



20. Kiritimati



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PHYSICAL FEATURES

Kiritimati (Christmas) Island is a coral atoll in the Northern Line Islands. It is the largest coral atoll in the world with an area of 363.4 sq.km. Kiritimati alone has a land mass larger than the rest of the islands of Kiribati combined together. Kiritimati is very isolated, being over 3,000 km distant from Tarawa, and 2,000 km from Honolulu, Hawaii.

The fringing coral reefs and patch reefs of Kiritimati are host to 83 species of coral, 235 species of fish, 2 marine reptiles, and marine mammals. Kiritimati has a large shallow lagoon and complex inner lagoon system that provides habitat for key commercial species, including the milk-fish (*Chanos chanos*) and bone fish (*Albula glossodonta*), which support artisanal and recreational tourist fishing. Its off-shore territorial waters are rich in fish stocks such as tuna and bill fish.

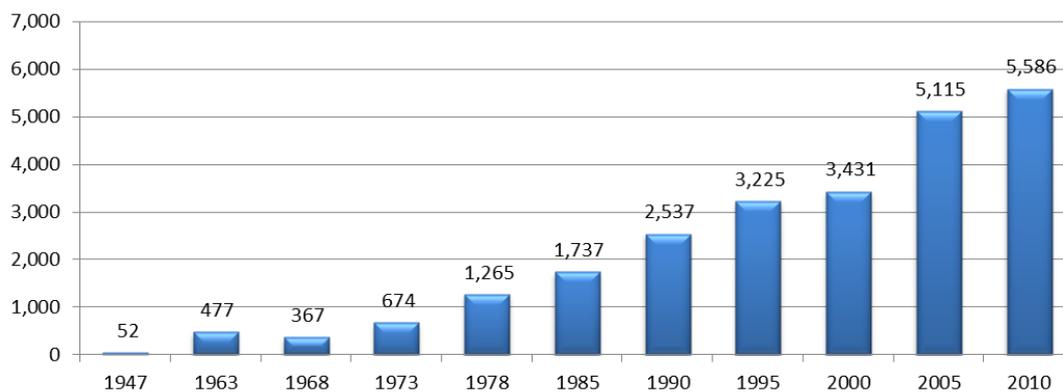
Kiritimati also has a diverse land habitat that ranges from introduced coconut plantation to *Scaevola spp* shrub-land to *Lepturus spp* open grassland to a complex internal lagoon system, with 18 native and 50 non native flora species. Kiritimati is home to an estimated bird population of over 6 million made up of 18 species of sea birds, two land bird species and 18 species of migratory birds.

POPULATION

While evidence of early settlement has been found on Kiritimati, European explorers in the 1800's found an island with no resident population. Kiritimati was claimed by Britain, and became part of the Gilbert and Ellice Islands Colony in 1919. The island was an important military base during World War II and was used by the British for nuclear testing in the late 1950s. Since Independence in 1979 the Government has encouraged I-Kiribati to settle on Kiritimati, and since 2005 there has been a formal policy to promote resettlement and development to ease land pressure on South Tarawa.

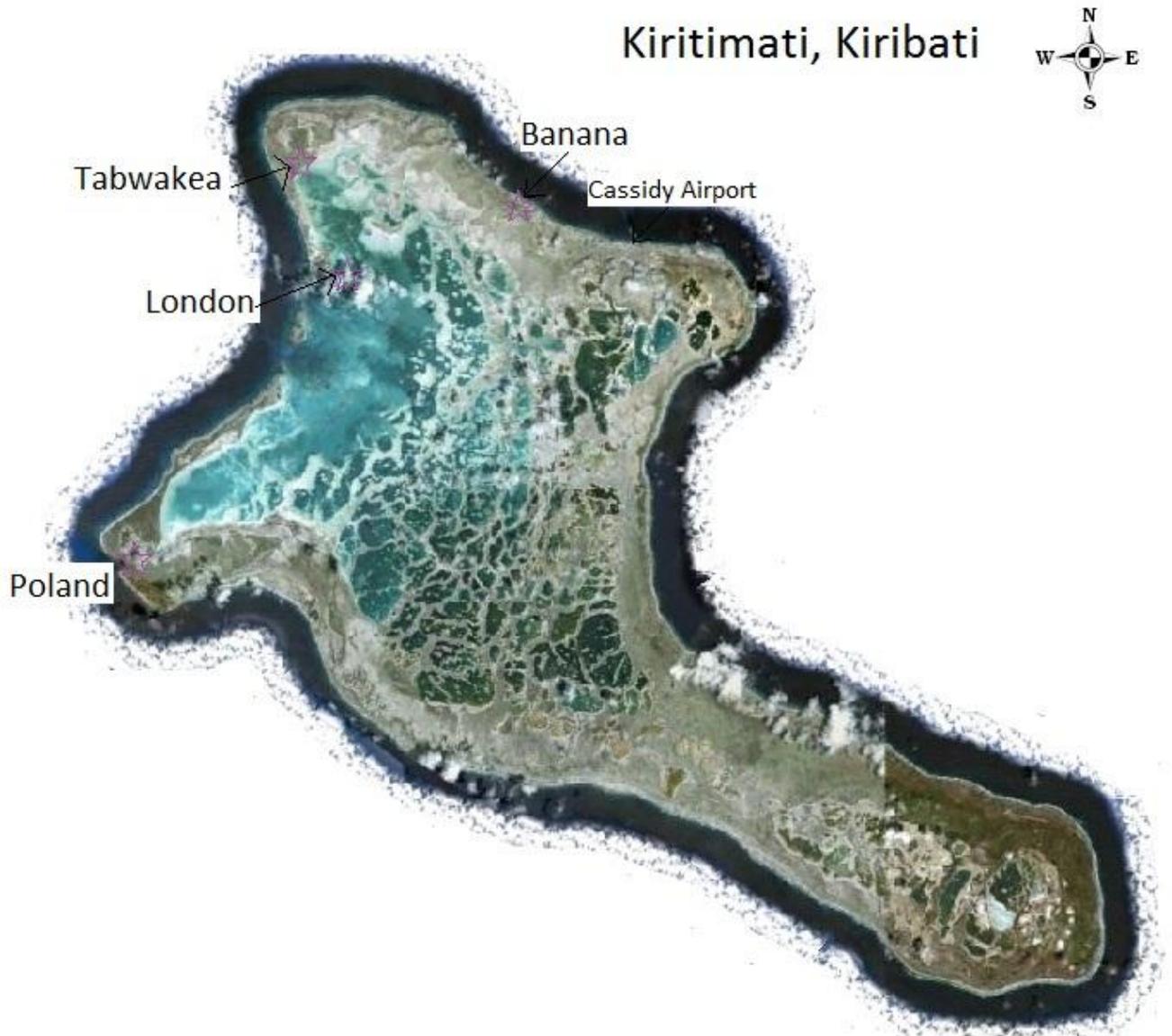
The population of Kiritimati in the 2010 census was 5,791. Compared to the 2005 population of 5,115 and the 2000 population of 3,431, the population is growing, but growth has slowed. The population of Kiritimati grew by 471 between 2005 and 2010, an annual population growth of 1.8%. This is much slower than the growth in the previous five years, when the population jumped by 1,684 people from 3,431 in 2000 to 5,115 in 2005.

Figure 20.1: Kiritimati population 1947-2010



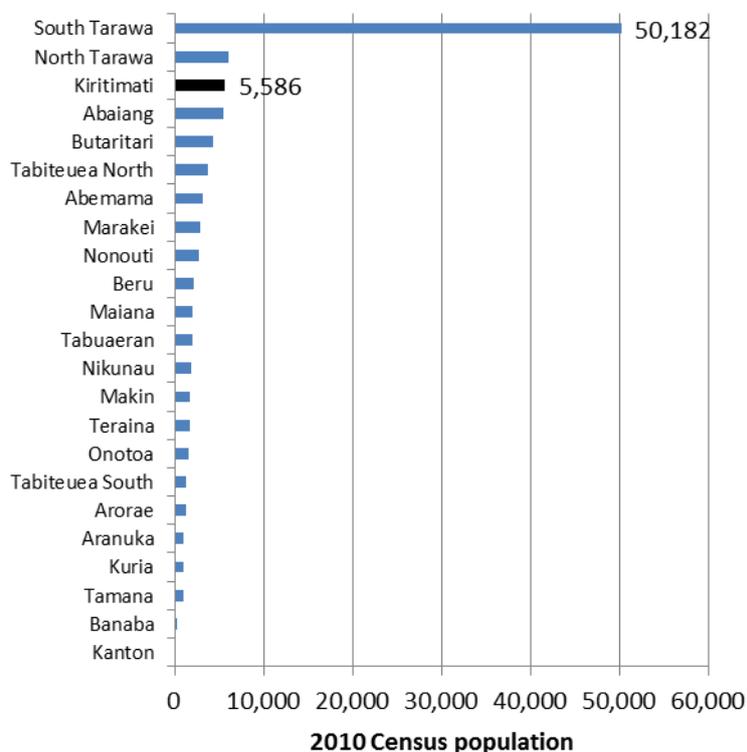
Source: 2010 Census

Figure 20.2: Map of Kiritimati



Compared to other islands of Kiribati, Kiritimati has the third largest population, at 5,586 people. This is slightly more than Abaiang (5,502 people) and less than North Tarawa (6,102), but nowhere close to the population of South Tarawa, which is home to around half the total population of Kiribati.

Figure 20.3: Population of Kiritimati in context with other islands of Kiribati



Kiritimati has a combined land area of 388.39 square kilometers and a population (in 2010) of 5,586, giving a population density of 14 people per square kilometer. Kiritimati is by far the largest island in Kiribati, indeed it is the largest coral atoll in the world. It is therefore almost the least densely populated island; only Kanton in the Phoenix Islands has a lower population density. However this is deceptive as most of the population lives in only a small area of the island.

The main villages of Kiritimati are Banana, Tabwakea, and London, which are located along the main road on the northern tip of the island, and Poland, which is across the main lagoon to the South.

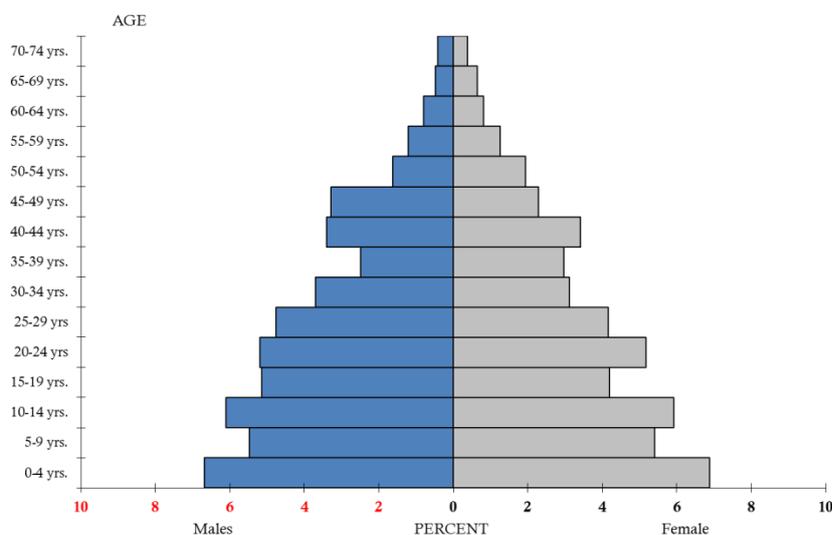
Figure 20.4: Kiritimati population by village

Kiritimati	Village	Population
	London	1,879
	Tabwakea	2,311
	Banana	955
	Poland	441
Kiritimati total population		5,586

Although Kiritimati is a large island, overcrowding in households is found also on the island. The problem is more acute in Tabwakea where families have settled with their relatives while waiting for the release of land leases by the government. The average household size on Kiritimati is 6.3 people, which is more than for other outer islands (5.3) but less than South Tarawa (7.3 people).

Compared with other islands of Kiribati and especially with South Tarawa, the population of Kiritimati is relatively evenly spread between the different age groups, with no pronounced “baby boom”. People aged under 15 make up 31% of the population which means the youth population is fairly small compared with other outer islands (38%) or South Tarawa (34%).

Figure 20.5: Kiritimati Island population by age and sex



Data source: Kiribati Census 2010

Kiritimati was settled only recently and most people living on Kiritimati identify themselves as being from one of the other islands of Kiribati. There are only 574 people who, in the 2010 Census, identified themselves as being “from Kiritimati” and most of these people are also currently living on Kiritimati.

Table 20.1: Residents of Kiritimati by home island, and people from Kiritimati by island of residence, 2010

	Home island is Kiritimati	From another island of Kiribati	From another country	Total: Population of Kiritimati
Live on Kiritimati	470	5,022	94	5,586
Live on another outer island	32			
Live on South Tarawa	72			
Total: People living in Kiribati who are from Kiritimati	574			

Data source: Kiribati Census 2010

LAND AND MARINE RESOURCES

Kiritimati has a unique and delicate environment – a function of its isolation, size and atoll characteristics that have resulted in a diverse ecosystem endowed with extensive biophysical resources. The whole Kiritimati lagoon is a spawning area for the bone fish (*Albula glossodonta*). Some areas have been designated by government as ‘marine parks’ to protect them from excessive fishing by villagers using gill nets. Some land areas have been closed to the public for commercial activities or as bird reserves.

All land on Kiritimati is state land except for plots made available for freehold in Tabwakea stages 1, 2, and 3. Government has made a public commitment to release land for all types of land activities, including the acceptance of applications for leases of land from individuals.

The growth in population in the main areas of London, Banana, Poland and Tabwakea has resulted in the increasing competition for the use of natural resources including land for housing, businesses, churches and *maneabas* as well as for building material (sand and gravel, coconut timber and fronds), ground water, fish and coconuts. The natural environment of Kiritimati is increasingly under pressure from the expanding settlements.

EDUCATION

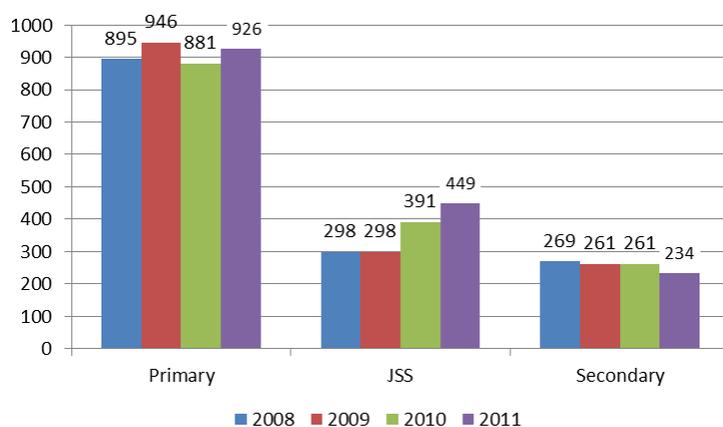
Kiritimati has three primary schools, one junior secondary school, and two secondary schools – St. Francis (Roman Catholic school) and Itoini Mainiku (KPC school). There is also a small USP campus on the island.

Table 20.2: Primary school enrollments 2011, Kiritimati

Kiritimati	No. of Pupils			No. of Teachers		
	2011		Total	2011		Total
	F	M		F	M	
Poland Primary School	22	28	50	2	1	3
Banana Primary School	98	93	191	6	1	7
Tennessee	405	280	685	16	4	20
Total	525	401	926	24	6	30

The number of enrolled students has been quite constant since 2008.

Figure 20.6: School enrollments 2008-2011, Kiritimati



Data source: Kiribati Education Statistics Digest 2011

ENVIRONMENT

There is a limited reticulated sewerage system on Kiritimati which is used by 14% of households, however the most common mode of wastewater disposal from residential and commercial premises is still to septic tanks via an automatic flush or pour flush toilet. There is danger that septic tank leaching will pollute the shallow freshwater lenses from which the island relies for its potable water. This is already happening in Banana.

Solid waste is now collected by the Kiritimati Island Council from London to the airport. There is no formal collection in Poland. Waste is disposed of at Tabwakea and Banana, often burned and occasionally buried. The waste dump in Banana is mainly for disposing medical and hospital waste. Unfortunately for both, proper sanitary landfilling practice is yet to be applied. There is a recycling facility for aluminum cans on the island.

Environmental issues identified by Kiritimati representatives to the Kiribati National Summit in 2011 are included at the end of this report. Although it is Government policy to encourage resettlement from South Tarawa to Kiritimati, representatives of Kiritimati regard their island as already crowded and wish to restrict further resettlement.

WATER

Piped water and household wells are used for drinking and cleaning on Kiritimati. Both water sources rely on the freshwater lenses that float on the salt water that permeates the islands coral substrate. Protecting the major groundwater reserves means ensuring that human settlements remain outside the perimeters of these reserves. It also means protecting the groundwater lens close to existing settlements at Tabwakea 1, 2, 3, 4 and North from leachates from solid waste, sewage, and other man-made contaminants into the underground lens.

AusAID and other donors have been involved in water and sanitation projects on the island. The main AusAID project (Kiritimati Water and Sanitation Project) was completed in 2003 and constructed major water supply infrastructure which tapped the lenses and provided a disinfected (chlorinated) supply to London, Tabwakea, Banana, Main Camp, and Poland. The lenses have been estimated to be able to supply an island population of around 30,000.

In the 2010 census, two thirds of households (67%) said they relied on this piped water supply as their main source of drinking water, with the remaining households relying on household wells. Half of households use piped water for washing, and half use well water. Only 1% of households use rainwater as their main source of drinking water, and no households used rain water for washing.

Human settlement in Banana, located above the freshwater lens, has contaminated the underlying lens largely from domestic and solid waste leaching through the soils. Although government has called on residents to voluntarily resettle in a new area (New Banana) to protect the water lens, residents are yet to move themselves to this new area.

There are approximately 470 consumers who are charged at A\$0.0015 per litre up to a monthly figure of 15,000 litres. For consumption above this, an additional A\$0.005 per litre is added. Non-payment of water supply bills threatens the sustainability of the scheme.

ENERGY

Kiritimati is served by 5 separate generating stations. Each has diesel generators which are expensive to run and maintain, are noisy and subject to regular breakdown. Distribution in Tabwakea and Banana is via underground cabling but this is old and subject to breakage and damage. In London distribution is generally via overhead cable, and is subject to significant power fluctuations. Most households use electricity for lighting

Electricity Supply is managed by the Public Utilities Board, a State Owned Enterprise wholly owned by the Government of Kiribati. The tariff is A\$0.30 per unit for residential properties and A\$33 per unit for commercial properties. Non-payment of electricity supply bills threatens the future sustainability of power supplies on Kiritimati.

The KPC and Roman Catholic schools each have their own generators as does the Fishing Lodge hotel.

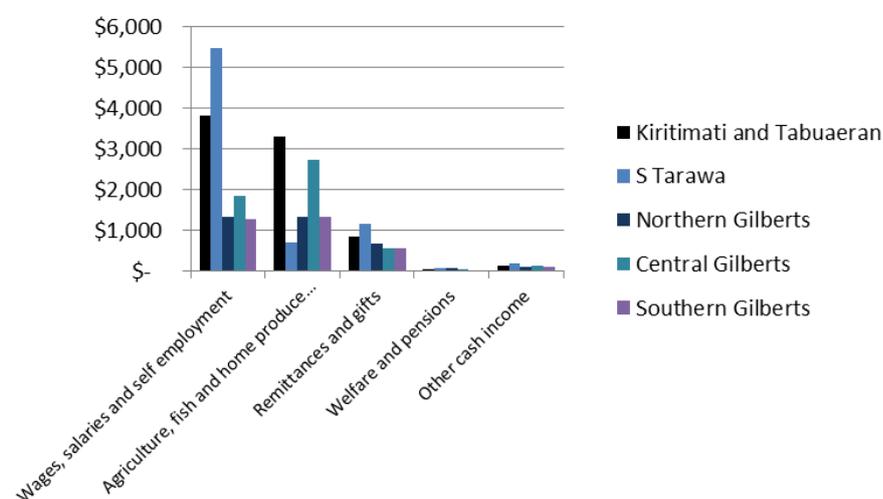
Firewood for cooking is not an issue, even so many families prefer kerosene stoves for cooking.

Fuel for generators, machinery, and vehicles is imported fossil fuel from overseas.

ISLAND ECONOMY

The economy of Kiritimati and Tabuaeran Islands was surveyed in detail in the Household Expenditure and Income Survey in 2006. From this study we know that average cash incomes on the Line Islands are slightly higher than on South Tarawa, and significantly higher than on other outer islands. Sales of fish, home produce and agricultural produce are almost as important as wages and salaries in the total cash income of households. Tourism is an important element of the Kiritimati Island economy and this is reflected in the relatively high incomes from sales of fish, handicrafts and home produce. Handicrafts are made and sold mainly for overseas visitors. Most of the handicrafts are made and sold by women.

Figure 20.7: Household Income, Line Islands compared with South Tarawa and other Outer islands



Source: 2006 Household Income and Expenditure Survey

The biggest contrast between the Line Islands and South Tarawa economically is not the difference in cash income, but the fact that in the Line Islands, average income is higher than average expenditure, in contrast to South Tarawa where the average household spends more each year than it earns, and so ends each year a little deeper in debt. This difference in expenditure is largely because Kiritimati is richer in subsistence resources, so families need less cash for their basic food and housing needs.

SUBSISTENCE ECONOMY

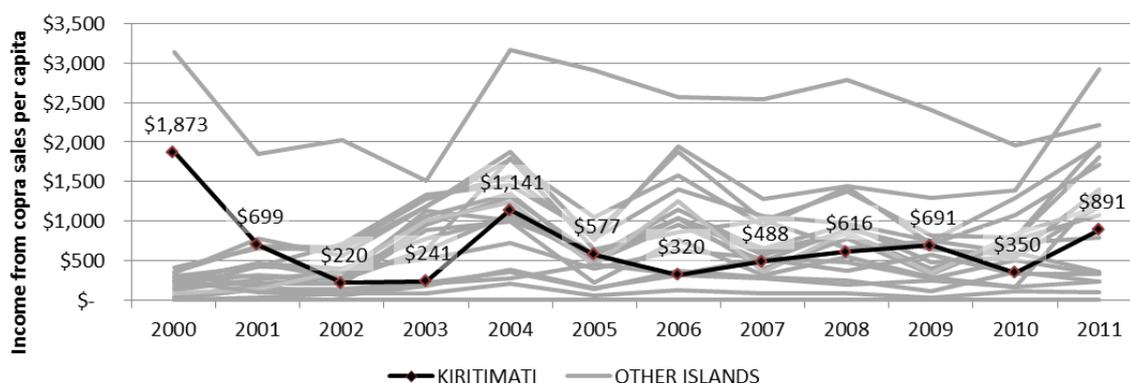
The fishing on Kiritimati is quite exceptional and people come to the island from all over the world to fish. Local households mainly fish in the lagoon, though fishing in the ocean and from the reef are also common. Since getting fish is not a real issue on Kiritimati, fish vendors are uncommon. Most of the fishing expeditions are for family consumptions or for drying and sending to relatives in the Gilberts, South Tarawa in particular.

Most families cut toddy and cultivate coconut and breadfruit trees close to the main settlements, and keep pigs and chickens, and many also have home gardens of cabbage, sweet potato and other crops. Cultivation of *bwabwai* (swamp taro) is for some reason very uncommon on Kiritimati.

COPRA

People on Kiritimati, whether engaged in cash work or not, do also find time to earn cash through fishing, cutting copra, or selling handicrafts. Copra cutting enables those without formal jobs to support their families, and provides many people with a way to gain extra cash. However copra is a lot less important to the overall economy of Kiritimati than it is on most outer islands. For example, in 2006 a total of \$234,462 was paid out through the Island Council for copra, which equates to \$320 per household. In that same year, the Household Expenditure and Income Survey found that the average household on Kiritimati had a cash income of \$8,157.

Figure 20.8: Average household income from copra, Kiritimati 2000-2011



Data sources: Ministry of Commerce, Industry and Co-operatives for copra payments, Census for household numbers

REMITTANCES

A number of parents receive money from sons and daughters working on German shipping line and Japanese fishing vessels. Many Kiritimati island residents who work in the formal and private sector remit money to relatives in the Gilberts.

HEALTH

The main health facility is London Hospital, while Banana, Tabwakea and Poland villages have one clinic each. Overall, the people of Kiritimati appear to enjoy good health, making fewer than three trips to a clinic each year, with the great majority of visits being for less serious diseases. The most common serious disease on Kiritimati is acute respiratory infection.

In comparison with other islands of Kiribati, both the smoking rate (46% of those over 15) and the rate of kava use (26%) are relatively low but rates of alcohol consumption are high with 28% of all adults drinking “regularly” or “sometimes”.

TRANSPORT AND COMMUNICATIONS

The primary road system around the island which passes through and links the villages (excepting Poland) was built by the British army at the time of nuclear testing in 1956-57, and appears to have had or needed only minor maintenance in the past (e.g pothole patching). The bituminized metalled roads are however, now showing signs of stress and some of the more regularly used lengths are in need of more comprehensive maintenance.

Most secondary roads in London are also bituminized and were constructed at the same time as the primary roads. They are also showing signs of stress in places and maintenance is required. Roads to villages are unpaved and are generally passable in dry weather; in wet weather, they are difficult to traverse.

Trucks, cars, motor-bikes and push-bikes are the main form of land transport. Because of the distance between Poland and Banana, trucks and cars are the more convenient means of transport.

The airport, port and jetty area are at London. The runway at the airport is in constant need of maintenance as is the lagoon channel into the jetty at London which needs to be regularly dredged. Government is responsible for the road system on the island, maintenance of the airport runway and apron, sea defense works, and for keeping the lagoon channel into the London jetty operational for small shipping. Cruise ship visits have in the past been an important source of income for Kiritimati but this requires regular dredging of the lagoon channel.

Flights to Kiritimati are operated weekly by Air Pacific from Nadi. To fly from Tarawa to Kiritimati requires an overnight stay in Nadi and is an international flight requiring a passport.

TELECOMMUNICATIONS

TSKL, a government company, is the sole deliverer of telecommunication services on Kiritimati. Because telephone calls on Kiritimati are difficult to make, TSKL has a plan to expand the telephone exchange, and to establish a wireless internet connections as well. A public internet café is available at TSKL office but connection is extremely slow.

There is a lot of room for improvement to the telecommunications system on the island.

Table 20.3: Environmental issues as identified by Kiritimati delegates to the Kiribati National Summit, 2011

ISSUES	PROBABLE CAUSE/S	IMPACT on SOCIETY	REMEDIAL ACTION	SUSTAINABILITY (EFFECTIVENESS)
Water	Human settlement within the boundary of the ground water source contaminates water lens Leaking septic tanks and toilet pits	Water unsuitable for human consumption; Low supply of water at times	Settlements to move elsewhere Upgrade toilet system and regular maintenance of existing toilet septic tanks and pits; People to pay their water bills	sustainable
Limited land space & overcrowding	-Population growth – migration of people from outer islands in the Gilberts and South Tarawa to Kiritimati;	-lack of privacy; dirty and unhealthy environments; Rise in crime, unwanted pregnancies, (single teenagers) mothers, Abuse of the custom of BUBUTI; Low income earners find it difficult to pay school fess and utilities	Control of migration of people from South Tarawa; Developments to move to outer islands; Land management and sound urban development planning.	costly but can be sustained
Reduction in Marine Resources	-overfishing in certain places; -use of gill fishing nets -unregulated harvest of resources	- depletion of catch; Fish caught are smaller in size.	-by-laws to protect fishing grounds and certain species; -plan and regulatory measures - demarcation of fishing zones	-take time to effect --can work if all parties agree