



**SECURITY**  
**IMPLICATIONS OF**  
**CLIMATE CHANGE IN**  
**KIRIBATI**

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## **Background**

This abbreviated report forms part of in response to the call from the Secretary General to solicit views from Member States which is contained in Resolution 63/281; Kiribati has compiled a report on findings of an investigation dealing with social economic issues now faced by its people. The report highlights new experiences in Kiribati that emphasize the reality the Kiribati people are faced with and adds a new scope to the report the United Nations Secretary General of the reality now faced in Kiribati on the effects of climate change in relation to national and global security.

## **Context**

Kiribati consists of 33 low-lying atolls and one raised island scattered over an expanse of ocean equivalent in size to the continental United States. The islands straddle the Equator and lie roughly halfway between Hawaii and Australia. The three main groupings are the Gilbert Islands, Phoenix Islands and Line Islands. Kiribati includes Kiritimati (Christmas Island), the largest coral atoll in the world, and Banaba (Ocean Island), one of the three great phosphate islands in the Pacific. Except Banaba, the rest of the islands raised no more than 0-3 meters above sea level.

The population of Kiribati is approximately 100,000. Less than 500 people lives on Banaba (Ocean Island), the rest lives on the atolls. The source of income is income from fishing license, copra and remittances from overseas workers.

## **Rainfall**

The trade winds blow between March and October, making this the most pleasant time of the year, while the highest rainfall (December to May) is concentrated on the northern islands. November to February is more wet and humid than the rest of the year.

The southern islands, Banaba and Line Islands except Teraina (also known as Washington Island) have very little rainfall all year around. During the dry season of June to November the northern islands will still have an average rainfall to keep the ground wet, keeping vegetation green and maintain the fresh underground water. The southern islands, Banaba, Christmas Island and Tabuaeran (also known as Fanning) at this time of year may have no single rain drop for months. However, with the change in rainfall patterns, due to climate

change the situation is worse, for the southern islands, they go for three years without rain. Because people cannot drink brackish water, they have to cut their way through other people's land to find fresh water, or harvest other people's plantations. This will in fact give rise to social instability. When we talk about the southern islands of Kiribati, including Banaba, Christmas Island and Fanning, we are simply talking about thousands of lives at stake. The situation at the moment is minimal but in the very near future, people will fight over their lands, village boundaries and resources. Some examples for this threat to peace are discussed in this report.

## **Introduction**

The security implications of climate change in Kiribati have just been recently and still compiled by different stakeholders. All information collected concludes that Water Security is a major issue in Kiribati. In fact it is a foundation of all other security implications identified in this report. Kiribati is now facing a lot of problems with safe water for its people. If this continues to get worse, (the increase in temperature, changes in rainfall patterns, prolonged droughts, sea level intrusion and many more) the atolls we call home will no longer be suitable for living. Other security implications of climate change in the areas such as Food Security, Economic Crisis, Health, Biodiversity, Migration and Loss of Culture are also presented in this report. A number of findings plus examples are listed and briefly discussed below.

## **Water Security**

In the past three years the Southern Islands in Kiribati experienced drought. At the beginning of this year some of these islands changed their priority projects from infrastructure development to water project. They proposed through the Ministry of Internal and Social Affairs for water related project. The water systems (solar pump) on most of the southern islands are not working due to maintenance problems, although the Ministry of Public Works and Utilities is gradually replacing some of these, and a proposed European Union project to begin in 2010 aims to improve water supply and sanitation for outer islands.

A single prolonged drought can have disastrous consequences and can lead to the rapid depletion of an island's surface and groundwater resources. Additionally, rising sea level is causing saltwater intrusion into the groundwater supply, further exacerbated by reduced water catchments area from coastal erosion. This is an especially serious problem for atoll islands, which are permeable and prone to flooding from within. Additionally, higher air temperatures are leading to higher rates of water evaporation, reducing soil moisture and decreasing the rate of groundwater recharge.

These are critical threats to the livelihood of the people of Kiribati, both socially and economically. Everyone in Kiribati relies on underground water for means of survival. If this water continues to be polluted, the atolls will no longer be suitable for living. It must be noted that the underground water is also crucial for vegetation. An increase in sea-level rise and the ever rising temperature will turn the Kiribati Islands into uninhabitable atolls.

Before we completely face the above threat, we are now encountering a social security threats, especially in some of the southern islands. This is rather an issue of social instability, derived from the issue water security.

On the island of Onotoa and Tabiteua, neighboring villages started to mark their borders disallowing others to come and fetch water from their community wells. This is an example of a security threat that will gear up conflict among islanders.

In the case of the island of Aranuka, the Island Council requested for Reverse Osmosis devices to be installed in all Meeting Halls and Churches, however the Government detected that the distribution of fresh water will create a dispute. A centralised plant for the whole island is more manageable but it is very expensive. Villagers moved to Health Centres and Clinics to take fresh water thus cause security threat to nursing officers and patients at these clinics.

Security implications regarding water, is in fact the very root of all other security implications in Kiribati. Without freshwater supply (underground) there will be no vegetation. Without vegetation, there will be no food supply and no more copra for export. Our *babai* (taro) pits which were cultivated by our ancestors will be no longer hospitable for these root crops.

## **Food Security**

Climate change threatens subsistence fishing in a number of ways. Rising sea surface temperatures can lead to coral bleaching, while the absorption of CO<sub>2</sub> by the ocean causes it to become more acidic. Taken together, these two problems could lead to the collapse of entire reef ecosystems, thus limiting or eliminating access to a critical food source. Additionally, circulation patterns of ocean currents could be altered thus affecting the distribution of ocean fisheries.

Kiribati relies much on subsistence fishing and simple agriculture. In the case of climate change, the rising sea level will cause more erosion and will urge those who live at coast lines to protect their homes with seawall. Seawalls require more aggregate mining which will destroy the reef ecosystem. Most people on the Capital South Tarawa who cannot afford fishing nets and boats rely on seashells from the lagoon. An increase in the number of seawalls means more digging in the lagoon platform destroying the habitat for shellfish. This is a very serious threat to the livelihood of low-income families.

There are also cases with milk-fish ponds drying up due to evaporation. One milk-fish pond on Nikunau Island in Southern Kiribati was drying up. Milk-fish of course, will not available as a substitution to the Islanders. Nikunau is one of the southern islands in the Gilbert group that lies 473.25 km south east of Tarawa, the capital of Kiribati. Its nearest neighbor is Beru lying 51.41 km west of it. Nikunau is one of the islands that do not have a lagoon and therefore the milk-fish pond is the only alternative fishing ground, especially during stormy weather when it is difficult to fish in the open sea. If the pond continues to dry up, the islanders for sure will have no more source of protein. In Kiribati fish is the part of the main meal, and it is a threat to the health and livelihood of people if there is no fish.

There have been reports this year from the islands of Butaritari and Tabiteuea about coastal flooding. This flooding has never been experienced before and it is critical since sea-water is flowing in the in-land natural ponds. The increase in salinity of these ponds will destroy the entire plantation. The nearby villages will be severely affected not to mention their underground water as well.

Additionally, subsistence agriculture on small islands is threatened by rising sea levels, which can increase the frequency of coastal flooding. Rising sea levels can also leave salt

deposits in the soil and contaminate groundwater supply, both of which have adverse effects on agriculture. Climate change is also likely to lead to more frequent and more intense periods of drought in some regions. Agricultural crops could become less resilient than usual to adverse weather extreme conditions, making dependence on agriculture insecure, for both subsistence and economic activities

In the case of the Island of Tabiteuea, the villagers lived near the pond urge those who own pieces of lands in this area but live at distant villages to come and assist in building a seawall to stop sea-water from coming in. They suggest that if they failed to give a hand, their lands and plantation will be taken away from them. Land dispute is always a very serious issue in Kiribati.

### **Reefs and Biodiversity**

Rising sea surface temperatures, an adverse effect of climate change, can lead to coral bleaching, and ocean acidification. These in turn could lead to the collapse of entire reef ecosystems.

The 2005 Millennium Ecosystem Assessment estimates that by the end of this century, climate change will be the main cause of biodiversity loss. The intergovernmental Panel on Climate Change asserts that roughly 20 to 30 percent of species it has assessed are likely to be at increasingly high risk of extinction as global mean temperature exceed pre-industrial levels by 2 to 3<sup>0</sup> C. This irreversible loss of biodiversity will have serious consequences for global food security and for habitability of some countries, particularly atolls which are low lying countries.

Kiribati in particular had contributed to the protection and preservation of one area called Phoenix Island Protected Area (PIPA). This is an example for such an effort to at least safeguarding what is believed to be important for our very survival. A lot of effort is needed to make it a global activity; however Climate Change is threatening this from every angle. Therefore there is a need to look into the security implications of climate change (CC) before commencing a biodiversity protection campaign.

Climate change causes an increase in temperature which severely affects the growth of reefs and resulted in loss of habitat for marine life (Biodiversity). The reef is the only hope for Kiribati and for the world as it acts as both breeding grounds for most marine species. Other migrated species rely on these reefs for survival as well. If the reef is continued to be endangered then, that means most of the carbon dioxide absorbed will be storming in the atmosphere causing a series of impacts to other biodiversity. This contributes to the rise of sea-level believed to be minimal to rest of the world but a very serious issue on the atolls.

## **Migration**

The International Federation of Red Cross has stated that climate change disasters are currently a larger cause of population displacement than war and persecution. This displacement of peoples is one of the most serious security threats caused by the adverse effects of climate change. The tensions intrinsic in migration of peoples can easily become open conflict as peoples compete over scarce resources or cause a shift in the existing order. It may start off first as voluntary migration, but increasing being expanded to include forced migration because of the increasing impoverishment of livelihood in the originating countries that have been so much adversely affected by climate change.

Kiribati is embarking on a mission to find and or request for a new home for its future generation. The government of Kiribati had and still work on a long term strategy of improving the skills and standard of its people (by sending them to international recognized institutions) to be able to compete in the international labor market so that they may find work and settle in safer places. From this, they will not be seen as a burden but rather useful people contributing to the development of the country that provides them with a job and a place to live. Climate Change gives no choice for I-Kiribati but to be forced to live in other places. The possibility of bringing peace or otherwise instability to others is still regarded as a foreseen security threat.

## **Loss of territory, sovereignty, and legal rights**

Scientists project major changes to the landmass during this century. Receding coastlines and submergence of large areas could result in loss of territory, including entire countries such as small island states. Internal relocation has already taken place in the PSIDS and the existence of entire nations is threatened. More disputes over land and maritime borders and other territorial rights are likely. It is predicted that long-established rules of international law may have to be revisited as we face the threat of losing many UN member states due to the adverse effects of climate change.

Without a territory and people to govern, without resources to distribute and resources to trade, there is no state. Even before our atolls are completely inundated there will be no life on the atolls. Our marine resources and enormous Exclusive Economic Zone we proud of, from which a big percentage of it is our gift to the world (the Phoenix Islands Protected Area), will no longer be under our jurisdiction and control. There will be no more legal right as a state to claim something in the name of our country. Our right as free citizens in a democratic state will no longer be recognized. This is a threat to our existence as humans belonging to this earth. A threat to our legal rights in creating a boarder to defend and preserve our language, culture and identity as a group of people different in their own but share equal rights with every other humans.

Climate change will create uninhabitable small atolls which were once full of myths and legends. Islands where law and order once existed. There will be no more ownership, no future and apparently no reason for existence.

### **Loss of Culture**

While most nations will ultimately suffer from the adverse impacts of climate change, small island states, including PSIDS, are already grappling with dire and immediate impacts today. These impacts include the inundation of coastal areas, where the majority of our people live; the submergence of islands; loss of freshwater supplies; saltwater intrusion; flooding; drought; damaged crops and failure of agriculture; diminution of biodiversity; destruction of critical infrastructure; and a substantial increase in the incidence of serious diseases. In many cases, these impacts will ultimately render Pacific island nations uninhabitable, destroying our unique and ancient cultures. Already the impact on distinct cultures are being felt as peoples are being forced to shift from traditional crops to new salt resistant strains, move to new fishing grounds, and in some cases, leave their ancestral homelands entirely.

In Kiribati and especially, on the outer islands, traditional meeting halls have been abandoned since people start to migrate further inland leaving the old existing villages. This could create loss of culture and existing village rules. People scattered around the Island are harder to be controlled thus creating a malfunctioned society.

This steady loss of traditional cultural institutions and practices is disrupting social networks that have existed for hundreds, and sometimes thousands of years, making it more difficult for these communities to cope with the adverse impacts of climate change. Such a breakdown in the social fabric can exacerbate existing tensions, especially in times of crisis and not therefore helpful in mustering communal efforts needed to cope with any such crisis.

However, this is only a starting of a major security issue. When relocation happens, the Kiribati people living overseas will lose their culture. A minority among the majority means adopting other cultures. In the long term there will be no more solidarity among the islanders later nobody will pay attention to the culture of Kiribati, or perhaps a culture may be preserved but not like what it is used to be on the islands. It will be a mixed culture and will keep changing as generation changes from time to time. It is often experienced that it is hard to preserve and practice your culture in other places because they too have their own culture. You as in intruder must adapt to the new situation and accept their cultures.

### **Natural Disasters**

As a known fact of climate change, natural disasters will be more frequent. In Kiribati, we have slowly entered a phase where we will start to experience such threat to our security.

One recent example is a tidal wave that hit Marakei a few months back. Several households and Mission Stations are affected. Seawalls built to protect the buildings on one part of the island is now completely damaged thus make this area vulnerable again for future erosion and inundation.

People are affected severely for they have to start building their new homes or repairing the damaged ones and more importantly will find other spots for growing their root crops and coconut palms. Tidal waves in the past repeatedly hit the last island in the South (Arorae) but with changes in climate patterns, it is now experienced for the first time at the northern part of Kiribati.

As widely known, the atolls in Kiribati are no more than 3 meters above sea level. Some islands are way below 2 meters above sea level making them vulnerable to even mini tidal waves. Once hit by any form of natural disaster, the land is again uninhabitable for people. It is sad that all atolls in Kiribati share this vulnerability. It is becoming a very scary issue threatening the very existences of the peaceful societies in Kiribati.

## **Public Health**

In Kiribati Public Health is being threatened by the following:

- a) Water related diseases
- b) Air borne diseases

Water related diseases are simply caused because the water we drink is not safe. Even if it is boiled for at least 10 minutes it will be contaminated again since the air is filled with dust. This situation applies to rain water we catch, since the roof is always dirty and salty, especially for those who live near the main road just along the coast.

The problem with atolls is that the sand is porous and seawater may easily sip in contaminating the fresh water lens. A lot of water related diseases will cause more spending and a lot social problems.

During hot and dry seasons, people always affected by flu. The prolonged period of drought encourage flu to spread quickly. Today with the newly discovered H1N1 influenza, Kiribati is already vulnerable to this threat.

## **Economic Crisis**

Kiribati is highly dependent on Marine Resource as a source of income. This sector will give hope to Kiribati in the near future. However, if this is continued to be annihilated by the negative impacts of climate change, the result will be devastating. Currently the unemployment rate in Kiribati is increasing and if the mentioned industry cannot provide future employment opportunities, then there will be a political instability. The cost of elections is high, and with a frequent change in Government due to an unconventional downfall is an example of political instability.

As mentioned in the context, our main income comes from marine resources. Climate change imposes threats to our marine biodiversity. Coral bleaching, pollution, and an increase in temperature will destroy our economy. Not only will our marine resources be destroyed but also our land resources. Without these there will be no production and this is a threat because our survival depends on these things.

Marine resources keep the trade going and the money received from these services assist our stability on land. A decline in the number of fish in our ocean due to the above issues will bring greater economic crisis in Kiribati. It simply means a decrease in employment opportunities which will cause other serious problems in the long term.

An economic crisis may also turn into a political instability because people will turn to government to provide for them. If government fails, it will give room for other politicians to advocate their plans for survival. A frequent demolished government is a sign of failed state. Security implications of climate change will destroy an existing but vulnerable state.

### **Conflict/Unrest**

Climate change will alter the distribution and quality of natural resources such as fresh water, arable land, coastal territory, and marine resources. Some researchers have speculated that these changes could cause or prolong armed conflict. Indeed, the general link between the environment and armed conflict is well established and accepted by the Security Council as evidenced by its work in the thematic areas of natural resources and conflict; and energy security and climate. Population pressure based on internal and/or external migration will exacerbate the potential for conflict. Unrest is a security issue in Kiribati because as provided from the evidence of future relocation, there is no guarantee for complete safety in a new home. As seen globally refugees due to political instability have caused serious conflict in places they settle in. Conflict may not necessarily mean the armed forces against the innocent or suicide missions against the Government; rather it is a conflict of interest over the resources and territory.

As mentioned earlier in migration, there is no clear and precise description of the future of I-Kiribati, whether they will bring peace to their new home or greater instability. Not because they choose to but because of the difficulty of adapting to a foreign place. Living with absolutely nothing is one example of a severe threat. It is a threat to the very dignity and identity of those who will become aliens in other people's land. Finding ways to have access to resources in order to settle ones needs and wants may trigger conflict.

It is hard to allow more people to have access to resources and services because it is still as seen today, this is still a burden and challenge for those bigger developed countries. Harboring strangers may cause political, economical and social unrest to both sides. Measures may be devised today, but in reality it will be a different situation and all that has been planned may fail and cause nothing but conflict or unrest.

### **Conclusion**

Kiribati is a very small country, vulnerable and incapable of defending her boundaries and specifically its citizens from the security implications of climate change. With the decrease in productivity due to the negative impacts of climate change we need a collective effort from neighbouring states to appeal to the rest of the world for an urgent attention of devising measures to safeguard our future from any threat imposed onto us by this scenario.