

## NIUE

<b>Capital:</b>	Alofi
<b>Land Area (km<sup>2</sup>)</b>	259
<b>Sea Area/EEZ (km<sup>2</sup>)</b>	390,000
<b>Islands (No.)</b>	1
<b>Population (No.)</b>	1,900
<b>Annual Growth (%)</b>	-3.1
<b>Density (inhabitants/km<sup>2</sup>)</b>	7
<b>Rural Population (% of total population)</b>	68
<b>GDP (US\$ million)</b>	6.9 (1991)-
<b>Agricultural GDP (% of total GDP)</b>	34
<b>GDP per caput (US\$)</b>	3,295 (1991)
<b>Currency:</b>	New Zealand Dollar

### A. General

Niue Island is 200 miles east of the Tonga Group, 300 miles south of the Samoa Group and 600 miles west of the Cook Islands Group. Although but a single island, it is 8,000 acres larger than the combined area of all the islands of the Cook Islands Group. The island is rhomboidal in outline, 11 miles wide by 13 miles long, with a coastline of 50 miles encompassing an area of 64,900 acres.

Niue Island is an uplifted atoll, the largest in the world. Its centre - the site of a former lagoon and now a plateau of gently undulating relief - is completely surrounded by a narrow rim, the “Mutalau reef”, and then sloping down a moderately steep incline to the sea shore. The soils are characteristically thin, with exposed coral-reef limestone outcrops on arable land almost everywhere.

The climate is tropical – hot and moderately wet - with cooling southeast trade winds and occasional storms. Rainfall averaging 80 inches varies widely from year to year. The wet season extends from November to April and the dry season from May to October, although in some years there may be little difference in rainfall between the two seasons. Mean monthly temperatures range from 70.2 degrees Fahrenheit to 80.8 degrees with an annual mean of 76.5 degrees.

Economic development heavily sponsored by the New Zealand Government has focused on agriculture and associated processing. Government produced the Niue Concerted Action Plan (NCAP) in 1988 aimed at “maintaining and developing a permanent living community”. Despite the efforts through the NCAP, depopulation and economic decline continued. New Zealand’s economic philosophy evolved to espouse tougher policies and her assistance particularly in support of the recurrent budgets was reduced. The DAFF was restructured in 1990 with substantial reductions in staffing.

A number of adverse events disrupted development and significantly weakened the economy. These included the depopulation of Niue, severe disruptions to airline and shipping schedules and Cyclone Ofa in February 1990. This slow down in development led to the formation of the Niue Review Group (NRG). The latter’s 1986 report formulated the objective of aid assistance as “maintaining and developing a permanent living community”.

Significantly, it was accepted that this did not necessarily mean that a “viable economy” would evolve.

In response to the NRG report, the Niue Concerted Action Plan (NCAP) was established in April 1988. Compared to previous aid efforts, this plan placed greater focus on long-term development projects, some of which – such as land titling and forestry – still continue.

However, despite the efforts through the NCAP, depopulation and economic decline continued. The New Zealand economic philosophy evolved to espouse tougher economic policies and the questioning as to why even the modest objectives of the NCAP were not achieved. New Zealand assistance, particularly that for Government recurrent budget support, was subsequently reduced. The department of agriculture was restructured in 1990 with drastic reduction in staff numbers.

## **B. The Agricultural sector: Constraints and Strategic Options**

### **Agriculture and the Economy**

**Land Use, Farming Systems and Institutions.** Agriculture in Niue is based on shifting cultivation normally with 8-10 year periods of fallow between crops. Where the fallow period has been repeatedly reduced to 3-5 years, fertility had declined so markedly that soils were no longer capable of producing worthwhile crop yields.

Planting of Taro is undertaken throughout the year. Bananas are mainly planted from towards the end of the dry season from August to the end of December. Kumaras and Yams are mainly planted after Christmas although some families prefer to plant Yams in September. Taro and Bananas are harvested throughout the year. The main Breadfruit season is from February to April.

**Major Challenges and Constraints.** Niue faces the challenges of a small local market, lack of scale, geographic isolation from overseas markets which results in transport and post harvest problems, brain and labour-force drain and lack of effective and efficient services. Niue agriculture confronts significant risks associated with cyclones and droughts. Niue is facing a formidable task in development because of the continuing depopulation of the island. Niue’s population has been declining from 5,200 in 1970 to 2,531 in 1986, to 2,239 in 1991 and to 2,088 in 1997.

In agriculture, the problem of Niue Island remains the need to evolve a more permanent system that does not damage the very restricted natural resources of the island. Niuean soils are generally shallow, interspersed by coral rock outcrops, moderate to high alkalinity and deficient in potassium, nitrogen and zinc. These limitations have made long periods of fallow between crops, necessary.

The local market is made up of about 2,000 persons with perhaps no more than 300 under fully paid employment - in addition to a small number of visitors (mainly Niueans residing overseas). There is no reason to believe that the population will substantially increase in the foreseeable future. Export of agricultural produce is constrained by the infrequency, unreliability and expensiveness of shipping and airfreight. Lack of market research also constrains marketing.

On the production side, the age range of persons permanently engaged in farming on Niue is narrowing into the older group. In this regard, a cause for concern is that school leavers have not shown appreciable interest in taking up farming as their preferred careers.

**Strategic Options.** On the positive side, there is an abundance of accessible arable land per capita of population, as consequence of the depopulation. The climate is favourable for tropical agricultural and horticultural purposes. Furthermore, because of her geographic isolation, there is a reasonably low number of exotic pests and diseases of plants and animals introduced to the country.

The main opportunities for Niue agricultural production lie in developing export commodities for which it has comparable advantages. Niue has comparative advantage for its staple crop, Taro, on account of Niue owning far more cultivars (34) than does any of her neighbouring Island states. This diversity provides good latitude for overcoming pests and diseases that may be introduced as has devastated Samoa's taro industry. In terms of quality, the Niue Taro is considered the best in the Pacific. Its foreign exchange earning potential has not been fully realised.

To reach its potential in the Taro trade, Niue would need to improve productivity in the field, quality of the produce and marketing efficiency. Effective DAFF research and extension work would improve productivity and quality while support to the NGA and improvement to shipping schedules would improve both quality of produce and efficiency in marketing.

Major opportunities also exist for the development of commodities that target niche markets for low volume but high value products. In this respect the current effort to produce Vanilla, Kava and Nonu are commendable. Aloe Vera and spices, including, Ginger, Chillies and black/green Pepper, are other commodities in this category. Production of fresh fruits particularly Lime, Passion fruit and Guava etc. has good export potential.

Small-scale cattle production (tethered dual-purpose breeds) represents a good opportunity as cattle fit in well with the Niue farming system. Over-sowing grass and legume seeds on fallowed land would provide the basic feed requirements of the cattle. Supplements can be provided through a cut-and-carry system based on Elephant Grass or similar grass specie and through the provision of feed blocks.

## **C. Project Interventions: Income Generation Activities**

### **I. Integrated Pest Management and Bi-wall Drip Irrigation for Food Security**

The primary food crops grown by Niue farmers are Taro, Banana, Sweet Potato, Vegetables (tomatoes, cabbages, bele etc.) and mixed tropical fruit trees. The main pests and diseases that constrain quality production of these crops are: for Taro, green aphids, leaf hoppers and red mites, for Pineapples, mealy bugs and ants, for Bananas, black sigatoka leaf spots, for Kumara, Kumara hawk moth caterpillars, for common vegetables, catface of Tomato fruits and target spots of leaves, fruits, fruit cracking during rainy seasons.

Niue has little technical expertise in IPM but the research/extension staff are willing to learn. The assistance will involve: training of key national staff in IPM and crop scheduling to avoid certain pests and diseases including nomination of resistant variety selection; organising farmers field studies focusing on Ecologically Based Pest Management (EBPM); and assisting in setting up an IPM strategy, crop scheduling and planting guide to ensure sustainability of support to village farmers.

Bi-wall drip irrigation is relatively low cost modern technology, successfully adapted to cash cropping by suit small rural farming communities in Cook Islands and Samoa. Field

observations in these countries showed that combined IPM approach and drip irrigation can double or triple crop production and significantly improve quality of the produce.

This project seeks to replicate success achieved in other countries and draw on the specific experience available in the region to assist Niue farmers.

Local contribution will include: local staff to assist in implementing the project, office space; storage of project materials, supplies and equipment; security to project belongings.

### **Success Indicators**

- Increased production of good quality food crops;
- Improved food security;
- Increased export of good quality fresh agricultural produce;
- Increased employment in the farming sector.

## **II. Mutahefonua Group Shredder/Mulcher for Organic Production**

MUTAHEFONUA consists of a group of four families that practices mixed-farming. The group has a long-term objective of encouraging other families to adopt sustainable farming methods by integrating traditional and improved farming practices. Activities include cash cropping and raising livestock involve all family members. Combined family effort occurs for certain tasks like pruning trees, land preparation, marketing and procurement of planting material.

Families each own a standing plot of coconuts, vanilla and taro, nonu, lime and vegetables. Livestock, predominantly pigs but including a few head of cattle also occupies part of each holding. The group recently erected vegetable fences to reduce damages by feral pigs and chicken is currently expanding their vanilla plots to be inter-cropped in future with Nonu plants (support plants for vanilla) and hybrid coconuts.

The project will purchase a mechanical shredder/mulcher to assist with the group's efforts to integrate organic farming with the methods and practices currently employed. The group has been using chicken and pig manure mixed with compost to raise vegetables. Chicken manure is currently insufficient and the group is considering raising the pig pens off the ground or constructing concrete floors to facilitate manure collection. The group currently borrows a shredder from the Department of Agriculture.

The project will help the group acquire an appropriate shredder/mulcher to ensure constant supplies of organic matter for compost making. Prunings from support trees, dry coconut leaves, husks etc. could thus be more efficiently used. The project will also supply adequate support for operation of the shredder for one year.

The local contribution includes: needed labour, local staff supervising the project, training facilities and office for project staff.

### **Success Indicators**

- Increased supplies of fruits, vegetables and other locally produced food crops to reduce reliance on imported foods, reduce drain on foreign earnings and improve health of local population;
- Diversify Niue’s agricultural production with potential to export regular supplies of organic produce to niche markets;
- Assist in ensuring sustainability of Niuean soils; and
- Encourage youth and women to participate in meaningful employment.