



TABITEUEA NORTH



2008

SOCIO-ECONOMIC PROFILE

PRODUCED BY THE MINISTRY OF INTERNAL AND SOCIAL AFFAIRS,
WITH FINANCIAL SUPPORT FROM THE UNITED NATION DEVELOPMENT PROGRAM &
KIRIBATI ADAPTATION PROJECT AND, TECHNICAL ASSISTANCE FROM
THE SECRETARIAT OF THE PACIFIC COMMUNITY.



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TABITEUEA ANTHEM

TABITEUEA TABEKIA RAKE

Ma bwanaa aika a tangiraoi
I butiko kaota nanom ibukin
Abam ae ko tangitangiria

Boni n nem ao kainikatum
Ae ko bwebwerake iai
Boni mamaten nanou
Tabiteuea tabekia rake ieta
Kaburaa I moa
Be e na uotia te roro
Ma te roro n rikirake

Ai rabwara aron te iango ma
Te kantaninga ae reke
E tabekiko tangiran abau
Baw e aki kona n rai
Baana n te riringa,
E rarabwa nanom ni koaua
Ibukin abam ae ko tangitangiria

RAISE TABITEUEA

*With the sweetest of voices
Please show your commitment
For your beloved island*

*Your foundation and home
Where you grew up
My heart is always there
Tabiteuea raise it high
Put it before all else
So that generations will endure
For generations to come*

*Much gratitude for the inspirations
Perceptions that came up
The love of your island lifted you up
For they will never wither
The leaves under the scorching sun
Much appreciation for your true heart
Shown for your beloved island*

FOREWORD

*by the Honourable Amberoti Nikora,
Minister of Internal and Social Affairs, July, 2007*

I am honored to have this opportunity to introduce this revised and updated socio-economic profile for Tabiteuea North island. The completion of this profile is the culmination of months of hard-work and collaborative effort of many people, Government agencies and development partners particularly those who have provided direct financial and technical assistance towards this important exercise.

The socio-economic profiles contain specific data and information about individual islands that are not only interesting to read, but more importantly, useful for education, planning and decision making. The profile is meant to be used as a reference material for leaders both at the island and national level, to enable them to make informed decisions that are founded on accurate and easily accessible statistics. With our limited natural and financial resources it is very important that our leaders are in a position to make wise decisions regarding the use of these limited resources, so that they are targeted at the most urgent needs and produce maximum impact.

In addition, this profile will act as reference material that could be used for educational purposes, at the secondary and tertiary levels. This is one of the intentions when the revision exercise was conceived in the first place. In its new format, the profile contains valuable information on the history, geography, demography, commerce and trade, natural resources, the environment, and many other important facts about the islands. The vision to make the island profile important reference material will be further enhanced with the launching of the Ministry's website. This is indeed a revolutionary step in the sense that such valuable information will be made accessible on the internet, for everyone to use in and outside Kiribati.

The profiles have potential economic value because they provide the kind of information that local and foreign investors need. This aspect of the profiles will be improved with time, as better information on marine and land resources becomes available and incorporated in the book.

The island profiles are useful development documents for individual islands and the nation as a whole. Whether they are used by students, businessmen, tourists, politicians, or planners, I can say with conviction that it will prove a useful resource on Kiribati.

Te Mauri, Te Raoi and Te Tabomoa to everyone.

ACKNOWLEDGEMENTS

The preparation of this profile involved the hard work and commitment of various individuals, Government ministries and external development agencies. At the outset, the initiative and financial support of the United Nations Development Program (UNDP) must be acknowledged with deep appreciation. UNDP financed the revision of the profiles through a joint UNDP-GoK project known as *Strengthening Decentralized Governance in Kiribati (SDGiK)*.

Other regional organizations that are very supportive to the profiling exercise include the South Pacific Geo-science Commission (SOPAC), who provided technical support in relation to the incorporation of GIS and CHARM in the project, and the South Pacific Commission (SPC), who assisted in the establishment of POPGIS for use in data sourcing and analysis, provided input to the structure of the profiles, recommends the incorporation of valuable data and information, and generously offered to publish the profiles. Without their assistance the profiles as you see it now will not have attained such a high quality in terms of content and appearance. The Ministry of Internal and Social Affairs owes much gratitude to these organizations particularly their concerned staff, for their readiness to assist even if it is beyond their terms of engagement.

The project office of the Commonwealth Local Government Forum (CLGF) based in Fiji, through its Pacific Project, also contributed invaluable assistance to the project, in particular to Component 3 which focused on capacity development of local government bodies on the outer islands. Several of the activities under this component were jointly funded by CLGF, thereby absorbing much in terms of financial costs and time. For these contributions we are very much thankful.

The various ministries of Government have helped in one way or another, especially in the furbishing of valuable data and information used in this profile. The project has been successful in maintaining the good relationship that had developed with other ministries and civil organizations. In addition, inter-agency committees were established for monitoring and technical support during the implementation phase of the project. The most important of these committees is the Outer Island Project Coordinating Committee (OIPCC), which serves as the overall steering body of SDGiK. Other technical working committees were also instrumental in getting some of the difficult tasks done. These working committees include the committee on the review of the Local Government Act, and the committee on the review of development procedures. One of the important lessons learned from the establishment of these committees is that it is possible to cut across borders to get the kind of commitment and cooperation that are reflected in the achievements of the project.

Hopefully the network of cooperation which is necessary in sustaining and improving the profiles in future is maintained between the various ministries of Government. As the leading agency in the production of this profile, the Ministry of Internal and Social Affairs must ensure that the linkages between the statistical units of various government departments remain intact.

Due to its multi-dimensional nature, far too many people are involved in the profiling exercise to allow acknowledgement on a personal level. It is hoped that by according merit to their respective agencies will somehow convey the deep sense of gratitude which the project owes to these committed individuals. With this in mind we would like to acknowledge the great contribution and support of the Ministry of Internal and Social Affairs (MISA), in particular the Rural Planning Division (RPD), the Local Government Division (LGD), the Community Development and Services Division (CDSD), and the Accounting Unit, who spearheaded the various activities related to their areas of expertise. The successes that have been achieved in the different project components are indeed the result of their collective work.

Ultimately the greatest contribution and sacrifice in the production of these revised Island Profiles is offered by a few committed individuals, both within the Ministry as well as from outside who deserve to be acknowledged. Nei Terautete Tareti, the computer operator in the Rural Planning Division, worked very hard to collect the updated statistics which now appear in the current profiles. A lot of times she had to work extra hours to input and analyze these statistics. Nei Ruta loata, who took over this task when the profiling exercise was transferred from RPD to SDGiK, was similarly forced by the heavy load and limited time to work overtime and in many instances well into the evening when everyone has gone home. Most of the initial analysis and graphic representations that appear in the profile are her design.

Phil Bright and his colleagues at SPC in Noumea generously offered to edit and publish the profiles, besides arranging for a work attachment with SPC of two of MISA staff. The profiles will have not attained the very high quality in which you see them now without their assistance. In addition, the improved layout and presentation of information is also based on their professional views and guidance.

The strong support and leadership of the Minister of Internal and Social Affairs, Honorable Amberoti Nikora have been a significant factor in the successful undertaking and completion of the profiling exercise, and for the whole SDGiK project for that matter. His support would have not been that strong without the equally solid support and guidance of the former Secretary of MISA, Karibaiti Taoaba, and Rikaua Takeke, the current Secretary.

The Deputy Secretary, Manikaoti Timeon spearheaded the profiling and completed the first prototype on Makin after which project staff continued drafting the other outer island profiles. His immense effort and guidance in the profiling is a major contribution to the completion of these profiles. The unwavering effort and dedication of Nei Erimeta Barako in the completion of the profiles even after the SDGiK project had ended culminated in the completion of these outer island profiles. Ultimately, the KAPII project under the directions of Kautuna Kaitara, the KAPII Coordinator, Kaiarake Taburuea, the Project Manager and Paul Craig, provided the required funds and support in the eventual completion of the profiles.

To everyone who have contributed in one way or another to the production of this useful document, including the many people and organizations on the outer islands, the Government of Kiribati is deeply indebted, and wish to thank you immensely for your useful contributions.

AMI BAU TEMAURI TERAOI AO TETABOMOA.

KAM BATI N RABWA.

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LIST OF ACRONYMS

SDGIK	Strengthening Decentralized Governance in Kiribati
MDGs	Millennium Development Goals
MOP	Ministry Operational Plan
NDS	National Development Strategy
UN	United Nations
GOK	Government of Kiribati
SOPAC	South Pacific Geo-Science Commission
CHARM	Comprehensive Hazard and Risk Management
GIS	Geographic Information System
CLGF	Commonwealth Local Government Forum
OIPCC	Outer Island Project Coordinating Committee
MISA	Ministry of Internal and Social Affairs
RPD	Rural Planning Division
LGD	Local Government Division
CDSD	Community Development and Services Division
SPC	Secretariat of the Pacific Community
MOH	Ministry of Health
MELAD	Ministry of Environment Land and Agricultural Development
MEYS	Ministry of Education Youth and Sport
MFED	Ministry of Finance and Economic Development
POPGIS	Population GIS
RC	Roman Catholic Church
KPC	Kiribati Protestant Church
SDA	Seventh Day Adventist Church
LDS	Church of Jesus Christ of Latter Day Saints
COG	Church of God
KHLP	Kiribati Handicraft and Local Produce Company
KSECL	Kiribati Solar Energy Company Limited

CHAPTER 1: INTRODUCTION

The first Island Profiles were published in the late 1980s, about 20 years ago. Apart from being used as a resource book by project personnel in the Rural Planning Division, it remained largely unutilized, and the information quickly became obsolete as the years passed without any attempt to update a lot of the statistics contained in them. This is the first time that the profiles are being updated and upgraded to suit today's need for information. In addition to the upgrading exercise, the profiles will also be updated, annually if possible, depending on the regularity and availability of reliable statistics. The current revision is based on a mixture of methodologies including importation of data from different government ministries (MOH, MELAD, MEYS, MFED), the use of PopGIS software to analyze and map data, face to face interviews, questionnaire surveys and the use of reference materials and the internet.

While the purpose of the profiles is to serve as the basic information tool for planners and decision makers, it can also be used to meet the needs of students, business people, politicians, tourists, planners, and the public in general. This is possible due to the fact that it contains unique and interesting information on the island's culture, economy, natural resources, environment, infrastructure, social services and various other features. With the incorporation of MDG indicators in this new version, the profiles will now serve a very useful purpose of becoming an important tool to monitor the country's performance in respect of achieving MDG targets. Island-level statistics enables more specific analysis of the situation faced by Kiribati in the different sectors of health, education, poverty reduction, gender equality, the environment, and HIV/AIDS. These are the issues embodied in the eight goals set by the United Nations which countries are expected to achieve by the year 2015.

Another new feature of the profiles is the introduction of a computerized back-up system, which is made up of an electronic copy of the profile, as well as a GIS program which enables detailed analysis of statistics right down to the village and household levels. The ultimate objective of the whole exercise is to have an efficient and reliable source of information about the outer islands, that is not only available in hard copy, but better still one that could be accessed immediately by the push of a keyboard button. This will enable professionals and lay people alike to acquire information quickly, for whichever purpose they may have. The profiles will be made available on the Ministry's website – www.misa.com, or alternatively through PRISM. This will enable international access to the profiles for the use of traveling officials, overseas students, potential investors and visitors. Apparently the website will contain information other than the island profiles, from the various divisions of the Ministry and perhaps additional relevant information from other government ministries. Upon completion of the website two goals will be achieved, first, that the information will be available on line for the first time and, second, that such useful information will be accessible from anywhere in the world in electronic form. This is going to be a significant achievement in itself.

The continual usefulness of the profiles, and other information contained in both the hard and electronic versions, will depend to a great extent on a reliable system of updating and upgrading. After all, information changes all the time, as do the technology upon which it depends. Finally, it is hoped that the profiles in their new format and accompanying electronic features will serve the purpose for which they are designed, and much more. We wish every user of this profile enjoyable reading, and trust that they find it interesting and rewarding.

Summary of main socio-economic indicators

	NATIONAL			TabNorth		
	Total	Males	Female	Total	Male	Female
Total population (November 2005)	92533	45612	46921	3600	1764	1836
Urban population	40311	19435	20876			
Percent of national population				3.9	3.9	3.9
Percent urban (%)	43.6					
Rate of Growth (%) of total population 2000-2005	1.8			1.4		
Population density	127			140		
South Tarawa population density	2558			NA	NA	NA
% population younger than 15years	37	38	36	39	38	38
% population 15-24 years	21	21	20	22	27	19.16
% population 15-59 years	58	57	58	54	58.17	55.7
% population 60 years and older	5	5	6	6	4.26	7.29
Age dependency %	74			43	44	43
Households				NA	NA	NA
Number of private households	13999			573		
Number of persons in private households	88644	43749	44895	3600		
Average household size	6.3			5.7		
Number of institutions (non-private)	43			NA	NA	NA
Number of persons in institutions	3889			NA	NA	NA
Labor market activity	36969	20013	16956	3600	1764	1836
Employed population (15+ years)	34715	18883	15832	2181	1044	1137
Cash workers	13133	8095	5038	270	165	105
Village workers	21582	10788	10794	1403	670	733
Unemployed	2254	1130	1124	26	11	15
Non-labor market	21069	7926	13143	NA	NA	NA
Students	7323	3496	3827	405	162	243
Persons engaged in home duties	6077	793	5284	12	7	5
Inactive persons	3662	1996	1666	6	5	1
Retired persons	3227	1179	2048	NA	NA	NA
Disabled or sick persons	709	398	311	NA	NA	NA
Prisoners	71	64	7	0	0	0
Labor market participation ratio	63.6	71.5	56.3	NA	NA	NA
Employment-population ratio	22.6	28.9	16.7	NA	NA	NA
Unemployment rate (%)	6.1	5.6	6.6	NA	NA	NA
Education				NA	NA	NA
School enrolment rates 6-15 year olds (%)	91.0	89.1	93.0	NA	NA	NA
Proportion of population 15 years and older with secondary or higher education	50.5	51.6	49.5	NA	NA	NA
Proportion of total population with secondary or tertiary qualification	19.4	18.2	20.5	NA	NA	NA

CHAPTER 2: GENERAL BACKGROUND

2.1 Location, Size and Land Area

Tabiteuea North is one of the southern islands of the Gilbert group, located 347.17 kilometers (km) Southeast of Tarawa, the capital of Kiribati. Northwest of it lies the island of Nonouti while Onotoa lies 113.35 km southeast and Beru found 135.01 km east of it. The distance from the most northern tip of Tabiteuea North to the most southern tip of Nonouti is 39.20 km. It has three inhabited islets found south of Kabuna, the most southern village of mainland Tabiteuea North.

Alternative Names: Drummond Island, Bishop Island
Area / Country: Southern Gilbert group, KIRIBATI

Coordinates: Latitude (DMS): 1° 11' 38.20" S
Longitude (DMS): 174° 44' 11.62" E
(Degrees, minutes and seconds)

Area: Total land area: 25.78 sq.km
Widest width: 2.18 km at Tekaman
Narrowest width: 0.13 km at Kabuna
Length: 27.90 km

Mainland Tabiteuea North extends from the northern village of Tekabuibui to the southern village of Kabuna. There are numerous islets between Kabuna and the three inhabited islets of Tenaatoorua, Bangai and Aiwa, just as there are also several islets in between the inhabited islets themselves. The islet of Aiwa also marks the boundary between North and South Tabiteuea.

2.2 Physical features

Tabiteuea, like Tarawa were separated into two islands due to their sizes and to allow easier management during establishment of the island councils in the 1960s. Tabiteuea and Tarawa were thus split into two islands, north and south, and with individual separate island councils and later Betio was fitted with a separate island council as befitting the population residing on it.

North Tabiteuea starts from the village of Tekabuibui and extends all the way to the islet of Aiwa in the centre of the island that also marks the boundary of Tabiteuea North and Tabiteuea South. From the northern end of the island, the villages include Tekabuibui, Tekaman, Tanaeang, Buota, Terikiai, Eita, Utiroa, Taumwa, Kabuna, and the rest three islets, Tenaatoorua, Bangai and Aiwa. The rest of the islets that are not habited are used as copra sites for families owning lands there. Immediately south of the Kabuna, lies the historical site of the Kiribati wars, Teabuaeroa, where stone monuments still line the coast of make-believe giant warriors still stand. These stone monuments look a line of giant soldiers when seen from the sea, ready for battle.



Undivided, Tabiteuea is the largest island in the Gilbert group that comes third after Tabuaeran and Kiritimati in the Line group. However, on its own, Tabiteuea North comes fourth in size or land area after Abemama in the central group. Located in the southern Gilberts, it is among those of the driest islands in the country that suffers greatly from the impacts of re-occurring droughts over the years. Like the rest of the islands in the southern Gilberts, 'bwabwai' pits are most of the time located further inland, away from the coast in order to access fresher water normally found away from the coast.

Typically, coral islands and atolls are small, averaging 2 meters above sea-level, with sandy and porous soil. The main source of drinking water is the underground water that is tapped by wells dug 3-5 meters into the ground. The quality of groundwater is easily affected by both droughts and heavy rains that either render it unfit or fit for drinking. Not only is the livelihood of the population dependent on the quality of groundwater but so is the terrestrial fauna and flora. Coconuts dominate atoll vegetation along with other common shrubs found along the coast such as saltbush and messerschmidia.

2.3 Climate

With the exception of Tarawa that has its own meteorological office, the non-availability of rainfall measuring equipment on the outer islands has resulted in the lack of rainfall data for all the outer islands of Kiribati including those in the Phoenix and Line group and Tabiteuea North.

Tabiteuea North, like the other islands scattered astride the equator, has a tropical climate and like the southern islands, experiences minimal rainfall throughout the years. It is hot and humid all year round with east trade winds moderating the temperatures throughout the year. Generally, the winds and rain come towards the end of the year in October until February or March while the rest of the months remain dry.

Most of the Kiribati islands are located in the dry belt of the equatorial oceanic climatic zone, between 5° on either side of the equator (*Frank R. Thomas: 2002*). The strong influence of El Nino and La Nina events on the climate is therefore prevalent throughout and even though Tabiteuea North is no exception, Where the northern islands are favorably affected during El Nino events, Tabiteuea North experiences dry weather and vice versa during La Nina events. The El Nino Southern Oscillation (ENSO) variability is defined by the Southern Oscillation Index (SOI) that measures the difference in pressure between Darwin, Australia and Tahiti. Simply defined, El Nino is the warming of the sea-surface temperatures in the equatorial Pacific Ocean that influences the atmospheric circulation and consequently rainfall and temperature in specific areas around world. Depending on this complex interplay of sea surface temperatures (SSTs) in the equatorial Pacific ocean, atmospheric circulation is affected which either then moves eastward or westward producing either of the two events, El Nino or La Nina which in turn either results in rain or drought on the islands depending on where the atmospheric circulation is headed. (<http://www.cpc.ncep.noaa.gov>).

Generally in Kiribati, the wet season, according to records, falls between the months of September to February, while the dry season begins in March and ends in August. The temperature ranges between 28° Celsius at dawn to 32° Celsius in the early afternoon but have been known to get hotter or warmer than 32° C. Cool ocean breezes play an important role in keeping the temperature down during hot days.

2.4. Soil

Kiribati atoll soils are derived from the underlying coral reef and thereby consist mainly of calcium and magnesium carbonates (Town 1982) and are among the poorest in the world (Frank R. Thomas 2002). The soils tend to be shallow and highly alkaline with large soil (grain) particles rendering it highly permeable with low capacity to hold water, highly porous (J. Barr 1991). Because the soil is highly alkaline, fertility is dependent on organic matter for the concentration and recycling of plant nutrients and for soil water retention in such excessively well drained soil. Kiribati soils especially those in the Gilbert group are classed as among the poorest in the world (Frank R. Thomas 2003).



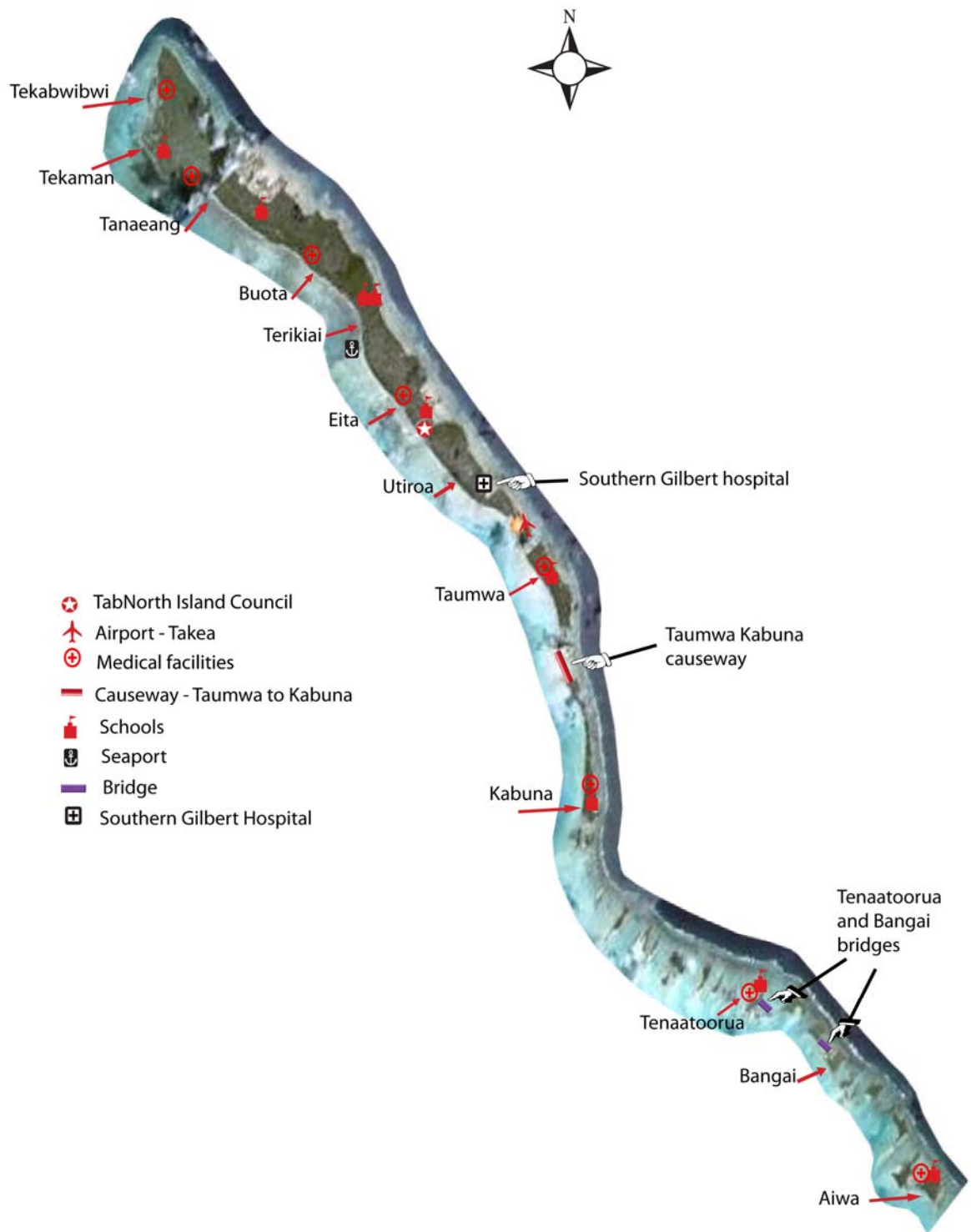
The soils encountered in Kiribati are described as having an AC type profile. The A-horizon consists of sand containing a variable quantity of humus. It is usually about 25 cm deep, has a pH of 7.6-8.0, and is dark grayish to black in colour. This rapidly gives way to coarse white and pink gravelly sand of the C-horizon, which consists almost exclusively of calcium and magnesium carbonates and has a pH of 7.8-8.3.

The soil type is one of coral sediment with varying topsoil that is poor in nutrients. The soil has a high amount of free calcium, locking up most of the necessary nutrients. The soils are very highly permeable and have a low moisture-retaining capacity. The topsoil may have clay-sized particles constituting up to 5 percent of the volume of soil but such particles are formed by the breakdown of the algae shells by carbonic acid in humus. The soils are generally low in N and K, and P tends to be fixed. Deficiencies of micro-minerals (nutrients) such as Cu, Zn, Fe and Mn are very common, however, the levels of sodium, boron and molybdenum are adequate, while sulphur may be borderline in some areas.

<http://www.fao.org/ag/AGP/AGPC/doc/Counprofi/southpacific/kiribati.htm>

The fact that Tabiteuea North is among the driest islands in the country has not helped the soil one little bit resulting in limited vegetation dominated by coconut trees. Coupled with drought effects turning water brackish only compounds the difficulty that vegetation and people on the island have to adapt to in order to thrive.

Figure 1: A Geographical map of Tabiteuea North



2.5 History and Culture

Tabiteuea is originally known as Tabu-te-Uea that literally means “kings are forbidden”. To this date, the culture is totally egalitarian where everyone believes in equality and where no-one has ever been a slave nor a king. This state of affairs, according to legend, was decreed by the God, Nareau the Creator. The legend said that Nareau created an island where he stood to do his long work of creation and initially called the island ‘Takoronga’ following the separation of the ‘Boo-ma-te-maki’ into land, sea and the heavens, and the first inhabitants of the earth. From Takoronga, Nareau commanded that lands and other means of life appeared. After creating people after him, He then renamed Takoronga, Tabu-te-Uea, to remind his subjects that he is the absolute God and no one else. He planted a tree called the ‘Ueanikai’ (the King Tree) and the people came and live on it. One of the roots of this is said to have shown up in Samoa where the ‘Kai n Tikuaba’ grew and became habited. This king tree was destroyed by Nareau himself when he came to know that the inhabitants on the tree were fighting against each other and wanted to be king like him. Angry with the destruction of the tree, its inhabitants flew and swam away to live on other islands that had been created after Tabiteuea. Those who remained on Tabiteuea kept the word of Nareau i.e. “kings are forbidden” and from thereon the tradition has been maintained to these days. If an island were to be similar in tradition to Tabiteuea, it would be the island of Onotoa, also very egalitarian with very similar customs just as Makin and Butaritari are very similar in customs and language. Pictured right is a historical site on TabNorth of the ‘Kaitu & Uakeia’ wars.



The historians, Maude and Sharp did not agree as to the discovery of Tabiteuea. Where Maude awards the discovery to Charles Bishop of the British *Nautilus* in 1799, Sharp merits Commodore John Byron of the H.M. *Dolphin* as having discovered it early in 1765.

Like the rest of the islands, Tabiteuea had also been frequented by whalers, blackbirders, beachcombers and traders who came to the islands to trade, recruit, refuel and restock their ships. Ironically, these foreigners' deeds were not as famous as the deeds carried out by those who were 'bringers of the gospel' and thus civilization to Kiribati. In 1868 the first two Protestant ministers, natives of Hawaii, settled in Eita and Utiroa in Tabiteuea, under the auspices of the Boston Society (LMS). In trying to force the natives to turn to Christianity, the two missionaries carried out religious wars on mainland Tabiteuea. After converting the northern natives to Christianity, they turned their sights to the southern island who did not want to give up their god 'Tiobwa'. In 1881, joined forces of mainland Tabiteuea descended on the poorly defended southern natives, massacred and burned all of them. This war is known as the bloodiest of religious war ever to be carried out in Kiribati where only a few of the southerners had managed to escape. Kapu, one of the two missionaries who initiated the war, was literally deported by Captain Davis when he came to Tabiteuea in 1892 and British rule was proclaimed over Kiribati.

Having lived on a very dry island for ages, the people of Tabiteuea concentrate their time in working the land and fishing the sea to make ends meet. The islanders are well feared for their sense of equality, proper conduct and straight-forwardness that they always assertively and sometimes aggressively ensure are carried out by all islanders and visitors to the island as well. Stabbing or wounding others on the island is a norm that is not surprising to the islanders themselves and is actually taken as a way of solving issues considered most rude and inappropriate ('kamatauninga') that would otherwise receive a more lenient solution with the judiciary system.



The traditional role of 'unimwane' is still very much maintained than on any other island in Kiribati with distinctively defined roles from those of the Tab North Island Council. Where the Tab North Island Council is responsible for island development as required by the Government of Kiribati, the 'unimwane' are responsible for managing the island according to tradition. As such, Tabiteuea North and South are the only two islands in the country who still maintain individual traditional village 'mwaneabas' made from local materials along with the responsibilities that go within this complex 'mwaneaba' system just as most of other island village 'mwaneabas' are no more or replaced with church 'mwaneabas'. Thus, 'mwaneaba' responsibilities in Tabiteuea North are still kept as handed down through the generations just as discussions and decisions are carried out in the village 'mwaneabas' by the 'unimwane' only.

Given that one is not rude or do anything inappropriate to others, the people however, are the kindest, hospitable and most generous people that anyone can come across despite their fearsome reputation.

CHAPTER 3: TE MAURI – ENVIRONMENT, RESOURCES AND SOCIAL SERVICES

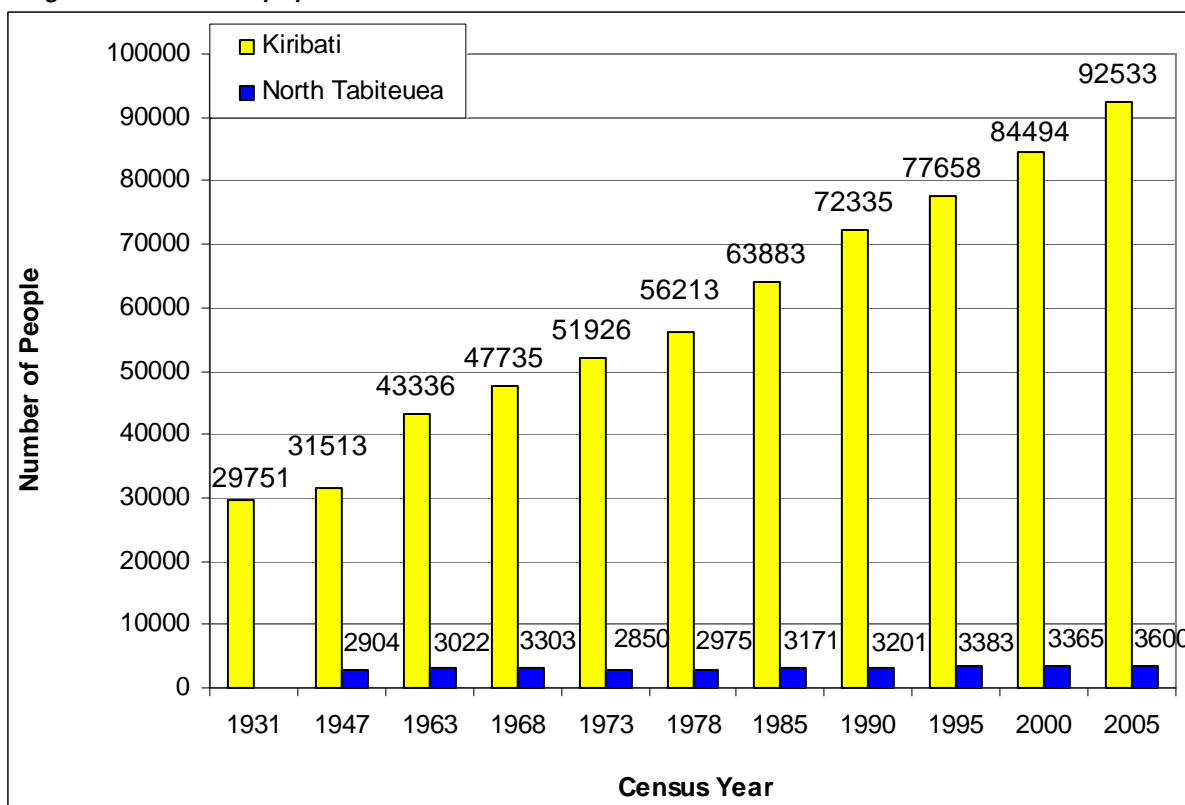
A. ENVIRONMENT AND POPULATION

3.1 Demography

3.1.1 Total population

The 2005 census recorded the total population of the island as 3,600. The most populous of the twelve villages on the island was the village of Eita that constituted 23% of the total population. The villages of Utiroa and Tanaea respectively came as the next two most populous villages on the island. Utiroa constituted 16% while Tanaea constituted 14% of the total population. The rest of the people were dispersed among the rest nine villages. The least populated village was the islet of Bangai where only 35 (1%) people resided just as Tenaatorua and Aiwa, other two islets are a lot less populated than villages on mainland Tabiteuea North.

Figure 2: TabNorth population trend 1947--2005



In general the population trend shows fluctuations between the years 1947 to 1985, steadily grew between the years 1978 to 1995 and again fluctuated since. The most recent increases since 1990 would mostly be an attribute to the establishment of Teabike High School, a Government High School and the establishment of a main hospital by Taiwan experts for the Southern Gilbert group of islands on the island. No doubt, there would be a significant increase in the population once the Hospital is opened and ready to receive patients from all over the southern Gilberts. Like the rest of high schools all over the country, Teabike High School also caters high school students from all over the country that have been fortunate in gaining entry.

Tabiteuea's size and strategic location between the capital of Tarawa and the remote southern islands has made it a very convenient island for development activities such as in the establishment of a new hospital and before that, as a focal refueling point for the Air Kiribati southern island weekly flights.

3.1.2 Growth rate

The annual population growth rate for Tabiteuea North between the years 2000 and 2005 is 1.4%. Compared to the previous inter-censal annual growth rate of -0.1% this not unusual, especially since the trend over the past years suggested a tendency for the population to fluctuate other than between the years 1978 to 1995 (refer to Fig. 1 above). As a big island with great potential as a growth centre for the southern Gilberts, its population growth rate will either continue to fluctuate even though most likely to increase in coming years.

Compared to other islands, Tabiteuea North has the 12th highest annual growth rate with Kiritimati and Tabuaeran having the highest growth rates at 8.0% and 7.4% respectively and Kanton in the Phoenix group have the least growth at -7.9. Where Tabiteuea North's annual growth rate is below the national growth rate of 1.8%, Kiritimati and Tabuaeran's growth rates are way above the national while Kanton on the other hand is way below.

3.1.3 Population Density

Population density is defined as the number of people living within a square kilometer of land. This is calculated by dividing the number of people in a given location with the area of land. Table 1 below presents the population density by village, with calculations based on the size of the village boundaries or village land area. It also shows that the density has increased by 7% in the last five years.

Table 1: Population Density by village

Village	Village Land Area	Pop 2000	Pop 2005	Density 2000	Density 2005	[Density Change %]
Tekabwibwi	0.12	97	145	808	1208	49.48
Tekaman	0.26	233	248	896	954	6.44
Tanaeang	0.32	494	514	1544	1606	4.05
Buota	0.49	336	343	686	700	2.08
Terikiai	0.43	269	255	626	593	-5.2
Eita	0.69	732	814	1061	1180	11.2
Utiroa	0.85	567	571	667	672	0.7
Tauma	0.4	198	204	495	510	3.03
Kabuna	0.24	206	204	858	850	-0.97
Tenatorua	0.15	100	122	667	813	22
Bangai	0.37	25	35	68	95	39.99
Aiwa	0.1	108	145	1080	1450	34.26
Village total	4.42					
TAB NORTH	25.78	3365	3600	131	140	6.98

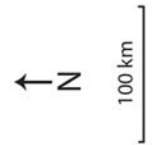
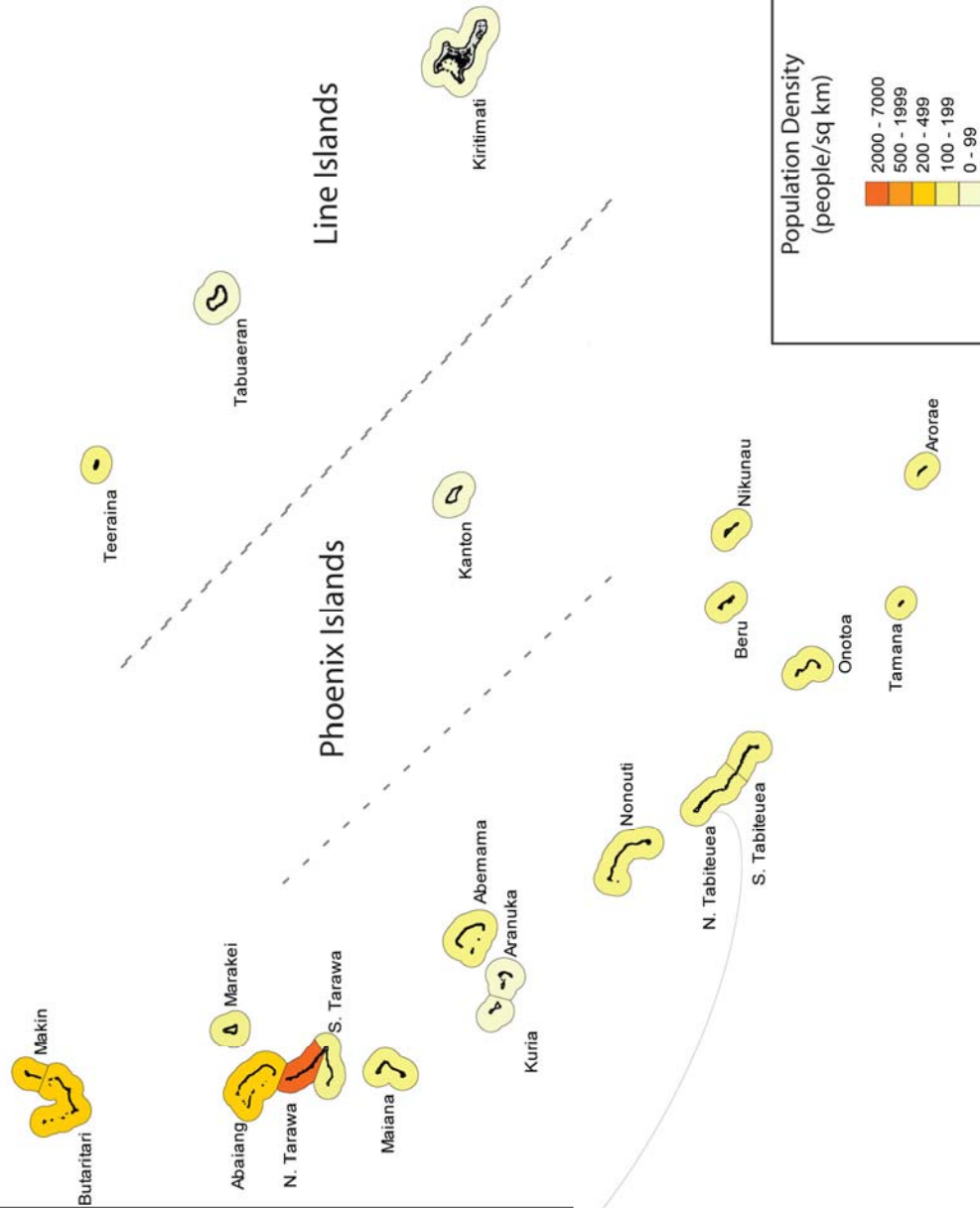
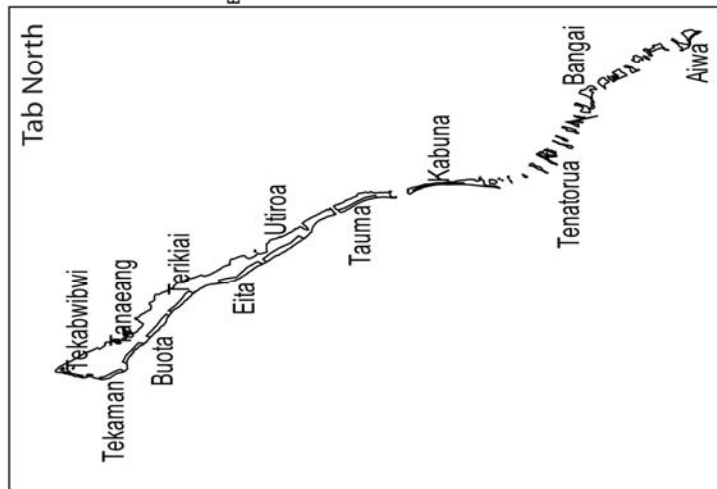
At the island level, Tab North has a combined land area of 25.78 square kilometers and a population of 3600 (2005 census), giving a population density of 140 people per square kilometer. Compared with other outer islands in the country including those in the Line and Phoenix group, Tab North is the ninth

most densely populated island after Nonouti. The most densely populated island in the country is South Tarawa at 2,558 people per square kilometer with the least densely populated island being Kanton in the Phoenix group at 4 people per square kilometer.

Table 2: Population density by island

Island	Land area (sq km)	Pop 2000	Pop 2005	Density 2000	Density 2005	Most Densely populated	[density change %]
Banaba	6.29	276	301	44	48	20	9.05
Makin	7.89	1691	2385	214	302	4	41.04
Butaritari	13.49	3464	3280	257	243	5	-5.31
Marakei	14.13	2544	2741	180	194	6	7.74
Abaiang	17.48	5794	5502	331	315	3	-5.04
Nth.Tarawa	15.26	4477	5678	293	372	2	26.83
Sth.Tarawa	15.76	36717	40311	2330	2558	1	9.79
Maiana	16.72	2048	1908	122	114	14	-6.84
Abemama	27.37	3142	3404	115	124	11	8.34
Kuria	15.48	961	1082	62	70	19	12.6
Aranuka	11.61	966	1158	83	100	17	19.88
Nonouti	19.85	3176	3179	160	160	8	0.09
Tabiteuea.Nth	25.78	3365	3600	131	140	9	6.98
Tabiteuea.Sth	11.85	1217	1298	103	110	15	6.66
Beru	17.65	2732	2169	155	123	12	-20.61
Nikunau	19.08	1733	1912	91	100	17	10.33
Onotoa	15.62	1668	1644	107	105	16	-1.44
Tamana	4.73	962	875	203	185	7	-9.04
Arorae	9.48	1225	1256	129	132	10	2.53
Teeraina	9.55	1087	1155	114	121	13	6.26
Tabuaeran	33.73	1757	2539	52	75	18	44.5
Kiritimati	388.39	3431	5115	9	13	21	49.15
Kanton	9.15	61	41	7	4	22	-32.83

Population density by Island, Kiribati 2005



Map created by MISA with data sourced from 2005 Kiribati National Census of Population and Housing

3.1.4 Breakdown of Population

The following is the breakdown of the population of Tab North, looking at its age in village composition.

Table 3: (a) Population by Age groups and Village

Island/Village Gilbert Group	Broadage Age Group								
	Total	<1	1	2-5	6-14	15-17	18-49	50-69	70+
TOTAL	92,533	2,403	2,167	8,819	20,804	6,589	41,131	8,628	1,992
MALE	45,612	1,235	1,114	4,483	10,693	3,334	20,045	3,971	737
FEMALE	46,921	1,168	1,053	4,336	10,111	3,255	21,086	4,657	1,255
TABITEUEA NORTH									
Tekabwibwi	145	1	4	15	37	8	56	20	4
Tekaman	248	8	7	22	76	12	91	25	7
Tanaeang	514	10	17	53	149	41	179	52	13
Buota	343	9	12	39	95	20	127	38	3
Terikiai	255	6	3	26	80	13	108	15	4
Eita	814	11	6	59	151	205	316	53	13
Utiroa	571	16	6	56	161	36	222	52	22
Tauma	204	4	4	24	50	12	88	18	4
Kabuna	204	4	5	17	62	12	78	22	4
Tenatorua	122	4	3	13	24	9	54	13	2
Bangai	35	2	3	5	2	2	18	3	0
Aiwa	145	5	3	13	37	8	64	12	3
TabNorth	3,600	80	73	342	924	378	1,401	323	79
Percentage	100	2	2	10	26	11	39	9	2

Source: 2005 Census of Population, NSO/MFED, 2007

The population table above compares the distribution of population by the different age groups amongst the twelve villages of Tab North. It shows clearly that 39% of the 3600 population are between the ages 18-49 with most concentrated in the villages of Eita, Utiroa and Tanaeang which are basically the biggest villages on the island. This age group is closely followed by the next younger generation, those aged between 6-14, who numbered 924, 26 % of the TabNorth population. Together, those between the ages 6-49 constitute 75% of the island population. The unusual high number of 15-17 year olds in the village of Eita is an attribute of 'Teabike High School', the Government High School located in the village. Utiroa and Eita lie next to each other and where the Island Council is located at the northern end of Utiroa, 'Teabike High School' is located in Eita. Together the council and school account for the high number of visiting school children and Government workers and workers residing at Bwakokoia, the TabNorth Island Council station.

The age dependency group is defined as those unable to live on their own and generally those below 15 years and those over 64 years of age. Nearly half, 43%, of the island population are in the age dependency group of which the majority 1,419 (90%) are the younger folk aged 0-14 years old while the rest 10% are the elderlies, aged 65 and older. The age dependency trend is similar throughout the islands of Kiribati as well. The oldest person on Tab North in 2009 is Ntongantonga Teuoi (pictured

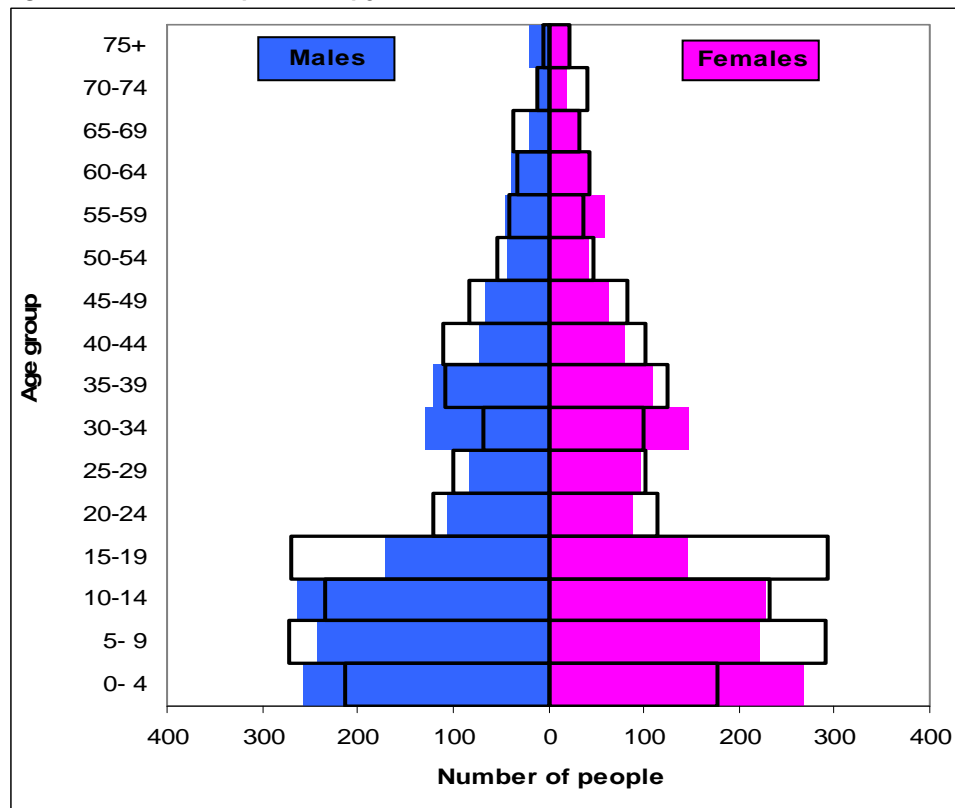


previous page), who was 95 years old in 2009. However, the oldest person in the country is Tawetia Nakabuta, 110 years old in 2009, originally from Maiana but living in Marakei with one of his great grandchildren, a Government seconded staff to the Marakei Island Council (*Elderly Office MISA*).

(b) Population by Gender

Out of the 3600 population on TabNorth, males constituted 49% (1,764) and females 51% (1,836) resulting in a ratio of 96 males per 100 females. The sex ratio is calculated by dividing the number of males by the number of females and multiplying it with 100 thus $1764/1836 \times 100 = 96$. This ratio differs from the national ratio of 97 males per 100 females (*Kiribati 2005 Census, Vol. 2: Analytical Report, SPC, Noumea, 2007*).

Fig 3: Tab North Population pyramid, 2000 (shaded area) and 2005 (outlined)



Source: The 2005 Census Analytical Report, SPC, 2007

As is the trend with most developing countries (*Haupt. A. & Kane T. Thomas 2000*), Tab North also has a very young population with the majority aged between 0 years and 49 years old. Those in the teenage by far are the most populous but then a lot if not most of the teenagers are those attending 'Teabike' High School.

The females outnumbered the males by 72 and even though it is not obvious in the above chart, the males were greatly outnumbered by 31 at the age group 30-34. At this age group, there were 100 females and only 69 males. Interestingly, there are also more elderly women than men specifically those in the age groups 65 and over. Consequently, where there are only 18 elderly men, there are 61 elderly women.



(c) Population distribution by religion

Table 3 below illustrates the population distribution by religion for Tab North in 2005. Generally, the two most dominant churches in the country are the Roman Catholic Church (RC) and the Kiribati Protestant Church (KPC) with countrywide congregation members numbering 51,144 and 33,042 respectively. RC is the predominant church on the island followed in order by the KPC, LDS, Bahai, SDA and last but not the least, the Church of God, further illustrated in the following table.

Table 4: Tab North Population by Religious denomination 2005

Religion	Population	%
Kiribati Protestant Church	973	27.0
Roman Catholic Church	2389	66.4
Seventh Day Adventist	33	0.9
Bahai Faith	77	2.1
Church of God	3	0.1
Mormon (LDS)	118	3.3
Other	7	0.2
Totals	3600	100

Source: 2005 Census of population, NSO/MFED

Except for the Church of God, all these church groups have their own compounds that normally consist of a chapel, a pastor's residence, and a *mwaneaba* (a meeting house). The LDS is a fast rising church in the country and has already built a church on the island which is rare on the outer islands as according to

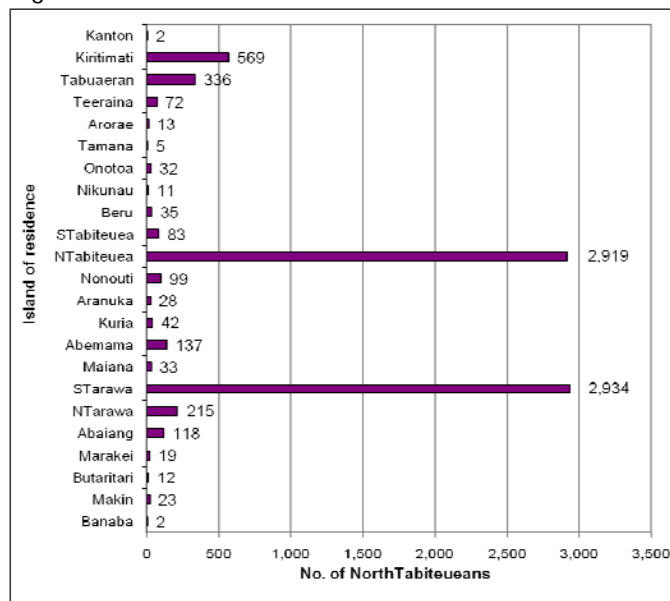
LDS norms, a church can only built once a certain number of congregation members is reached. Considering that the majority of the outer islands do not yet have an LDS church, the building of the church on the island can only mean that the LDS church has gained more members since 2005 just as it is rapidly collecting members in South Tarawa. Figure 5: Out-Migration

3.1.5 Out-migration

The population of TabNorth in 2000 was 3,365, 235 less than the most recent population of 3600 in 2005. This high increase is believed to be caused by the increased intake of Teabike High School as well. Unfortunately information relating to the migratory movement of people from and to TabNorth was not available at the time of profiling for better confirmation of the 235 increase in population. Like the rest of the

other islands, the TabNorth population is now made up of not only the TabNorth natives only, but a mixture of people from all the outer islands of Kiribati who are either there as Government seconded officers to the island council and other service facilities (teachers, nurses etc), married or adopted to the island natives, or as visitors to the island. Statistics showed that of the 3600 residing population, 2,919 (81%) are native islanders, 260 (7%) are northerners (Makin, Butaritari, Marakei, Abaiang, Tarawa), 102 (3%) are from the central islands (Maiana, Abemama, Kuria, Aranuka), 315 (9%) are southerners (Nonouti, Onotoa, Beru, Nikunau, Tamana and Arorae) while the rest 4 people were foreigners.

Figure 6:



Initially, in the 18th century, Kiribati migration started with blackbirders and coconut plantation recruiters from across the oceans. Later, people were recruited from all over the islands of the Gilbert group to work the phosphate mining companies on Banaba and Nauru and resettlement of the Banaban people in Rabi, Fiji Islands. In 1985, the first group of settlers for the Northern Line Islands Resettlement Scheme were transported. Since then, many people from the Gilbert Islands including TabNorth have migrated to the Line Islands where there is greater opportunity to earn income and the benefit of free access to state-owned land and marine resources. Kiritimati and Tabuaeran now have the highest population growth rates in

Kiribati, while most islands in the Gilbert group are experiencing either very slow or negative growth. In addition, there were absentees at the time of the 2005 count, working in South Tarawa and as seamen on overseas ships, while every year a small number of young people leave Junior Secondary School to attend Senior Secondary Schools (SSS) or other technical institutions on South Tarawa or other islands. As Kiribati developed, so did the doors to overseas opportunities such as work and education that allowed capable I-Kiribati to migrate. Marriage to foreign visitors has also been quite a common occurrence even though not at a high number.

The above chart shows the number TabNorth natives and their islands of residence during the 2005 census. Overall, there are 7,739 (8%) TabNorth natives that make up the 92,533 national population. While 2,919 (37.7%) are still residing on their native homeland, a greater number of 2,934 (37.9%) are residing in South Tarawa. Kiritimati and Tabuaeran, also accommodate a several hundreds of TabNorth natives after South Tarawa, thanks to the Northern Line Resettlement Scheme. The normal trend nowadays is that there are more native islanders residing away from their homelands just as 62% of native Tabiteuea Northerners are not residing on their homeland. South Tarawa, Kiritimati and Tabuaeran are proving to be the preferred islands of migrations, in search of better opportunities for education and income.

3.2 Land Resources

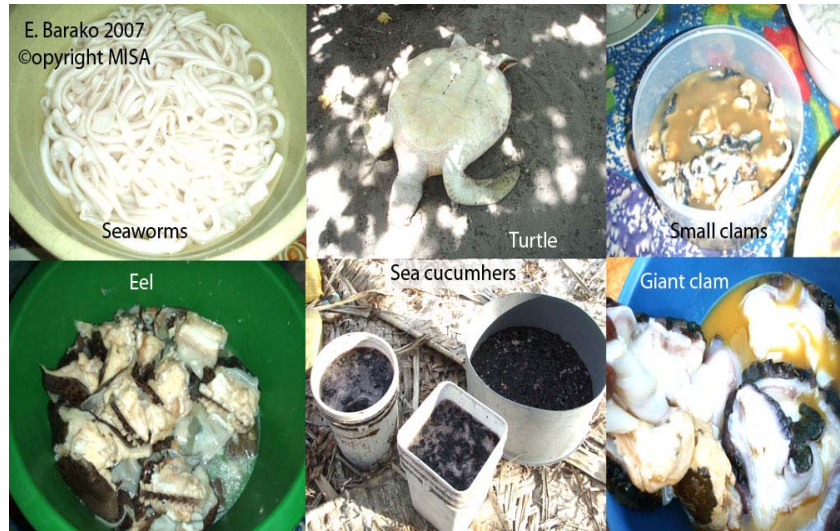
3.2.1 Land Tenure and Use

Of the 25.78 sq. km. land area of Tab North 4.42 square kilometers is used village settlements that were established during the colonial administration. Village settlements are normally found on the lagoon side of the island with a main road running alongside the length of the island through the villages. Generally, the Government also leases lands for schools, clinics and runways while churches also purchase or lease lands for their facilities. Even though a lot of lands were freely given away during initial establishment of churches on the islands, nowadays, it is a norm for churches to also purchase or lease lands.



Like other islands in Kiribati, land on Tabiteuea North is owned by family inheritance. Lands are divided among the heirs on the death of the owner with male heirs taking precedence over females. There are also lands given away as gifts and for nursing an aged or sick person. Some lands were won in battle by the victors and this happened after the religious war on Tabiteuea in 1881. However, the increased migration of natives to other islands has sometimes resulted in landowners dying elsewhere without immediate families on the island. As such, lands that have not been divided between sons and daughters are left as family lands, awaiting the presence or representatives of all the children of the deceased to divide the lands in court unless, a will had already been made by the deceased parent. In other cases, where there is not even an immediate child present, the deceased parent's land is then used and managed by his/her siblings. Then there is also the tradition of owning 'te tekateka', basically a plot of land in the village settlements. These village settlement plots are normally inherited by the eldest son or daughter if there are no sons, along with the houses that stand on them. Disputes over land ownership and boundaries are settled in Lands Court.

In the past, before European times, the main social group in Gilbertese society was the *kaainga*, a small group of extended families (*utu*) related through a common ancestor. The land of the *kaainga* usually extended from the ocean side of the atoll to the lagoon side, including the adjacent section of ocean reef (*maran*) and lagoon reef (*nama*). In the reef islands, the land of the *kaainga* extended from one *maran* to the other right across the island. Access to this area was confined to the *kaainga* members with the head of the family given the right to distribute and prohibit access to the reef (Lambert B: Land Tenure in the Pacific 1971). This practice no longer exists as the high tide area points towards are now Government owned and thus people are free to fish in any part of the reef and offshore. Nevertheless, fish traps, basically walls of coral rocks placed in a certain pattern to a certain height can be found on the reef, are legally recognized as belonging to individuals or family therefore, a form of land as well.



3.3 Marine Resources

3.3.1 Size of reef and Lagoon area

Records unfortunately are not available for the size of the reef and lagoon for Tab North on its own but however provide a size of the reef and lagoon for a united Tabiteuea. Tabiteuea has 39 square kilometers of reef with a base of 49 sq.km. This is quite a vast reef area compared to other islands in Kiribati. The lagoon area on the other hand is the second largest after Tarawa at 532 sq. km. Tarawa's lagoon is 533.91 sq. km.

Table 5: Size of Reef/Lagoon Size

Islands	REF(sq/km)	REF base (sq/km)	LGN (sq/km)	LAND (sq/km)
Tabiteuea	39	49	532	25.78

3.3.2 Status of Fish Resources

It is difficult to quantify the fish resources of Makin, or any island for that matter. However, it is generally accepted that the bigger the reef area the larger the fish resource, particularly reef fish. Consequently, with a large reef and lagoon area, it can only be concluded that TabNorth has a vast and diverse number of marine resources. Free migratory fish such as skipjacks and yellow fin tuna (*Katsuwonus pelamis*, *Thunnus albacores*), flying fish (*Cypserulus sp.*) and shark (*Ginglymostoma ferrugineium*) amongst others are always abundant and an increasing number of people are engaged in both ocean fishing and lagoon/reef flat fishing. A variety of shell fish can be found on the lagoon and reef flats at low tide or sometimes in deeper lagoon waters, and abundant schools of small fish swim and live among the roots of the mangroves. Then there is the famous sea worm and sea cucumbers that are also fished off the lagoon flat that are two of the main income generating resources on the island. Eels, turtles, common mojarra, lobsters and crabs etc can be found in abundance in the surrounding ocean and lagoon. All

these marine resources by far provide an important source of food and income to the people of the island.

The main and major source of protein to atoll islanders is fish and shellfish as hardly any other animal can live and survive in the atolls with their limited vegetation. Pigs and chickens on the other hand take time to grow and are normally kept for special functions or family celebrations. Fish is therefore a daily protein that can be found in both the ocean and lagoon. With their vast lagoon and reef area, the people on the island are fortunate for during stormy times, the lagoon still provides an abundance of resources for their livelihoods.

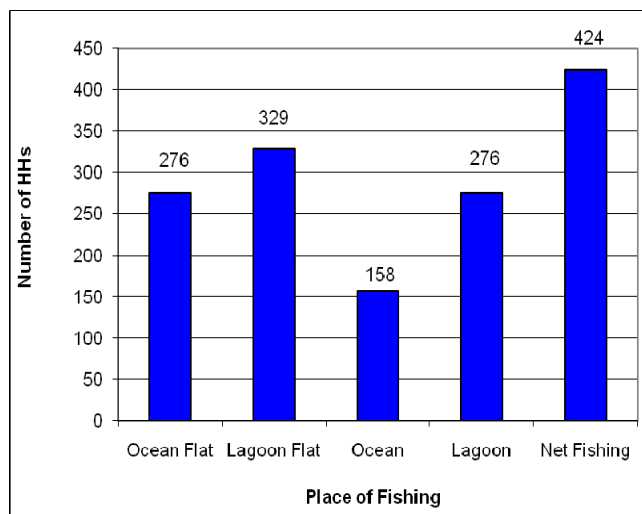


3.3.3 Pattern of fishing activities

Fishing is largely a man's responsibility even though women are not restricted from fishing. Not every man owns a canoe or boat but the majority of households either own a canoe/boat or have access to one. Nonetheless, it is extremely rare to borrow canoes belonging to other households unless it belongs to an immediate family member. Unfortunately data is not available as to the number of canoes owned by households on the island or for any other island for that matter.

Canoes are highly priced items as they are hard to make and equally hard to get materials to construct one. The frames and planks are made up from imported timber obtained from Banaba, Nauru and South Tarawa while the outrigger is made from local wood mostly those that are light most of the time breadfruit, sea trumpet and the great lettuce tree. The fishing pattern on TabNorth is dependent on the ownership of a canoe/boat, fishing equipment and skills handed down from the fore-fathers.

Figure 7: Place of Fishing per Household



Eel trapping is dependent on knowing how to construct an eel trap, sea worm fishing dependent on how and where it is probed while deep sea fishing depends on how far the line should be allowed and knowing what kind of bait to use to catch specific kinds of fish. Constructing a fish trap on the reef requires knowledge of the reef features, current and tides and so forth. All these fishing know-hows are family guarded secrets just as cultivation know-hows of the different cultivated tree crops are also kept in the families. However, due to the strategic location of the villages on the lagoon side of the island and vastness of the lagoon, those living in towards the middle of

mainland TabNorth find it hard to access the ocean thus the increasing popularity of outboard motor boats.

The above chart categorizes fishing activities by location. The chart also shows that the most popular fishing method is net fishing that is mainly carried out in the lagoon and reef flats when the tides come in or in deeper waters. A most common way is to leave a fishing net overnight or for several hours at a certain place and come back to get the fish caught. However, a lot of people are also engaged in going out net fishing themselves including the women and children, accounting for a lot of people popularly using nets to fish. Compared to ocean and deep lagoon fishing, net fishing falls to all members of the family irrespective of gender and age to take part in while, ocean and deep lagoon fishing are left to the men of the house. 424 (74%) households out of the 573 island households engage in net fishing activities.

The second most important fishing area is the lagoon flat having 329 (57%) households using it as their main fishing site. This is basically the area surrounding the island on the lagoon side that is exposed during low tide when it comes easily accessible. The other reason that most people popularly frequent the lagoon flat for fishing is because the methods of fishing and equipment required and used are simple and cheap. Other than net fishing, sea worms, shellfish and sea cucumbers are fished off the lagoon flats. Ocean flat and lagoon fishing sites come third as the most frequented areas of fishing with 276 (48%) of the households each either frequenting the lagoon or the ocean flat areas. The ocean flat is also normally rich in marine resources, which range from seashells obtained right from the beach to small and large fishes that live in the waters at the edge of the fringing reef. There are also seasons for migrating jellyfish that get washed ashore and are collected off the beach. Fishing methods commonly used on the ocean flat include, among others, collection of shellfish, hooking of octopus, sea-snake and other small fishes, rod fishing (*roarao*), spear-fishing (*katebe*), torch fishing (*kibe*), and more.



The least popular fishing site is the ocean that is basically hard to access by those living away from the end tips of TabNorth. The fact that fishing beyond the safety of the reef requires more energy, complicated fishing methods and much more expensive fishing gear, not to mention the availability of either a canoe or boat has rendered ocean fishing not as popular as the other locations. Outboard motors and local canoes are the main mode of transport for ocean-going fishermen.

3.3.4 Current Developments

The Ministry of Fisheries & Marine Resources Development is responsible for marine development nevertheless, Island Councils on individual islands have their own marine developments. The most recent popular development by the MFMRD is the promotion of sea cucumber harvesting for income generation purposes. To this effect, the Fisheries department is carrying out underwater surveys for the different species of sea cucumbers specifically the white teat fish (*Holothuria fuscogilna*) numbers for re-stocking purposes. Where the white teat fish are abundant, they are collected and taken back to the

Fisheries headquarters in South Tarawa for breeding. The white teat sea cucumbers are bred in artificial tanks of which the young ones are used to restock depleting stocks on the outer islands. White teat fish (*Holothuria fuscogilna*) are as the prevalent restocking species from amongst the sea cucumbers because they have higher market prices compared to the other sea cucumber species.

Table 6: Sea cucumber species and buying prices LOCAL

NAMES	COMMON NAMES	SCIENTIFIC NAMES	Buying Price/kg AUD
Buraerae	Prickly redfish	<i>Theleanata ananas</i>	1.50
Kanimnim	Sand fish	<i>Holothuria scabra</i>	1.30
Kiriin	Green fish	<i>Stichopus cholornatus</i>	1.70
Mmamma mai	White teatfish	<i>Holothuria fuscogilna</i>	2.00
Nautoonga	Blackfish	<i>Actinopyga miliaris</i>	0.30
Ntabanebane	Lolly fish	<i>Holothuria nobilis</i>	0.30
Ro mmamma	Black teatfish	<i>Holothuria nobilis</i>	2.00
Taika/te kuntaika	Tiger leopard	<i>Bohadschia argus</i>	1.30
Uraura	Red surf	<i>Actinopyga mauritiana</i>	1.80
Waeura	Surf redfish	<i>Actinopyrga mauritiana</i>	1.80
	Chalkfish		1.10
	Curryfish		1.10

In an attempt to improve fish availability and commercialization, Government is embarking on a program to equip outer islands with cold storage facilities. The construction of such a facility is envisaged to provide fresh fish for TabNorth people during times of rough seas, as well as allow storage of exportable fish and other marine resources before arrival of boats to transport them to Tarawa, the capital. On Tarawa, fish imported from TabNorth and the other outer

islands are most of the time sold to the general public on South Tarawa at a much higher cost. Rarely are these exported or processed into other products as a fish factory still has to be established in the country.

There are plans to access to ocean floor to explore the resources to be found there. High hopes and future wealth may lie on the ocean floor in the form of manganese and cobalt elements, but the technology necessary for effectively mining the seabed is still being developed. More powerful drills and better undersea communication equipment are expected to make commercial production a possibility.

3.3.5 Issues facing fishing and development of marine resources

Owing to its reef and lagoon size, the issue of lack of marine resources for livelihoods is not an issue. Generally, marine resource issues on the outer islands are more commercially or income generating connected. Just as sharks are being run down and depleted in Tamana and Arorae further south to generate income from the shark fins, sea cucumbers are also rapidly being fished out on most islands including TabNorth, to earn income. As an island suffering from a dry climate all the time, the people on TabNorth are now turning to the sea to provide income as an alternative to copra.

3.4 Status of Environment

3.4.1 Environmental Issues

Coastal erosion is a fast rising major environmental issue for the islands of Kiribati including TabNorth. The change in climate has caused a rising negative change to the coastal and terrestrial environment of the islands, further compounded by establishment of coastal infrastructure and increased mining of coastal aggregate and sand. Many locations on TabNorth have been seriously eroded, resulting in the relocation of infrastructure (road, buildings, etc.) or the recurrent high expenditure of maintaining seawall protection.



As a big and long island compared to other islands, where erosion is occurring to parts of the island, accretion is occurring at the same time to other parts. Flooding during high tides has only been experienced in the village of Kabuna. Brackish wells are also a common occurrence during long periods of drought. The people however have freshwater sites that were initially established during colonial times and maintained by the islanders themselves. Some freshwater sites are as old as the island itself and tied to myths and legends of the island. One of the sites (pictured below) in the village of Taumwa is said to have been dreamt by a woman of the land clan that to date remains fresh no matter how long the drought period is.

The islet of Tenaatorua is suffering mild erosion all around, Bangai is suffering mild erosion at the southern end and extreme erosion at the northern end where the bridge stands. Aiwa on the other hand is also suffering mildly from coastal erosion on the northern lagoon side of the island only. Tenaatoorua freshwater is slowly becoming brackish, Bangai residents are now fetching from either Aiwa or another nearby islet while Aiwa is using their only freshwater well located at Tebwatua.



Like the islets of Nonouti, fruit trees have been greatly affected by the heat and lack of water to the extent that there are very less coconuts and the toddy cutters have to give up most of their toddy trees as the spathes are either too small to get anything out of or the toddy itself is not forthcoming.

Mainland TabNorth is also suffering from the two or more year drought but have more alternatives when it comes to water. Flooding is rare on the island except for the village of Kabuna where flooding occurs every high tide towards the southern end of the village. Accretion and erosion go hand in hand and where there is erosion, accretion is occurring in other places. Kabuna suffers from erosion starting from where the causeway ends at the village area to nearly halfway of the village. The southernmost tip is accreting or has been for years now.

There is one causeway that links mainland Tabiteuea North from the village of Taumwa to Kabuna and two bridges linking the islets of Tenaatoorua to a nearby islet as well as Bangai to another nearby islet. The village of Taumwa has a unique freshwater well or water hole would probably be a more suitable name as it does look like a hole in the rocks that stocks fresh water. This is supposedly a site dreamt by the landowner's elder that stays fresh come drought, long as it may be. Fetching water requires time as it takes time for the water to seep in again to fill the hole up. The Utiroa community, on the other hand, are now fetching water either from the newly built and still to be opened hospital or from the area where the council offices stand, Bwaakokoia, whichever way is nearer.

The island's limited land area and resources will face increasing pressure as the population continues to grow. Coconut, which is one of the main commercial agricultural produce used in the production of copra, is now scarce, as more and more people compete to harvest it. This problem is particularly noticeable around Makin village, where coconut collection at night using flashlights has become a preferred method of harvesting.

Climate change and sea level rise are creating dreadful realities to the outer islands including TabNorth requiring that people are better informed and prepared for solutions that could eventually mean relocation to other parts of Kiribati or overseas migration.



Table 7: TabNorth CC & SLR GPS Coordinates

No.	Lat/Lon hddd°mm'ss.s"	Description
1	S1 06.261 E174 39.914	Eroded area at Tekabwibwi
2	S1 06.337 E174 39.836	Eroded area/End of Seawall at Tekabwibwi
3	S1 06.501 E174 39.774	Eroded area/End of Seawall
4	S1 06 59.1 E174 39 54.7	Clinic at Tekabuibui
5	S1 07 44.9 E174 39 48.4	Primary School
6	S1 08.039 E174 39.878	Erosion at Tekaman
7	S1 07.732 E174 39.663	Erosion at Tekaman
8	S1 08 07.6 E174 40 12.0	Clinic at Tanaeang
9	S1 08.785 E174 41.342	Erosion at Buota
10	S1 09.049 E174 41.750	Erosion at Buota
11	S1 08 47.2 E174 41 24.2	Primary School at Buota
12	S1 09.230 E174 42.151	Erosion at Buota
13	S1 09.411 E174 42.499	Fresh Water
14	S1 09.456 E174 42.525	Erosion at Bareatau Buota
15	S1 09.661 E174 42.748	Erosion at Bareatau Buota
16	S1 09 38.6 E174 42 44.7	Clinic at Buota
17	S1 10 08.9 E174 43 33.5	Takoronga Primary School
18	S1 10 7.55 E174 43 37 21	Takoronga JSS
19	S1 10.478 E174 43.618	Accretion at Eita
20	S1 10.740 E174 43.650	Accretion at Eita
21	S1 10.734 E174 43.661	Fresh Water
22	S1 10.901 E174 43.678	Erosion at Tekaawa Eita
23	S1 11.399 E174 44.070	Erosion at Aonuka Eita
24	S1 11 58.7 E174 44 45.6	Clinic at Eita
25	S1 11 52.4 E174 44 45.9	Teabike High School
26	S1 11 57.4 E174 44 56.7	Temwamwaang Primary School
27	S1 12 22.6 E174 44 59.6	Erosion at Tekaraa - Utiroa
28	S1 12 22.2 E174 44 59.0	Erosion at Tekaraa - Utiroa
29	S1 12 24.6 E174 45 01.6	Point two of above two
30	S1 12 29.3 E174 45 06.4	Erosion at Ierutare from the KPC area
31	S1 12 37.9 E174 45 14.6	Point two of above at Aontebono
32	S1 12 37.5 E174 45 14.0	Boobooti store at risk from erosion - Utiroa
33	S1 12 46.8 E174 45 24.0	Kairaoa erodin and accretion at Utiroa
34	S1 12 49.6 E174 45 26.8	Buarai erosion at Utiroa that continues to Takea erosion points
35	S1 12 49.91 E174 45 57.39	Southern Gilbert Hospital
36	S1 13 34.4 E174 46 29.6	Point 2 of above
37	S1 13 46.2 E174 46 36.5	Takea erosion on the lagoon side of the airport
38	S1 13 58.0 E174 46 42.5	Point two of above at Tetiribuki
39	S1 14 13.6 E174 46 56.7	Uribia erosion at Taumwa
40	S1 14 12.3 E174 46 58.7	Clinic at Taumwa
41	S1 14 13.3 E174 47 01.6	Taumwa Primary School

42	S1 14 30.4 E174 47 25.1	Freshwater site at Taumwa - Tebeetao
43	S1 14 30.4 E174 47 25.6	Boundary site of above that is brackish
44	S1 15 43.77 E174 47 28.8	Point B erosion of 45
45	S1 16 07.8 E174 47 44.5	Erosion at Tabouea - Kabuna
46	S1 16 59.0 E174 47 58.8	Point two of above at Tebuunrang
47	S1 17 07.3 E174 48 01.6	Naaniman erosion on the ocean side near the clinic and primary school in Kabuna
48	S1 17 09.38 E174 48 0.9	Kabuna medical clinic
49	S1 17 11.6 E174 48 00.3	Primary school at Kabuna
50	S1 17 40.2 E174 47 50.5	Erosion at Kabuna - Nanon te rawa
51	S1 17 40.32 E174 47 50.5	Flooding point at kabuna
52	S1 17 47.9 E174 47 48.2	Point 2 of above
53	S1 18 04.1 E174 47 48.7	Erosion at Tabontekee - Kabuna
54	S1 18 08.1 E174 47 45.7	Point 2 of above
55	S1 18 11.1 E174 47 43.8	Accretion at Tabontekee - Kabuna
56	S1 20 27.1 E174 51 04.9	Clinic at Tenaatorua
57	S1 20 25.29 E174 50 59.9	Tenaatorua Primary School
58	S1 20.492 E174 51.190	Eroded area at Tenaatorua
59	S1 20.538 E174 51.149	Flooded area at Tenaatorua
60	S1 20.586 E174 51.113	Eroded area/RC Tenaatorua
61	S1 21 34.6 E174 52 33.1	Erosion at Bangai
62	S1 21 36.1 E174 52 30.9	Point 2 of above
63	S1 23.298 E174 53.976	Flooded area at Aiwa
64	S1 23 15.76 E174 54 7.23	Aiwa medical clinic
65	S1 23 15.55 E174 54 9.43	Aiwa Primary school
66	S1 23 16.3 E174 54 22.6	Freshwater site at Aiwa islet

Note: The following maps may not be north oriented for better display of climate change impacted areas.

