



22. Teeraina



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SUMMARY OF MAIN SOCIOECONOMIC INDICATORS – TEERAINA

	Teeraina					All other outer islands					South Tarawa including Betio					All Kiribati				
	2005		2010			2005		2010			2005		2010			2005		2010		
Population (Census)	1,155		1,690			51,067		51,186			40,311		50,182			92,533		103,058		
Percent of national population	1.2%		1.6%			55.2%		49.7%			43.6%		48.7%			100%		100%		
Land area, km ²	9.55		9.55			701.03		701.03			15.76		15.76			726.34		726.34		
Population density, people per km ²	121		177			73		74			2,558		3,184							
			2005-10					2005-10					2005-10					2005-10		
Population growth			535					119					9,871					10,525		
Annual rate of growth of population, %			7.9%					0.0%					4.4%					2.2%		
	<15 years	15-30	30-45	45-60	over 60	<15 years	15-30	30-45	45-60	over 60	<15 years	15-30	30-45	45-60	over 60	<15 years	15-30	30-45	45-60	over 60
Population by age group	745	423	307	160	55	19,320	13,501	9,196	6,080	3,089	17,119	15,784	8,959	5,813	2,507	37,184	29,708	18,462	12,053	5,651
Population by age group, %	44%	25%	18%	9%	3%	38%	26%	18%	12%	6%	34%	31%	18%	12%	5%	36%	29%	18%	12%	5%
			2005					2005					2005					2005		
Number of private households	198		278			8,556		9,060			5,245		6,705			13,999		16,043		
Number of persons in private households	1,155		1,690			48,303		49,020			39,186		49,250			88,644		99,960		
Average household size	5.8		6.1			5.6		5.4			7.5		7.3			6.3		6.2		
	Labour market activity, people 15+					Labour market activity, people 15+					Labour market activity, people 15+					Labour market activity, people 15+				
	Cash work - formal	Cash work -market oriented	Voluntary or subsistence work	Unemployed	Not in labour force	Cash work - formal	Cash work -market oriented	Voluntary or subsistence work	Unemployed	Not in labour force	Cash work - formal	Cash work -market oriented	Voluntary or subsistence work	Unemployed	Not in labour force	Cash work - formal	Cash work -market oriented	Voluntary or subsistence work	Unemployed	Not in labour force
Labour force status	159	102	0	134	405	4,687	3,564	0	4,492	11,725	8,594	2,487	0	6,826	13,545	13,440	6,153	0	11,452	25,675
Labour force status %	20%	13%	0%	17%	51%	19%	15%	0%	18%	48%	27%	8%	0%	22%	43%	24%	11%	0%	20%	45%
	Education attainment, people 15+					Education attainment, people 15+					Education attainment, people 15+					Education attainment, people 15+				
	No school completed	Primary leaving certificate	Form 3 certificate	Senior secondary certificate	Post secondary study or qualification	No school completed	Primary leaving certificate	Form 3 certificate	Senior secondary certificate	Post secondary study or qualification	No school completed	Primary leaving certificate	Form 3 certificate	Senior secondary certificate	Post secondary study or qualification	No school completed	Primary leaving certificate	Form 3 certificate	Senior secondary certificate	Post secondary study or qualification
Education attainment	91	440	231	178	5	4,104	11,418	7,092	8,526	726	2,418	8,125	7,570	13,626	1,324	6613	19983	14893	22330	2055
Education attainment %	10%	47%	24%	19%	1%	13%	36%	22%	27%	2%	7%	25%	23%	41%	4%	10%	30%	23%	34%	3%
			2010					2010					2010					2010		
Literate in [te taetae ni] Kiribati %			83%					90%					93%					91%		

PHYSICAL FEATURES

Teeraina (Washington) Island is the northern most island in the Line group of islands. It lies 120 km northwest of Tabuaeran and 383 km northwest of Kiritimati. It has also been known as New York Island and Prospectus Island.

Teeraina is one of the most isolated inhabited islands in Kiribati and in the world. Early European explorers found an island with no resident population. Today, access to the island is by ship/vessels only as there is no airport, no harbor and no breakwater. There is no published shipping schedule but there is a service which brings supplies to Teeraina and Tabuaeran from Kiritimati. The landing site presently used was developed recently on the south side of the island, half a mile from the southwest point that is better than previous sites but still risky during rough weather. Landing on Teeraina is often a dangerous experience especially when it is rough. Ships have been known to leave the island without off loading or loading cargo and passengers.

Teeraina is a sandy coral atoll of about 5.5 kilometers long, 2.1 kilometers at its greatest width with a circumference of about 15 kilometers and an area of 14.2 square kilometers. Like other low lying atolls, it typically averages 2 meters above sea-level, with sandy and porous soil. However, due to its high rainfall, peat soil is found throughout and the island is densely covered with coconut palms shrubs and vegetation including forest trees reaching 23 to 28 meters in height. It is surrounded by a fringing reef not over 183 meters wide, except at three places: 915 meters at the east point, 732 meters at the northwest point, and 549 meters wide at the southwest point. It is at these wide points of the island that the reef flats are seen during low tide otherwise, the rest of the reef flats surrounding the island are always submerged in water during high and low tide.

Teeraina has nine villages on the island located along the coast that can be accessed by a local gravel road mostly by pushbikes, motorbikes and trucks. Access to the villages by traveling the inner freshwater lake is impossible due to the thick dense coconut forest and marshland surrounding the lake. Instead the lake is used mainly to access other parts of the coconut forest for copra cutting or for fishing.

Teeraina has a high annual rainfall reportedly 2900-4000mm per annum, and a unique fresh water lake/lagoon, a lush tropical coconut forest where three different kinds of ferns and some other trees not found in Kiribati grow. Its main geographical feature is the presence of a fresh water lake/lagoon surrounded by swampy land and coconut woodland. Bulrushes ('titania') and giant swamp taros ('bwabwai') grow in abundance in these swamp or wetlands and can be observed when traveling throughout the lake. Coconuts, giant swamp taro, pandanus and breadfruit grow well without much need of cultivation in the coconut forest surrounding the lake. Sometimes during the wet season, the lake overflows, flooding the villages and causing discomfort to the villagers however, the islanders have learned to live with and prepared for such floodings.

The soil under the coconut forest is rich in humus and coconut peat and is cushiony to tread on. The peat consists of a dense, interlaced mass of partly decayed plant fibres, dark brown or black in colour, a major feature of this forest. The surface of the lake is about 1 meter above sea level. It measures nearly 3 kilometers long by 11 kilometers wide, and averages

about 2 meters deep during rainy seasons. Heavy rainfall experienced throughout the year maintain the fresh water quality and resources in the lake most notably the 'tuna', an eel like fish, the dusky jack, tilapia and milkfish.

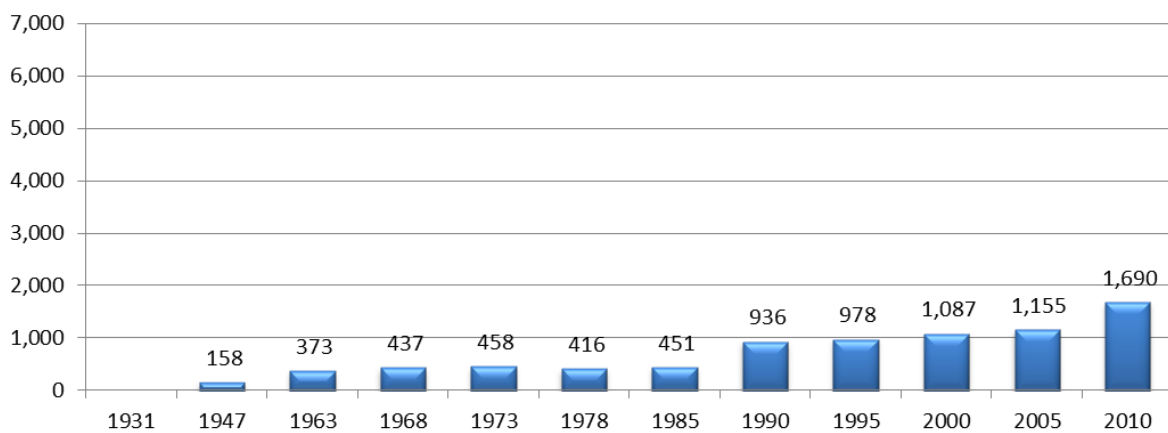
The only inlet of ocean water into the island is through a small opening at the end of the *Te buka (Pisonia grandis)* forest locally called the '*tunga*' marked by a reef spout that can be seen during the onset of incoming tide.

On the outskirts of the forest towards the ocean, the gravely, rocky and sandy soil types more common on Kiribati islands can be seen.. Unique also to this island is the lack of reef flats around most of the island resulting in deep water around the island all year round. On two parts of the island (northwest and southwest) the reef flats are wide enough to be exposed during low tides otherwise the rest of the reef flats are never exposed but submerged by the sea all year round.

POPULATION

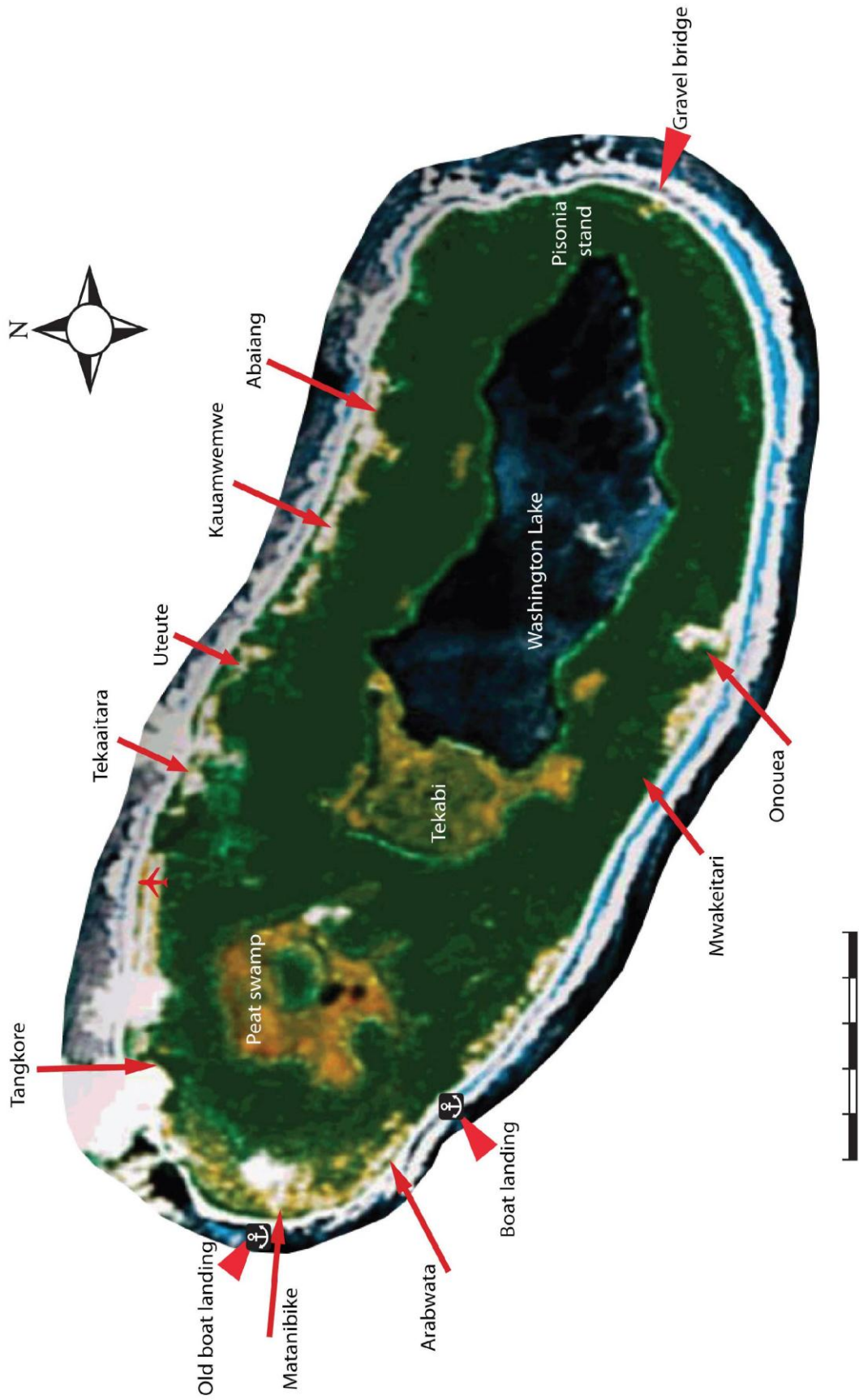
The population of Teeraina in the 2010 census was 1,690. Compared to the 2005 population of 1,155 and the 2000 population of 1,087, the population is growing very rapidly. The population of Teeraina grew by 535 people between 2005 and 2010, an annual population growth of 7.9%. In percentage terms, Teeraina is the fastest growing island in Kiribati, although the growth is much less significant in terms of absolute numbers.

Figure 22.1: Teeraina population 1931-2010



Settlement of Teeraina in modern times included the Burns Philip Copra Company scheme which operated on the island after the Second World War (WWII). More recently, settlement from Gilbert group has been encouraged during the re-settlement schemes of 1989-1995.

Figure 22.2: Map of Teeraina



Teeraina has a combined land area of 9.55 square kilometers and a population (in 2010) of 1,690, giving a population density of 177 people per square kilometer, making it one of the more densely populated islands in Kiribati.

Teeraina has eight inhabited villages; Matanibike (Government station), Tangkore and Arabata (where most of the initial settlers of Teeraina during the BP Company Scheme have settled), Mwakeitari, Abaiang, Kauamwemwe and Uteute where the recent settlers of the re-settlement schemes of 1989 and 1995 have settled. The settlement of Kaitara had no resident population at the 2010 census.

Table 22.1: Teeraina population by village

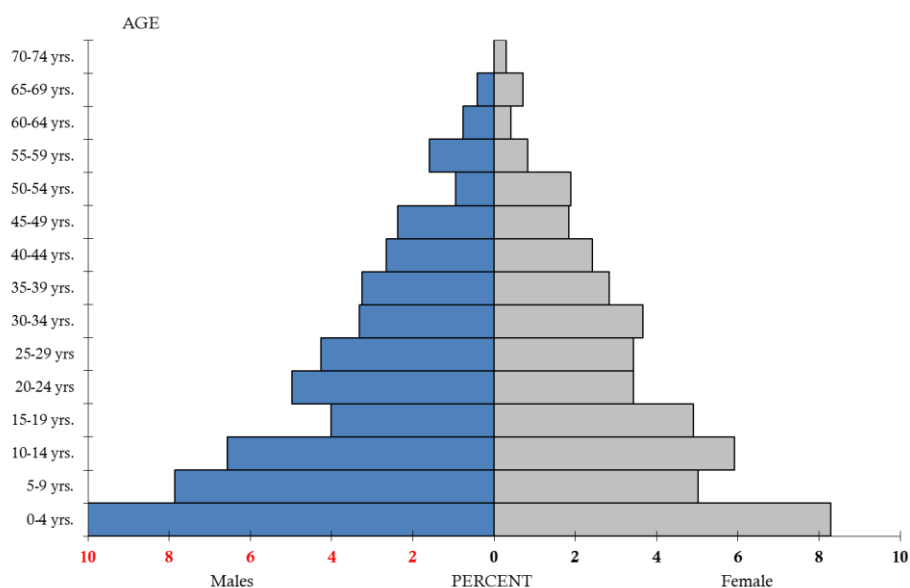
Teeraina	Village	Population
	Abaiang	146
	Kauamwemwe	198
	Uteute	141
	Kaaitara	0
	Tangkore	410
	Matanibike	91
	Arabata	353
	Mwakeitari	177
	Onauea	174
Teeraina total population		1690

Source: 2010 Census

The villages are linked by a rocky and bumpy road which provides the main access not only to the villages but to the different parts of the island to harvest coconuts for copra or to find other means of livelihood.

Teeraina has an unusual age structure; nearly half the population (44%) is aged under 15 and one in five people (19%) are children under five years. There are more boys than girls in almost all age groups except the elderly.

Figure 22.1: Teeraina population by age and sex



Data source: 2010 Census

Because Teeraina was settled recently, most residents identify themselves as being from another island of Kiribati, with a few from other islands of the Pacific. The number of people identifying themselves as being “from Teeraina” (404) is actually smaller than the number of people living on Teeraina who were born on Teeraina (761).

Table 22.2: Teeraina residents by home island

	Home island is Teeraina	From another island of Kiribati	From another country	Total: Population of Teeraina
Live on Teeraina	404	1,278	8	1,690

LAND AND MARINE RESOURCES

LAND

The island’s main resources can be found in its vast untamed forest, vast freshwater lake and swamp areas.

Coconut trees grow untamed and so high in the forest, they form a canopy, preventing sunlight from reaching the ground thus the ground so the soil is always moist. Concealed in this forest’s vastness is a forest of breadfruit (*Artocarpus altilis*) trees that compete with the surrounding coconut trees for sunlight. The freshwater lake is surrounded by swampy areas where the ‘*bwabwai*’ grow, some wildy and others cultivated and bulrushes as far as the eye can see.

An interesting feature of the island is the tendency for different stands of trees to be found in one location. Some of these trees can be found on other parts of the island but the majority

was observed to be found in one location only. The tropical almond, *kunikun* (*Terminalia catappa*) and *tekaitua* (*Leucaena leucocephalus*) are plentiful in the village of Matanibike. Stands of *aronga* and *te kanawa* (*Cordia subcordata*) can be observed in the villages of Kauamwemwe as one drives towards Abaiang after which a large stand of *buka* trees (*Pisonia grandis*), probably the second largest of its kind in Kiribati after the pisonia forest of Millennium Island (Caroline Island).

Technically, all land on Teeraina as well as reef and lake areas is owned by the Government of Kiribati. However the land use policies of the Government are designed to encourage migration to Teeraina. About a third of households (29%) live on land that they now have the right to call their own, while the remaining two thirds live on Government leases or privately arranged subleases.

WATER

Water supply on Teeraina is not an issue as there is a large freshwater lens and freshwater lake. Water is abundant all over the island all year round even during periods of drought.

The source of drinking water is the groundwater reservoir, tapped by digging wells 1 or so metres into the ground. The quality of groundwater is fresh throughout the year and not easily affected by droughts. All households have one or more wells, mostly open wells although some protected wells are used mainly for drinking. Only 1% of households use rainwater, mainly for drinking.

The only water issue relating to health is the abundance of worms and thus a high incidence of health problems encountered by the medical staff all year round. A notably well known worm prevalent on Teeraina is known locally as the '*naautoonga*' has been observed to be a prevalent issue on the island affecting mostly the children. The water supply otherwise is fresh and abundant all year round.

MARINE RESOURCES

Owing to its natural features, ocean fishing can be greatly constrained by rough weather at which times fish from the lake, land crabs or tinned food are then used to supplement the absence of fish. Skipjack tuna, sharks and other ocean fish are common catches on the island.

The natural resources of Teeraina include the following freshwater lake fish:

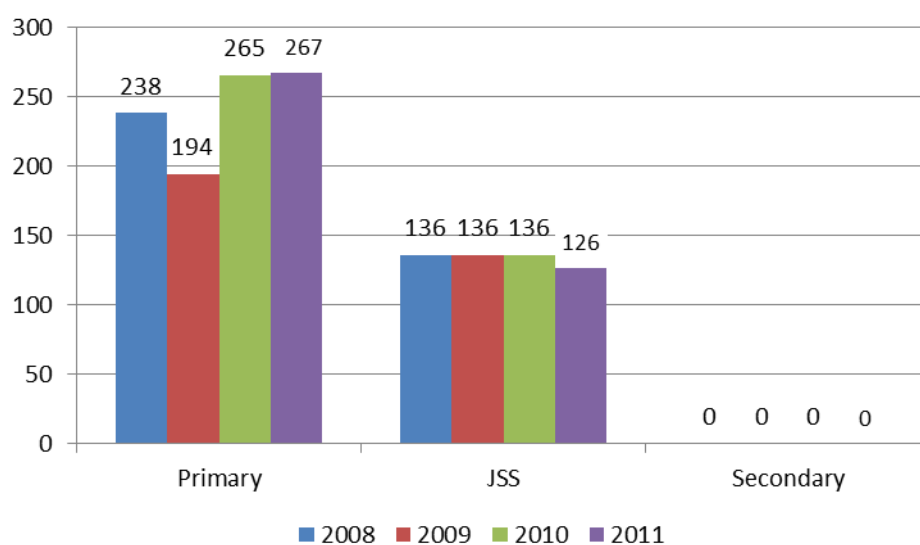
- Dusty Jack (*Caranx sp.*) – a trevally that seems to have made its home in the lakes of Teeraina
- Tilapia (*Oreochromis sp.*) – this was introduced to the Gilbert group by the Agricultural Department as a biological control of mosquitoes that was later considered by Gilbert islanders as a pest believing it to predate on milkfish
- Milkfish (*Chano chanos*) – a popular bony fish
- 'Tuna' (*Anguilla marmorata*) – freshwater eel

EDUCATION

Most adults (over 15) on Teeraina either have no schooling (10%) or primary schooling only (47%). Fewer than 1% of the population has a post-secondary qualification.

Teeraina has two schools, a primary school called 'Sunlight Primary School' and a Junior Secondary School called the Teeraina JSS. Both schools are located on the boundaries between the villages of Matanibike and Tangkore. Enrollments are fairly steady but are likely to increase soon as the large group of children aged 0-5 years at the time of the 2010 Census enter their school years and start to attend school.

Figure 22.2: School enrollments, Teeraina 2008-2011



Like most schools in general in the Kiribati islands, there is a great lack of furniture for the schools and pupils especially in primary schools have to sit on the floor. Sunlight Primary School pupils are no exception to sitting on the floor while JSS students on the other hand, have desks and chairs, some needing maintenance and upgrading

HEALTH

There one health centre on Teeraina, called the Arabata clinic, that is located at the Government station. The clinic has a dispensary and two wards that are without cooking and toilet facilities. In-patients rely on their families to bring in food from the homes. . The medical centre is staffed by a Medical Assistant, a nurse and a nurse aide. There used to be two other clinics but these have broken down and are no longer operational.

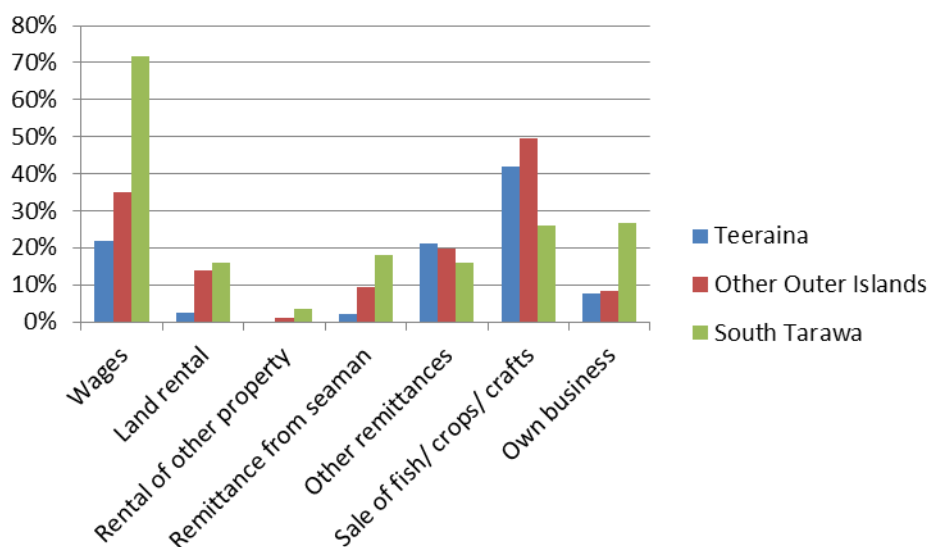
The people of Teeraina appear to enjoy good health overall and do not visit the clinic often; in 2011 there were an average of 1.6 visits to the clinic per person in that year. Most clinic visits are for non-serious illnesses or injuries, but there is a high incidence of Acute Respiratory Infection which can be very serious. Teeraina has a very high smoking rate; 55% of adults (over 15) smoke which increases the risk of respiratory infections not only among the smokers themselves but throughout their household.

Because Teeraina is so isolated, it is difficult to get medical supplies to the island or to evacuate patients in an emergency. Emergency backup is provided by the Kiritimati Hospital but it is not always possible to arrange transport to Kiritimati at short notice.

ISLAND ECONOMY

There are very few jobs on Teeraina and only one in five families received income from wages at the time of the 2010 Census. Remittances, either from seamen or from other family members working abroad or on South Tarawa are a very important source of income for Teeraina households. Sale of fish/ crops/ crafts (mainly copra) is the most common source of income.

Figure 22.3: Sources of household income, Teeraina



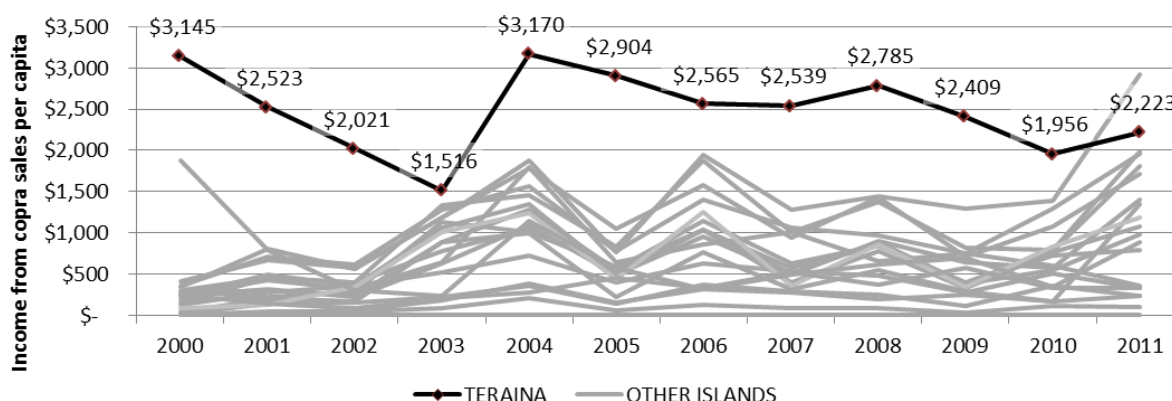
Source: 2010 Census

COPRA

Copra cutting provides the main source of income for households on Teeraina. Copra is harvested both around the villages and from forest areas. Canoes and boats are used to transport copra from other parts of the forest that otherwise cannot be transported through the forest by pushbikes or manual carrying.

Production has been fairly stable and households earn over \$2,000 per year, or \$6 per day per household in most years from copra alone. Unfortunately although payments are made to producers from the Government-allocated Copra Subsidy, much of the copra is never collected from Teeraina due to its extreme isolation and the high cost of transporting copra first to Kiritimati and then to the Copra Mill at Tarawa.

Figure 22.4: Copra income per household, Teeraina 2000-2011



Data source: Kiribati Copra Co-operative Society KCCS

AGRICULTURE

Teeraina has great potential for agricultural development, but the problem is its extreme isolation and the difficulty in transporting any produce. Not only does it have high annual rainfall and very fertile soil, but it is also free from most major pests and predators that are found in Kiribati especially in the Gilbert Group. Besides coconut, a good variety of fruit and vegetable crops such as *bwabwai* (swamp taro), breadfruit, banana and pumpkin also grow well on the island either wild or with little cultivation. Imported vegetable crops such as English cabbages, corn, rock melons, eggplants etc are cultivated presently on the island. The 'bwabwai' beetle (taro beetle), scale insect, sooty moulds are but some of the pests and plant ailments that are still to reach Teeraina.

Most households cultivate a range of food plants in the village areas, and some also collect breadfruit and *bwabwai* and cut toddy on the Government lands outside the main villages. Teeraina households hold the record in Kiribati for keeping pigs and there were almost as many pigs on Teeraina at the time of the 2010 census (1,277) as there were people (1,690). Households also keep chickens and dogs.

TRANSPORTATION

Council trucks provide the main transport for Primary and JSS students to and from their schools and general use by the Council. The other trucks are used for the respective services by the owners such as in transportation of cargo and other products from docks and to other branches while the KPC Tetaobe is used to support the KPC members in their church activities and functions. They are also hired by the general public for transportation as and when required.

Most households (62%) have at least one bicycle in working order and some (18%) have a motorbike. The road on Teeraina is in very poor condition and some parts, particularly through the forest, are difficult for any vehicle especially in wet weather.

Canoes, boats, and skiffs can be used both as transport and for fishing. Only 7% of households own a canoe, and 4% own a boat or skiff. Transport between villages is possible using the inland lake waters and canals. However, the canals become the issue

especially during dry spells when the lake and canal waters go down. The canal beds are full of coconut and pandanus leaves, logs, wood and mud obstructing the passages and blocking the engines system. The canals are full of soft mud/peat that one can sink into and thus is a danger to step into the canal unknowing or alone.

Teeraina is one of the most difficult islands to travel to as the only way to get there is by ship/boat. There is currently no air service to Teeraina and no airstrip. However literature states that at one point in time, there was an airport built by Dr. Martin Vitousek in support of his research work on climate which required recording rainfall data from Teeraina amongst other islands in the Line and Phoenix group. Unfortunately, the airstrip has now been overgrown with weeds and shrubs.