

2023 Indo Pacific Global Health Competition

# Sowing Seeds in Rising Tides: Addressing Childhood Nutrition in Kiribati

**2023 Indo Pacific Global Health Competition Case Writing Team**

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Disclaimer: All characters described within the case are fictional, but the background information provided in the case report reflect real-life data and events ongoing in Kiribati. Teams are responsible for justifying the accuracy and validity of all data and calculations that they use in their presentations

## Introduction

‘Aulani is in the kitchen preparing a meal of Spam fried rice for her family of five. This is far from a typical meal on the island of Arorae like fresh skipjack Tuna, mashed cassava, and sauteed *kangkong*. After a recent flood, caused by the relentless forces of climate change, ‘Aulani and Kekai’s family found themselves in a dire situation. Their home garden, once of source of fresh and nutritious food, was destroyed. To make matters worse, following the flood, their two-year-old daughter Heiura fell ill with cholera. Medical treatment was expensive, and money became unbearably tight. Meals that were once filled with homegrown fruits and vegetables were now replaced with canned goods, instant noodles and other processed items. While ‘Aulani cooked, Kekai, helped their son Ahohako, age 7 and reading below grade level, with his school exercises.

Later that night, Afa, the oldest of the three children at 9 years old, lay on a woven mat made of pandanus. Despite his growth spurt, he was still the shortest child among his classmates. He had woken up in the middle of the night, his belly rumbling with hunger. His mother would usually prepare *swimming rice*, a watery mixture of rice and milk, for a snack, but she had used the last of the rice for the evening’s meal. Finding an empty kitchen, he ran to his mother, waking her up with tears streaming down his face. “*Baki* (hungry)...*Mama baki*” he uttered to his mother. This had become a common occurrence, and ‘Aulani felt helpless to soothe her growing boy’s hunger. She could see the lasting impact that malnutrition was having on her children.

‘Aulani did the only thing that she could have done that night; she comforted her son. Kekai had left in the early morning hours for his job as a commercial fisherman, leaving space for her to embrace Afa. He curled up in his mother’s arms, the rumbling in his stomach painfully loud in the quiet room. After some time, he fell asleep, but his mother could not. She knew that it would not be the last time her children would go to bed hungry, and the weight of that knowledge kept her awake.

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The next morning, ‘Aulani found comfort in knowing that her children would be receiving school lunches as part of the Ministry of Education’s efforts to address childhood malnutrition. She spent her day sewing garments to sell at the local market. When Kekai returned home, ‘Aulani informed her husband that their child has woken up from hunger again and there was no food in the house for her to give him.

“He will be *niko* (fine). I grew up hungry and it made me *nanomaka* (strong).”

“Don’t you see Kekai? Our children are *nanokobakoba* (weak from hunger). They are *nikutæ* (too short).”

“They will be *niko*. They are just late bloomers; I was short growing up too.”

“No! You don’t understand, our children are dying! They will die before you understand...you are *nanokatanga* (cruel).”

With a heavy sigh, ‘Aulani left to sell her goods so she could feed her children that night.

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Around her, other women were selling their crafts: woven baskets, shell jewellery, and carved figurines. During a lull, neighbouring artisan and new mother, Marewe, came over to confide in ‘Aulani that she was struggling to produce enough breastmilk to feed her six-month-old and was ashamed she would have to formula-feed her. ‘Aulani shared that she struggled to feed Afa at that age when a nurse recommended feeding him mashed breadfruit to supplement the reduction in milk. Marewe was surprised, she thought children could not eat soft foods until they were much older. Nevertheless, she felt relief and thanked ‘Aulani for the advice.

‘Aulani knew many mothers were struggling to feed their children, yet this commonality brought her no comfort. As she packed up her stall, she found herself lost in thoughts, dreaming of a world where her children could thrive.

“Hey, is everything alright?” said an unfamiliar voice, rousing her from her thoughts. She looked up to see a member of the Kiribati Climate Action Network, identified by his T-shirt with KiriCAN emblazoned across the chest.

‘Aulani had heard of KiriCAN but had dismissed it as something for the city’s wealthy. Sceptical that such organisations would act in her community, she decided to hear what he had to say. The man explained that he was collecting information on childhood development for an upcoming proposal, and the president would be meeting with UNICEF Pacific Islands. It was as though her prayers were answered. She knew something had to change, and this could be the way.

She gathered her friends and women in the community, and they described their struggles to KiriCAN: their starving children, poverty,, food insecurity, climate change, and lack of harvest. The worker noted everything down. Maybe this was how everything would change.

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## An Opportunity Arises

Following the KiriCAN president’s meeting with UNICEF Pacific Islands, a unanimous decision was made that greater efforts need to be made to safeguard healthy childhood development across Kiribati, with a particular focus on childhood nutrition. UNICEF Pacific Islands has pledged a two-year

grant of A\$2,000,000 grant to support innovative interventions that will improve childhood nutrition and reduce childhood mortality in the island nation and is currently seeking proposals.

You are a team of international childhood development specialists who have been contacted by Talanoa Consulting to work on this proposal. You have previously worked across the world and have successfully improved the state of childhood development in various low resource settings. This grant could help support a lot of children growing up in Kiribati and you know that it is an opportunity that cannot be missed.

## Details of the Request for Proposals

UNICEF Pacific Islands will highly favour proposals that fulfill all of the following criteria:

- **Solution Focus:** A solution that addresses childhood nutrition, identifies a specific measurable metric, and provides justification for this choice in metrics. The solution must be evidence-based and tailored to the target audience's feasibility and cultural appropriateness.
- **Innovation and Integration:** An intervention that either builds upon existing initiatives or creates a novel approach, considering existing school and community programs. It must be innovative and add new facets to existing programs.
- **Multidisciplinary Approach:** A program that recognizes the social determinants of health (SDoH) in childhood development and particularly nutrition. Collaboration with local stakeholders is encouraged.
- **Sustainability and Community Engagement:** A two-year, community-based project that builds local capacity, ensuring that benefits continue after the project ends. Leveraging community resources and obtaining members' buy-in is critical, with a clear timeline and consideration of sustainability.
- **Represents good value for money:** The 2 million dollars can be spent on any aspect of the program. Additional in-kind and cash contributions can be leveraged but must be realistic. Expenditure of the 2 million dollars needs to be budgeted, justified clearly and fully expended in 2 years.
- **Targeted Intervention:** A project that focuses on intervening during ONE specific time period in childhood (Infancy, Early Childhood, Pre-school age, Pre-adolescence)<sup>1</sup> and provides a rationale for that selection.
  - Infancy (0-12 months)
  - Early Childhood (1-3 years)
  - Pre-school age (3-7 years)
  - Pre-adolescence (7-12 years)

The proposal must adhere to ethical and cultural considerations, include a detailed budget, and demonstrate a clear understanding of the local context.

Good luck!

## Case Prompt

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<sup>1</sup> The scope of the UNICEF Pacific Islands grant is strictly limited to childhood development, and while maternal health and wellbeing is closely tied to childhood development, interventions targeting this group will not be considered.

You will submit your application in the form of a **twelve-minute PowerPoint presentation** to the panel of reviewers that UNICEF Pacific Islands has assembled for evaluation, including members of the Kiribati government, KiriCAN, community members, and local childhood experts. Your presentation must include the following components:

- 1. Descriptive Title**
- 2. Project Narrative:**
  - A)** Describe the problem you intend to address.
  - B)** Identify the period of intervention and your rationale.
  - C)** Explain your proposed intervention.
  - D)** Provide supporting evidence for your specific approach, including references where appropriate. Referencing should be completed in Vancouver citation style.
- 3. Timeline:** A detailed timeline depicting all components of the proposed project across the 2-year grant period.
- 4. Budget:** Describe your budget for each year. Itemise costs for personnel, supplies, etc. Note that A\$2,000,000 is for the entire 2-year period. We are not expecting definite budgets, rather as accurate as possible budgets.
- 5. Sustainability Justification:** Describe how your project can build capacity in the local community so that your intervention can be sustainable beyond the grant period.
- 6. Measuring Impact:** Describe what childhood development measures your project targets and what data you will collect to evaluate the impact of your project in alignment with these targets. All measures for which data will be collected should be justified in relation to the project's intended goals.
- 7. Acknowledgement of Determinants:** Describe the considerations of your intervention on the local SDoH context with relation to childhood development.

## Background

### Country Profile

Kiribati is an island nation situated in the central Pacific Ocean, consisting of 33 atolls<sup>2</sup> and reef islands spread out over an area roughly the size of India (see Figure 1).<sup>i</sup> Yet, Kiribati is also one of the world's smallest and most isolated country. A summary of Kiribati's key statistics are provided in **Table 1**.

**Capital:** Tarawa

**Population (2023):** 133,828

**Official Languages:** Gilbertese, English (less spoken outside the capital)

**Religion:** Predominantly Roman Catholic (56%) and Protestants (34%)

**Currency:** Australian Dollar, Kiribati Dollar

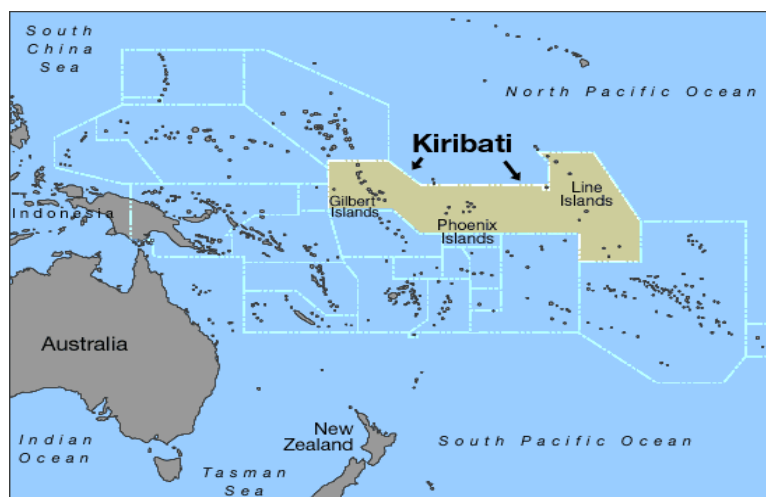


Figure 1. Kiribati on the map. Image courtesy of Thaman & Tye, 2015<sup>ii</sup>

Table 1: Key Country Figures<sup>iiiivvvi</sup>

<b>Demographics</b>	
Urban population	57.8%
Life expectancy	68.2
Fertility rate (births per woman)	3.3
<b>Economy</b>	
GDP per capita	US\$ 1702.0
Unemployment rate	11%
Education expenditures	19.3%
Healthcare expenditures	11.6%
<b>Health</b>	
Adolescent birth rate (aged 10-19 years) per 1,000 women	40%
Infant mortality rate (per 1,000 live births)	33

<sup>2</sup> An atoll is a ring-shaped coral reef, island or series of islets.

Under 5 years mortality rate (per 1,000 live births)	52
Neonatal mortality rate (per 1,000 live births)	21
Physicians (per 1,000 people)	0.2
<b>Education</b>	
Primary completion rate <sup>a</sup>	94%
Junior secondary completion rate <sup>a</sup>	78%
Senior secondary completion rate <sup>a</sup>	20%

<sup>a</sup> Per centage of a cohort of children or young people 3–5 years older than the intended age for each level education and completed that level of education.

## Background: Climate Change

In 2015, Ioane Teiota, a Kiribatian, made the headlines for applying to be the world’s first climate refugee by claiming asylum in New Zealand<sup>vii</sup>. With an average elevation of less than six feet above sea level<sup>viii</sup>, this Pacific Island nation is one of the most susceptible to the imminent effects of climate change.

### *Rising Sea Levels, Extreme Weather Events, and Coastal Erosion.*

One of the most pressing concerns for Kiribati is the rising sea levels attributed to global warming. It is estimated that sea levels have risen an average of 3.2 mm per year since 1993, making Kiribati at the perils of being the first country to be swallowed up by the effects of climate change<sup>ix</sup>. *King tides*<sup>3</sup> further aggravate the sea levels rising impact on Kiribati that could elevate the sea levels by additional 30cm in the Central pacific. Kiribati is also vulnerable to an increased frequency and intensity of extreme weather events, including cyclones and storm surges. In addition, coastal erosions have occurred rendering certain atolls uninhabitable. Many communities are being forced to relocate due to the coastal erosion, and some islands (e.g. Abanuea and Tebua Tarawa) have been completely flooded and no longer exist<sup>x</sup>.

These extreme conditions contribute to further issues affecting drinking water and food availability. As seawater intrudes into freshwater sources, this threatens the availability of clean drinking water for the population. As seawater infiltrates the soil, agricultural lands are becoming increasingly salinized, jeopardizing food security and increasing the incidence of water and vector borne diseases<sup>xi</sup>. Coupled with inadequate access to basic sanitation (see Figure 2), the effects of climate change are compounding and posing a serious public health threat.

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<sup>3</sup> *King tides* is a non-scientific term used to describe exceptionally high tides, influenced by the El Nino-Southern Oscillation.

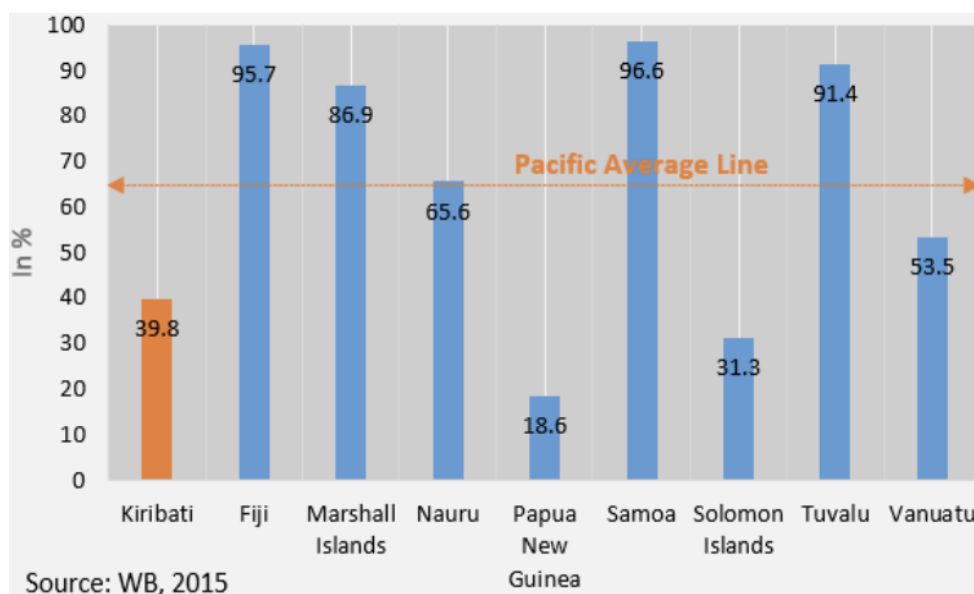


Figure 2. Kiribati's Poor Access to Basic Sanitation. Image courtesy of World Bank (2015)<sup>xii</sup>

### *Adaptation and Resilience Strategies*

In the face of these challenges, Kiribati has been working to develop and implement adaptation and resilience strategies including the construction of sea walls, the elevation of infrastructure, and the development of climate-resilient agriculture practices. These programmes are heavily funded by foreign aid with Australia being a key figure in pledging spending towards climate-resilient programmes in the Pacific<sup>xiii</sup>. Australia's investment in Kiribati include<sup>xiv</sup>:

- The Kiribati Education Improvement Program (\$9.8 million 2016-20 in climate and disaster finance of \$96 million 2010-22 project total) which ensures schools have raised floors and protective seawalls to reduce coastal flooding, that school facilities are built using sustainable materials with integrated water and energy systems, and that children learn about climate change at school.
- The Pacific Technical Assistance Mechanism (PACTAM) is supporting the Director of the Ministry of Finance's Climate Finance Division to increase Kiribati's access to international climate finance. Through this support, Kiribati has secured over USD150 million in support for priority climate change projects.
- The Kiribati Adaptation Project Phase 3 (\$5.9 million, 2010-2018) built seawalls and other shoreline protection systems around South Tarawa to help protect roads, homes and businesses during storm surges and sea flooding.

Additionally, the government is exploring innovative solutions, such as floating islands, to ensure the survival of its citizens in the face of rising sea levels. In 2014, then President Anote Tong, authorised the purchase of 20 sq km of land in Vanua Levu, Fiji, as a contingency plan for relocation<sup>xv</sup>.

### **Background: Food Insecurity**

According to the Food and Agriculture Organization of the United Nations<sup>xvi</sup>, around 8% of Kiribadians are undernourished, 22% live below the basic needs poverty line, and 41% experience moderate or



severe levels of food insecurity<sup>4</sup>. In addition, Kiribati has the Pacific Islands' lowest childhood survival rate, with 15% of children under the age of five suffering from stunting<sup>5</sup>, and 6.3% of children dying before the age of five<sup>xvii</sup>.

### *Multiplier Effects of Climate Change*

Traditional food harvesting practices, which are central to the nation's food security, have been compromised due to the impacts of climate change. Overfishing, coral reef degradation, and changing ocean patterns have led to declines in fish stocks, a significant protein source for the population. The productivity of coastal fisheries (e.g. fishes and invertebrates) is projected to decline by 20% by 2050 in part due to the effects of rising sea surface temperature<sup>xviii</sup>. With 31.9% of Kiribatians employed in the agriculture, forestry and fishery sector, livelihoods are increasingly made precarious by effects of climate change leading to further food insecurity<sup>xix</sup>.

### *High Dependency on Imported Food*

Climate change has resulted in significant declines in local food production, increasing reliance on nutrient-deficient imported foods and raising the prevalence of noncommunicable diseases. There is now a higher dependency on imports with 43.69% of food imported<sup>xx</sup>, leaving the nation exposed to supply chain disruptions and price fluctuations. From Jan-May 2023, 22 children were admitted to hospitals for malnutrition, with 6 deaths subsequently recorded<sup>xxi</sup>. According to latest UNICEF data, child malnutrition is on the rise with 1.3% of children suffering from severe acute malnutrition and 2.2% suffering from moderate acute malnutrition<sup>xxii</sup>.

With limited arable land and freshwater resources, Kiribati's capacity to produce food is greatly restricted. As such, there has been a significant shift from a diet of traditional foods characterised by legumes, tubers, fresh fish, seafood and green leafy vegetables to one heavily dependent on non-nutritious, cheap, imported food consisting of oils, fatty and processed meats, confectionary and dominated by rice as a staple food<sup>xxiii</sup>.

Consequently, diabetes and cardiovascular disease are now the primary causes of premature death in the country<sup>xxiv</sup>. Vitamin and mineral deficiencies continue to be public health threats in Kiribati<sup>xxv</sup>. With an increasingly sedentary lifestyle over 41% of adults aged 18 years and over were characterised as insufficiently physically active in 2010<sup>xxvi</sup>. According to WHO estimates, 46% of Kiribati's population aged 18 and above is obese or overweight<sup>xxvii</sup>. In 2015, 49.7% of all presentations to health facilities were of people with confirmed or suspected diabetes, and the figure was 46.9% for hypertension, confirming a picture of a country with pressing NCD-related problems<sup>xxviii</sup>.

### *Adaptation and Resilience Strategies*

The Kiribati government has developed a comprehensive nine-year strategy to promote climate change adaptation and skill up the country's emergency preparedness. The main goal is to foster healthy and resilient ecosystems while also improving water and food security through integrated and sector-specific initiatives. To achieve this goal, the government intends to strengthen communities' ability to take practical and long-term measures to address food security, increase understanding of food and nutrition practices, and improve food preservation and storage techniques to avoid food shortages<sup>xxix</sup>. Some of these initiatives include:

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<sup>4</sup> A person is food insecure when they lack regular access to enough safe and nutritious food for normal growth and development and an active and healthy life.

<sup>5</sup> Child stunting refers to a child who is too short for his or her age and is the result of chronic or recurrent malnutrition.

- Collaborative Sustainable Fisheries Project<sup>xxx</sup>:  
Kiribati has partnered with the Australian Centre for International Agricultural Research on a sustainable fisheries initiative. The goal is to implement community-based fisheries management and establish Marine Protected Areas. This approach involves local communities in managing fisheries resources and creating protected zones to conserve marine habitats and enhance resource sustainability.
- Integrated Coastal Management Project<sup>xxxi</sup>:  
The Ministry of Environment, Lands and Agricultural Development (MELAD) and the Ministry of Fisheries and Marine Resources Development are jointly leading an initiative that focuses on sustainable management of both land and coastal fisheries. Its objectives include boosting food production, safeguarding natural resources, and improving the well-being of island communities.
- Livelihood and Cultural Promotion by Tourism Authority<sup>xxxii</sup>:  
The Tourism Authority organises workshops that cover fishing guides, home gardening practices, and the promotion of local culture. These efforts contribute to improved livelihoods and self-sufficiency in food production.

Despite these efforts, there are doubts as to whether any of these initiatives will be sustainable and sufficient to stem the tide from the effects of climate change.

# Appendices

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<sup>xxvii</sup> Food Consumption in Kiribati. Based on Analysis of the 2019/20 Household Income and Expenditure Survey. Retrieved 23 August, 2023 from: <https://www.fao.org/3/cb6579en/cb6579en.pdf>

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