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## **Understanding food insecurity across fisheries and agricultural systems in coastal communities within southeast Asia**

**Key words:** Food Security, Systems Dynamics, Fisheries

### **Abstract:**

The poorer coastal populations of the Asia-Pacific are heavily reliant on small-scale fisheries and agriculture to meet their food and livelihood needs. Their prospects for a food secure future depends directly on the services provided by coastal ecosystems such as the fish production service provided by coral reefs, and their ability to purchase food through income generated by their livelihoods which also depend directly on coastal ecosystem services. In Southeast Asia these coastal ecosystem services are in decline due to endogenous pressures, such as resource degradation, development, and increasing demand for goods and services, as well as exogenous pressures, such as population growth, rising imports of food and climate change. These pressures represent a key threat to the food security of coastal communities. Using system dynamics, this research aims to understand how interactions among coastal ecosystems, economies and societies influence the food security of coastal communities. The research uses El Nido, Palawan in the Philippines as a case study to develop a dynamic hypothesis for food security that incorporates food sources from marine habitats (such as fish) and from agriculture. The system dynamic model simulates the influence of policies (both current and proposed) and pressures on food security and the resilience of the food system. The results are being utilised in an on-ground project to identify opportunities where modifications to existing business activity, or the introduction of new businesses, can improve the food security of coastal communities.