Chapter 3

The Impacts of Climate Change on Food Security and Management in Papua New Guinea

Akkinapally Ramakrishna
National Agricultural Research Institute (NARI), Papua New Guinea

Sergie Bang
National Agricultural Research Institute (NARI), Papua New Guinea

ABSTRACT

Papua New Guinea is highly vulnerable to the impacts of climate change since it encompasses 17,000 km of coastline, 600 low-lying islands, and 2,000 coastal villages. It is vulnerable to sea-level rise and other manifestations of climate change. Climate change provides new and unprecedented challenges that demand equally new and urgent efforts to meet them. Research and development efforts are taking rapid strides forward in understanding what is going to happen to farming, fishery, and forest systems as the climate changes. The interactions that will occur with other global changes within this complex and dynamic situation, as well as the trade-offs between food security, livelihoods, and environmental security are also being studied. PNG is engaging new strategies, forging new partnerships and truly integrating approaches. Climate change risks are effectively mainstreamed in development planning at all levels to build in adaptation and mitigation measures. This chapter looks at these new strategies.

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GEOGRAPHY AND SOCIOECONOMIC SITUATION

Papua New Guinea (PNG) occupies the eastern half of the rugged tropical island of New Guinea, sharing a border with the Indonesian province of West Papua to the west. Australia to the south, the Solomon Islands to the east and the Federated States of Micronesia (FSM) to the north. PNG is located in the so-called “Pacific Ring of Fire” and has active volcanoes, experiences significant earthquakes and mudslides, and its coastal areas are prone to tsunamis and floods. Apart from the island of New Guinea, the country has four large islands (Manus, New Ireland, New Britain, and Bougainville) and some 600 small islands lying between the Coral Sea and the South Pacific Ocean (Figure 1). The total land area is 465,000 square kilometers (km\(^2\)). It has an exclusive economic zone of 2.4 million km\(^2\), which encompasses 17,000 kilometers of coastline and almost 2,000 coastal villages, with a rural population of nearly 500,000 people. Communities in PNG have developed more than 850 languages, as well as unique customs and traditions (Chalapan et al. 2000). According to the Asian Development Bank (ADB), PNG has an estimated population of 7.06 million with annual growth of 2.8% (2009–2011) (ADB, 2012). Overall population density is low, although pockets of overpopulation exist.

Figure 1. Map of Papua New Guinea
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