION

Increasing global food prices, fuel price upheavals, unstable economic conditions and climate change affects the availability and access to sufficient, safe and nutritious food. Pacific Island countries and Territories (PICTs) in particular are being adversely affected. These global influences are increasing food prices, exacerbating PICTs already heavy reliance on imported and processed foods and contributing to the loss of local harvesting, production and cultural knowledge. Even more important, these influences also create uncertainty around food supply. As a consequence, Pacific populations are at greater risk of malnutrition, food-borne diseases and non-communicable disease (NCD)…

… Despite encouraging world food price trends, PICTs are particularly vulnerable as they tend to be net staple food importers. Perhaps most striking is their heavy dependence on imported cereals as a source of dietary energy and protein. Remarkably, rice and flour have now replaced root crops as the single most important source of starch and energy in Pacific Island Countries. All PICTs, apart from Fiji, PNG and Solomon Islands, rely exclusively on cereal imports, indicating their high vulnerability and dependency.

Another indicator of vulnerability is the high food import bill, which is increasing as a proportion of total export earnings. This indicator provides a measure of capacity to import food and in many countries it is declining. In some, eg Tuvalu, Samoa, Kiribati and the Cook Islands, the value of food imports has exceeded that of total exports.

In Sustainable Development Brief 15th March 2013/SDWG

2.2 MARKET CHALLENGES AND OPPORTUNITIES

2.2.1 Gradual decline of agricultural/food exports

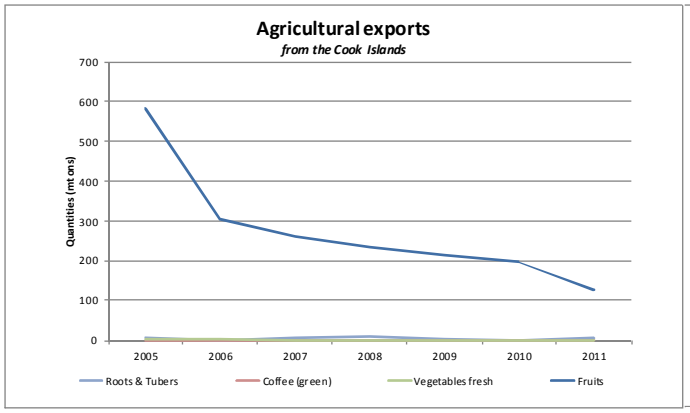
The Cook Islands major agricultural exports as identified in the FAOSTAT database[20] are: (i) Fruit juices (mainly Noni juice); (ii) fresh fruits (Papaya, Pineapple, Citrus fruits, …); (iii) coffee beans and (iv) minor occasional (roots, vegetables,…).

Over the last decade these exports have represented a total average quantity of 283 metric tonnes, decreasing from 594 tonnes in 2005 to 136 in 2011; value wise these exports represent on average an income of 1.23 Million NZ$, decreasing from 2.3 million NZ$ to around 564 thousand NZ$ in 2011. In 2011, fruits juices were the only significant remaining agricultural export, amounting to 531 thousand NZ$.[21]

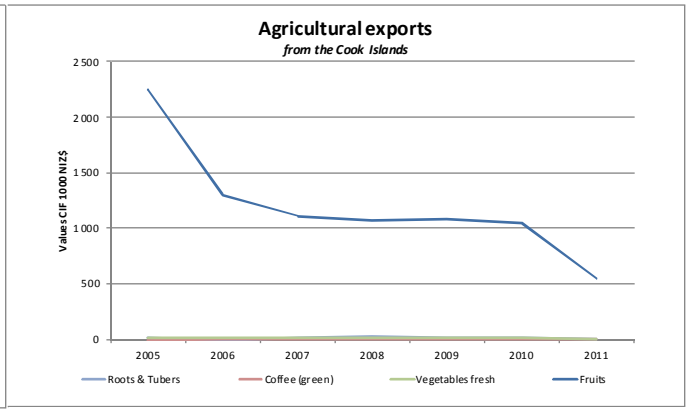
With the exception of Noni juice, none of the other significant agricultural exports included value adding, thus constraining the sector to a primary product provider to other markets.

[20] *This database (for the years 2005-2011) indicates 5 to maximum 7 different agricultural exports for the CKI.*

[21] *+ an estimated yearly small export of 50 000 NZ$ of Maire leaves.*



Source: FAOSTAT 2005-2011

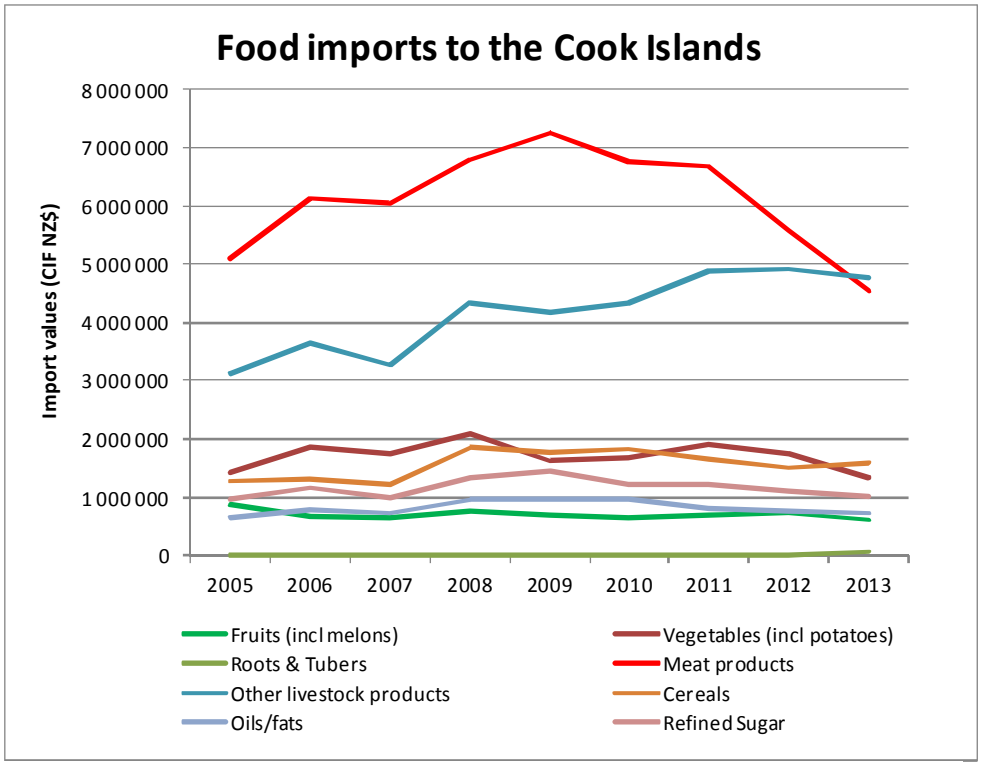


Source: FAOSTAT 2005-2011 adjusted US$ to NZ$ using average annual exchnage rates

2.2.2 Import dependence and substitution

As already highlighted in the section on food security, CKI food and agricultural imports represent more than 80% of the average diet.

The Cook Islands major agricultural imports as identified in the import statistics provided by the Customs department of MFEM are by order of importance: (i) Meat products (inclusive of poultry and offal) ; (ii) Other livestock products (dairy, eggs, …); (iii) Cereals and Vegetables (inclusive of potatoes); (iv) Refined Sugar; (v) Fruits (inclusive of melons) and oil/fats.

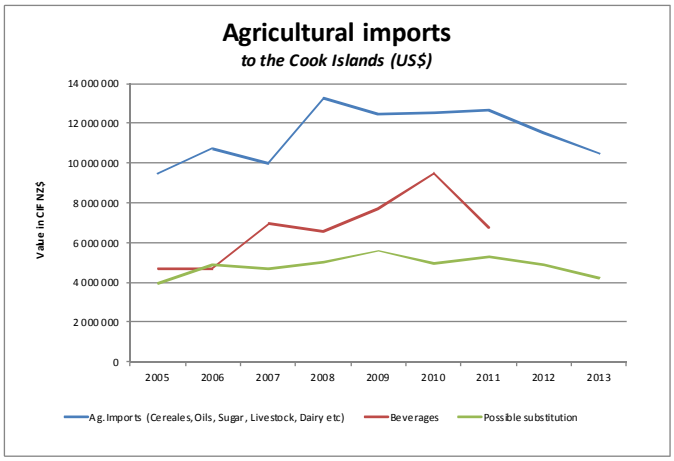


Source: MFEM - Customs (Chapters 2,4,6,7,8,10,11,12,15 & 17)

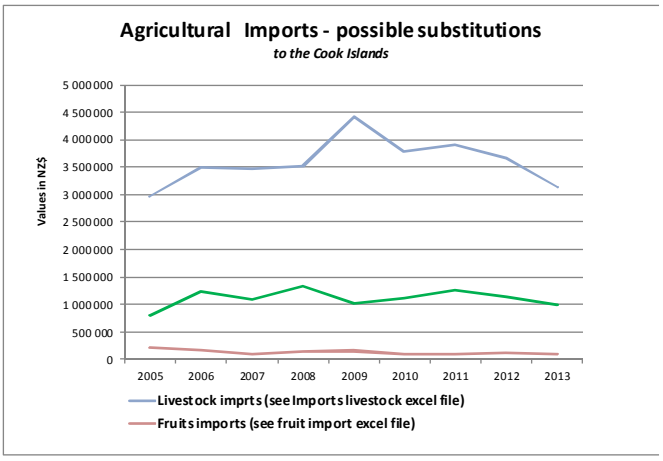
According to the customs statistics, average imports of agricultural products and foods[22] have been around 16.3 million NZ$ (2005-2013[23]) have been around NZ$.

22 *Cfr data recorded under chapters 2,4,6,7,8,10,11,12,15 & 17.*

23 *Import data for 2013 for meat products, vegetables, roots & fruits have been compiled for the three first quarters of 2013; all other imports figures for 2013 include all four quarters.*



Source: MFEM - Customs (Chapters 2,4,6,7,8,10,11,12,15 & 17)



Source: MFEM - Customs (Chapters 2,4,6,7,8,10,11,12,15 & 17)

When considering import substitution opportunities, import figures have to be regrouped under the following headings, which are illustrated in the above graphs:

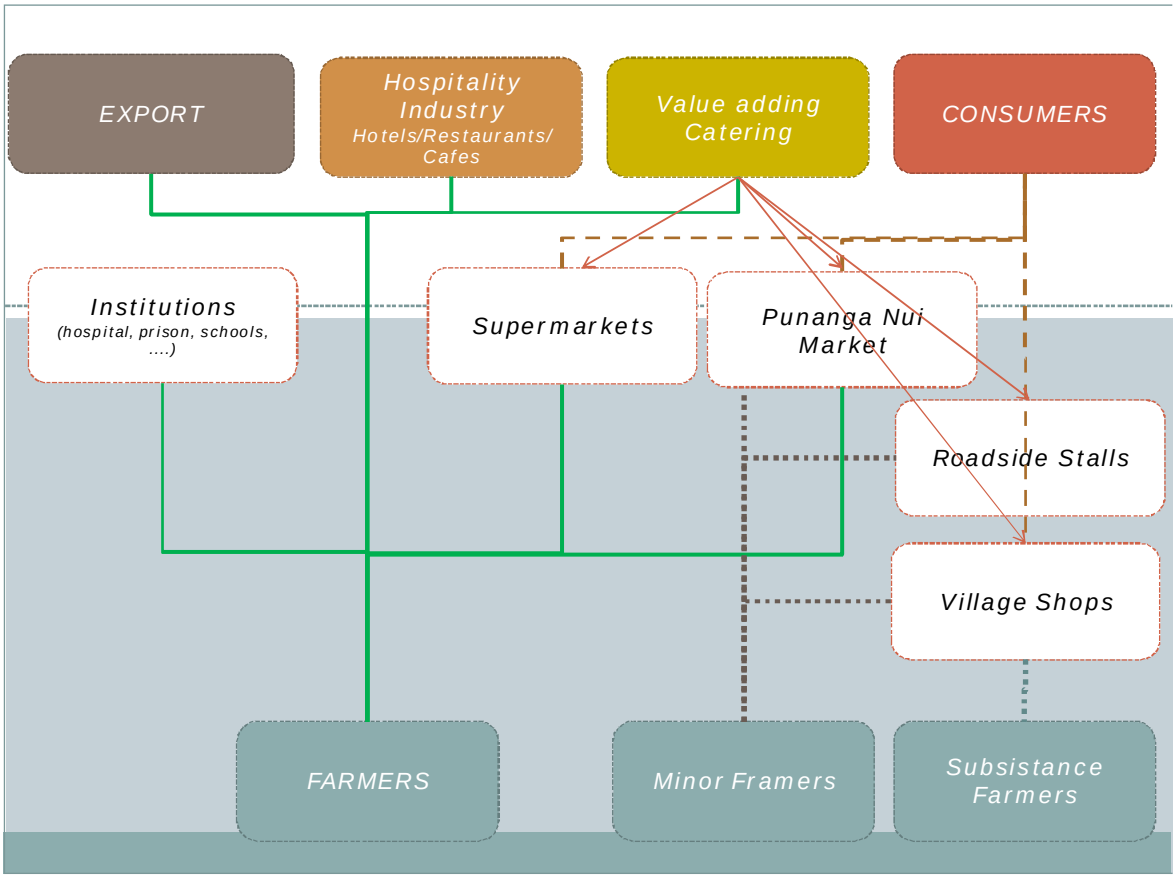
- Standard imports for which there is little or no local production opportunity; i.e. livestock products (all meat except pork, poultry and goat; dairy products; offal; …) temperate and other fruit preparations and other more temperate vegetables)
- Beverages[24] (non alcoholic, alcoholic and waters)
- Imports of products that are locally available (or could be expanded/developed); i.e. livestock products (pork, poultry and goats meat + eggs), tropical fruits (citrus fruits, papaya, banana, mangoes, pineapple, noni, avocados, pineapple, guavas, melons, coconut, …) and vegetables (tomatoes, onions/leeks, cabbages, lettuce, carrots, potatoes, chillies, capsicum, …)

The importance of import substitution represents more or less 4.8 million NZ$ over the 2005-2013 period (22.5 % of average total agricultural/food imports over the same period) which is mostly provided by livestock products (3.6 million NZ$) followed by vegetables (1.1 million NZ$) and tropical fruits (0.13 million NZ$).

[24] *Beverage imports in the table have been estimated using the data provided by FAOSTAT for this entry and converting the value of the imports from US$ to NZ$ using average annual exchange rates.*

2.2.3 Fragmented value/marketing chains

The local markets for the three major groups of products are characterized by a very fragmented picture as illustrated in the graph below.



There are few major producers (31 'commercial farmers' and no significant livestock commercial farmers with the exception of the egg sub-sector) and most of the agricultural activity is part-time on small plots < 2 acres (see section 1.1.3), with low crop volumes and low consistency over time.

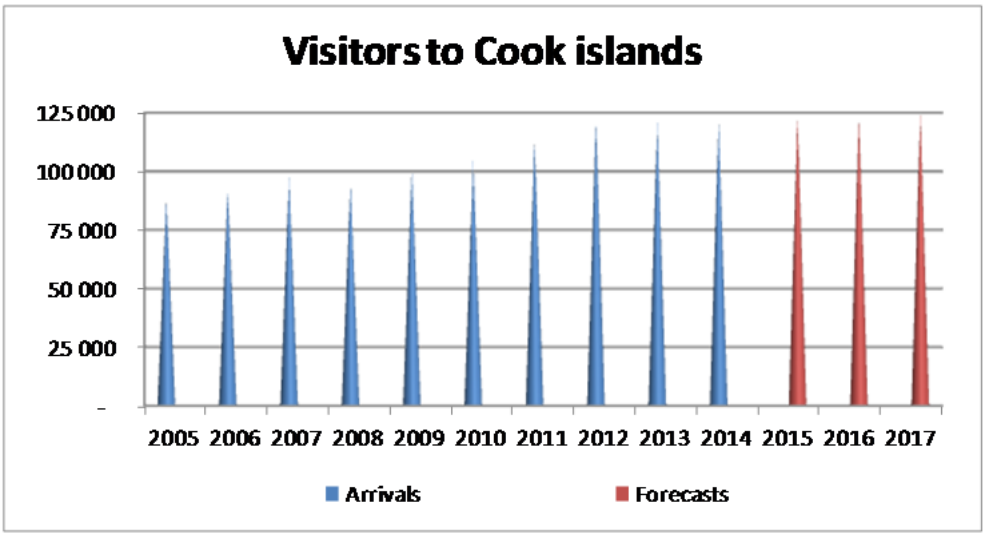
The only value added exported agricultural crop is noni juice. Some limited local value adding exists such as papaya juice/nectar production *(Hugh Baker, Raro-Pacific)*, chilli and tomato pastes *(Blue Pacific/Trader Jack)* and the odd fresh smoothies, juices, salads available at the Punauga Nui market. A High Temperature Forced Air (HTFA) facility exists at the airport compound, including packing and cold storage facilities. This facility used to cater for exports of papaya exports and other fruit-fly sensitive fruits to New Zealand. Its recent operation was entrusted to a papaya cooperative or association after being run for several years on a private service contract. It has encountered technical problems and since last year's fruit fly outbreak, no fruit have been exported. The facility is at present not in operation and its future is uncertain.

There are no middle men that operate as links between retail and the producers. The retail sector is dominated by one major local supermarket chain *(CITC)*, other smaller supermarket facilities *(PrimeFoods, Wigmore's Super Store, Convenience Store)* and a number of smaller shop

operators along the Rarotonga ring road. There are no regular other markets other that small roads sales and small local shops.

2.2.4 Linkage and interaction with Hospitality sector

Tourism remains the largest industry in the Cook Islands, accounting for around 60 per cent of the economy. Arrivals have soared over the past years, as shown in the following graph.



***Source*: MFEM - Budget estimates 2014/15**

However, growth in tourism arrivals has slowed from 3.2 per cent growth in 2012/13 to 1.6 per cent growth in 2013/14. Subsequently, tourist arrival forecasts in the CKI budget estimates for 2014/15 have been maintained at their recent levels and slightly revised downwards.

New Zealand remains by far the largest market at 65 per cent of total arrivals. Australia has as smaller, but increasing share (18 per cent) which is offsetting the declines experienced in European markets. The average stay is estimated at around 8.0 days, with this average heavily influenced by the level of New Zealand and Australian arrivals. The average daily spend (including accommodation) is estimated to be around $200-230 per visitor (including children), but varies by time of year and by tourist source market[25].

Data in the Cook Islands Visitor Survey[26] indicate that 99 % of tourists visit a restaurant/ café during their stay and this is where they spend the most money. The Visitor Survey also identifies that 84 % of tourists visit the local market and 69 % attend island night and feast events.

Interestingly, almost an equal number of tourists cite their food and beverage experience as the least appealing aspect of their say (12 per cent) as those that cite it has the most appealing (11 percent). The 'food' or 'cuisine' experience is however an important marketing theme of the Cook Islands

> ***Welcome to the paradise of the Cook Islands.***
>
> ***Dare to experience the unique culture, food, and lifestyles***
>
> *http://instagram.com/cookislands*

[25] *MFEM – Budget estimates 2014/2015.*

[26] *Cook Islands Visitor Survey Annual Summary Report April 2012-March 2013, and Cook Islands Visitor Survey Results July- September 2013; New Zealand Tourism Research Institute, Auckland University of Technology, 2013*

Tourism Council and Board. It is therefore essential to ensure as far as possible that this 'food-cuisine' experience draws on local products and food traditions.

The food hospitality (i.e. hotels, restaurants, cafes) sector is a significant consumer of local fresh produce. In the previous FAO report on linking farmers to market, a rapid estimation of the importance of this local fresh market was made (see Appendix 3 for a more detailed table[27]) and suggests that for vegetables approximately 192 tonnes of selected vegetables are required, at a value of over NZ$ 765 thousand; and that for fruits there is demand for 294 tonnes of fruit valued at around NZ$ 867 thousand, every year. The total value of the tourist market for this fresh food produce is therefore estimated to be over NZ$ 1.6 million.

> *Lettuces, cucumbers, tomato, pumpkin and silver beet are the most valuable vegetable markets; while water melon, banana and rock melon are the most valuable fruit markets*
>
> *Linking farmers to Markets*
> *FAO - 2014*

The food hospitality sector accesses food supplies directly from importers and farmers and also to a lesser extent from all of the other intermediary retail/wholesale outlets. Whilst some of the hotel/resorts have established preferred supplier arrangements and do provide limited forward indication of their produce demand, formal contracts are not the norm. A consequence of these uncoordinated supply chains for local farmers' produce has been summed up by the food hospitality sector as a situation of 'feast or famine'.

2.2.5 The livestock sector

There seems to be a major disjoint between the imports of a number of livestock products (see section 2.2.3) and the existing local production capacity (mainly pork, poultry, goats and eggs – see section 1.2.2).

Major constraints generally highlighted when considering not to invest or develop livestock activities in the CKI are:

- Direct competition from other Pacific countries reducing viable commercial options; unless focused[28] market interventions[29] or niche value adding (origin labels or products) ventures can be sustainably developed.
- Animal feed is imported at great cost and little use of local available or produced feed is researched and promoted; even though a number of local feed products (coconut,

---

27 *This seems consistent with estimates based on experience in Fiji. If the average tourist there consumes three papaya, two mangoes, one pineapple and consumes similar quantities of meat products to the average consumption in his country of origin, the tourist market in the CKI would amount to some 350 tonnes of papaya, 100 tonnes of mango, 100 tonnes of pineapple and 360 tonnes of meat products annually (of which 110 tons of Beef meat – 75 of Pork -140 of chicken and 35 of sheep meat).*
Sources: McGregor estimates for 2006 sited in the Veith report (2009) on 'Assessing the Viability of Collection Centres for Fruit and Vegetables in Fiji - Value Chain Approach' and the Cardno report (2012) –' Identification of a Livestock Support Project for Fiji based on M4P Methodology'

28 *Focused on either protecting the market or improving input importation.*

29 *Other pacific islands maintain high levels of protection of their national livestock productions. For example Fiji maintains a 32% duty on most livestock products. It is thus ironical that an important share of the "duty free" imported eggs in 2014 originates from the "duty" protected Fiji.*

cassava, …) are available and could be used-incorporated with smaller and more focused imported feed elements.

- The breeds (mostly indigenous) and the present production and animal husbandry techniques (open air and wandering) are either viewed as low input or as presenting a major health /consumption hazard.
- Environmental concerns regarding animal wastes and production conditions seem to prevail in the light of CKI's pristine environment as an important impediment.
- The lack of appropriate local value adding ventures is in part justified by the direct import competition and in part by the inconsistency of local supplies. Small local butchering and pork workshops operating in the early 2000 have closed down; and so has the existing local abattoir.

Nevertheless, as past local small value adding ventures have shown, there is scope to try and regain some market shares for livestock 'quality' or 'local labelled' products.

The Livestock Sector
in "Linking farmers to markets in the CKI"

The impact of increased competition from livestock producers in Pacific Rim countries which enjoy scale efficiencies and cheaper feed costs, has made it extremely difficult for commercial livestock producers to maintain market share, without significant market intervention, which the Government is unwilling to continue.

Pork *- The government has decided to remove tariff protection on imported pork products in April 2014. In addition as the scale of pork production has fallen and shifted from commercial to own consumption, the standard of commercial meat processing and storage facilities has fallen and is now no longer operational, making it extremely difficult for local producers to meet necessary quality and food safety standards required to supply retailers and hospitality markets.*

Poultry (Eggs) *- Although there is no commercial broiler enterprise in Cook Islands there are commercial layer operations which have a proven capacity to produce and market eggs. This sector has also benefited from border tariff protection (*) until its very recent removal. With the tariff protection local eggs are price competitive with imported eggs and have a quality advantage over sea-freighted imports in terms of 'freshness' and shelf life. However, the levels of production achieved by the local egg industry have declined as result of difficulties accessing local retail markets (despite a price advantage).*

FAO – March 2014

…

2.3 CHALLENGE OF THE OUTER ISLANDS

The present contribution of the outer islands to the agricultural/food sector is limited by a number of major constraints which represent the major challenges:

- **Transport and communications** links are semi-regular with the capital island of Rarotonga for the other southern islands and far less developed with the northern group of islands. All islands have to transit through Rarotonga in case of international trade and exchanges. Agricultural development is thus fully dependant on the local subsistence farming activities and imports from Rarotonga.
- **Tourist developments** have increased the demand of food which in part is provided locally. But short and local supply chains and networks need to be developed and strengthened to ensure consistency in quantities and quality. Few local ventures exist at present to do so within the outer islands.

Atiutaki fruit orchard and agri-linking to island tourism

The sheltered Aitutaki lagoon and its pristine beaches make it an ideal destination for sea and water related tourism activities. The soil is rich in minerals and has been well shielded from insecticides and other chemicals, so far. This therefore becomes an ideal condition for farming. Historically taro, arrowroot, banana, pawpaw, tomatoes, cabbage, noni have been the local crops. The intent of the local growers to export out of the island has been limited by operation glitches induding the BQA protocols for export. Our plan is to use the richness of the soil to produce exotic fruits for local consumption.

There is a regular stream of tourists coming into the island. We want them to taste paradise. Today's traveler is more demanding than ever, wanting something new and exotic. The health conscious traveler is willing to pay a premium for the unusual, the exotic and the highest quality produce.

With cruise ships also docking at the island regularly there is good scope to produce fruits such as Mango, Avocado, Pineapple, Durian, Abiu, Rambuta, Lychee and others; Production will be consumed locally, thus saving us the cost of exporting them out of the island.

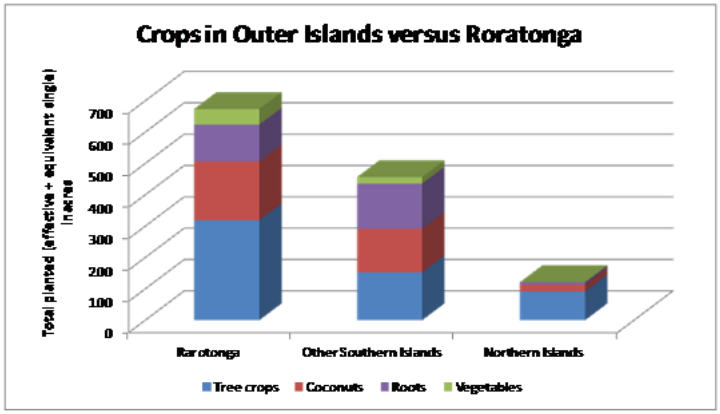
We intend to use the rustic nature of the island and build a farm that will be a tourist destination. This farm will set a landmark activity and we hope to demonstrate to the local community that we, who are from the land, can develop a financially rewarding venture and we hope that this will encourage more of the young Aitutakians to return to their homeland.

Fresh Fruit Farm in Aitutaki – Proposal to FAO trust fund – 2014 - Taangara Maao, Ironui Moate & Brian Paxtor

- Good **farm land** (class one) is available mostly in the Southern islands, whereas northern islands farm land is classified as class two ('tree crops only').
- **Water resources** are distributed more unevenly; reasonably abundant on Rarotonga and limited (other southern islands) to very limited (all northern islands/atolls).
- **Population has declined** gradually and outer islands experience significant seasonal and temporary migration either to the main island of Rarotonga or to New Zealand and Australia.

Production wise (see sections 1.2 and more detailed data in Appendix 3), compared to Rarotonga,

- Other southern islands are: (i) a major reservoir of livestock (pigs, poultry and goats); (ii) important producers of taro and cassava; and (iii) engaged presently in producing the following major tree crops (coconuts, noni, mango, banana and coffee), and the following major vegetable crops (melons, tomato, pineapple). These islands had in the past major monoculture citrus/tropical fruit plantations regularly exporting to New Zealand through Rarotonga.



Source: 2011 Agricultural census

- The northern islands have little or no livestock numbers and small productions of coconuts, bananas, mangoes and taro.

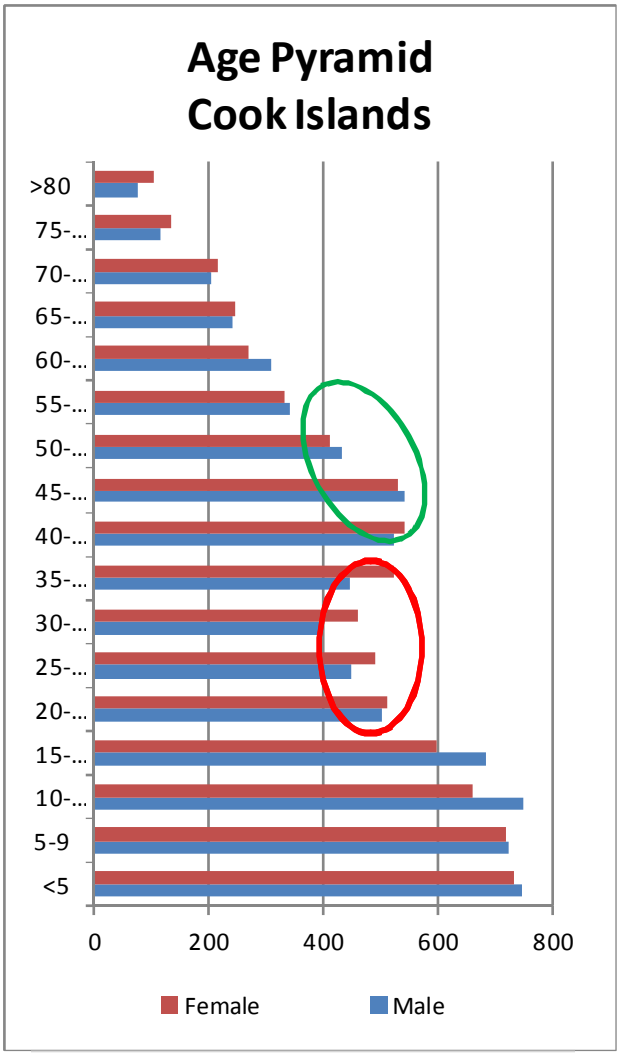
So far **trade in agricultural** products from the outer islands have been essentially fresh products with little if no local value adding (thus reducing volumes and contents to transported; juicing, jams or other fruit/vegetable preparation, slaughtering and deboning,…)

Water and infrastructure challenges are being gradually addressed through co-funding of islands development plans and a number of financial tools initiated by the Government (Socio-economic fund, government budget, …) and FTPs (GEF, UNDP, Climate change, …).

The challenge however remains to initiate a number of appropriate and sustainable supply chains and networks, which avoid the past overspecialisation, and ensure at least consistent and regular local outlets.

2.4 DEMOGRAPHY PARADIGM

Seventy-four % (13,095) of the CKI's population lives in Rarotonga; 20 % (3,586) in the Southern Group islands; and 6 % (1,113) in the Northern Group islands.



Source: Population & Housing Census 2011

The current trend of net migration continues to be negative, which means that still more people emigrate (leaving the country), than immigrate (entering the country)[30]. Internal migration continues to be directed from the Outer Islands (rural areas) towards Rarotonga (urban). There was very little movement of people between the Northern and Southern Group islands.

The age pyramid of the 2011 population and housing census reflects an important indent (see red circle) of the 15–29 year age groups, showing a sign of outward-migration at the young ages.

Furthermore, population projections[31] seem to indicate that the future evolution of the age groups will show a tendency for this indent (see green circle) to shift towards other age groups; with substantial increases in the older (+60) and younger than (30-) age groups (see details in Appendix 2).

These overall demographic trends are exacerbated in the agricultural sector as younger generations turn to other economic sectors (services) and agricultural farming households have drastically decreased since the 2006 agricultural census (from 1721 to 1269).

Furthermore, the population in the Cook Islands is strongly urbanised (more than 70% of the population is considered urban). This has a major implication in regards to the availability (and consumption) of food of appropriate quality and the stability of the country's food stability (see section 2.2.1), as is emphasized by SPC and WHO: "Urbanized dwellers tend to

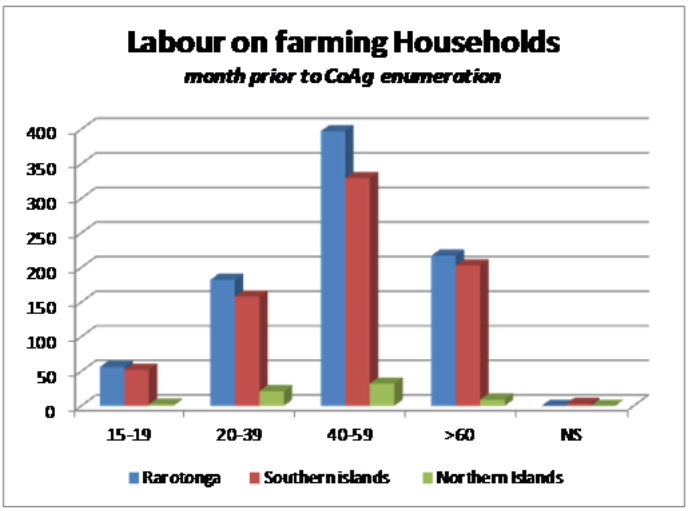
- No longer grow own food
- Increasing control of supermarkets on diet
- High prices forcing to buy cheap, poor quality food import
- Unemployment = low labor productivity = Loss of traditional knowledge

[30] *It has been estimated that over 1,600 more people have left than have entered the country during the period 2006-2011. That was an average net-loss of about 322 people per year*

[31] *Based on three crossed fertility, morality and migration scenarios (high, medium and low) –Source: Cook Islands - Demographic Profile - 2006-2011 – Government Cook Islands & SPC - 2012*

2.5. LABOUR DYNAMICS OF THE SECTOR

According to the 2011 agricultural census a total of 1661 people are working in the agricultural sector, of which 365 are women. (See Appendix 3 for more detailed figures), this represents 1.30 labour force per agriculture active household. More than 70 % of this labour is over 40 years old.[32] Household and non-household members are engaged as follows:



Source: 2011 Agricultural census

Farming labour	Total	Of which Female
Household members		
Operators	1 000	71
Paid	31	13
Unpaid	543	281
Sub-Total	***1 578***	***365***
Non - Household members		
Operators	30	5
Paid	35	3
Unpaid	18	3
Sub-Total	***83***	***11***

This would suggest that the sector employs 66 paid labour (of which 14 women). Unfortunately the census does not focus in on the specific 390 farming households that are engaged in farming for sales (and of which 31 as said to be commercial farmers), and which would be those contracting non household workers.

Paid labour is expensive as the minimum wage is set at NZ$ 6 per day and the commercial/part-time 'selling' farmers are thus the ones confronted with these high labour costs:

> *Competition for labour from the public sector and overseas employment has significantly reduced the availability of efficiently priced surplus labour for the intensification of agricultural production in the Cook Islands. The cost of agricultural labour in the Cook Islands is among the highest in the Pacific Islands. Indeed, with the minimum wage in Cook Islands having been recently increased from NZ$ 5 to NZ$ 6 per hour, wages in the Cook Islands are comparable with developed, rather than developing countries (e.g. US federal minimum wage of US$7.25 per hour).*
>
> *Despite the high minimum wage rate, Cook Islands employers are forced to sponsor labour from overseas (mainly from Philippines, China and Fiji) in order to take up vacant positions in industries such as tourism and agriculture, in return for significantly higher hourly wages than the minimum and the payment of large bonds, return airfares and other expenses. This has significantly raised the cost of agricultural labour, and labour-intensive agricultural production, in the Cook Islands. Furthermore, socio-cultural factors have restricted the use of foreign workers for agricultural ventures on some outer islands*
>
> *Linking farmers to Markets*
> *FAO - 2014*

[32] *45.6% between 40 and 59 and 25.8 over 60 years old*

According to the 2011 population and housing census labour monograph's agricultural sector snapshot there were 15 foreign workers engaged by the sector (3 from New Zealand, 3 from Fiji, 2 from the Philippines and 7 of other ethnic groups).

The major constraint facing the agricultural sector is that most young people are escaping agriculture, preferring other employments or migration. They do not view it as an 'innovative", "actual" and interesting income generating activity. It is mostly associated with risks and viewed as traditional/older generation's activity. Farming is not seen as a small scale business and remains driven by 'production' as opposed 'value chain or supply chain' driven.

LACK OF CONTRACT/ASSOCIATIVE FARMING TRADITION

One often advocated way forward for the agricultural sector is to engage in 'associative' forms of collaboration between farmers. Cook Islands experience with farmers' associations is rather limited and needs to be revisited. There have been a number of village level associations which were basically set-up on a demand driven approach, i.e. to access equipments (tractors, …) or specific services (inputs, seeds, …). Most are not business driven and are ineffective in developing common development plans or promoting grouped contract farming arrangements with the hospitality sector or SME value-adding businesses.

There have been a number of recent initiatives to revitalise associations: (i) supporting the Titikaveka Growers Association (TGA); (ii) launching a Rarotonga fruit growers association (recently started and still in the formalization process; (iii) the Araronga farmers association; …

Titikaveka Growers Association (TGA)

Currently farmer organisations have been disorganised and ad hoc with only one organisation the) that has attempted to formalise the farmers' organisation with the main activities being:

- *Establishing a community compost centre over the past two years*
- *Organizing growers in and beyond Titikaveka to choose which crops they will farm and to stick with their selection instead as in the past of many growers jumping into the same crops, hence flooding the market, depressing prices and ending up with a useless surplus.*
- *Offering instruction on organic and biological farming methods to growers*
- *Facilitating discussions with the larger retailers who are the main buyers of produce.*

TGA has had limited success and remains a small organisation with a small membership; and in deer need of business mentoring and focusing on strengthening its capacities to engage effectively in farming contracts and ensuring group cropping planning in accordance.

In FAO trust fund proposals 2014

Well run, effective farmers groups/associations are an essential link to value chain and supply networking. They need however to be more focused and to engage in activities which in time can develop into financially viable and sustainable services to farmers (members or not). Starting point should be engaging in a value chain/supply chain network approach, focusing first on ensuring consistent quantity & quality product supply for a given market/contract/value chain. The absence of formal and well organized farmer organizations has reduced planning

and coordination of planting and growing patterns on the ground thereby being unable to determine what, when and how much is being produced at any one time.

TGA's development has been hampered by a lack of "on-the-ground" capacity building and coaching, so as to gradually develop and expand its activities in line with its own dynamism and incomes.

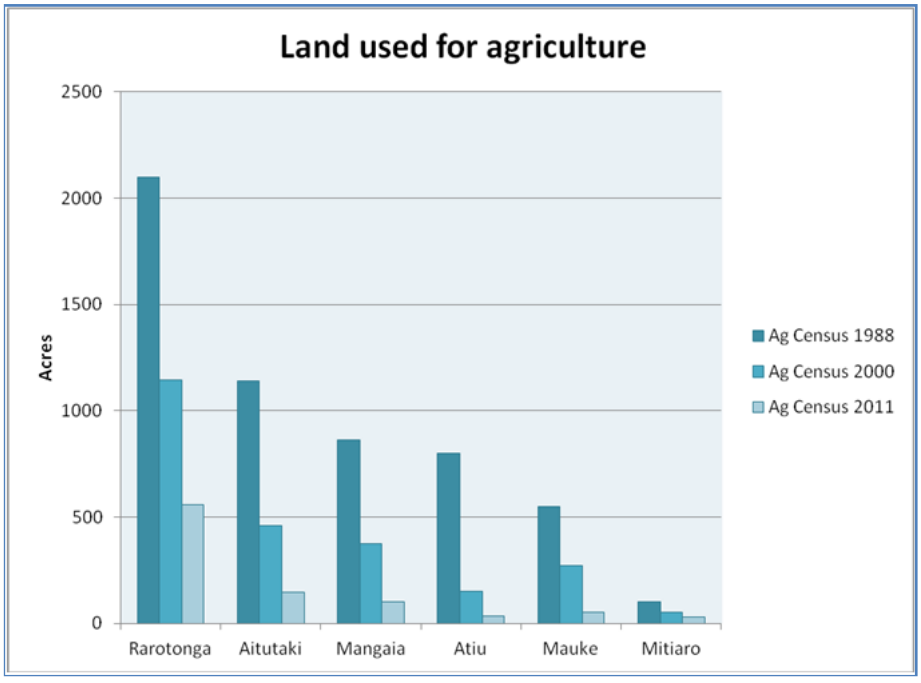
Developing such groups is a long term process that requires ongoing support (business mentoring, organizational coaching and specialized technical/knowledge support). Associations first need to learn to walk before running by trying to engage in more complex business opportunities such as 'professional composting'.

A systematic mentoring/coaching of farmers' groups/associations/cooperative has been lacking and needs to be provided on a long-term and not on a piece meal/project/ad-hoc basis as seems to have been the case so far.

2.6 LAND USE

Land used for agricultural purposes has been on the decline on all the major agricultural islands (Rarotonga, Atuitaki, Mangaia, Atiu, Muake and Mitiaro) since 1988. Total figures have shrunk from 6934 acres in 1988[33] to 2029 acres in 2011[22].

Two major factors contribute to this: (i) the continual and gradual decrease of the performance of the agricultural sector since the end of the last century; and (ii) the increased competition for land on Rarotonga from the tourism sector and housing sectors which has significantly reduced the amount of vacant agricultural land, and therefore poses a challenge a major challenge to the CKI's various farming systems.

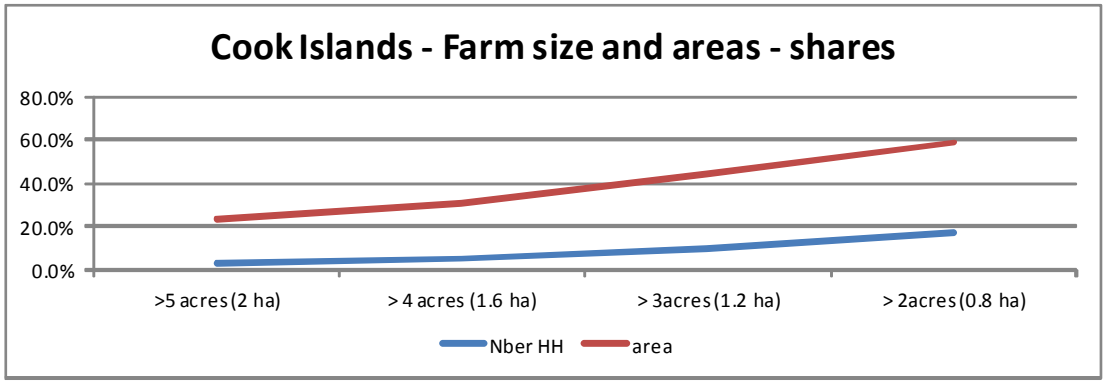


[33] *Including 1429 acres fallow in 1988 and 795 acres fallow or under bush in 2011.*

Land use for agricultural purposes is further compounded by the small size of farm holdings. More or less 82 % of all households engaged in farming activities operate on farm holdings smaller than 2 acres (or ± 42 % of all agricultural land). The remaining 17 % of households operate on ± 58 % of all agricultural land. Farm holdings operating on more than 5 acres represent 3 % of all households and have access to 23% of all agricultural land.

	> 2acres (0.8 ha)		> 3acres (1.2 ha)		> 4 acres (1.6 ha)		>5 acres (2 ha)	
	Nber HH	area	Nber HH	area	Nber HH	area	Nber HH	area
Cook Islands	220	872	126	656	68	462	40	345
%	*17.3%*	*58.6%*	*9.9%*	*44.1%*	*5.4%*	*31.1%*	*3.2%*	*23.2%*
Rarotonga	73	286	41	214	17	130	12	108
%	*12.7%*	*50.2%*	*7.2%*	*37.6%*	*3.0%*	*22.9%*	*2.1%*	*18.9%*
Other Southern Islands	146	584	85	442	51	332	28	237
%	*23.4%*	*64.5%*	*13.6%*	*48.9%*	*8.2%*	*36.7%*	*4.5%*	*26.2%*

Source: 2011 Agricultural census



Like most other PICs, all the lands of the Cook Islands traditionally belong to the native inhabitants of the islands. In accordance with the land court system, lands are now classified into Crown Land (land acquired by government); Customary Land[34] (land held by natives or descendants of the natives); or Freehold Land[35] (customary land held by individuals through lease, license, occupation or court order).

Land administration is carried out through the procedures of the land court for most of the islands, with the lands of Mangaia, Mitiaro and Pukapuka still under customary control.

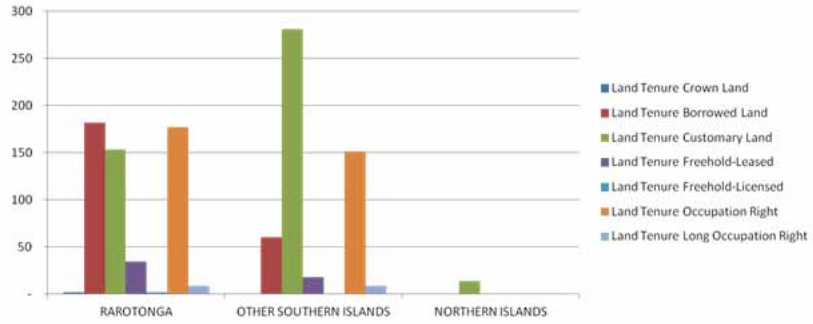
According to the 2011 agricultural census, only 7 % of the land area used for farming is under freehold lease or license. An estimated 65 % of the land being used by commercial farmers is borrowed or customary, with the largest portion being borrowed.

[34] *Customary land is inherited unilaterally by all members of the family which means that a large number of people have ownership rights to a small section of land. This multiple ownership results in land titles becoming extremely fragmented*

[35] *Freehold land, which is owned by one or more individuals have allowed individuals to develop land although a large number of land development have been undertaken by extended families and are mainly of a subsistence nature*

LAND TENURE (acres)

	Crown Land	Borrowed Land	Customary Land	Freehold -Leased	Freehold-Licensed	Occupation Right	Long Occupation Right
Rarotonga	2	182	153	35	2	177	9
Oth. Southern Islands	1	60	281	18	1	151	9
Northern Islands	-	-	14	-	-	-	-



Agricultural census 1988 -2000 - 2011

The proliferation of use rights to customary land among both resident and non-resident Cook Islanders has made it extremely difficult for commercial farmers to obtain leases for tracts of agricultural land of a size sufficient to obtain scale efficiencies from investment in broad acre, mechanized farming systems. In addition, the incentive for commercial farmers to invest their own resources to improve and develop borrowed land is significantly diminished, given the high rate of risk that the owner could reclaim the land without paying them compensation.

Whilst government recognizes the need for the introduction of legislation to address the impact of rapid demographic and socioeconomic change on land - such as the implementation of recommended procedures to address land fragmentation, absentee ownership and land development[1]; and negotiating long-term lease arrangements with off-shore landowners in order to establish a land-bank to open up to investors[1] - these policy reforms will be politically difficult to achieve. Consequently, the facilitation of investment in land saving agricultural systems, such as hydroponics and covered agriculture, is critical to improving the competitiveness of the industry.

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2.7 CAPITAL & BUSINESS ENVIRONMENT

The capital and business environment for the agricultural sector is described as follwos in the previous FAO - CKI mission's report: "linking farmers to markets":

Loans and interst rates: The high rate of interest charged on loans to the agriculture sector – 16.5 % for unsecured loans – is a significant barrier to the adoption of land and labour saving technology (hydroponic and drip irigation systems, coverings, tractors and trailer attachments), particularly for very small and small-sized farmers. The Bank of Cook Islands (BCI), in partnership with the Business Trade Investment Board (BTIB) have already gained experience of providing low interest loan products for the agriculture sector albeit at a mico-finance level.

Agricultural Development Loan

The Business Trade and Investment Board has worked previously with the Bank of Cook Islands and the Ministry of Agriculture to provide a small stimulus loan (NZ$ 3,000 at 5% interest, payable within 12-months) to 31 farmers in the Cook Islands. Despite the limited period within which loans were to be repaid, BTIB/BCI received full repayment on 80% of the loans.

The performance of these loans was therefore only slightly less than the average 85% rate of repayment experienced with mortages in the Cook Islands. Implementation of this scheme has also provided BCI with good background credit information on members of the agriculture sector which will help them select clients for future loans.

Availability of a suitable loan product (finance in the range of NZ$ 5 to 50,000 for the purchase of capital equipment, with maximum interest rate of 5 %) targeted at proven agriculture sector borrowers who have a viable business plan, and who are supported by business mentoring services and technical assistance on new technologies, would be an important catalyst for agribusiness development.

Business Environment. In order to assist financial institutions identify loan applicants in the agriculture sector suitable for financing, it is important to provide them with information tools to improve their capacity to calculate the profitability of agribusiness applications, and estimate likely rates of repayment. Similarly, in order to encourage stakeholders in the agriculture sector to invest in increasing production and productivity, it is essential to help them identify commodities offering the best rates of return on investment[36].

Given the experience of the BTIB in identifying profitable enterprises in the Cook Islands and helping them to prepare farm business plans, it is critical that they work alongside agriculture sector stakeholders to identify a series of 'best bet' agribusiness enterprises and loan applicants to make first use of the low interest loan, in order to ensure the sustainability of the fund. The support of the Tourism Industry Council should be sought to help identify

[36] *Consequently, a priority for the Ministry of Agriculture should be the production of a Farm Manual containing calculations of Gross Margins for the production of the full range of commercial fruit and vegetable crops. These margins should include some sensitivity analysis in order to enable calculation of profitability for the full range of different input and output prices commonly experienced in the Cook Islands, in order to enable calculation for both peak and off-season, and allow for fluctuations in input prices*

dedicated buyers in the tourism industry, and therefore increase the security of agribusiness loans.

In order to ensure the sustainability of investments in the agricultural sector, it is critical to ensure that successful loan applicants have ongoing access to technical support on business planning and modern farming methods. Applicants should also have access to technical support from agribusinesses overseas that have experience of incorporating these technologies into a profitable agribusiness. The Chamber of Commerce (CC) is currently implementing a business mentoring programme (with support from New Zealand) and would be keen to see this extended to the agriculture sector[37].

Income Taxes and VAT. Reducing the tax burden on the primary sector will also encourage a higher level of investment. In the recent past the government have promoted investment in tourism in the outer islands by making capital asset investments 100% depreciable over 2-3 years, allowing operators to reduce their tax payments in the first years after their initial investment, when repayments on a loan are highest. This same model could also be used to reduce the tax burden for the primary sector, which in many countries in the Pacific region is exempt from taxes. Tax holidays may also be considered for agribusinesses that make significant capital investments over a prescribed threshold level. This would encourage investment in the adoption of production technologies which increase off-season supply, as well as processing technologies which will help to provide a market for second grade fruit and vegetable products during periods of oversupply.

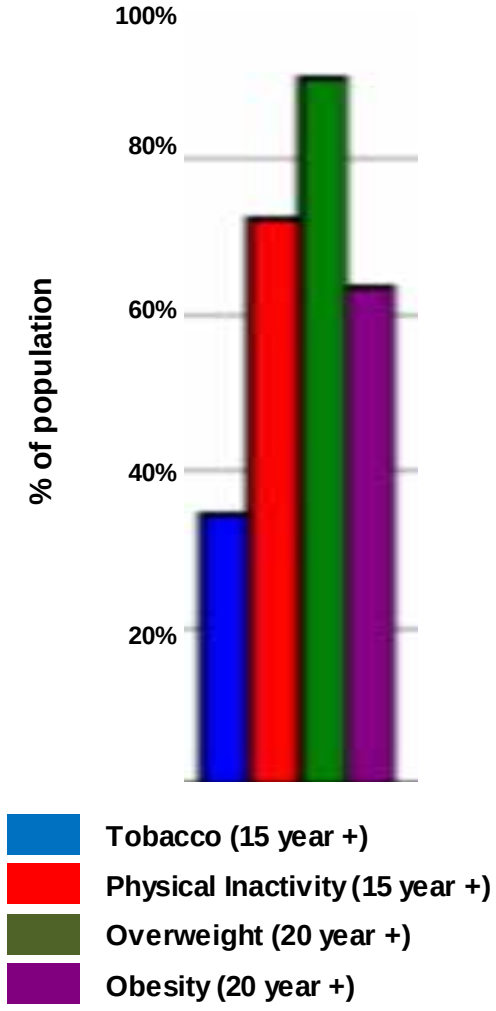
Furthermore there is no specific primary sector VAT rate; like almost all other Pacific Islands CKI implements a single VAT rate system, unlike Australia which has a dual rate system. Considering such a dual system for formal commercialized primary agricultural products might also contribute to reducing the tax burden.

[37] *Personal communication Steve Anderson, President Cook Islands Chamber of Commerce*

2.8 HEALTH AND NCD

With the declaration of the "Non Communicable Diseases (NCD) Crisis" at the Pacific Island Forum by the pacific leaders in 2011,[38] efforts to address NCDs have been intensified in the Cook Islands with increasing national attention and commitment.[39] (See more details in Appendix 7) NCDs represent a growing burden in the Cook Islands which subsequently challenges its healthcare system and resources (infrastructure, human, laboratory and pharmacy.) There are 3 725 patients currently registered in the Ministry of Health's NCD registry. The prevalence and incidence of NCD were respectively 2.1 % and 26% in 2012. Overall, 79% of deaths were due to NCDs.[40]

PREVALENCE OF NCD KEY RISK FACTORS IN CKI



Source: SPC - Country HIES (2008)

Critical NCD risk factors[41] are: (i) tobacco smoking, (ii) physical inactivity, (iii) alcohol misuse and (iv) unhealthy diet (low consumption of fruits and vegetables, high salt, sugar and fat).

The 2011 STEPS report indicates that 61.4% of the population were obese (BMI ≥ 30kg/m2), 43.9% were current smokers, 62.9% were current alcohol drinkers at the time of the survey.; an estimated 33.2% of the population had raised blood pressure[42], 23.6% had raised fasting blood glucose (≥6.1mmHg) and an astounding 75/2% had elevated total blood

Chips before pawpaw:
Cook Islanders lose taste for healthy, local food

"When I was a kid," says Tupou, a farmer on the Cook Islands, "we ate mostly fresh fish and tomatoes, pawpaw, and taro. … "I know lots of people who prefer takeaways rather than cooking anything. I think that's why there's a lot of diabetes and all that," Tupou adds. Food on the islands is making many of the islanders sick…

The traditional diet, like Tupou's, has been replaced by imported, often calorie-rich and nutrient-poor processed foods and sugary drinks. With the boutique resorts have come western-style fast-food outlets where islanders spend their wages and, as tourism has blossomed, so has obesity ….

A recent ministry of health school survey here found that 24% of girls and 34% of boys are obese.

Extracts from The Guardian September 2, 2014

38 *Pacific NCD Crisis. SPC Secretariat of the Pacific Community and World Health Organization. Noumea. Sept 2011*

39 *The Cook Islands Te Kaveinga Nui National Sustainable Development Plan 2011 – 2015.*

40 *Cook Islands NCD Risk Factors STEPS Report. Te Marae Ora Ministry of Health, World Health Organisation. 2011*

41 *These risks are increasing as a result of climate change and development impacts. For example, modern lifestyles typically result in less physical activity at home and at work; while climate change is already affecting the food, the water and environments.*

42 *Systolic blood pressure ≥140mmHg and/or diastolic blood pressure ≥90mmHg*

cholesterol level exceeding 5.0mmol/L.[28]

Even if food is not the only cause of the NCD crisis, it remains a crucial contributor, as unhealthy diets or 'chips before pawpaw' directly challenge the vision of what food and which agriculture is to be pursued in the CKI. Healthy diets and quality of life depends directly on the production of locally available quality food products made from healthy farm products.

2.9 ENVIRONMENT AND CLIMATE CHANGE

The agricultural sector in the CKI operates in a sensitive environmental environment and will need to prepare itself to cope with the longer-term effects of climate changes. Most environmental projects and climate change programmes envisaged in the CKI are based on the assumption that the CKI will engage in a sustainable agriculture. At present the prevailing monoculture/plantation type agricultural system is a high input driven model which has major impacts on the environment and is directly impacted by the on-going climate changes.

2.9.1 Environmental impact

Although the Cook Islands are isolated and only have a total land area of 23,990 hectares, the terrestrial landscape supports high ecosystem diversity and endemism.

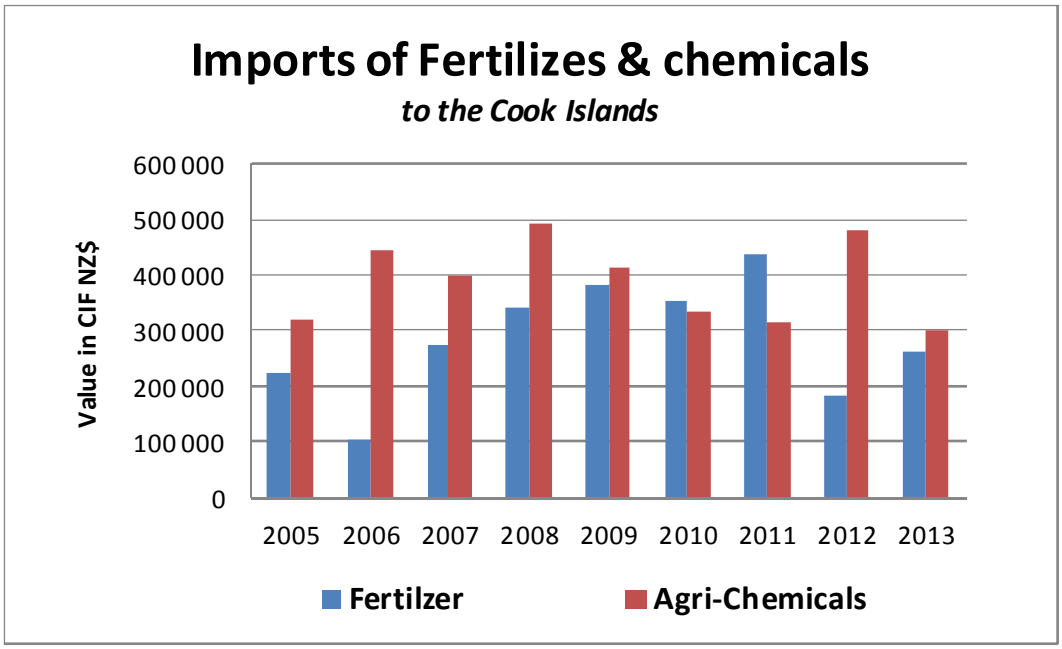
> *Coral reefs encircle all nine islands and these are separated by the pelagic ecosystem. Seamount ecosystems exist within the park. A variety of tropical forest ecosystems exist on the islands, including littoral forests, the Rarotonga montane rainforest, Rarotonga cloud forest, and makatea forest on the upraised limestone islands. Wetland ecosystems include streams, swamps and lakes. Unlike most tropical island environments, there are no mangrove or seagrass ecosystems in the Cook Islands.*
>
> *The biodiversity of the Cook Islands is critical to the health and wellbeing of the local population. Cook Islanders have depended on the terrestrial and marine ecosystems to sustain themselves and their culture over more than 1,500 years, and the importance of the nation's biodiversity is present in every facet of a Cook Islander's way of life, including the provision of various natural resources for food, shelter, medicinal and traditional purposes. In addition, biodiversity sustains offshore fisheries, which is the second largest contributor to the economy after tourism.*
>
> *In Cook Islands Biodiversity Strategy & Action Plan - 2002*

The biodiversity of the different islands is rich in plants and animals which generations of Cook Islanders have used to sustain their culture. It is this diversity of plants and animals that needs to be conserved and that is a major global environmental concern. Despite degradation of various habitats in the Cook Islands, it is not the case that a great number of species have become extinct or extirpated. There are 25 threatened coral species, 8 threatened fish species, 3 marine turtle species, 3 threatened whale species, 8 threatened land bird species, 11 threatened plants, one tree snail, one skink and one threatened seabird.

These island ecosystems are increasingly exposed to anthropogenic impacts that threaten this biodiversity, such as deficient land conversion, pollution, poorly treated wastewater releases, invasive species, overexploitation (freshwater, fisheries, etc.), agricultural practices, habitat loss

or conversion for tourism, and climate change. These anthropogenic threats result in loss of 'ecosystem services' throughout the country. The agricultural sector as it stands at present in 2015 (even though it has considerably shrunk in area – see section 2.6) has a considerable local impact on the environment (polluting coastal/marine areas) through:

- inefficient water management and soil conservation practices
- importance of mono-crop tree plantations
- inefficient livestock sector (large numbers)
- plantation type unsustainable agricultural practices,
- overuse of pesticides and fertilizer, contaminating surface and groundwater supplies



Source: MFEM - Customs data

On average these imports of fertilizers and chemicals represent an average total value of 670 thousand NZ$ per year (since 2005) or 285 thousand NZ$ in fertilisers and 385 thousand NZ$ in various agri-chemicals. This would represent an investment by farmers of 1 116 NZ$ per ha (actually farmed in 2011[43]) or 472 NZ$ per ha in fertilizers and 644 NZ$ per ha in agri-chemicals, if one neglects the share of these imports that go to non-agricultural purposes.

2.9.2 Climate change & cyclones

The Cook Islands are expected to incur, on average, about 5 million US$ per year in losses due to natural disasters. In the next 50 years, the Cook Islands have a 50% chance of experiencing a loss exceeding 75 million US$ and casualties larger than 130 people, and a 10% chance of experiencing a loss exceeding 270 million US$ and causalities larger than 200 people

[43] i.e 1489 acres farmed on 1275 active holdings (those selling crops and those engaged in subsistence activities)

A) CLIMATE CHANGE

Cook Islands agriculture, by its very nature, is relatively vulnerable to changes in normal weather conditions, wet or dry seasons including unusual weather patterns over time as a result of global warming. The significance of climate change to PICs is best described by the following paragraphs from 'Pacific at Risk: Our Knowledge, the Reality'[44]:

- **Sea-level Rise -** The 'best estimate' of global sea-level rise by the Intergovernmental Panel on Climate Change (IPCC) is an increase of about 50 cm by the year 2100[45]. An optimistic scenario would produce sea-level rise of 14–32 cm, peaking in about 2050. Such an increase, even without the associated increased height of storm surges coming off a higher sea level, is of deep concern to the small islands which are only one meter above mean sea level.
- **Tropical cyclones -** Climate change will lead to some increase (0–20 %) in maximum tropical cyclone wind speeds. This increase in cyclone intensity raises concerns about damage from storm surges[46].
- **Changes in weather patterns -** These recent changes in El Niño Southern Oscillation (ENSO) patterns in the central and southern Pacific are responsible for severe droughts and water shortages in many PICs and for the occurrence of tropical cyclones in the Pacific.

Recent changes observed in the Cook Islands are:

(see detailed table of probable changes in Appendix 4)

- Coastal roads, bridges, foreshores and plantations are suffering increased erosion.
- Decreased productivity in fisheries and agriculture.
- Higher sea levels are making some soils too saline for cultivation of crops such as taro, pulaka and yams.
- Increasing reports indicating the more widespread and frequent occurrence of mosquito-borne diseases such as dengue.

B) CYCLONES

Since 1955 the Cook Islands has experienced a total of 38 natural disasters (of which 34 cyclones) which have resulted in 34 deaths and cost in the

	Number	Damages US$ millions	Deaths
Cyclone	34	47.63	27
Epidemic	3	n.a.	7
Earthquake	1	n.a.	n.a.
Total	38	47.63	34

Source: Cook Islands Investment in Disaster Risk Management SOPAC Economic Report (PR23)

44 *Produced by SPREP's Climate Change and Integrated Coastal Management Programme through the Pacific Islands Climate Change Assistance Programme (PICCAP), with funding assistance from the Global Environment Facility (GEF) through the United Nations Development Programme (UNDP).*

45 *It is worth noting that based on data from the 11 tide gauges installed in 11 Pacific island countries, relative sea levels in the South Pacific have been rising by as much as 25 mm per year since 1994*

46 *Many small island nations are only one or two meters above sea level, and an increase in the height of storm surges would mean greater risk that waves driven by cyclonic winds could sweep entirely over many inhabited Pacific islands*

region of US$ 47.6 million, equivalent to approximately NZ$ 65.4 million[47].

In 2005, over a period of five weeks, saw five tropical cyclones, four of which were category 5 (Meena 02/02/05, Nancy 10/02/05, Olaf 14/0205, Percy 25/02/05 and Rae 04/03/05) devastated the islands causing widespread damage to infrastructure and property; losses were over NZ$35 million, representing 14% of the country's GDP at the time. In February 2010, Tropical cyclone Pat struck the island of Atiutaki, affecting 78 % of houses and devastating the local agriculture sector (Cyclone Recovery Committee 2010). The recovery and reconstruction program was estimated to cost NZ$ 9.5 million[48]. This equates to 4 % of GDP in current prices.

These figures identify reconstruction costs associated with damage only. They do not account for any economic losses which would have occurred as a result of the damage caused by the disaster. Such losses include foregone wages to the individual and loss of tax revenue to the Government, or long-term damage on the agricultural sector.

> *In 2005, the island of Pukapuka was completely inundated by wave surges associated with cyclone and strong winds completely inundating the entire taro plantation areas on Pukapuka with by salt water. It took 3 years before taro could again be reintroduced to the island ….*
>
> *Salt spray which is a major threat to agriculture in the outer islands (especially on the low-lying atolls of the Northern Group) is not such a big problem on Rarotonga where gardens are normally established on higher grounds. They impede crop growth and further reduce the amount of land available for crop production …*
>
> *Excessive rain has resulted in the loss of some once productive agriculture lands and the flooding of plantation areas. These areas when dried after the cyclones often become boggy and difficult to cultivate …*
>
> *According to the assessment carried out by the Atiutaki Department of Agriculture, it appears that other than fruit trees, crops such as root crops received minimal damage because they were too small. Fresh food shortages will be a problem taking into consideration the loss of bananas and pawpaws and the supplies of many fruit trees*
>
> *In Climate Change and Food Security in Pacific Island Countries - A case study in the Cook islands – FAO - 2008*

47 *In 2005 in the 2 months February and March, cyclones Meena, Nancy, Olaf, Percy, and Rae swept the country. Four of these cyclones reached the maximum category five rating causing massive damage to infrastructure and agriculture (Cyclone Recovery Committee 2006).*

48 *This amount is for recovery and reconstruction only and does not include any estimate for loss of employment or forgone tax revenue from the government in terms of income tax, corporate tax and VAT.*

2.9.3 Climate risk insurance

One major barrier to investment in agriculture sector development in the Cook Islands, is the high rate of risk of damage to capital equipment as a result of the frequency of natural disasters/cyclones.

In May 2011 the Cook Islands Disaster Emergency Trust Fund (CI DE-TF) was established and an amount of 200 thousand NZ$ was transferred from the Government's RTF[49] during the 2011-2012 financial year. In the budget 201/15 a further 100 thousand NZ$ has been earmarked. The purpose of the CI DE-TF is to enable a swift and coordinated response once a State of Emergency or Disaster is activated. The fund is limited to emergency response as typified by the following: deployment of Initial Damage Assessment team(s), reestablishment of essential services such as communications, power, health, water supplies, etc. The fund is not intended for longer-term recovery (rehabilitation and reconstruction) which comes into play once a Recovery Coordinator and Committee (RCC) has been appointed and a recovery plan is approved by Cabinet.

Cook Islands joined the Pacific Catastrophe Risk Insurance Pilot in 2013 to gain insurance coverage against earthquake, tsunami and tropical cyclone risk. This insurance scheme aims to provide a rapid injection of funds in the event of a major disaster, to help governments manage the immediate costs of recovery. The World Bank acts during this pilot as an intermediary between Pacific island countries and a group of reinsurance companies, which were selected through a competitive bidding process – Sompo Japan Insurance, Mitsui Sumitomo Insurance, Tokio Marine & Nichido Fire Insurance and Swiss Re. The Pacific Catastrophe Risk Insurance Pilot is part of the broader Pacific Disaster Risk Financing and Insurance (DRFI) program.

In order to provide greater security to investment in capital equipment, the government of Cook Islands should investigate the feasbility of establishing a public-private agricultural insurance facility. Given that the sector which commonly experiences the highest rate of

The Pacific Disaster Risk Financing and Insurance Program

The Pacific Disaster Risk Financing and Insurance Program builds on the Pacific Catastrophe Risk Assessment and Financing Initiative (PDRAFI). PCRAFI is a joint initiative between the Secretariat of the Pacific Community SPC, the World Bank, and the Asian Development Bank, with financial support from the Government of Japan and the Global Facility for Disaster Reduction and Recovery (GFDRR).

Development of Private Disaster Risk Insurance Markets

The domestic property catastrophe risk insurance markets are currently under-developed in the South Pacific. This activity assists in the design of disaster risk insurance products, both sovereign disaster risk insurance for governments and disaster micro-insurance for households and SMEs. It provides insurance companies and other financial institutions with technical assistance to design and to implement parametric (based on size of the event) disaster risk insurance mechanisms in the PICs.

Source: World Bank program overview , September 2011

[49] *The Cook Islands has a Reserve Trust Fund (RTF) which, as an ongoing policy, accrues 0.5 per cent of annual tax revenues. This fund may be called upon during a hazardous event. In the budget 2014-2015 , 515 thousands NZD$ is appropriated*

economic losses as a result of cyclones is the agricultural sector, utilizing these funds to establish a dedicated agricultural insurance fund could provide help facilitate greater investment in the sector. Insurance and government risk-sharing arrangements should increase a banks' level of comfort and enable them to increase their lending rates to the agricultural sector.

2.10 AGRICULTURAL WATER AND MANAGEMENT

Water is an essential agricultural input and its availability (in quantities and consistency over the cropping seasons) varies among the different Cook islands:

- As coral atolls, islands in the Northern Group are without surface water and dependent for supplies on the fragile fresh water lens which are subject to rapid depletion, salt intrusion and other pollution. Individual homes traditionally depend on rainwater stored in small containers.
- The volcanic islands of the Southern Group are well supplied with good quality drinking water and have no major problems during normal climatic conditions. On Rarotonga and Mangaia, the springs and streams within the catchment valleys provide a good source of agricultural water and these are already being tapped using filter bed intake systems. On Rarotonga, water is piped from the stream catchments into the main reticulation system, serving the majority of households (and their gardens).
- On other volcanic islands of the Southern Group, adequate underground aquifers and pumping facilities have been provided under the government's water development programmes..

Farming activities are usually concentrated in the foothill flatter areas and in or around depressions or around wetland areas. Crops are exposed to regular dry spells. Surface water catchment facilities exist but need to be rehabiliated or developed in order to intercept rain water and store it or infiltrate it as much as possible.

Appropriate water sources should also be explored for the provision of water, particularly on Rarotonga where treated, reticulated water may be more costly and redundant where there may be better and more appropriate sources available (that may include tank storage from rainfall capture or groundwater - bearing in mind that standards for such sources may require particular careful management practices).

Improved water management techniques (drip and farming systmes that favour consistent crop coverage of the soil together with mulching and use of compost) need to be developed and extended to farmers.

A national water policy is under preparation. This policy should provide the Government of the CKI with a comprehensive and consistent framework for managing water resources in a coordinated manner across all agencies and organizations with a responsibility for managing, supplying or monitoring water.

The agricultural sector is both one of the major water users (irrigation/drainage of crops, hydroponics, and watering of animals) and also one of the sectors directly impacting both the water quality (pollution and chemicals) and the overall water cycle (soil and water conservation practices). Agriculture is estimated to be the largest single sector user of water on Rarotonga with approximately 40% of water usage attributed to agricultural and horticultural practice. .

Many issues pertaining to water rights, land issues and allocation are complicated given the situation of customary land rights and ownership of water resources. Essentially water resources are not explicitly owned by any one person, or the State. In the absence legislation clarifying this situation, informed public input is necessary at various decision making levels, which will warrant and ensure that the management of the water resource is effective and efficient.

Developing and implementing measures for increasing awareness amongst the population, users and the land owners is a critical factor in educating people as to the scarce nature of water as a resource.

The national water policy under preparation is articulated around 9 objectives, of which the three following are directly related to agricultural activities:

Objective 1 - Reliable, potable water for all who reside in the Cook Islands and the establishment of standards for water quality and resource management.

- *Goal 1.1 - We will ensure all persons in the Cook Islands shall have access to reliable, safe and potable drinking water. - It is important to establish clear objectives regarding appropriate water quality and provision for domestic, commercial and agricultural use of water in the Cook Islands.*
- *Goal 1.4 - We will have adequate, appropriate and reliable water for horticultural and agricultural production - Users of water at each of these sites (householders or small farmers using bores or stream catchments) must ensure that water is protected from contamination; and will have to prepare policies or plans to ensure their practice is consistent with standards and will not threaten the quality or sustainability of sources for other users.*
- *Goal 1.5 - We will have Water catchment and intakes free of toxins and chemical contaminants so that water meets appropriate standards.*
- *Goal 1.6 - We will develop appropriate water quality standards for streams, rivers and creeks such that effluent and wastewater does not adversely and permanently affect the natural environment and native species of the Cook Islands.*
- *Goal 1.7 - We will ensure Ground water is free of chemical and artificial contaminants and free of harmful toxins that may affect organic life.*
- *Goal 1.8 - We will develop appropriate standards for lagoon water quality to ensure the preservation and proliferation of natural lagoon marine ecology.*

Water Quality Standards will identify our expectations for water quality, and management to ensure appropriate use will be identified in water safety plans; and these policy goals will have direct implications for land use management, solid and liquid waste management and will link to the NESAF and land management plans aiding to set goals around management of these areas.

Objective 3 - Sustainable management of both inland and coastal water resources.

Land-based activity is a significant factor that impacts on water quality. Therefore land development must be managed to avoid or minimise contamination or upsetting the natural balance and natural courses of water and water sources. Relevant agencies involved in the management of these areas of regulation must work in a cooperative and collaborative manner in developing and implementing plans and actions to effectively address issues in this area.

- *Goal 3.2 - We will manage Ground water resources so as to not adversely affect the surrounding ecology or the overall composition and ongoing sustainability of the water table.*
- *Goal 3.3 - We will manage naturally occurring rivers, streams, creeks or any water ways, temporal or permanent such that they will neither be disturbed nor diverted.*
  As with the management of groundwater, the management of water and streams is significantly impacted by the management of land.
- *Goal 3.4 - We will ensure any man-made diversions of or artificial water ways may not adversely affect the surrounding natural environment or the over-all balance of any part of the eco-system. In the development, management and maintenance of artificial waterways (drains, culverts, canals, etc.) it is important that they are effectively maintained and managed and this policy is enforced.*
- *Goal 3.5 - We will manage Wetlands and estuaries such that they will not be disturbed or filled in. In addition to this, any development or activities in wetland areas will not disturb the natural flow of the water cycle.*
- *Goal 3.6 We will manage all activities in lagoon areas or coastal zones such that they will not adversely harm the marine ecology.*
- *Goal 3.7 We will ensure maritime activities take all precautions to not pollute or harm the coastal area in which it is commuting through or where it is docked.*
  Most of these goals are directly related to land use management policies and practice.

Objective 5 - Equitable systems for controlling demand and appropriate usage, conserving water and minimising waste and leakages

Water conservation and the minimisation of usage and wastage are the key tenets under which the Cook Islands will endeavour to improve its management of resources.

Agricultural Practice

- *Goal 5.5 We will encourage and educate farmers and growers to utilise techniques that will minimise water use whilst maintaining or increasing crop productivity.*
- *Goal 5.6 We will explore and utilise the most appropriate water sources and storage methods for horticulture.*
  Research must be done in this area with farmers and government working hand in hand to find smarter and more appropriate solutions in the provision of water for the agricultural and horticultural activity throughout the country. Provisions for this should be part of the water infrastructure strategy.

2.11 CONCLUSIONS – AGRICULTURAL SECTOR IN AN AKARI

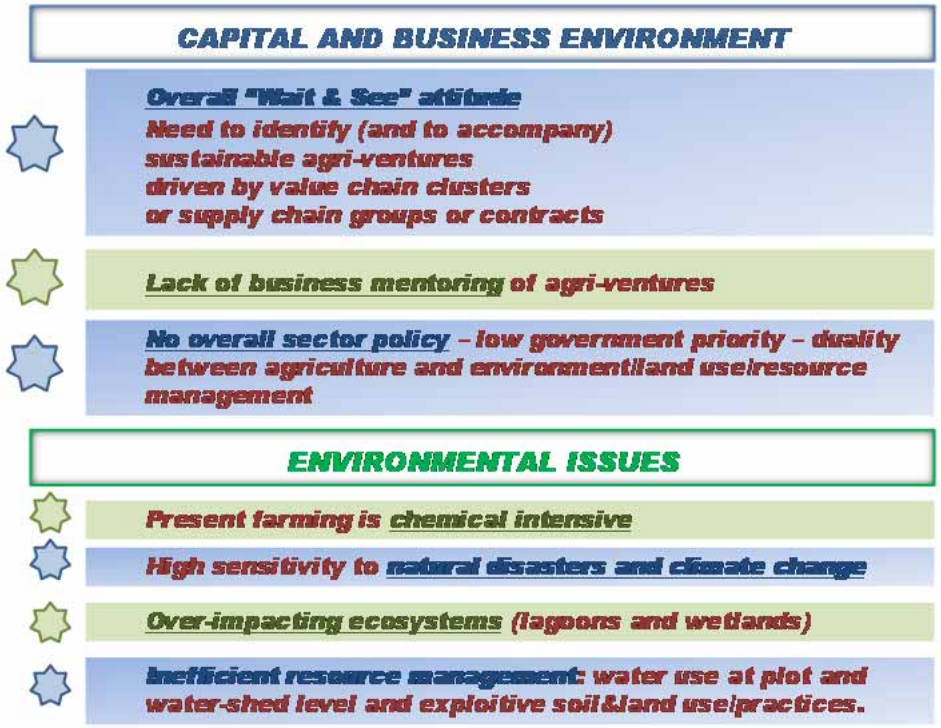
In an Akari, the agricultural sector in the Cook Islands presents a number of specific characteristics which are summed up in the following slide:

- Many smallholders (1275)
  Small size (80% farms have less than 2 acres)
  Few Commercial (31) and many part-time farm holdings (359)
- **Tree crops dominate** followed by roots crops and a small but significant vegetable sector
- **Important numbers of livestock**
  (Pork, Poultry, Goat) – little formal value adding
- **Importance of outer islands** (Aitutaki, Atiu & Mangaia) in both fruits, root crops and livestock
- **Reduced agricultural land area** (down from ±7000 in 1988 to ± 2000 now) – challenged by a fragmented land ownership and increased pressure on its use for tourist, economic and housing projects
- **Demographic paradigm** – aging population and out-migration of the younger (70% farmers are older than 40) – farming does not attract younger generation – old-fashion and not high-tec.

The recent performance of the sector is disappointing as illustrated in the following slide. It seems to be persistently focused on capturing export markets, whereas its internal food markets and opportunities are neglected, if not totally abandoned.

- FOOD SECURE but > 80 % imported
  CKI highly urbanized (72%) and high NCD risk
  Unhealthy diets
- **Agricultural exports down** to half a million NZ$
  Insufficient to balance the average yearly import bill of fertilizers and agricultural chemicals
  (± 700 thousand NZ$)
- Import substitution opportunities limited to Livestock (3.5 million NZ$), vegetables (1.1 million NZ$) and tropical fruits (0.13 million NZ$)
- LOCAL MARKETS fragmented and little local value adding ventures
  Local supply chains poorly formalised
  High opportunity to develop specific ventures with hospitality sector to promote consistent supplies
- LOCAL livestock sector totally abandoned
  Pork, poultry and eggs are now fully imported
  Thus underutilization of existing stocks

The agricultural sector is at present operating (see following slide) within a passive business environment and a more and more demanding environmental framework as its direct impact on the environment are far from negligible. There is a lot to be done to foster a better business environment and to implement more sustainable farming practices and systems.



So from here ?????

How to revitalize a sector driven by part-timers ?

Inconsistency of productions ?

Lack of strategic vision ?

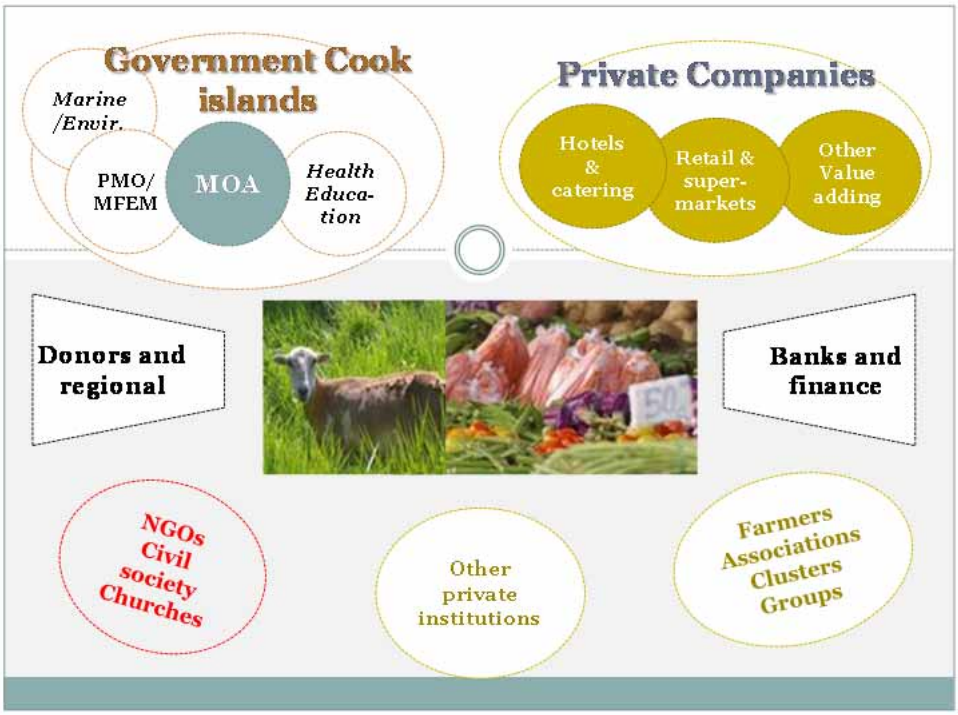
& Other constraining policy frameworks (trade, environment, water, land use....)

3. AGRICULTURE & FOOD STRATEGIC INTENT OR AFTER MDG VISION

To turn the sector round, it is important that all stakeholders (private and public stakeholders) agree on three major prerequisites:

- The first, which is conceptual, is that the agricultural sector is a little more complex than just production. ***Agriculture is more than just an economic earning sector producing primary inputs for others***. It is a sector where many other societal elements play major roles or interact. It concerns food, it concerns sustainable natural resources management and it concerns quality of island life.

  It requires a wide approach whereby other stakeholders need to come on board and interact with the farming community and the Ministry of Agriculture.



- The second, that will be developed in the subsequent sections, is that one needs to know and agree on what is expected from and for this important sector; or in other words "***What agriculture does Cook Islands want***".

  Before developing more detailed actions plans, policy frameworks and combining it all into a sectoral development plan, all stakeholders need to come together on a strategic intent, in a similar way as the tourism sector has done. This strategic intent or Vision will need to represent a long term perspective, as many elements of such a Vision will need time and energy to materialise. This in turn requires a wide national commitment involving the present legislature, but also the future ones.

Based on the field work, contacts and round tables organized in November 2014, a Vision, called after MDG, will be presented hereafter for discussion.

- The third derives from the simple finding that this is not the first attempt at revitalizing the sector. Several other missions and reports have all more or less highlighted the various challenges presented in the previous section. Suggestions forward have been made and the present vision has tried to expand on them. The major problem remains: (i) real and pragmatic commitment to support the sector's turn around by all stakeholders; and (ii) ***who will be in the driver's seat to impulse and mentor the implementation of the Vision.***

> *"A lot of the things happening today have made us continuously dependent on foreign inputs, whether it's agriculture or other things," says farmers' leader Teava Iro, who argues that there needs to be much more investment, otherwise the few farmers who remain risk being locked into a cycle of dependence.*
>
> ***"I think development is all about empowerment***
> ***and there's no middle ground.***
> ***Either you fund it properly or you don't bother at all."***
>
> *Extracts from The Guardian September 2, 2014*

It's a no-brainer really

So despite best efforts for over a decade, Pacific Resort at Muri is meeting only 16% - by value - of its food needs from local growers; local fishermen get about 7% of the food budget. On Aitutaki the percentages are slightly higher with the growers on 20% and the fishermen on 10%.

So out of an annual food bill of $1.2million about $300-thousand goes directly into the hands of local growers and fishermen, the rest goes offshore via local importers. Greg Stanaway the CEO of the Pacific Resort Hotel Group says he would really like to see far more product from locals. He says local foods are fresher and more nutritious. With greater and more regular supplies he would make a feature of the local food in the resorts restaurants…

There is huge potential for the fledging agriculture industry to supply fresh produce – including juices - to the local market, not just for the visitors, but to locals as well. And that by replacing a lot of the imported processed foods and things like soft drinks, the country would save overseas funds and end up with better health outcomes too by eating healthier tucker…

Ramping up local food production will provide jobs, better food and juices for the visitors and the locals, and much healthier outcomes for locals too. Healthier food, healthier outcomes, local food for tourists, fewer imports and jobs too – they all seem like no-brainers really…

Agriculture needs a 'champion' a leader, is there anyone waiting in the wings?

3.1 STRATEGIC INTENT

In view of the fact that the Cook Islands is faced with:

- Major imports of food, thus undermining the stability of its food security.
- High NCD exposure; in part due to prevailing unhealthy diets and the lack of physical activity engendered by increased urbanization.
- Serious negative impacts on its pristine environment by the present farming systems.
- The demographic paradigm and the lack of interest or younger generations in farming.
- Fragmented food and agricultural markets and value adding ventures.

A vision statement will thus need to focus on turning the sector round from a high-level chemical inputs farming system[50] and struggling against imported foods towards 'agro-ecological' driven farming systems geared mainly towards regaining the local markets and engaging with the future generations.

It is composed of four statements and addresses all stakeholders to come together and collaborate, as shown in the following slide:

It is also based on the overall commitments made by the Cook Islands in its various environmental and climate change programmes towards implementing 'sustainable agriculture'.

[50] *Based essentially on 'monoculture' plantations*

3.2 THE FOUR KEY ELEMENTS OF THE STRATEGIC INTENT

To implement the four key elements of the strategic intent or vision, a number of new approaches or major issues will need to guide the various objectives and activities that will form part of the future sector action plan(s).

3.2.1 Healthy soils & Healthy foods

Healthy soils and healthy foods are two key elements of the Vision that go hand in hand.

They both imply greater care to the way in which food is produced and processed. The starting point however lies in addressing the soils and the farming techniques. Usage of high rates of chemicals and fertilizers need to be brought under control and radically reduced, if not banned.

Agro-ecological farming practices and systems need to be pursued in the CKI with determination, as a major approach to fulfil the country's commitment in the Reef to

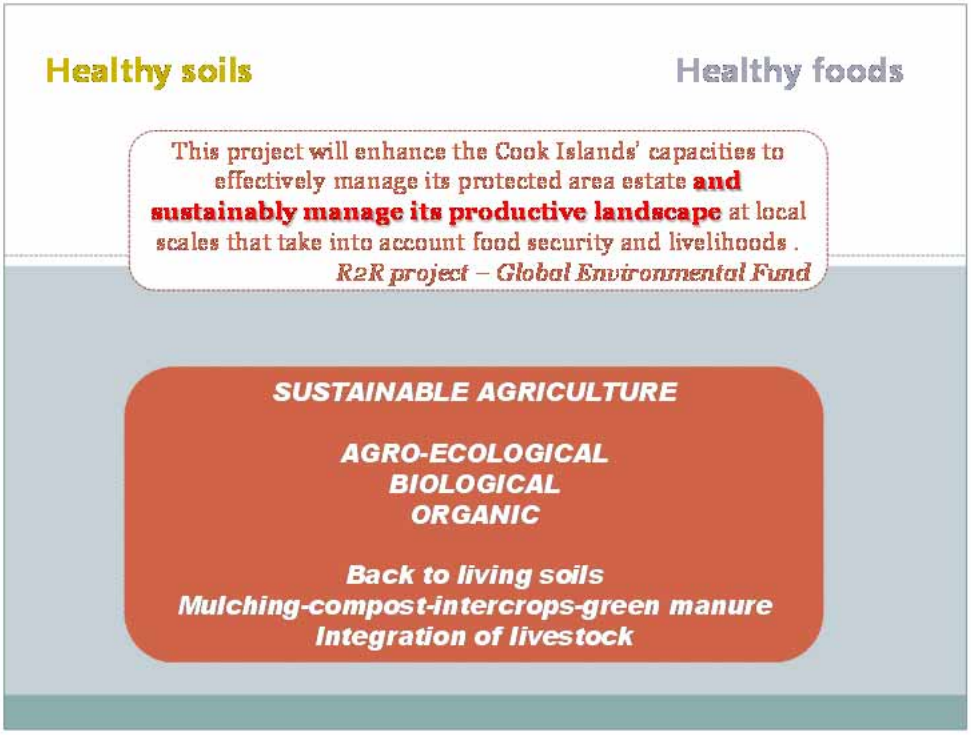
AGRO-ECOLOGY

Agro-ecology refers to a range of agronomic techniques, induding intercropping, the recycling of manure and food scraps into fertilizers, and agroforestry, that reduce the use of external inputs and maximize resource efficiency... It enhances soils productivity and protects the crops against pests by relying on the natural environment such as beneficial trees, plants, animals and insects,… Diverse farming systems contribute to more diverse diets for the communities that produce their own food, thus improving nutrition….

Olivier de Schutter, former UN Special Rapporteur on the right to food

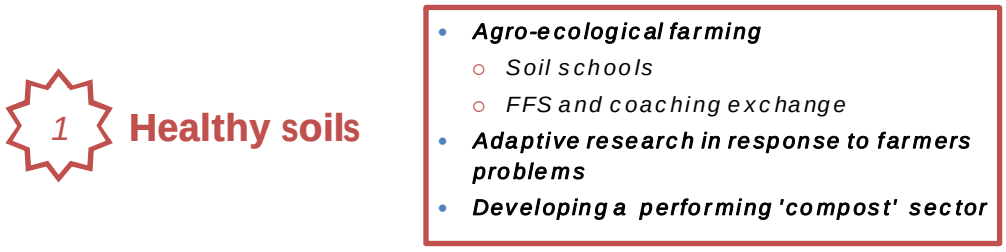
It is also an approach that generates a higher overall productivity (at farm rather than crop level) through a diverse range of agricultural products and environmental services, which reduce risks of crop failure in the long term. It is concerned with farming systems.

In Agroecology - What it is and what it has to offer – Laura Silici –IIED Issue Paper - June 2014



Ridge GEF programme of "***sustainably managing its productive landscape***".

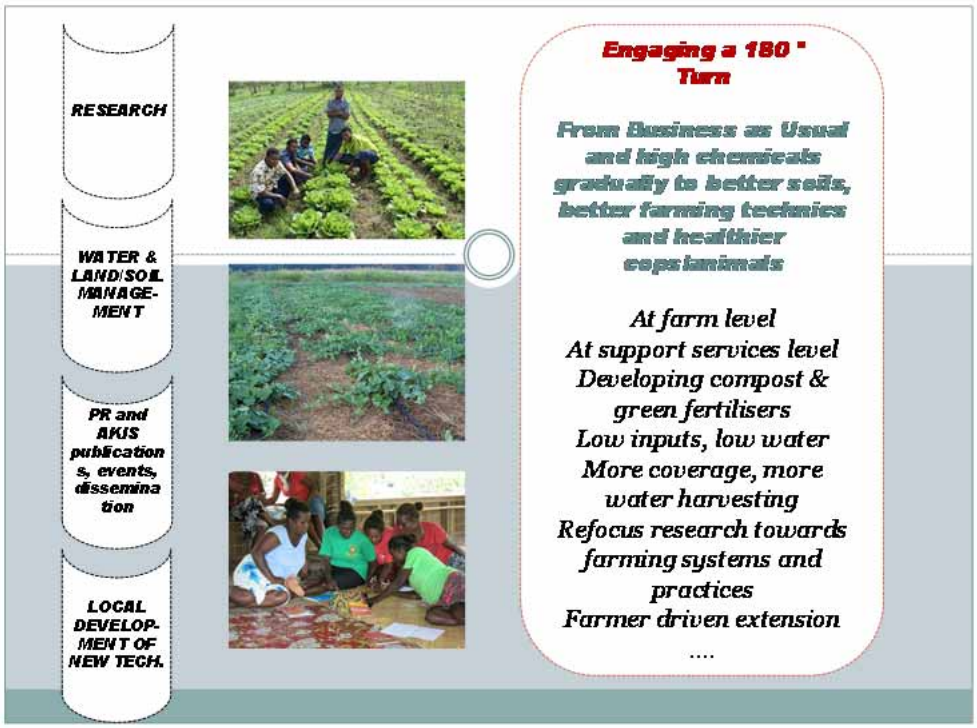
Agro-ecology is an integrated approach whereby more attention is paid to diversified cropping systems and-or integrated crops-livestock systems.



More extension and adaptive research focused on developing and promoting such approaches will need to be part of the Vision. CKI has already started with activities that have contributed to the awareness raising of the existing soil conditions and the possibilities of integrated pest management through soil schools and farmers' field schools.

In Titikaveka the TGA has been engaged since a couple of years, with the initial support (now completed) of NZAID and ARDA in composting of green waste from the Muri area. In Arorangi, Baker Tree Services (BTS) produces basic shredded mulch from its own green waste which farmers collect for mulching their fields.

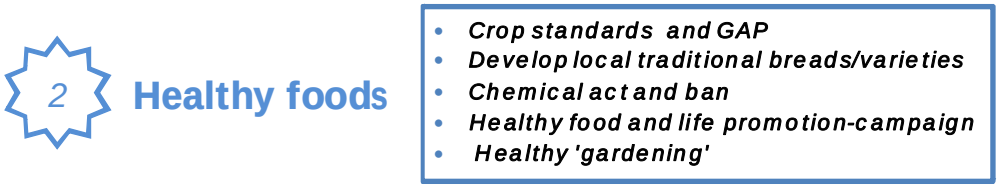
There is however very little adaptive on-farm research/extension going on at present in the CKI; most agricultural research being focused on varieties and single crops. Neither TGA nor BTS have enjoyed regular technical support that would have enabled them to strengthen their operations and to develop a strong compost sector in the Country. With the present abandonment of the livestock sector, the compost sector is losing one of its major local inputs.



The major challenge of the agricultural producers will be to negotiate this 180° turn around. Specific mixes of crops, intercropping and rotations, combined agro-forestry and composting techniques (and formulas) all need to be developed and extended. Improving soil health and quality will imply overall improvements in soil coverage (mulching) which in turn will lead to improved water management and if drip irrigation and other modern shading techniques (shade-houses,…) are promoted will further improve the effectiveness of these modern and more costly techniques.

Agro-ecology is a knowledge intensive farming approach, as it implies constant observation and interactions with networks of other practitioners.

Local organic farming trials are on-going on some individual farms, but still need mentoring and observation in order to contribute significantly to this turn around. All these initiatives require support; continued coaching and the development (and agreement) on a number of crop standards and-or Good Agricultural Practices (GAP). These in turn should enable both producers (commercial or part-time farmers) to eventually receive a "differentiated" price for their crop according to their GAP or standard; and consumers to be able to access and buy produce that they 'can trust'.



To develop these standards will require stakeholders to come together and engage in a Participatory Guarantee System's (PGS) approach. This PGS approach has been developed with the support of SPC in various other countries and has facilitated access to small loans and credit in the Sigatoka Valley in Fiji.

PGS aims to provide a credible guarantee to consumers seeking quality produce through direct participation of farmers and consumers/buyers in the guarantee process. Together they define transparent, systemised decision-making processes sharing the responsibility for the guarantee and to verify that farmers are consistently maintaining the standards. Trust is created through open information and peer reviews. PGS involve less formal certification and is more flexible to producers' and consumers' needs/expectations.

Supporting the emergence of an agro-ecological farming model, will need to proceed hand in hand with a more effective implementation of the chemical act and with water quality standards (and levels of polluting agents in rivers, sources, water tables and marine areas), when they will have been defined in the national water strategy. This will require a transitional period during which restrictions[51] will need to be gradually introduced in addition to a number of front-up bans (especially in the field of some agri-chemicals).

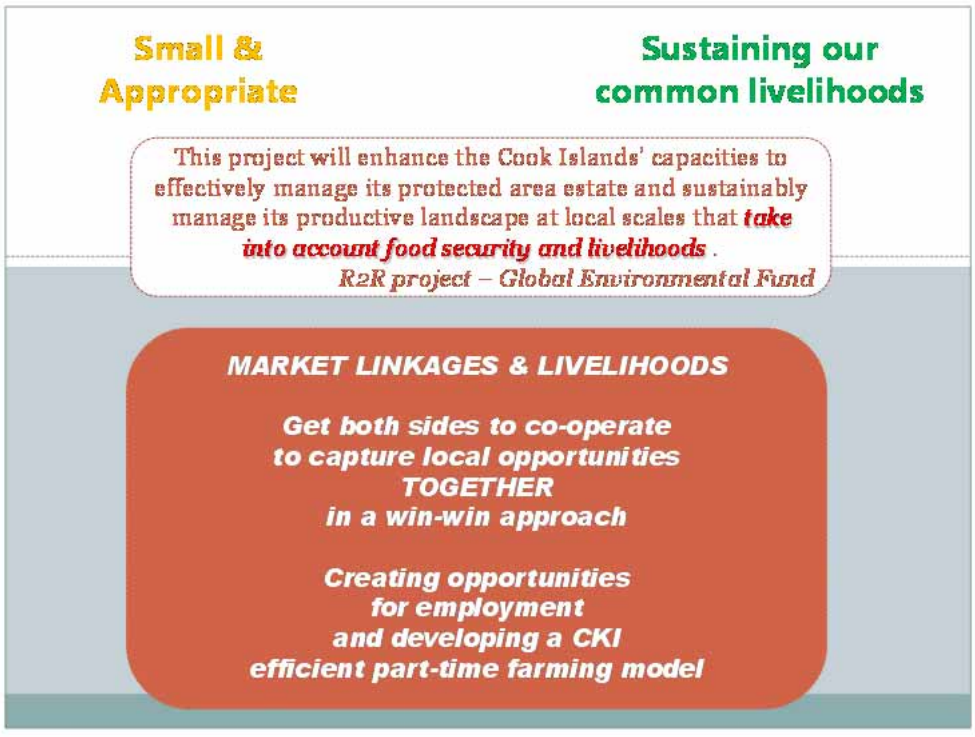
[51] *Or construction layout standards for livestock, composting and other agricultural value adding/grading/storing activities that minimize water run-off and direct infiltration of manure, juices, or wastes.*

Ensuring Healthy foods implies in addition to the standard food safety procedures in relation to collecting, processing, preparing and distributing food products and the definition of the abovementioned GAP or crop standards, the promotion of healthy diets and eating habits. This will require working on:

- Promoting specific NCD less risky diets and highlighting the benefits of a number of traditional products and diets.
- Conducting joint campaigns on healthy foods and NCD avoidance together with a number of civil society associations.
- Reintroducing a number of traditional crops/livestock breads in the framing systems and ensuring that appropriate seeds and seedling techniques are available to farmers/groups.
- 'Extending' agricultural extension beyond the group of commercial and 'selling' farmers' in order to encompass small 'hobby' or 'household' gardeners and to improve on simple gardening or box gardening techniques (equally promoting low-input gardening)
- 'Extending' agricultural extension to schools (using the FFS approach with some teachers) in order to convey both agro-ecological farming approaches and healthy diets and quality of life to the students.

3.2.2 Small and local & Sustaining the cook islanders livelihoods

Ensuring that the engagement with healthy soils and healthy food is sustained in the long-run requires a concomitant engagement to fulfil the second part of country's commitment in the Reef to Ridge GEF programme of "***taking into account food security and livelihoods***".



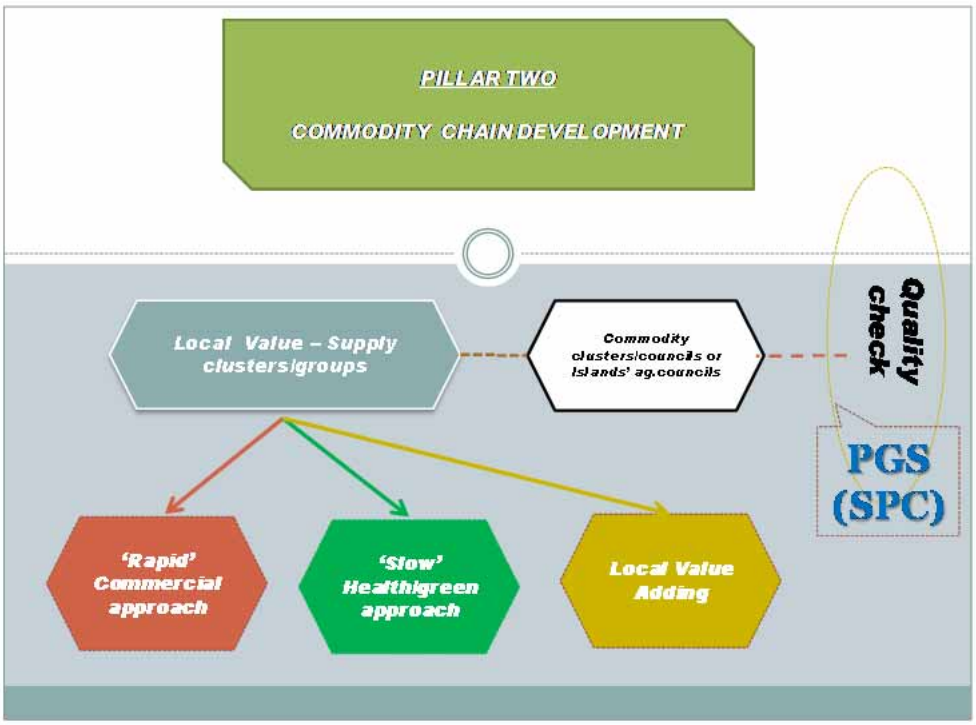
This further widens the group of stakeholders, as it involves the 'what to do with the agro-ecological products' and 'the longer-term sustainability' of the entire sector and this in turn points back to its interrelations with its surroundings (both physical and cultural). It concerns value chains or supply chains on the one hand, integrated watershed/land management on the other hand; and involving and addressing all generations (present and future).

The CKI's food security is, as shown in section 2.1, clearly unbalanced and open to external shocks; as more than 80% of food items are imported. This is further compounded by the importance of the 'western' type diet that neglects the use of local crops, the importance of the service sector and urbanization and the tourist developments, that tend to replicate their main clients' food habits. The CKI has nevertheless a number of major food assets that it needs to develop.

Food security is a big issue for countries around the world. That's why Chinese entrepreneurs are buying up dairy farms in New Zealand so they can lock in a source of dairy products into the future. It doesn't seem such a big issue in Rarotonga when all the fruit trees are loaded, the fishermen are still catching fish and there are plenty of little pigs growing up ready for the umu.

Present agricultural markets' fragmentation needs to be addressed and the prevailing "wait and see attitude" between producers and consumers/buyers changed. Both sides are partners to common value or supply chains; this is a simple concept acknowledged by all; but it is only when effective groups or clusters within these chains come together to develop common win-win operations, that sufficient impulse can be given to ensure consistency in supplies (both quantity and quality); but also sustained and fair revenues to producers. (see boxes on following page)

The level of organisation of such clustering needs to be driven from local to top, i.e. by in initiating a number of small groups/clusters around either one crop or one supply (contract)



The cluster approach

This approach, extensively used with SME and knowledge and innovation policies, is based on the following notions:

- *"A cluster is a **geographical proximate group of interconnected companies** and associated institutions in a particular field, linked by commonalities and externalities".*
- ***Cluster members or constituents***

  Cluster members or better "constituents" often include firms in downstream industries (that is, channels or customers); producers of complementary products; specialized infrastructure providers; government and other institutions providing specialized training, education, information, research and technical support. Finally, many clusters include trade associations and other collective private sector bodies that support cluster members." (Michael E. Porter, On Competition, Harvard Business Press, 1998, p.215-216)

Implementing a "cluster" approach is thus a very relevant approach when dealing with value or commodity chains, as all actors at one or other level in the chain are dependent on what other can or do not do. The aim is basically to create and emulate a win-win attitude in the cluster group, and eventually try and address imbalances between the various actors. Commodity chain can be therefore seen from two different angles: (i) the production one (imbalanced towards producers), often favoured by the Ministries of Agriculture; and (ii) the process-market driven one (imbalanced towards processing, meeting markets), often favoured by the SME development agencies. It is thus essential that the cluster membership reflects all levels of the value or commodity chain.

In Guyana – MTE – Agricultural Export Diversification Program (ADP) – IADB - 2012

Jamaica Sandals Resorts - success in sourcing local food from farmers

The Sandals Group is a large all-inclusive resort chain with properties in Jamaica, Bahamas, St. Lucia and Antigua. Their approach to developing agricultural supply linkages has been quite distinctive, going beyond just increasing their own demand for local products.

Sandals' Farmer Program in Jamaica began in 1996, with the aim of developing good working relationships between farmers and hotels by improving the quality of produce, developing proper pricing arrangements, and improving communications between farmers and hotels. Thus the initiative works across supply, demand and marketing. Key elements of the approach include:

- ✓ *A farmer extension officer, funded by Sandals, who works directly with farmers on improving production.*
- ✓ *Collaboration with various other organizations, particularly on agricultural support, including the Rural Agricultural Development Authority (RADA) and Continuing Education Program in Agricultural Technology (CEPAT).*
- ✓ *Hotel management staff visit farmers, holding and attending workshop days with them to discuss quality and marketing procedures. Farmers visit the hotels to see how their products are being utilized and why Sandals' specifications are important.*
- ✓ *A focus on improving pricing and contractual arrangements concerning volumes to be traded.*

Problems have also been encountered. The initial problems for farmers were a) problems relating to production (e.g. lack of water supply; lack of packing material); and b) problems relating to sale of the produce (e.g. inconsistent supply orders; lack of communication). RADA played an active part in ensuring that the communication lines were active and the hotels were being informed two weeks before the delivery date as to what crops and volumes are available, thus guaranteeing supplies to the hotels while informing the farmers of demand in due time. In addition, a list of types, volumes and delivery prices of produce was agreed to by individual hotels and the respective farmer groups. This corresponded to a monthly supply order. Despite initial problems, progress has been made. The project began with ten farmers supplying two hotels, but increased to involve 80 farmers across the island; and sales rose from US$60,000 to $3.3 million within three years. Farmers' income increased and became more reliable, while hotels have gained from a wider variety of good quality local produce and cost savings. The program subsequently expanded to St Lucia and Antigua.

Source: Pro-Poor Tourism, Brief No 3, ODI, UK

and in due time federating local cluster initiatives to develop and share a number of services; such as gradually testing and developing a common quality system, based on pooling needs and quality responses through participating clusters. Top-down clustering does often not work, as it then becomes similar to the 'opportunity' associations that come together to benefit from an equipment or instant market opportunity.

Small & Appropriate

- *No wonder crop - no wonder industry*
- *Supporting local business in VC-Adding*
- *Priority to local markets (Tourism, local markets, ...)*
- *Involving outer islands as partners*
- *Revitalize livetsock through local quality labeled products*
- *Favouring ad-hoc economic/financial environments*

In line with the healthy soil and healthy food approach, there are at present three possible major lines of value-supply chain promotion in the CKI: (See more detailed slides in Appendix 6)

4. **The 'rapid commercial' clusters** – which are driven directly as supply chains through contract agreements combined with co-investment (either through knowledge sharing-(adaptive research/extension) build up, or through direct coaching or providing mentoring services, or through specific other investments (casings, bags, grading,…) between a number of local producers (at village or area level, individually or as a group/association) and one or several buyers (hospitality and-or retailers).
   There are at present in the CKI a number of pilot operations, such as the operational framework between TGA and Pacific Resorts or the recently started operational framework between the Atiutaki Fruit farm, Air Rarotonga Atiutaki one day tour and the Manea Nui Plantations in Rarotonga.

Linking farm to tables in Somoa

*In 2012, the Poutasi Development Trust (PDT), in partnership with the Tindall Foundation and VSA, established **Poutasi Gardens**. The Gardens currently supply over 20 restaurants and resorts with fresh locally grown produce. After three years the Poutasi Gardens now employs five full time workers, four of whom are women, including the team leader. The Gardens buy produce from more than 10 local families and sell to its customers. Seventy per cent of all income from the Gardens project is paid directly to people in the district. 10,000 tala (around NZ $5,000) now goes back into the community each month, allowing the community to support a preschool for 25 children and the Poutasi Arts Centre for local artisans to make and sell their products. The project has also trained 20 village members in intensive horticulture and garden staff are now managing many aspects of the garden independently.*

5. **The 'slow health-green' clusters** – which would aim at facilitating short circuit deliveries and focus more on promoting 'healthy foods-diets' within the local communities and residents. This approach would need to be implemented gradually as it first needs to build trust relationships and traditional/improved diets/cuisine using existing or traditional crops (vegetables, roots, fruits, fish, livestock etc) will need to de identify and redesigned. It can be implemented either through one producer for a group

Linking farm to tables in Somoa - *continued*

***Samoa's Farm to Table scheme**, run by Women in Business Development Inc (WIBDI), has been operating since November 2013, and while its aim – connecting family farmers to the tourism industry - may sound simple, in Samoa it means creating a whole supply chain. At present 20 family farmers are supplying 10 restaurants and three hotels. Almost all farmers in Samoa can be considered 'family farmers'. Many are 'pre-business': few have bank accounts, keep business records or understand supply agreements. So for WIBDI, success involves many things: doing hands-on marketing, restaurant liaison, produce grading and delivery, invoicing, and even chef training. Supplying just 13 outlets, Farm to Table is, for now, being kept deliberately small so that it can be evaluated and adapted.*

of consumers. It can also combine a group of producers and aim at consumers or specific social groups (as schools, elderly, …)

In CKI, adapting such a model might be an interesting way forward to strengthen a number of part-time farmers (subsistence selling part of their crop). Various initiatives exist elsewhere and are often referred to as 'home vegetable/fruit boxes or baskets'; most of these short circuits initiatives originate from the 1960 Teikei groups in Japan.

The Teikei groups in Japan

*The origin of the Community Supported Agriculture (CSA) concept, the partnership between consumers and farmers, can be traced to Japan in the mid-1960s. Homemakers began noticing an increase in imported foods, the consistent loss of farmland to development, and the migration of farmers to the cities. In 1965, a group of women approached a local farm family with an idea to address these issues and provide their families with fresh fruits and vegetables. **The farmers agreed to provide produce if multiple families made a commitment to support the farm**.*

*A contract was drawn and the "*teikei*" concept was born, which translated literally means partnership, but philosophically means "food with the farmer's face on it." Clubs operating under the teikei concept in Japan today serve thousands of people sharing the harvest of hundreds of farmers. This concept is based on a number of criteria:*

- *Production has to be agro-ecologically sound, i.e. farms/gardens need to grow different items together with some livestock, using compost and livestock manure for fertilizer and seeds and local livestock feed.*
- *Size needs of units needs to be small and consistent with the importance of the groups, in a sense the entire groups belongs to one big family.*
- *Consumers help producers as a farming experience and need to visit their producers to share their problems and eventually lend a hand and help.*
- *Simplification of crop grading/selection and packing. Producers have to carry out minimal grading; big or small, with or without mud on them.*
- *Self-distribution is the rule as delivery is made by themselves, producer or consumer. The producer will know who will eat their produce and the consumer will know who takes care of it. "Teikei" stands on the friendly relationship between producers and consumers.*
- *Reform in diet, challenging and changing the consumers' diet and ways of shopping. This often goes to pair appropriate recipes to consume all of the produce: "from root to leaf", The selection of crops and recipes are adjusted to seasonal changes and exploiting whatever crops each season offers in a natural way to maximize nutritious value, avoiding products artificially grown out of season.*
- *Prices are set with an agreement on both sides through a direct negotiation. "Producers should be regardful of consumers' diet and health, and consumers are regardful of producers' livelihood."*

6. **The value adding clusters** - which are more process oriented and require incorporating more complex procedures as the end product is a processed quality food (that has a significant shelf live) and not so much a fresh primary product that will be consumed rapidly. Adding value can also be a way of reducing volumes and transport costs and accessing higher value end products. These clusters are usually difficult to set-up as they often involve a strong technical partner (who has the markets and the technical skills to control the value chain) and a large amount of producers and stringent quality control or grading procedures. But just like any cluster, it remains a question of developing a win-win chain assessment and a shared vision to reinvest in the value chain that drives the value adding. In view of the few existing overseas' markets for value added products, in the short term, thinking local market and local hospitality sector might be a strong starting point.

Dried Bananas – Women in Development (Samoa)

*A special partnership between WIBDI, Oxfam and All Good Bananas is bringing Samoan **Organic Dried Banana Chunks** to New Zealand. Oxfam has been working with WIBDI for over ten years now, helping to identify opportunities for income generation and job creation at the village level. WIBDI is currently working with over 250 small-scale farmers growing organically certified misiluki bananas in Samoa. Exporting dried bananas will provide these famers with a vital new income opportunity. As well as being good for the growers, there are plenty of great reasons for eating organic dried banana chunks. Misiluki bananas are naturally sweeter, which means that nothing else needs to be added – no preservatives, no sugar, no sweetener; just organic, naturally dried bananas.*

Existing export opportunities such as Organic Noni Juice to China need of course to continue, but a stronger diversified market, strategy combined with re-injecting revenues into the value chain (research, seedling production, intercropping, etc).

Organic Noni Juice

Extracts of Brad's Case study ???

Value adding clusters may of course combine a number of operations, as the papaya value/tropical fruits chain can illustrate. CKI papaya have for years been primarily either consumed locally with little local processing or exported mainly to New Zealand. The latter has drastically decreased in volume and faces strong competition from other papaya industries in the Pacific, such as Fiji through its Natures' ways cooperative. One of the major constraints to exports is the need for HFTA treatments, which is technically sensitive and costly and for air freighting.

Turned away crop has at present but little alternatives to a differentiated price (value added juice or jams or chutneys…) and the local 'export' market (the hospitality sector) is not seen as the major 'export market' by the various actors and thus undersupplied by local crops. Papaya remains a major CKI crop and it would need to come together as a value chain, and not just as a producers cum exporters chain and gradually develop and offer other options to the papaya crop in the CKI.

The papaya sector also needs to investigate the various alternative production systems and gradually move towards a more diversified organic/agro-ecological production system. Adaptive research and investing within the value chain needs to be stimulated by the various stakeholders, once again highlighting the need for reinvesting proceeds from sales in the value chain.

The Fiji Natures' ways cooperative has been able to mobilize its members and has therefore been in a position to enjoy regular co-funding from the Government and other FTP to provide its own internal extension services, its own adaptive research and seedling production and interacting with the bio-security agency in Fiji.

Eventual Livestock cluster(s)

There are a number of possible livestock cluster that could be supported and gradually mentored to some form of long-term sustainability. They would however need to be based on a quality product (small piglets, special hams, cuts, …) and-or a specific local production technique (appropriate use of local feeds and husbandry). These clusters would have to address in addition the selection (and improvement) of local breeds the support to ensure proper animal health support services.

One way forward would be to take example on the poultry and egg sector in Fiji, where one of the major producers, operates with a number of smaller out-growers. Establishing a cluster run (or cluster shared) hatching facility, which requires adequate technological skills, could serve as an incentive to a number of out-growers, members of the cluster and the group in turn could market together either the eggs or live animals, and gradually move further up the value chain, to prepare or market specific CKI products.

Goats are mostly present on one island; and coming together in a cluster could in due time drive this sub-sector to be more effective in supplying Rarotonga. Pigs of course with the hospitality sector interested in umu piglets or pigs for BBQ, this again could be the starting point of revitalizing a local pig sector, based on developing small local cluster activities leading to the re-establishment of a number of local meat processing ventures.

CKI needs to give support to this clustering of agricultural/food sector by initiating specific support tools (TA for establishment, mentoring and coaching during the various stages of cluster development, specific financial/macro-economic packages to

accompany the scaling up phase of a number of selected 'viable' priority clusters, close monitoring and the provision of wider framework kind support such as combined involvement of health/tertiary education/agriculture/civil society/tourism council in

Sustaining our common livelihoods

- ***Develop alliances with environmental programmes highlight agriculture's positive 'agro-ecological' impacts both by reducing pollution and improved resources management***
- ***Building bridges between stakeholders and generations through specific initiatives in tertiary education and ad-hoc market outlets***

accompanying the development of these clusters)

Sustaining common livelihoods will be a direct consequence of the above small and appropriate clustering endeavours, but it will also need to draw on a series of mutual reinforcing initiatives:

- ⇨ By resolutely opting for a 180° turn in farming practices and focusing more on agro-ecologically sound farming techniques, the various clusters will have to be open and engage with for the various environmental programmes and projects planned and on-going in the CKI.

  These projects in turn will also need to interact with the various clustered groups in order to raise their awareness of the "landscape" the cluster is operating in and the various impacts that need to be gradually mitigated together. The two will need to collaborate as the core of the clusters' activities will most often be in the buffer zones around the various reserves or protected areas.

  This will also require a 180° turn from the various environmental agencies that have a tendency to consider agriculture as a damaging activity and not as a sector that can provide environmental services in addition and in combination with environmentally friendly productive activities.

  Sustainable agriculture is often a major theme in these various projects and can be effectively implemented if small grants from these various programmes can be mobilised to support combined actions and appropriate mitigation plans (inclusive of improved soil & water management) developed together with the clusters.

- ⇨ Trying to address the demographic paradigm through cluster specific private-public partnerships. These specific PPP could build on the present tertiary education/ apprenti-ceship framework being implemented by the Government through the Cook Islands Tertiary Training Institute.

Cook Islands Tertiary Training Institute Apprenticeship Programme

CITTI's Apprenticeship Programme will provide a 1 year wage subsidy of up to 50% of the gross hourly rate paid by the employer (host company) up to a maximum of $6500.00 per annum.

Employers (host company) will be required to enter into a training agreement with the Cook Islands Tertiary Training Institute and the Apprentice. Employers must provide a minimum of 25 hours per week of relevant employment at their premises.

Who is eligible for the incentive ?

- *People seeking work and enrolling in Cook Islands Tertiary Training Institute programmes of study.*
- *People engaged in work under a contract of employment and looking to enrol in a Cook Islands Tertiary Training Institute programme of study and not engaged in formal training with any other training provider*

This apprenticeship programme could eventually include a special funding window for special agro-apprenticeship agreements with a specific cluster. These cluster-agreements would concern a number of part-time employees or young unemployed that would have an apprenticeship type contract with the lead partner of a cluster.

The apprenticeship contract would include part-time service work (direct income earner) and part-time farming activities. The apprenticeship would be concluded for a minimum of three years during which CITTI (thus also enabling a kind of certification), MOA or another technical agency such as VSA for example or the mentoring programme of the Chamber of Commerce and the cluster lead partner would assist the apprentices to established themselves as full fledge agro-operators. (The package would be developed in such a manner as to promote farming as a business or an agro-operation).

In due time this specific apprenticeship could build on the various school garden initiatives undertaken in some secondary schools and from which specific students coulds eventually opt for this kind of apprenticeship.

3.3 CONSISTENCY OF THE AFTER MDG VISION

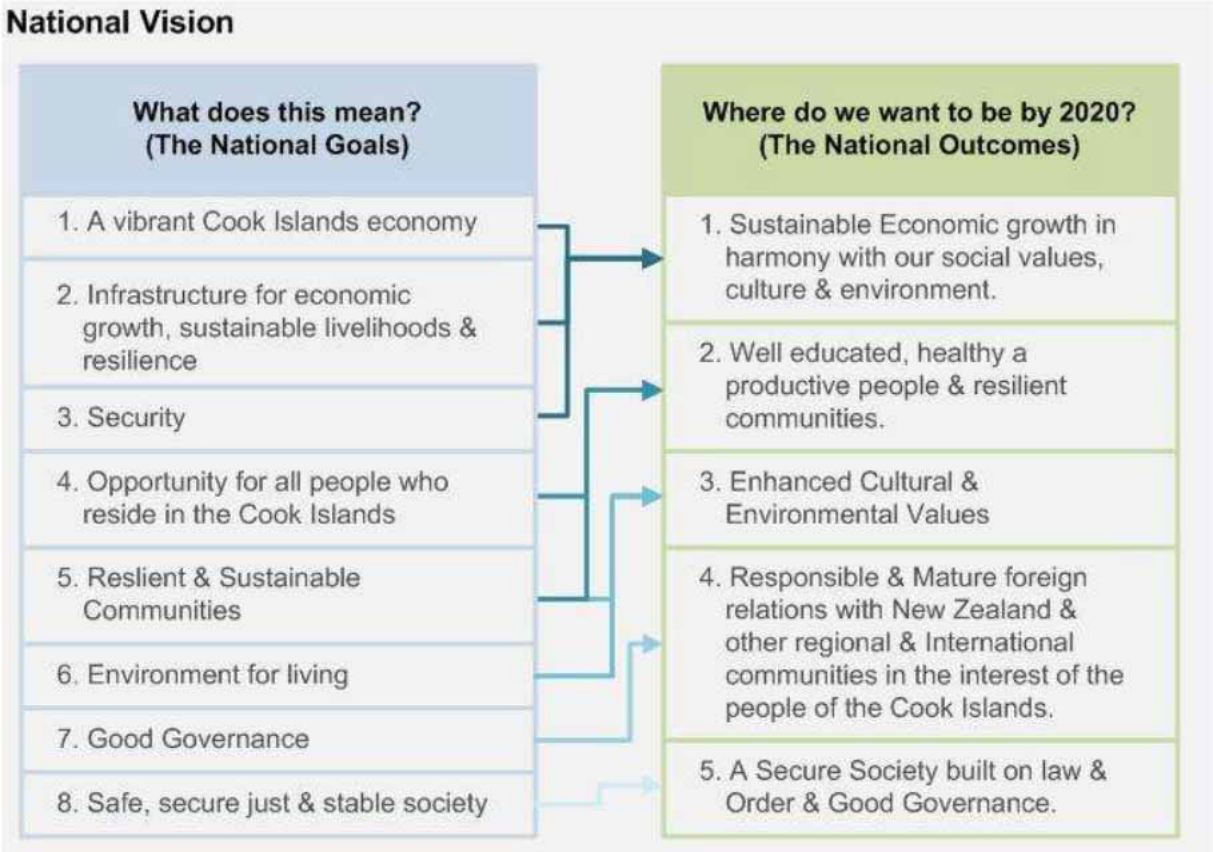
3.3.1 Consistency with other major national policies

In 2007 the Cook Islands launched a 2020 visionary framework - Te Kaveinga Nui, articulating its National Vision and Development Outcomes to be realised through a three phase medium term planning approach.

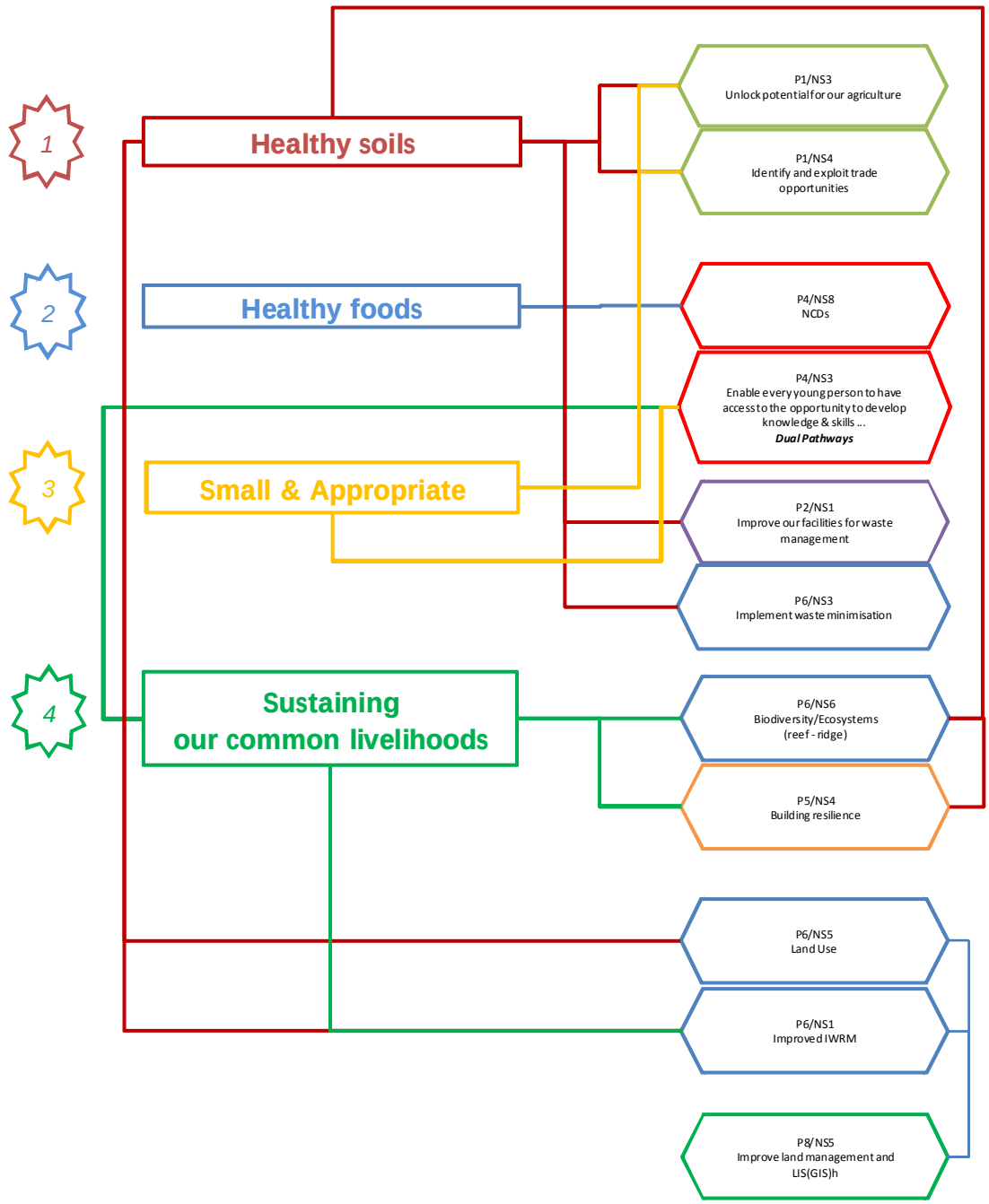
The national vision statement is:

> ***"To enjoy the highest quality of life consistent with the aspirations of our people in harmony with our culture and environment" or***
> ***"Te oraanga tu rangatira kia tau ki te anoano o te iti tangata, e kia tau ki ta tatou peu Maori e te aotini taporoporoia o te basileia"***

2015 sees the completion of the second leg of this journey and the start of its last leg. It is built on eight overarching national goals as shown in the figure hereafter.



The after MDG vision for the agriculture/food with its four major focus areas is consistent with this national vision or the National Sustainable Development Plan (NSDP) as it is widely known. The MDG vision for the agriculture sector is however defined as larger than just being a part of the National Goal One 'A vibrant CKI economy'. The MDG vision sees the sector as a crossroads or cross-cutting sector where production of food, local economy, livelihoods, health and diets, education, management of natural resources all interact as is illustrated in the following graph[52]:



52 *References in the graph are as follows:*
P = Priority area (or National goal)
NS= national strategy to be pursued under the 2010-2015 step

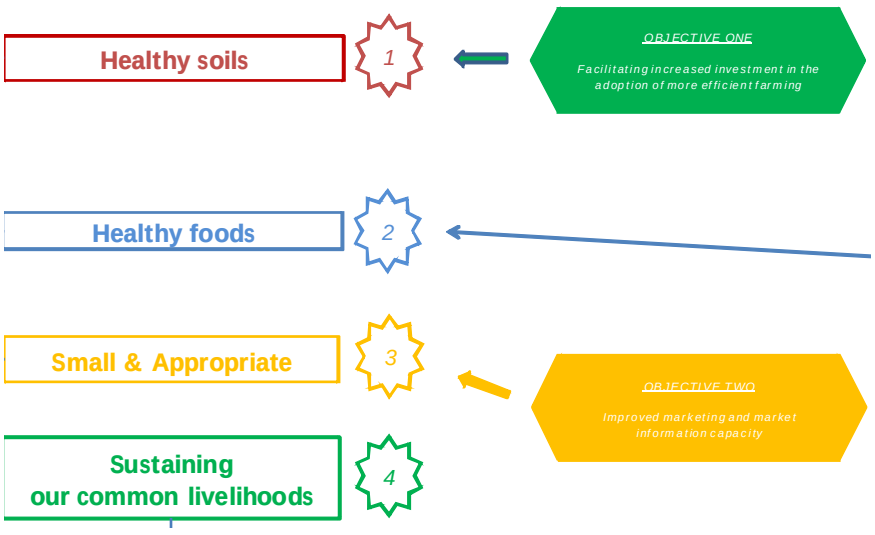
During the preparation of the after MDG Vision for the agricultural/sector, a number of other policies and sector plans were still in their own process of discussion and finalisation. Major orientations of these policies and sector plans have been taken on board and it will be essential that during the finalisation of the agricultural/food sector action plan, all these documents are crosscut and interwoven in such a way as to be mutually supportive:

- The outer islands devolution policy and the various outer island development plans and agricultural opportunities
- Non Communicable Diseases policy
- The Education policy and more particularly its apprenticeship and tertiary education elements
- The labour policy
- The land use policy

3.3.2 Consistency with the recommendations of the previous FAO report

The previous FAO mission's report[53] focussed mainly on: "Linking farmers to markets: Realizing opportunities for locally produced food on domestic and tourist markets in Cook Islands". It made 16 practical/general recommendations under three overarching objectives: (i) facilitating increased investment in the adoption of more efficient farming; (ii) improved marketing and market information capacity; and (iii) improved co-ordination of policy and regulatory framework. The major drive behind the report was to facilitate investment in the sector and to highlight a number of policy or macro-economic framework issues that needed addressing. The document presented a first picture of where the agriculture/food sector in the CKI could be heading to.

The after MDG vision tries to explore a number of options and to provide a wider and more overarching framework. The consistency with the FAO proposals is highlighted in the opposite graph. Only two objectives overlap in part with the after MDG vision. Healthy foods and the need to focus more on quality and agro-ecological farming are not addressed as such, but are clearly underpinning the overall thrust of the previous FAO document. Most recommendations do in fact pertain to the overall business and investment environment facilitation. They are in fact relating more to the "how of things" than to



[53] *Conducted in March 2014.*

"what things need to be encouraged".

The various recommendations have thus been re-organised in Appendix 5 according to the four pillars of the Vision. In this appendix, at least 10 recommendations have been regrouped under the third objective that intends to address the overall policy and economic framework.

As will be shown in the draft template for the agricultural/food action plan (see chapter four hereafter), most of these recommendations are very relevant and will need to be more pragmatically defined in order to clearly and pragmatically address the various areas of intervention that will be outlined with all stakeholders as being part of the 2015-2020 action plan and beyond.

3.4 DRIVING THE VISION TOWARDS A PRAGMATIC ACTION PLAN

During the various discussions, face to face interviews and round tables conducted during the November 2014 field work, a major and recurrent concern of all has been "who will be the driver" or as a previous box concludes "***Agriculture needs a 'champion' a leader, is there anyone waiting in the wings?".***

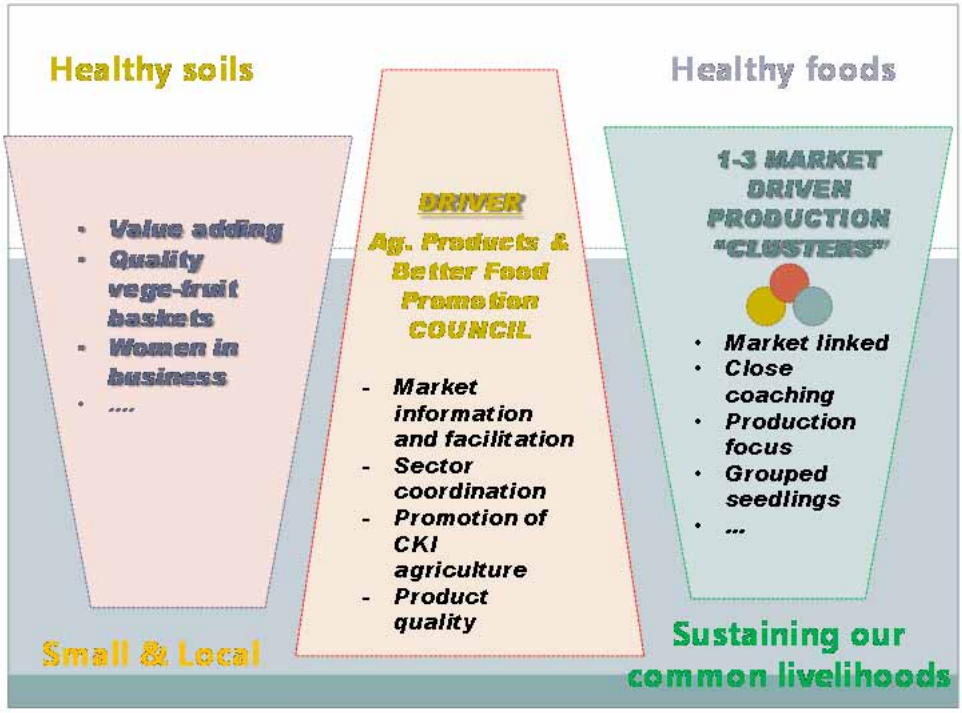
As already mentioned the sector is wider than just economic issues of production which has been so far the major concern of the Ministry of Agriculture. In view of this, the previous FAO report suggested the establishments of a Food Policy Council in order to help achieve the implementation of policy and regulatory reforms required to achieve improved food security. It was envisaged to attach this high level, multi-sector (public and private sector stakeholders) statutory body within the NSDC at the Prime Minsiter's Office.

In order to emphasize even more that the sector is essentially a sector fully driven in last resort by the private sector, with the public sector providing services to facilitate and support the sector, it might be worth reconsidering the establishment of a Food Policy Council and prefer instead a model comparable in its concept to the one operating for the tourism and hospitality, sector, where there is a Tourism Council which drives the sector, which is in turn supported by a specialized board.

The sector needs first to be technically re-oriented and marketing/value/supply chain cluster groups initiated. This will require consultations between potential partners and groups, development of ad-hoc strategic partnerships and initiating a number of basic services that will be beneficial to the sector as a whole (intelligence, but also knowledge networking and sharing, grouped access to 'new' inputs, etc). Policies and regulatory frameworks are of course part of this effort, but they need to be responsive to the sector and it is therefore proposed in the after MDG vision that an independent private sector driven council be set up. This might equally be a way to bring people of different political backgrounds (Rarotonga and outer islands, majority and opposition) to work together on long-term sector defined priorities.

3.4.1 Initiating a sector council driven by the farmers and private –sector

It is suggested that this council be gradually established during the coming two or three years. Before formalising a council, it is suggested to spin the council off as a special task force within



the Chamber of Commerce. This council would however need to include various producers (and ensure a correct outer islands' representation) and work in close intelligence with the MOA and other relevant public services/ministries. Within this informal task force, a number of thematic groups would be gradually set up to investigate and prepare a number of concrete actions that will mobilize sufficient and dedicated partners to drive these actions through. The motto is "to grow gradually (walk before running)" and to be "professional" in preparing and documenting proposals, suggestions and actions.

To start with the informal task force could be pilot tested during the next step of the agricultural/food sector action plan:

- ⇨ Assisting the MOA and-or the FAO team in finalising this action plan (articulated around a short–term pilot plan (2015/16 & 2016/17) and sketching a medium term canvas (2017/2020)
- ⇨ Engaging the stakeholders in market and sector wide economic intelligence (i.e. developing an on-line vegetable/fruit/livestock forecasting system and interconnecting it with the quarterly customs data; and in due time developing an in-door capacity to analyse data and publish sector assessment reports)
- ⇨ Coordinate and monitor the implementation of the after MDG vision and ensure that the various agreed on actions are monitored and evaluated to the benefit of all.
- ⇨ Initiate together with the restaurants, the specific committee on food within the Tourism Council, the MOH and the MOA, the definition of CKI product quality guideline/standard, certification or guarantee system and-or GAPs.
- ⇨ Take the lead in interacting with the CITTI to define an specific agricultural apprenticeship package
- ⇨ Take the lead in launching a number of clusters and organizing their on-going coaching and mentoring.

3.4.2 Engaging in clustering and cluster building

A specific thematic group of the sector council will need to engage in supporting the emergence of a number of specialise clusters: i) to start at least 2 to 3 'rapid economic 'clusters driven by a major supply contract or specific technical activity such as composting; ii) to establish at least one livestock focused cluster; iii) establishing one or two small 'slow green' cluster or short circuit test groups together with the NCD group within the MOH; iv) examine how to consolidate the existing commodity value chains (Noni, papaya products) and v) support a strategic small scale women in business partnership to support short circuit simple value adding activities.

Cluster development would proceed stepwise, after each step is reviewed by an internal mentoring group:

STEP 1 Cluster establishment (sensitisation, group formation and initial activity planning)

STEP 2 Technical design of the cluster package with the various partners and business plan development (inclusive wherever possible of ad-hoc environmental mitigation plans)

STEP 3 After approval of support, implementation of the first business plan with constant coaching and business and technical mentoring

STEP 4 on-going monitoring and development of subsequent activity plans and monitoring of business development

3.4.3 Creating an enabling environment

As outlined in the previous FAO report there are a number of overall actions (see appendix 5 relating to tax code, import duties, financial tools, supportive FTP's interventions, …) to be assessed in order to gradually create a more supportive enabling environment, and which can be clarified once the major clusters and types activities of the sector plan are more clearly defined.

Assessing these actions in greater detail and monitoring their eventual effectiveness will need to be done in parallel with the on-going activities during the implementation of the short-term 2015/2016/2017 pilot sector plan.

Some of the required actions can thus be gradually addressed and policy proposals submitted to the relevant government bodies/agencies, but others will require longer and more in depth consultations and discussions in order to find longer term and lasting solutions.

> *Greg Stanaway thinks that somehow, the **land tenure system** needs to be changed to allow more land to be brought into production; and he thinks we need to **import labour** used to working large-scale gardens. He thinks they should probably come from China and/or the Philippines. He knows that will be controversial but he says the workers should not be considered cheap labour and they should be paid maybe double the current minimum wage; and they should come here under a fixed contract and visa arrangement – say two years with another two maximum, and they should train locals to take over from them while they're here.*

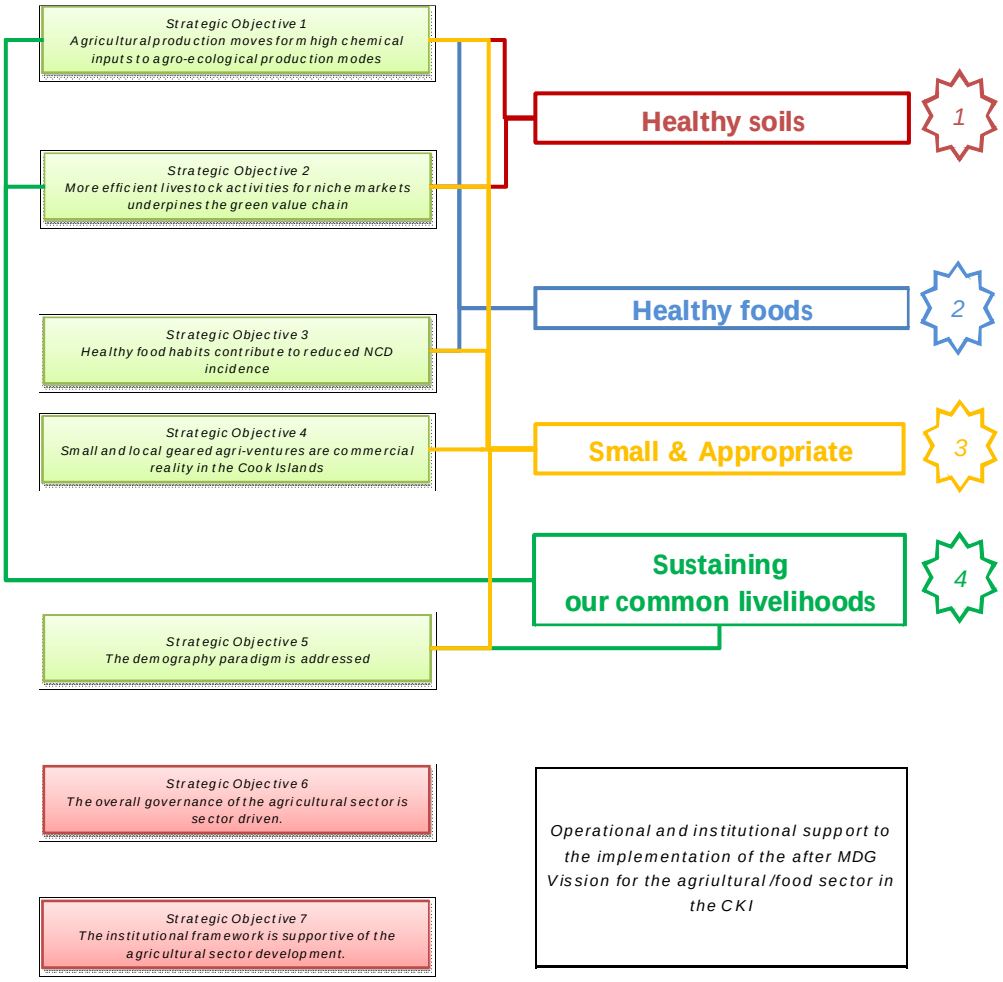
4 FROM INTENT TO OPERATIONAL SECTOR PLAN

An operational sector action plan will be developed with the various stakeholders during the second quarter of 2015 after the 50 year CKI celebrations and the partner meeting planned in February 2015.

An indicative plan is presented hereafter as a general guideline to assist the sector council and the MOA in developing a more detailed plan and to prepare more detailed budgets and proposals for those various activities for which Government, FTP partners, private operators or foundations or NGOs have shown interest. It is articulated around:

- 5 'productive' strategic objectives: (i) agricultural production moves form high chemical inputs to agro-ecological production modes; ii) more efficient livestock activities for niche markets underpins the green value chain; iii) healthy food habits contribute to reduced NCD incidence; iv) small and local geared agri-ventures are commercial reality in the Cook Islands; and v) the demography paradigm is addressed.
- 2 more 'structural' strategic objectives: (vi) the overall governance of the agricultural sector is sector driven; and vii) the institutional framework is supportive of the agricultural sector development

The overall consistency of the indicative template for an operational sector plan with the after MDG Vision is shown in the following graph



4.1 STRATEGIC OBJECTIVE 1 :

AGRICULTURAL PRODUCTION MOVES FORM HIGH CHEMICAL INPUTS TO AGRO-ECOLOGICAL PRODUCTION MODES

ACTIVITY 1.1 DEVELOPING A GREEN FERTILISER VALUE CHAIN

ACTIVITY 1.2 CONDUCTING AGRO-ECOLOGICAL ADAPTIVE RESEARCH

ACTIVITY 1.3 ENGAGING IN AD-HOC GAP/PGS THUS PROMOTING PAYMENTS FOR QUALITY FARM PRODUCTS

ACTIVITY 1.4 PROVIDING SPECIALISED ADVISORY SERVICES

ACTIVITY 1.5 ENGAGING IN INDIVIDUAL OR ASSOCIATIVE CONTRACT FARMING PROTOCOLS

ACTIVITY 1.6 A SPECIFIC SMALL GRANT/LOAN TRUST FUND TO SUPPORT THE MOVE TO AGRO-ECOLOGICAL FARMING (INDIVIDUAL & ASSOCIATIVE) IS OPERATED THROUGH THE SECTOR COUNCIL.

4.2 STRATEGIC OBJECTIVE 2 :

MORE EFFICIENT LIVESTOCK ACTIVITIES FOR NICHE MARKETS UNDERPINS THE GREEN VALUE CHAIN

ACTIVITY 2.1 CONDUCTING A SPECIFIC SUB-SECTOR REVIEW AND PREPARING SUB-SECTOR PLAN

ACTIVITY 2.2 ENHANCING LOCAL ANIMAL FEED AND NECESSARY VETERINARY INPUTS

ACTIVITY 2.3 PROMOTING LIVESTOCK INTEGRATED NUCLEUS/OUTGROWER FARM MODELS (POULTRY/PORK/GOAT)

ACTIVITY 2.4 A SPECIFIC SMALL GRANT/LOAN TRUST FUND TO SUPPORT THE LIVESTOCK SUB-SECTOR

4. 3 STRATEGIC OBJECTIVE 3 :

HEALTHY FOOD HABITS CONTRIBUTE TO REDUCED NCD INCIDENCE

ACTIVITY 3.1 PROMOTING HEALTHY CUISINE AND EATING HABITS

ACTIVITY 3.2 ENGAGING IN JOINT MOA/MOH AND MOE EDUCATION CAMPAIGNS

ACTIVITY 3.3 SUPPORTING THE EMERGENCE OF HEALTHY HOME-GARDENS

ACTIVITY 3.4 DEVELOPING SHORT CONSUMER CIRCUITS THROUGH FRUIT/VEGE- BASKETS

4.4 STRATEGIC OBJECTIVE 4 :

SMALL AND LOCAL GEARED AGRI-VENTURES ARE COMMERCIAL REALITY IN THE COOK ISLANDS

ACTIVITY 4.1 **SMALL VALUE ADDING VENTURES ARE DEVELOPED AND OPERATIONAL**

ACTIVITY 4.2 **ENGAGING IN CROSS-CUTTING INITIATIVES TO SUSTAIN LOCAL PRODUCTION TRAFFIC TO AND FROM THE VARIOUS HOSPITALITY ACTORS IN THE CKI**

ACTIVITY 4.3 **SUPPORTING THE EMERGENCE OF VALUE CHAIN INTEGRATED SERVICES**

ACTIVITY 4.4 **A SPECIFIC GRANT/LOAN TRUST FUND TO SUPPORT VALUE ADDING AND INTEGRATED VALUE CHAIN ACTIONS IS OPERATED THROUGH THE SECTOR COUNCIL.**

4. 5 STRATEGIC OBJECTIVE 5 :

THE DEMOGRAPHY PARADIGM IS ADDRESSED

ACTIVITY 5.1 **AGRO-ECOLOGICAL FARMING IS PART OF THE BASIC TEACHING CURRICULUM**

ACTIVITY 5.2 **APPRENTICESHIPS AND TERTIARY EDUCATION SUPPORT THE START-UP OF YOUNG/NEW FARMERS**

ACTIVITY 5.3 **SPECIFIC BUSINESS MENTORING AND COACHING IS AVAILABLE TO 'NEW' FARMERS**

ACTIVITY 5.4 **FACILITATING ACCESS TO REGIONAL TEMPORARY LABOUR IS CONSIDERED AND FACILITATED**

ACTIVITY 5.5 **A SPECIFIC TRUST FUND TO SUPPORT START-UP FARMING IS OPERATED THROUGH THE SECTOR COUNCIL**

4.6 STRATEGIC OBJECTIVE 6:

THE OVERALL GOVERNANCE OF THE AGRICULTURAL SECTOR IS SECTOR DRIVEN.

ACTIVITY 6.1 **AN AGRICULTURE SECTORAL COUNCIL DRIVES THE SECTOR**

ACTIVITY 6.2 **INTERACTIONS WITH PUBLIC SERVICES (HEALTH, EDUCATION, FINANCES, ENVIRONMENT, TRADE, ...) ARE STREAMLINED**

ACTIVITY 6.3 **MARKET INTELLIGENCE IS COLLECTED AND DISSEMINATED**

ACTIVITY 6.4 **SECTOR INTELLIGENCE IS MONITORED AND SPECIFIC CROP/SYSTEM/LIVESTOCK REVIEWS CONDUCTED**

ACTIVITY 6.5 **ANNUAL SECTOR REVIEWS/STATE OF THE SECTOR ARE CONDUCTED/PUBLISHED**

4.7 STRATEGIC OBJECTIVE 7:

The institutional FRAMEWORK is supportive of the agricultural sector development.

ACTIVITY 7.1 **THE VARIOUS ACTS IMPACTING THE AGRICULTURAL SECTOR ARE REVIEWED AND UPDATED (THE AGRICULTURAL ACT, THE FOOD ACT, THE CHEMICAL ACT, …)**

ACTIVITY 7.2 **AN AGRICULTURAL INSURANCE PACKAGE IS DEVELOPED IN ACCORDANCE WITH THE GLOBAL PACIFIC CATASTROPHE RISK FUND (WB SUPPORTED)**

ACTIVITY 7.3 **A SECTOR SPECIFIC PER IS CONDUCTED AND A SECTOR SUPPORTIVE TARIFF/TAX/MACRO-ECONOMIC PACKAGE IS INITIATED**

ACTIVITY 7.4 **ACCESS TO LAND IS FACILITATED AND ITS USE PROTECTED**

ACTIVITY 7.5 **ENVIRONMENTAL AND CLIMATE CHANGE PROGRAMMES GIVE FULL SUPPORT TO SUSTAINABLE AGRICULTURE AND ITS GRADUAL ADAPTATION TO AGRO-ECOLOGICAL PRODUCTION MODES**

ACTIVITY 7.6 **THE ROLE AND ORGANISATION OF THE MOA IS REVIEWED IN LINE WITH THE PRESENT SECTOR PLAN**

FOR THE APPENDICES PLEASE REFER TO

www.mfem.gov.ck