

NAURU

Capital:	Yaren
Land Area (km²)	21
Sea Area/EEZ (km²)	320,000
Islands (No.)	1
Population (No.)	11,500 (2000)
Annual Growth (%)	1.8
Density (inhabitants/km²)	548
Rural Population (% of total population)	
GDP (US\$ million)	377 (1996)
Agricultural GDP (% of total GDP)	-
GDP per caput (US\$)	27,514 (1996)
Currency:	Australian Dollar

A. General

Nauru is a single, raised coralline island with a land area of only 21 km² but with an EEZ, which extends over 320,000 km². Nauru lies 42km (26 miles) south of the equator. Its nearest neighbour is Ocean Island (Banaba, part of Kiribati). The economy is based on phosphate mining, export of phosphate providing the island's only income, apart from overseas investment. About 2m tons of high-grade phosphate is mined annually. With phosphate resources almost completely depleted the country is looking for alternative sources of income to replace mining revenues. Fisheries development is considered to be the principal economic prospect for the future.

Phosphate mining in the central plateau leaves a barren terrain of jagged coral pinnacles, up to 15m (49ft) high. A century of mining has stripped four-fifths of the total land area. The island is surrounded by a coral reef, exposed at low tide and dotted with pinnacles. The reef is bounded seaward by deep water, inside by a sandy beach. Coral cliffs surround the central plateau. The highest point of the plateau is 65m (213ft) above sea level.

Although possessed of only a very shallow lagoon, much of which dries at low tide, and a narrow fringing reef, Nauru's near-shore open ocean areas are frequented by an abundance of tuna and other pelagic species.

The climate is tropical with Northeast trade winds blowing from March to October. Day temperatures are 24–34°C, average humidity 80%. Rainfall is erratic and heavy; average annual rainfall is 2,060 mm. The monsoon season is November to February.

Population is about 10,000 (mid 1992 est.) and there is a fluctuating population of overseas workers. The birth rate is 19.8 per 1,000 (1987-1990/91). Life expectancy was 68 years in 1993.

B. The Agricultural Sector: Constraints and Strategic Options

Agriculture and the Economy. Apart from phosphate mining, none of the sectors that play significant roles in economic development in most PICs e.g. agriculture, fisheries and tourism are active in Nauru. Having been dependent on imported food during over a century of phosphate mining, farming and fishing, subsistence or otherwise have not been practiced by the local population.

Land Use, Farming Systems and Institutions: The only fertile areas are in the narrow coastal belt where there are coconut palms, pandanus trees and indigenous hardwoods, and the land surrounding Buada lagoon, where bananas, pineapples and some vegetables are grown. Some secondary vegetation grows over the coral pinnacles. Very little crops are grown; most food items and much of the drinking water are imported. Limited varieties of fruit trees and vegetables are grown on a very small scale for home consumption.

The Government hopes to develop a local fishing industry. Although there is virtually no tourism at present, there is potential to develop such an industry. A colourful reef dotted with WWII sunken wrecks surrounds the island, the waters make great diving and sport fishing is good.

Major Challenges and Constraints. A century of mining has stripped four-fifths of the total land area. The island is surrounded by a coral reef, exposed at low tide and dotted with pinnacles. The reef is bounded seaward by deep water, inside by a sandy beach. Landward from the beach is a 150–300m wide fertile coastal strip. With porous soils and uncertain rainfall, this area offers limited opportunity for expanded agricultural production.

Land tenure is the most critical consideration relating to the practicality of implementing programs for the rehabilitation and or development of resource (agricultural) based initiatives. Settlement problems are exacerbated by a land tenure system that is made up of some 630 irregular sized and shaped pieces of land, some less than a metre wide and only a few square metres in area, which do not appear to relate to any ordered plan or access rights.

The land problem is further aggravated by a joint ownership system where many individuals hold “a share” in a piece of land which may be, as in one case, as little as an 1/1008 interest. As well, a consensus has to be achieved among owners before development can proceed.

With a growing population and fragmentation of land ownership, as a result of inheritance, attempts to use land for building or agriculture can result in disputes between owners of a land portion as to who should have the use of it. These disputes reduce the value of the amenity, to Nauruan life.

Similar issues relate to water rights. Water is owned by the owners of the land upon whose land the opening to the well is found. The water recovered from the well belongs to the land owner who can allow others access to the well as thought fit. The fact that the water might percolate from below the land of another owner is not relevant (even if known). The main consideration and matter is access. As a result the siting and development of tube wells (bores) in order to provide a reliable water supply will be the subject of ownership disputes similar to those relating to land.

The area of land potentially available for agricultural purposes is small. Availability and sustainability is constrained by plot size, soil type, proximity to housing and other alternate use. This is further constrained as a result of land tenure conflicts and water rights. Much

Bottomside land has been used for activities related to phosphate mining, residences and public use.

Although estimates can vary depending upon the criteria used, there are approximately 100 ha of vacant land, which could be used for agricultural purposes. The 14 ha around the Buada lagoon is perhaps the most fertile. In comparison some areas have already been subject to building, and will require rehabilitation (removal of concrete, road gravel, building rubbish, car bodies, rusting and derelict machinery, other unused buildings and obstructions).

Land is fragmented and often polluted. It is relatively infertile, has poor water holding capacity and narrow available water range. Irrigation, if available is rudimentary and will rely on a potentially brackish underground water resource or a fragile rainwater collection system. The use of fertilisers and composting is not common and it is expected that the soils will suffer major deficiencies Potassium and Nitrogen. Minor trace element deficiencies can be expected and heavy metal toxicities have been predicted. Given resources these potential problems can be identified and rectified. However there is insufficient land, even in the most optimistic scenario, to provide all but a supplement to Nauru's food requirements.

Current Nauruan lifestyle, developed over an extended period of excesses associated with the wealth brought about by phosphate exports, has been largely divorced from the land and sea. The will to till the soil and husband crops and animals has largely disappeared from the general populations. And so have the soils through phosphate mining.

Inadequacy of bore water restricts its use for domestic use although controlled limited use of subsistence gardening has potential. Rainwater catchments are used to supplement bore water although frequent droughts make dependence on this source risky for commercial operations. FAO recently completed a study into the feasibility of setting up a hydroponics system for the production of vegetables. Insufficient availability of water was identified as one of the most limiting factor.

Various crop pests e.g. two exotic fruit fly specie and *Brontispa* have been cause for concern due to destruction to the small amount of fruits and vegetables in the island and to coconuts, respectively. Previous interventions by an FAO regional project on fruit flies eradicated one of the fruit flies, although new incursions have occurred. An FAO TCP project to control the *Brontispa* coconut pest is currently being executed.

Strategic Options. At the 1994 Small Island States (SIDS) Conference on Sustainable Development, the Nauru Government announced plans to rehabilitate the island. The out-of-court payment pledge of US\$8 million each by Australia and New Zealand is expected to assist in this exercise. Once the rehabilitation effort gets underway and in the absence of phosphate exports, more meaningful development in the area of agriculture can be planned and executed.

A recent Food Security Assessment for Nauru, undertaken by FAO and AusAID, made the following concluding remarks: "Quantification of the level of supplementation of the food requirements by local activities as food gardens is not possible, given that this practice is uncommon, and will be limited by land availability and water rights. Measures to alleviate these problems ... include education programs within schools to improve awareness of the necessity to produce local food, mobilization of community groups to train the families for food production activities, and the provision of propagation materials for home garden activities. A food deficiency crisis will occur within the next year(s) unless appropriate arrangements are put in place".

In line with the above conclusion, small-scale production of vegetables and tree crops can be encouraged and effort to improve productivity made, targeted at the coastal strip. Furthermore, a farming system based on growing suitable crops on medium largely comprising

compost in - for example, half drums and wooden boxes - can be piloted to provide nutritious base food and to help get the population into a self help mode that could underpin sustainability.

C. Project Interventions: Income Generation Activities

I. Pilot Household Food Garden Project

On a pilot basis and led by households, increase food production through developing farming systems at the household level appropriate to Nauru's environment and society. The purpose of the project is to evaluate and develop household farming systems for Nauru. Three food production gardens each of approximately 200 square meters in each of 14 districts will be developed and evaluated. Also, two nurseries for propagation of planting material will be established and operated.

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

The cost and financing plan are indicative as the implementation and cost details will be worked out in detail with RPMU (see TOR for Project Co-ordinator) and the Nauru Government.

Success Indicators

- Supply of planting materials available to the public
- Increased availability of locally produced food
- Family income generation through marketing of surplus produce
- Access to nutritious fresh foods contribute to improved nutrition
- Potential farmers trained and gain knowledge in appropriate farming techniques

II. Strengthening the teaching of agriculture (farming systems) in primary and secondary schools

The project will improve the food production skills, knowledge and attitudes of Nauruans towards a little-used system for providing food to the household. While the extended family in Nauru has the prime responsibility to impart life skills to the upcoming generations, schools at both primary and secondary levels can play an important supporting role. The project will strengthen the teaching of agriculture with an emphasis on household farming systems, taught in the primary and secondary schools of Nauru. This will involve developing curricula for primary and secondary schools, developing teacher aids, training teachers and initiating teaching.

Local contribution include: local staff / teachers and schools.

Success Indicators

- Increased awareness of farming systems suitable for local conditions
- Increased involvement of households in household backyard gardening