



2. Butaritari



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SUMMARY OF MAIN SOCIOECONOMIC INDICATORS – BUTARITARI

	Butaritari					All other outer islands					South Tarawa including Betio					All Kiribati				
	2005		2010			2005		2010			2005		2010			2005		2010		
Population (Census)	3,280		4,346			48,942		48,530			40,311		50,182			92,533		103,058		
Percent of national population	3.5%		4.2%			52.9%		47.1%			43.6%		48.7%			100%		100%		
Land area, km ²	13.49		13.49			697.09		697.09			15.76		15.76			726.34		726.34		
Population density, people per km ²	243		322			70		74			2,558		3,184							
			2005-10					2005-10					2005-10					2005-10		
Population growth			1,066					-412					9,871					10,525		
Annual rate of growth of population, %			5.8%					-0.2%					4.5%					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	1506	1335	711	568	226	18,559	12,589	8,792	5,672	2,918	17,119	15,784	8,959	5,813	2,507	37,184	29,708	18,462	12,053	5,651
Population by age group, %	35%	31%	16%	13%	5%	38%	26%	18%	12%	6%	34%	31%	18%	12%	5%	36%	29%	18%	12%	5%
	2005		2010			2005		2010			2005		2010			2005		2010		
Number of private households	561		630			8,193		8,708			5,245		6,705			13,999		16,043		
Number of persons in private households	3,279		3,546			46,179		47,164			39,186		49,250			88,644		99,960		
Average household size	5.8		5.63			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	356	327	612	515	1,030	4,490	3,339	6,931	4,111	11,100	8,594	2,487	1,611	6,826	13,545	13,440	6,153	9,154	11,452	25,675
Labour force status %	13%	12%	22%	18%	36%	15%	11%	23%	14%	37%	26%	8%	5%	21%	41%	20%	9%	14%	17%	39%
	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	342	1,051	633	790	24	3,853	10,807	6,690	7,914	707	2,418	8,125	7,570	13,626	1,324	6613	19983	14893	22330	2055
Education attainment %	12%	37%	22%	28%	1%	13%	36%	22%	26%	2%	7%	25%	23%	41%	4%	10%	30%	23%	34%	3%
			2010					2010					2010					2010		
Literate in [te taetae ni] Kiribati %			91%					90%					93%					91%		

PHYSICAL FEATURES

Butaritari is one of the northern islands in the Gilbert group. It has a total land area of 13.49 sq.km; 2.6 km at its widest point at Ukiangang village and 0.26 km at its narrowest point at Kuma village. The total length of the atoll is 69.27 km. Being located north of the equator Butaritari has a wet climate compared with the central and southern islands. Consequently, plant life is lush and diverse, and agriculture is benefiting its people.

Butaritari, like most of the outer islands, has one main road that runs along the entire island, connected to Keuea and Kumaa villages by Teibo causeway. There are also numerous access roads and sidetracks leading to inner land and bushes and other areas of importance. Apart from Tanimainiku, the rest of the villages are located linearly alongside the road on the lagoon side. Tanimainiku is located north of Tanimaiaki and is connected to Keuea village by Teibo causeway.

Butaritari is hot and humid all year round with easterly trade winds moderating the temperatures. September to March is the rainy season, with high humidity and strong winds. According to locals Butaritari is the most humid island in the Gilbert group.

POPULATION

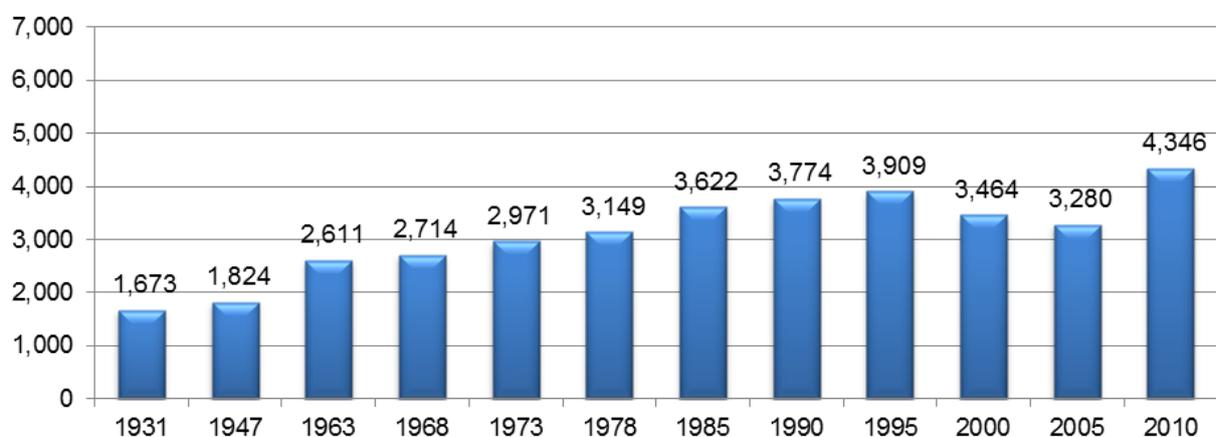
The population of Butaritari in the 2010 census was 4,346; this is 4.2% of Kiribati's total population.

Compared to the 2005 population of 3,280 the population appears to be growing rapidly, but the long term trend is quite complex, with a decrease in population from 2000-2005 coinciding with an increase in population on neighbouring Makin.

Butaritari has a combined land area of 13.49 square kilometers and a population (in 2010) of 4,346, giving a population density of 322 people per square kilometer. Butaritari is the 3rd most densely populated island in Kiribati after South Tarawa and North Tarawa.

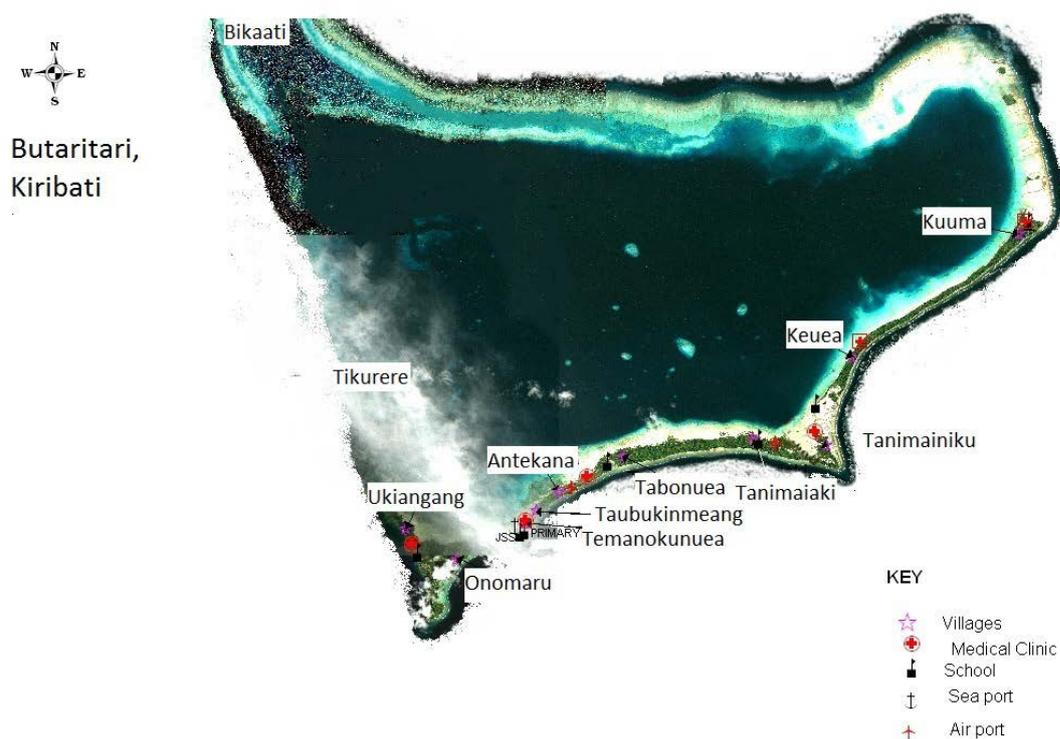
There are 630 households in Butaritari, and the average household size is relatively large: 6.9 people compared with the national average of 5.2.

Figure 2.1 Butaritari population 1931-2010



Data Source: 2010 Census

Figure 2.2: Map of Butaritari



Note: Refer to Butaritari Island Profile 2008 for problem areas and sites of significance.

Temanokunuea is the central village that accommodates the Local Government station (Butaritari Island Council) and the rest of the Government services such as communication, health, financial services and a decent boat harbour. Nearby Taubukinmeang is the most populous village, while Ukiangang at the widest point of the island is the second largest village.

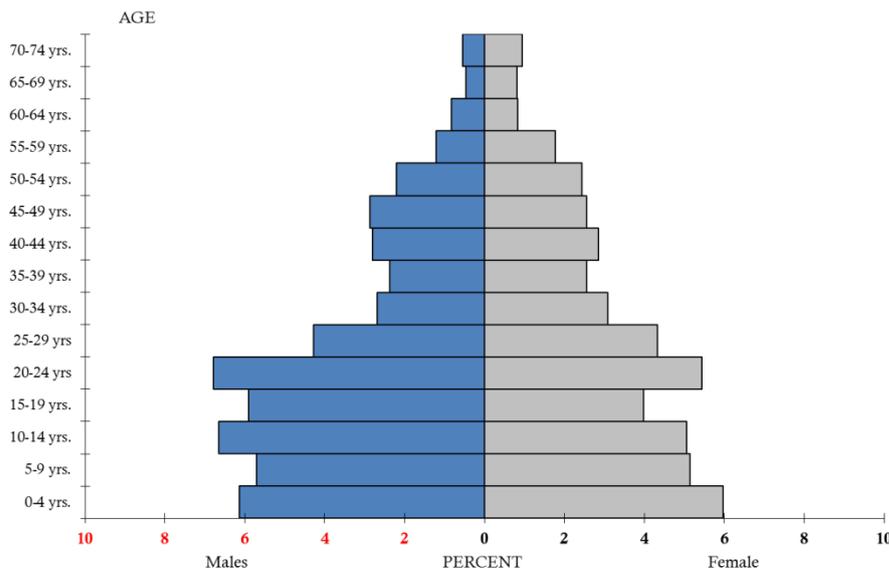
Table 2-1: Butaritari population by village

Butaritari	Village	Population
	Kuuma	323
	Keuea	258
	Tanimainiku	248
	Tanimaiaki	267
	Tabonuea	271
	Antekana	217
	Taubukinmeang	835
	Temanokunuea	621
	Onomaru	366
	Ukiangang	707
	Bikaati	225
	Tikurere	8
	Butaritari total population	4346

Data Source: Census 2010

There are 630 households in Butaritari, and the average household size is 5.6. 35% of the population are aged under 15; which is in line with the average for Kiribati. The proportion of people in each age bracket is fairly similar, which is indicative of a stable population – rapidly growing islands like South Tarawa have a higher proportion of young children than Butaritari. There are relatively few young people aged 15-19, which is consistent with the fact that there is no secondary school on Butaritari and children who wish to complete their schooling must travel to another island.

Figure 2.3: Age Sex Pyramid, Butaritari



Data source: Census 2010

LAND AND MARINE RESOURCES

Butaritari has a lush biodiversity with diverse land resources. Like other islands in Kiribati, the dominant fruit trees are coconuts however Butaritari people are more dependent on bananas for a living. Butaritari has rich biodiversity that is reflected in having 4 species of mangrove found at Ukiangang mangrove forest.

Butaritari has abundant marine resources due to its vast lagoon and reef areas. Even with the abundance of marine resources, there are still resource issues on Butaritari such as:

- Lack of fishing equipment;
- Remoteness of the island makes it hard for them to access fish markets in South Tarawa and Betio;
- There is no ice-plant on Butaritari, so salting is the only way of preserving fish;
- Depletion of lagoon resources such as sea cucumbers;
- Introduction of an invasive species of seaweed.

Table 2-2: Marine Resources - Reef and lagoon areas Butaritari

Island	Reef (square km)	Reef base (square km)	Lagoon (square km)	Land (square km)
Butaritari	82.61	11.7	295.77	13.59

Source: Ministry of Fisheries and Marine Resource Development

EDUCATION

91% of the population of Butaritari are literate in the Kiribati language. Of the adult population (those over 15), 12% have not attended school at all. 37% of the adult population have a Primary leaving certificate, 22% have a Form 3 certificate, and 28% have a Senior Secondary certificate. Only 1% hold a Post-Secondary qualification.

Butaritari has two types of school (excluding pre-school), primary and junior secondary schools. The seven primary schools are strategically located within or between villages so that each village has easy access to at least one school. Teinaura Primary School serves Ukiangang pupils while AinenKarawa serves Onomwaruu, Temwanokunuea, Taubukinimeang and Antekana. A "satellite school" accommodates Classes 1-3 children from the village of Tabonuea. Satellite schools on the outer islands cater for Class 1-3 children, based on a community's requirement and Government's understanding that children at this age are too small to walk long distances. Teraaka serves children from Tanimaiaki village while Anginbaiatooa caters for pupils from Tanimainiku and Keeuea. Anderson Primary School serves Kuumaa pupils while Tikinee caters for Bikaati pupils. In 2011, a total of 626 children were enrolled in the seven primary schools. There are 28 teachers, and the average class size across all schools is one teacher for every 22.4 pupils.

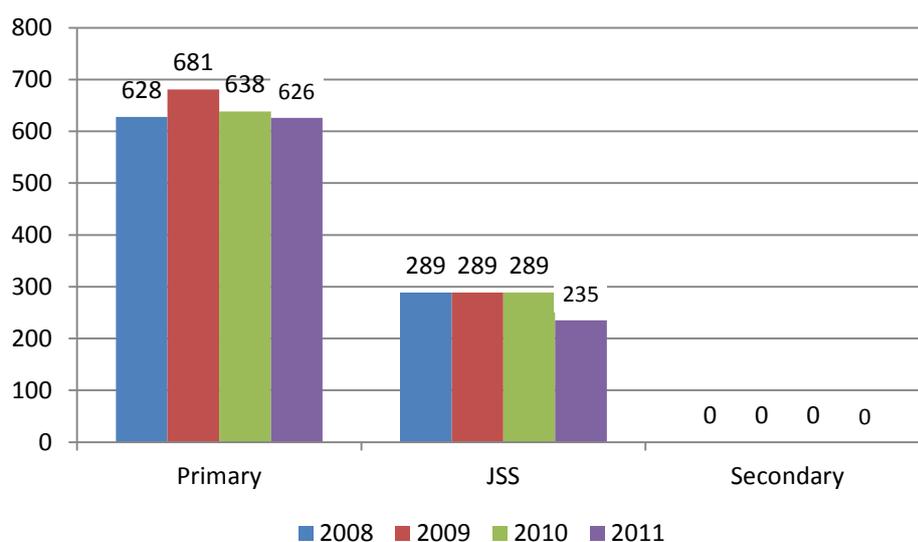
Table 2-3: Primary school enrollments, Butaritari

Butaritari	No. of Pupils			No. of Teachers		
	2011		Total	2011		Total
	F	M		F	M	
Ainenkarawa Primary School	82	89	171	6	1	7
Anderson Primary School	24	42	66	2	1	3
Anginbaiatooa Primary School	44	48	92	3	2	5
Teinaura Primary School	50	82	132	4	1	5
Teraaka Primary School	35	39	74	1	2	3
Tikinee Primary School	24	20	44	1	1	2
Tabonuea Primary School	22	25	47	1	2	3
Total	281	345	626	18	10	28

Source: 2011 Education Digest

Butaritari JSS, located in Temwanokunuea, had 235 students enrolled for the year 2011; 117 girls and 108 boys.

Figure 2.4: All school enrollments 2008-2011, Butaritari



ISLAND ECONOMY

SUBSISTENCE ECONOMY

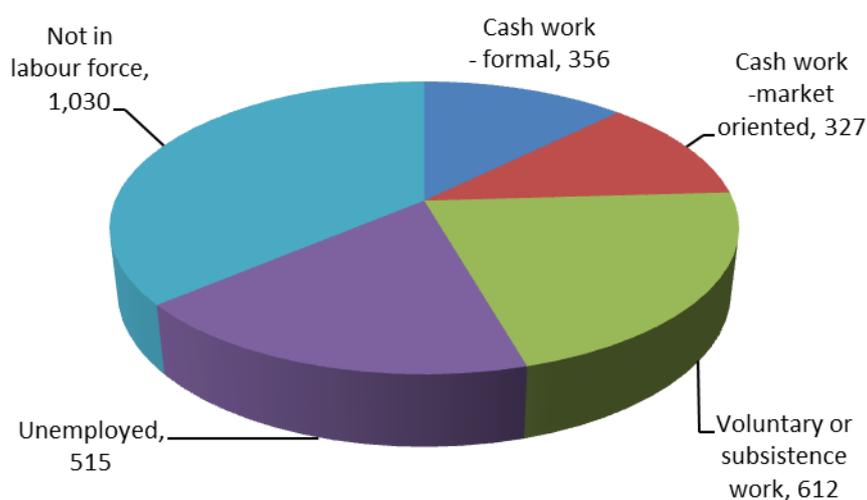
In common with other Northern islands, Butaritari has a dual economy where almost half of family incomes come directly from the land and ocean. Typical subsistence activities include fishing, toddy cutting, cultivation and harvesting of food crops mainly coconut, pandanus, breadfruit and *bwabwai* (giant taro), weaving mats, making thatch, rolling string, fetching water, collecting firewood, making fish traps and hooks, cleaning and washing, cooking and house construction amongst others.

Butaritari has rich soil and regular rainfall, as well as a large and productive reef and lagoon. As a result, food resources are abundant and varied, and the people of Butaritari take pride in their ability to provide a surplus of food for their guests and to send to relatives in South Tarawa.

FORMAL CASH WORK

Butaritari has a small economy with relatively few formal cash jobs. Of the 2,840 adults (over 15) living on Butaritari at the time of the 2010 census, only 356 were engaged in formal cash work. There are 59 roles in the Island Council (including MISA staff based on Butaritari) and other formal roles in education, police and agriculture.

Figure 2.5: Labour force status, Butaritari adults aged 15+

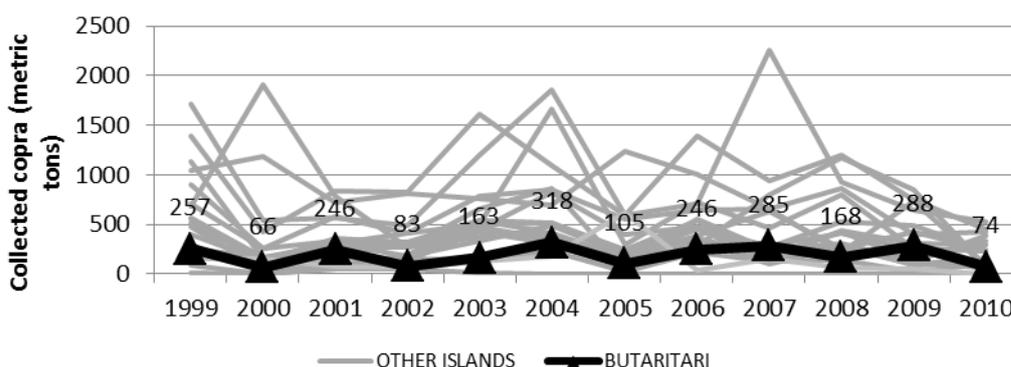


Data source: Census 2010

COPRA CUTTING

Where copra cutting is the main source of cash income for the people on most of the outer islands, it is not so for the people of Butaritari. This is due mostly to the rainy climate of the island that does not allow sun drying of the copra (instead copra has to be roasted/baked in an oven), the damage to coconuts by rats and the land tenure which is based on family owned lands as against individually owned lands. Oven drying of copra was used by the islanders until growing bananas for export to Tarawa became a popular income generating activity that replaced copra cutting. 74 metric tons of copra was collected from Butaritari in 2010, which is low compared with other outer islands.

Figure 2.6: Butaritari Copra Production 1999-2010



Data Source: National Statistics Office, MFED

FOOD EXPORTS

Some small-scale private businesses sell bananas, pumpkins and fresh coconut in South Tarawa, and this is becoming an important source of income for Butaritari.

Butaritari produce is sold in the 3 major food crop markets in Tarawa located in Bikenibeu, Bairiki and in Betio, and in some of the small but active food outlets located along the main road. Produce sold at the markets includes coconuts, banana, pumpkin, cabbage and pandanus. Major produce items such as coconuts, banana and pumpkin are brought in from Butaritari, Abaiang and Marakei whereas more perishable items such as cabbages, cucumbers, and melons are produced mainly by small household gardens in South Tarawa and Betio. Breadfruit, an important food crop which is perishable and would not ship well is collected on Tarawa.

Other food crops including *bwabwai* (swamp taro) and *te bero* (local fig) can be easily grown on Butaritari but are not often sold on Tarawa. This is thought to be because they take time to prepare and are not as appealing to people on South Tarawa. Boiled coconut toddy (*kamaimai*) and vinegar are also produced in abundance on Butaritari but are not often exported to Tarawa.

Overall, food exports are already an important source of cash income for the people of Butaritari, but the number of people engaged in “market oriented cash work” is still low (327 people or 12% of adults over 15), indicating that this activity is probably limited to a small number of families. A major project by the Agriculture division of MELAD aims to work with local families to establish gardens on an area of Government land near the airport, producing a greater variety of produce in quantities which can economically be shipped to South Tarawa.

The Government of Kiribati believes that there is further potential for Butaritari and the other “garden islands” of the North to earn more income from local foods if problems of storing, transporting and marketing can be addressed.

HEALTH

In addition to the main Butaritari clinic, local clinics are located at Kuma, Nakiroro, Tekananuea, Tanimaiaki, Ukiangang, Bikati and Keuea.

Each village on Butaritari has its own Village Welfare Group, which is helping the medical staff on the island. Members are representatives of different groups or associations, such as youth, *unimwane* (old men's) association, women, pastors or catechists and medical personnel. There is an overarching village welfare-working group that coordinates the work of all the other village groups. Some of the activities carried out by this working group include the following:

- Fundraising;
- Construction of toilets;
- Ensure that cleanliness is observed by villagers;
- Assist medical staff in preparing and taking patients to airport who are to be admitted to Tungaru Central Hospital in South Tarawa;
- Construction of safe and protected wells; and
- Assist the island council in the general maintenance of its buildings.

Records show that the most common diseases on Butaritari Island are fever, cough, headache, stomachache and diarrhoea. There are no cases of sexually transmitted

diseases, or these are not reported. Serious illnesses are referred to Nowerewere Central Hospital.

TRANSPORTATION

Trucks are an important form of transport, for all types of goods as well as for transporting people between villages. The Butaritari Island Council has a truck which is available for hire. The Kiribati Protestant Church and the 'Boboti' CS Ltd also have their own trucks for their own use and for hiring out to the general public.

Cars are very uncommon. Only one household in three (36%) have a bicycle, and one household in six (15%) has a motorbike.

The council and individuals also have their own canoes and boats which are used for fishing and for transportation between the villages.

The issues of transportation include the following:

- Insufficient transport services to and from the island
- No regular freight service, which limits the potential for local food exports
- High cost of pushbikes, motorbikes and boats
- Lack of properly equipped mechanical workshops

Air Kiribati has scheduled flights from Tarawa to Makin every Wednesday and Friday.

ENVIRONMENT AND RESOURCES

WATER

The 2010 census showed that 86% of households depend on well water as their main source of drinking water, while only 14% were using rainwater. Many households depend on multiple water sources, for example using a protected well for drinking water and an unprotected well for washing water.

ENERGY - FUEL

Butaritari fuel energy needs in 2007, totaled 2,531 drums comprising 1,650 (65%) un-leaded petrol (ULP) drums, 336 (13%) automotive diesel oil (ADO) drums and 545 (22%) drums of dual purpose kerosene (DPK), a total of 330,000 litres of ULP, 67,200 litres ADO and 109,000 litres of kerosene (DPK).

ENVIRONMENTAL ISSUES

The most threatening environmental issue on the island is coastal erosion, and flooding of agricultural land during high sea surges. Other issues also exist; there is no system for safe dumping of rubbish and a lack of proper sanitation facilities that will not affect the water lens. Environmental issues however include those of introduced invasive species of weeds and seaweed and, before culverts were built into the Teibo causeway, loss of some marine

species. A fish species called *te kimokimo* disappeared months after after the construction of the causeway, only to reappear after the culverts were added to the causeway in 2005.

Survey results done by the KAP II community consultation team in late 2007 showed that coastal erosion is greatest around the villages of Tanimaiaki/Tanimainiku and Keuea villages. This was presumed to be caused by alteration to the natural patterns of accretion and erosion linked to Teibo causeway. Other eroded coastlines are linked to human destruction in terms on aggregate mining for concrete buildings and other construction work. Land reclamation also contributed to coastal erosion along Butaritari village lagoon coastline. Other noted eroded areas were probably caused by the removal of mangroves.

Table 1-3 below shows the environmental issues and impacts identified by representatives from Makin during the 2011 National Summit.

Table 2-4: Environmental Issues and Impacts, Butaritari

ISSUES	PROBABLE CAUSE/S	IMPACT on SOCIETY	REMEDIAL ACTION	SUSTAINABILITY (EFFECTIVENESS)
Water	Droughts	<ul style="list-style-type: none"> -destroying vegetation and fruit trees -brackish water -Bikaati village has less ground water/wells for residents to drink -Anginibaiatooa Primary School lacks groundwater and rainwater -coconut trees bear less fruit 	<ul style="list-style-type: none"> -future plans for concrete cisterns -provision of aluminium roofing for houses to allow water catchment in water tanks -increase water catchment for residents -Bikaati village – immediate provision of water systems i.e over-head tanks, solar pumps and piping system including permanent water catchment -Anginibaiatooa Primary School urgently in need of concrete water catchment 	<ul style="list-style-type: none"> -once all these are accomplished, it is hoped that it will be sustainable

ISSUES	PROBABLE CAUSE/S	IMPACT on SOCIETY	REMEDIAL ACTION	SUSTAINABILITY (EFFECTIVENESS)
Coastal Erosion	-global warming	Reduction in land masses	-relocation of people further inland	-challenging
	-aggregate mining	-a threat to properties and welfare of the people	-funding of projects to protect and manage coastal areas	-costly and takes time for islanders to get the message
	-sea level rise?	-rows of coconut trees and vegetation disappearing from the beach	-limit aggregate mining	-questionable
	-Teibo causeway (1980s)	-number of bwabwai pits flooded	-mangrove planting and coastal vegetation planting	-takes time, need the cooperation of residents to monitor to ensure sustainability
	-land reclamation		-replace causeway with bridge	- bridges costly but sustainable
			- better designs of channels	-costly but may have side effects

ISSUES	PROBABLE CAUSE/S	IMPACT on SOCIETY	REMEDIAL ACTION	SUSTAINABILITY (EFFECTIVENESS)
Seawater seepage into bwabwai pits	<ul style="list-style-type: none"> -seawater erosion -extreme high tides - storm surges -aggregate mining -land reclamation 	<ul style="list-style-type: none"> -Tanimaiaki/Tanimaiaki, Ukiangang and Bikaati villages –bwabwai plants killed -bwabwai pits left unattended, thus dry -less supply of bwabwai to feed land owners 	<ul style="list-style-type: none"> -reduce aggregate mining -erection of concrete blocks to prevent further flooding -plant exotic plants as a substitutes such as cassava and others thru Taiwan Technical Mission and Agricultural Unit -relocation of bwabwai pits further inland 	<ul style="list-style-type: none"> - sustainability of these techniues is questionable -costly but effective to some extent - can be sustained over time but requires positive attitude
Reduction in marine resources	-closure of inter island passage with Teibo causeway	-bonefish species declined, some disappeared	-reopening of the passage	-costly but sustainable

ISSUES	PROBABLE CAUSE/S	IMPACT on SOCIETY	REMEDIAL ACTION	SUSTAINABILITY (EFFECTIVENESS)
	-increase in human population	-mangrove crab (ma`nai) decline in numbers	-control fishing	-hard to control behaviours of people
	- unregulated fishing	-shark is rarely landed due to overfishing	-by-law and regulations to protect marine species	-sustainable once enacted
		-octopus and lobsters are getting scarce		
Less Agricultural Activity	-superficial commitment to agricultural activities -shortage of feed for pigs/piglets due to delay in receiving orders from abroad -limited funding	-unbalanced diet -no supply of land protein	-increase awareness and importance of livestock and agricultural activity through Agricultural Division and Taiwan Technical Mission -provide funding - use of local plants, marine seaweed mixed with breadfruit to	-it can be sustained -Can be done, cheap and sustainable, needs creativity

ISSUES	PROBABLE CAUSE/S	IMPACT on SOCIETY	REMEDIAL ACTION	SUSTAINABILITY (EFFECTIVENESS)
			supplement imported feed	
	<p>-mismanagement of livestock</p> <p>-pigs slaughtered before they are bred</p>			

