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EXECUTIVE SUMMARY

Enhancing Community Resilience Through Nature-Based Solutions:

A Case Study of Taiperia Informal Settlement, Lautoka, Fiji Islands

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Executive Summary

This study examines how nature-based solutions (NbS) are helping residents of the Taiperia informal settlement in Lautoka, Fiji adapt to growing climate risks. Located in a low-lying coastal area, the community faces recurring flooding, sea-level rise, coastal erosion, extreme heat, saltwater intrusion, and increasingly variable rainfall. Through interviews with community members, the research explores how locally driven adaptation efforts are strengthening resilience despite limited formal support and persistent socioeconomic challenges.

The findings reveal a community experiencing frequent and significant climate-related impacts. Most residents reported repeated flooding over the past five years, with many households suffering property damage, health impacts, and economic losses. Flooding was primarily linked to river overflow, coastal inundation, and inadequate drainage infrastructure. Respondents also described increasing heat stress, declining soil quality, changing rainfall patterns, and reduced agricultural productivity, all of which are affecting livelihoods, food security, and overall well-being.

Despite these challenges, residents have developed a range of practical nature-based and community-led adaptation measures. The most widely adopted initiatives include backyard gardening, crop diversification, cultivation of salt-tolerant crops, mangrove restoration, and the continued use of Indigenous knowledge and customary resource management practices. These measures help maintain food production, strengthen household self-reliance, protect coastal areas, and support environmental sustainability. Community gardens, in particular, emerged as one of the most successful interventions because they simultaneously improve food security, generate income opportunities, and increase social cohesion.

A notable finding is the important role of Indigenous knowledge in climate resilience. Traditional practices such as *teitei* (home gardening) and *tabu* (temporary restrictions on harvesting natural resources) continue to influence community decision-making and environmental stewardship. Residents reported that these customary approaches help preserve local ecosystems, sustain fisheries and food supplies, and reinforce collective responsibility for resource management. The research suggests that locally embedded knowledge systems remain highly relevant for addressing contemporary climate risks and should be more fully integrated into resilience planning.

The study also highlights the value of combining ecosystem-based approaches with targeted infrastructure investments. Mangrove restoration, supported by local authorities, is helping reduce coastal erosion and wave impacts, while seawalls provide additional protection against storm surges and flooding. Residents generally viewed these interventions as complementary rather than competing solutions, indicating that hybrid approaches may offer the greatest resilience benefits in highly exposed coastal settlements.

Several barriers continue to limit the long-term effectiveness and expansion of nature-based solutions. These include insecure land tenure, limited financial resources, insufficient technical support, gaps in government assistance, and uncertainty surrounding possible relocation of the

settlement. Residents also noted that while they actively participate in adaptation activities, they are not always meaningfully involved in planning and decision-making processes. These constraints reduce confidence in long-term investment and make it more difficult to scale successful community initiatives.

Overall, the study concludes that nature-based solutions are already making a meaningful contribution to resilience in Taiperia. Beyond reducing environmental risks, they are improving livelihoods, strengthening social cohesion, preserving Indigenous knowledge, and increasing community ownership of climate adaptation efforts. However, realizing their full potential will require stronger institutional support, improved access to resources, greater integration of informal settlements into climate planning, and sustained recognition of community knowledge and leadership. The findings demonstrate that effective climate resilience in Pacific informal settlements is most likely to emerge from partnerships that combine local stewardship, traditional knowledge, ecosystem restoration, and supportive public policy.