



Pilot Fragility Assessment of an Informal Urban Settlement in Kiribati

January 2013

The Asian Development Bank (ADB) has piloted fragility assessments in selected urban settlements in the Pacific using a community-based approach and focusing on the impact of fragility on the delivery of basic services. The fragility assessment of South Tarawa in Kiribati explores patterns of fragility related to urban development including delivery of critical urban services with focus on water and sanitation services. Bairiki Village, an urban settlement in South Tarawa, was a case study for the assessment.

The assessment’s key objectives are to determine and better understand the patterns of fragility and resilience created by state–society relationships, as they relate to the delivery of urban services in South Tarawa, and to identify means of overcoming fragility to improve the quality of urban life in the community. The findings of this study, outlined below, should inform ADB’s urban development activities in Kiribati, including the South Tarawa Sanitation Improvement Sector Project, ensuring that a fragility-sensitive approach is adopted to achieve better development results.



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The pilot fragility assessment in South Tarawa, Kiribati is part of the regional technical assistance Supporting ADB’s Engagement in Fragile Situations.¹ ADB urban development specialist Allison Woodruff and consultant Claire Anterea conducted the fragility assessment, under the guidance of ADB’s focal point for fragile situations Patrick Safran. This publication was prepared with technical inputs from ADB principal economist Emma Veve and design and editorial inputs from consultant Cyrel San Gabriel. For more information regarding ADB’s engagement in fragile and conflict-affected situations, visit www.adb.org/fragile-situations.

1. ADB. 2009. *Technical Assistance on Supporting ADB’s Engagement in Fragile Situations*. Manila (TA 7269-REG).

Key Drivers of Fragility

ECONOMY

- Kiribati's economic growth potential is constrained by very limited land area, geographic dispersion across 5,000 kilometers of ocean, and remoteness from major markets resulting in high transport costs and limited transport services.
- Almost half of national income is derived from abroad, predominantly through fishing license fees, remittances, foreign aid, and revenue from the country's trust fund, the Revenue Equalization Reserve Fund.
- Kiribati is highly vulnerable to economic shocks associated with rising oil and food prices, loss of fisheries revenues, and the appreciation of the Australian dollar (A\$), which is the legal tender in Kiribati.
- Private sector activity is low and economic opportunities are limited, leading to high unemployment rates, especially among the youth.
- The public sector is dominant, with state-owned enterprises (SOEs) operating in most sectors of Kiribati's economy. SOEs, supported by government subsidies and guaranteed loans, have largely failed to provide essential goods and services, such as reliable electricity and



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- transport services. SOEs incur substantial losses, offset by government transfers, resulting in underinvestment in development and maintenance of key infrastructures.
- High rates of urbanization and limited economic opportunity have translated into high rates of poverty in South Tarawa, with almost a quarter of urban residents living below the poverty line.

Box 1 Surviving in a Subsistence Economy

Bairiki Village in South Tarawa is characterized by high levels of unemployment, with most households involved in informal sector activities. Only a handful of households in the community are formally employed in the public sector. The most common source of income is derived from fishing, with the men responsible for going out to fish while women sell the catch at roadside stalls. Households reported earning an average of A\$200 every fortnight from fishing activities; however, incomes vary widely depending on the size of the catch.

Households have little disposable income once paying for basic necessities and church contributions. Like other Pacific island communities, households in South Tarawa place priority upon contributing to the church. However, due to cultural sensitivity, it was not possible to collect data on the average size of household contributions.

On the other hand, households reported that they can all afford to feed their families, and that they rarely face shortages of cash to purchase food. While household plots are too cramped for households to have their own gardens, almost all households keep pigs. These are either consumed during celebrations or sold for cash when needed.



ENVIRONMENT

- Consisting mostly of coral atolls, Kiribati is highly vulnerable to hazards from climate change and natural events, including sea-level rise and storm surge.
- There are periods of drought associated with El Niño Southern Oscillation events. Limited water storage in small islands means that domestic water supplies are severely threatened by these dry periods. Drought occurs in South Tarawa on average every 4 to 6 years.
- The impacts of climate change, including prolonged drought and saltwater intrusion associated with sea-level rise, pose a threat to sustainable management of water resources in Kiribati.
- South Tarawa's remaining water reserves are threatened by contamination as a result of illegal settlement and other inappropriate land uses, putting the urban piped water supply at risk.
- Poor soils, scarcity of land, and low rainfall means that there is a high level of dependence on imported staple foods such as rice, flour, and sugar, particularly in South Tarawa.

Box 2 Lifestyle in an Overcrowded Environment



Overcrowded, and lacking adequate water and sanitation, Bairiki Village can be characterized as extremely environmentally fragile. Of the 51 households interviewed, only 2 have private toilet facilities. The majority of the households openly defecate in the ocean, or on the beach. This practice has become so widespread that there is little or no social stigma associated with defecating in the open. While open defecation is illegal under the Environment Act, and laws against it during colonial times were strictly enforced, there is no enforcement of these laws at present.

Households recognize that open defecation is an unhealthy practice but claim that they have little or no other choice. While some households said that they could not afford to construct their own toilets and pay utility sewerage connection fees, the cramped living conditions in Bairiki Village show that there is simply not enough space between homes to construct individual household toilet facilities. The ocean and beach are the preferred options since they can be used at no cost to the household.

The majority of the households keep pigs next to their homes. This practice poses a major threat to public health, particularly through groundwater contamination. In addition to animal waste, solid waste management is another challenge facing the community. Rubbish is routinely disposed of on the beach or in the ocean. Again, while households recognize this practice as being unsanitary, it is common because rubbish can be disposed of in this manner free of charge. Although this practice is illegal under the Environment Act, the laws are not enforced. While the village council offers garbage collection services, households are reluctant to pay council fees for this service. Another option available in South Tarawa are "green bags" for waste collection, which can be purchased for A\$0.20 per bag and put on the side of the road for collection as part of an externally funded solid waste management project.

The majority of homes within Bairiki Village are informally constructed using a variety of locally available materials. Housing conditions are poor, with a large number of people residing in cramped living conditions. Many people opt to sleep in the village *maneaba* (meeting hall) because of insufficient space within homes. There is no enforcement of existing building codes on land plots in Bairiki Village.



URBAN SERVICE DELIVERY

- The total available land in South Tarawa is estimated to be 1,202 hectares. South Tarawa is experiencing 4% annual population growth. Population pressures, combined with uncontrolled urban settlement, have resulted in overcrowding that has put stress on critical public infrastructure and the surrounding natural environment.
- Problems relating to the quality and supply of drinking water, disposal of sewage, and management of solid and hazardous wastes have existed in South Tarawa for more than 30 years. Vacant land is increasingly becoming scarce, and squatter settlements are expanding. South Tarawa's two water reserves are no longer sufficient to meet the growing needs of the urban population.
- Almost 70% of South Tarawa's households rely on water supplied by the Public Utilities Board, a government-owned utility, as their primary source of drinking water. The board relies on government subsidies and donor funding, and there are no incentives to ensure customer satisfaction. The monopoly on service provision has also led to consumers having little choice but to accept poor quality services.
- Overcrowding and lack of water and sanitation have facilitated the spread of disease in urban centers of South Tarawa. Kiribati has high rates of infectious diseases, such as tuberculosis; and water-borne diseases, such as diarrhea, dysentery, skin infections, and worm infestations. Neonatal conditions, spread of infectious diseases, diarrhea, and malnutrition among children, particularly in overcrowded places in South Tarawa, are the principal causes of hospital admissions and deaths. With its deteriorating facilities and weak capacity, the health sector can no longer support the growing number of hospital admissions.

Box 3 Unsustainable Sanitation and Water Supply Services



Bairiki Village has been provided with several communal toilet blocks through government and external development partner projects, but once constructed, these quickly fall into disrepair. Since they are not kept clean, households prefer using the ocean and beach. Some households had made initial efforts to keep the toilet blocks clean, but eventually gave up when they realized that other households using these facilities were not contributing to clean-up efforts. Also, since there is no running water available in the communal toilet facilities, it requires extra effort to fetch water for hand washing and cleaning. In some cases, private households have taken ownership of individual toilet

stalls within communal blocks. Locks have been added to prevent other families from using the stalls.

Like the rest of South Tarawa, the community in Bairiki Village has very limited access to clean water supplies. Households reported that they could not afford to purchase individual rainwater tanks. Also, because of the informal style of most houses in the community, there is no guttering to collect rainwater. The community owns several communal rainwater tanks that have been funded by external development partners where households can access potable water; but during dry periods rainwater tanks do not provide an adequate source of water. There is also no available space to install additional communal rainwater tanks. Piped water is supplied on an intermittent basis, generally for 2 to 3 hours every second day.

Less than a decade ago, under the ADB Sanitation for Public Health and Environmental Improvement Project,² most households were provided with drip-feed systems consisting of water storage tanks with connections to the main water distribution system. However, most of these systems have been dismantled because the water pressure was insufficient to fill raised water tanks. It is common to see the lids of these water tanks on the ground, with hoses placed on the lids, so that these can be filled with drinking water when piped water supply is available. However, this practice exposes drinking water to contamination. In other cases, households have tampered with water lines, and have sunk oil drums in the ground to collect piped water. These informal wells are not covered, and are exposed to contaminants such as pig waste.

2. ADB. 1998. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grants to the Republic of Kiribati for the Sanitation, Public Health and Environment Improvement Project*. Manila (Loan 1648-KIR(SF)).

URBAN LAND USE AND MANAGEMENT

- The former colonial administration introduced laws to acquire land from traditional landowners under long-term leases for public use. Almost all land in urban South Tarawa, where government offices and other public infrastructures are located, is rented under 99-year leases from customary landowners. Surplus land that was not required for public use was subsequently subleased for 25-year periods to individuals for housing and other uses.
- Both formal and informal arrangements between landowners and occupants are used to acquire land in South Tarawa. While some transactions have been formally approved by the Land Magistrates Court, others are informal oral or written agreements between landowners and occupants that have no legal or contractual basis.
- Rapid urbanization and a finite supply of land in South Tarawa have resulted in overcrowding, land fragmentation, dislocation, landlessness, and illegal occupation. Land issues feature prominently in community-level politics and disputes.
- Settlements in South Tarawa are relatively heterogeneous. Within a single community, a number of land arrangements may exist including ownership, formal leasing, informal leasing, or squatting. The majority of public sector workers are provided with government-owned housing, which is managed by the Kiribati Housing Corporation. Much of the housing in South Tarawa can be described as temporary; substandard; and lacking space, privacy, safety, and basic services.
- While most of the legislation and regulations are still in place, there is weak enforcement, particularly in cases that can result in conflicts

Box 4 Growing Population in Bairiki



Bairiki Village is located in the urban center of Bairiki in South Tarawa. The community is located adjacent to the official residence of the country's President and close to Bairiki's commercial center. The community was originally located where the Bairiki Stadium now stands; however, the original inhabitants were resettled under the former colonial administration when their land was appropriated for public use.

The government has entered into long-term lease arrangements to rent the land on which the community is currently settled. Communities are permitted to live on this land free of charge. The Teinainano Urban Council is responsible for administering urban

affairs in Bairiki Village through the Village Committee.

Under the original resettlement plans, each of 17 families was allocated a plot of land to settle on. However, over the years, the number of residents in Bairiki Village has grown, resulting in very high population density levels and overcrowding. According to the results of the 2010 census, 404 households, consisting of 3,281 people, were living in the Bairiki urban area. While a village-level population breakdown for Bairiki Village is not available, it is estimated that around 51 households now reside in Bairiki Village, where the size of some households may reach up to 17 people. Land issues within Bairiki Village are particularly sensitive, since it is no longer clear which households have a legal right to settle in the village.

between the government and individuals. Local councils were established to manage urban development. However they lack the financial and human resources to undertake their responsibilities in planning, building, and other local government functions.

URBAN SOCIAL NETWORKS

- Communities in South Tarawa are heterogeneous, consisting of migrants from throughout Kiribati with various religious backgrounds. As a result, unlike communities in the outer islands, South Tarawa communities tend to be organized around church groupings rather than through any traditional governance structure. Individuals tend to identify most strongly with their church affiliation. This makes organization of community-based activities challenging, since it requires bringing a number of church groups together.
- Weak social cohesion and lack of a sense of individual social responsibility have led to damaged or poorly maintained public properties, unsanitary conditions, and environmental problems. Among the practices that contribute to these problems are vandalism, tampering with water pipes, open defecation, and dumping of solid wastes on beaches.



Box 5 The Role of the Village Council and Churches

The village council, represented by the *Unimane* (council of male elders), is responsible for overseeing the affairs of the community. However, its authority is limited. While some rules are enforced and fines are levied for noncompliance, such as for drunkenness in the *maneaba* (meeting hall), the council has only limited power to set and enforce rules in the community.

Bairiki Village administration is further subdivided into three village subgroups based on three distinct geographical zones, known as Sunrise, Midday Sun, and Sunset. Matters handled by these subgroups are largely confined to organizing village celebrations, such as the anniversary celebrations in the village *maneaba*.

At one time, the village committee created a subcommittee known as *Te Kamengaraoi* (healthy living) consisting of nurse aides and representatives from the Village Council and from each of the three village subgroups. The role of the committee was to carry out monthly inspections to ensure that households were keeping their living areas clean and to levy fines for noncompliance. However, its authority was limited and fines were not always paid, so eventually this body became inactive.

Churches play a very strong role in the community, with Catholics and Protestants being the two largest religious groups. Each church has its own *maneaba*, and actively involves its members in fund-raising activities. The authority of the church is generally regarded as much stronger than that of the Village Committee in governing the day-to-day affairs of its members. However, working through the churches to improve the quality of urban living in Bairiki Village has proven to be challenging because of the need to involve groups from multiple denominations.

Mitigating Fragility

- Weak capacity of the government and the community to manage delivery of urban services must be recognized. Often nongovernment and community-based approaches are used in other countries to address government's inability to effectively deliver public services. However, given the heterogeneous nature of communities in urban South Tarawa, and the fact that nongovernment organizations also suffer from serious capacity limitations, alternative approaches are needed. The potential to outsource urban management functions to the private sector to overcome these constraints should be explored further. The recently relaunched "green bag" solid waste management initiative has been successful in promoting improved service delivery by using private sector service providers to collect solid waste through a "user pays" system. However, given the economic fragility of South Tarawa, the ability of households to pay for services must be considered in the design of similar private sector initiatives to ensure that vulnerable groups are not excluded.





- Urban sector reforms take time to be achieved in small tight-knit societies. Policymakers are often reluctant to enforce regulations or implement measures that are unpopular among the population, or that are in conflict with traditional rules or practices. As a result, difficult decisions are rarely made, and the status quo is difficult to change. There is a need to promote demand-driven urban management reforms. For South Tarawa to have any chance of success in mitigating fragility, there must be bottom-up support for change among local communities.
- Externally supported urban development initiatives must take into account the fact that

land ownership is a very sensitive topic in South Tarawa. To avoid igniting disputes on settlement rights within the community, project designs must be carefully considered.

- Project benefits must be equitably distributed among community members in South Tarawa to avoid conflict. Given the emphasis placed on equity and redistribution of resources in Kiribati's society, project initiatives, such as those that use local labor, must ensure that all members in a community are given opportunities to participate and share in project benefits (e.g., use of a roster system for local labor opportunities).

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All photos were taken by Marc Overmars.