

# ANALYSIS OF TSUNAMI/STORM-SURGE HAZARDS IN SAIPAN (CNMI) AND LANDSLIDE HAZARDS IN KOSRAE (FSM)



## The Problem and Current Situation

The greatest losses of life and injuries during natural disasters in the Pacific are caused by drowning from storm-surges and burial by landslides. Plans to mitigate the effects of storm-surges and landslides could be mitigated by encouraging people to move away from, temporary evacuate, or build outside high-hazard zones. In order to be able to advise people appropriately on such actions, hazard mapping would have to be available for the targeted areas of Saipan in the Commonwealth of the Northern Marianas Islands (CNMI) and Kosrae in the Federated States of Micronesia (FSM).

## Overall Project Goal

The overall goal of the five-year Natural Hazard Analysis Project is to: (1) perform systematic analyses of the hazards that affect these populations—the storm-surge and tsunami hazard on Saipan/CNMI and the landslide hazard on Kosrae/FSM; and (2) construct hazard maps for those two islands.

## Objectives, Activities and Indicators

**Objective 1:** Available hazard information for each island is collected and collated to assist in the hazard analysis.

1. Project scientists will collect and collate available information to assist in the relevant hazard analysis for each island. Topographic, geologic, geotechnical, hydrographic, hydrologic, and other data from government and other sources will be gathered for the hazard analyses.

2. Partnerships will be developed with National Oceanic and Atmospheric Administration (NOAA), Centers for

Disease Control and Prevention/ Pacific Emergency Health Initiative (CDC/PEHI) (data regarding health risk), U.S. Geological Survey (USGS), and local agencies to collect existing data. Necessary fieldwork will then be conducted to verify scientific data collected and to collect additional pertinent data.

3. **Expected Outcome:** By the end of two years, pertinent hazard data and information on all participating islands will have been collected and compiled.

**Objective 2:** A susceptibility/hazard analysis is performed for storm-surge and tsunami hazards on Saipan and for landslide hazards on Kosrae, and hazard maps depicting these hazards are produced.

1. Hazard analyses will be performed on Saipan and Kosrae

2. Hazard maps will be constructed.

3. **Expected Outcome:** By the end of the five year project, the hazard mapping for participating islands will be completed.

## Collaborating Agencies

This project will be implemented in Saipan and Kosrae and will be coordinated from the United States, through the U.S. Geological Survey based in Golden, Colorado. NOAA, USGS, CDC/PEHI and agencies of local governments will form the partnerships necessary to accomplish these hazard analyses and produce the maps.

## Monitoring/ Evaluation Methodology

The CDC/PEHI and local agencies will monitor and evaluate the coordination efforts, and NOAA/USGS experts other than project personnel will review the accuracy and the applicability of the hazard maps.

## Budget Summary

The total cost of the project is estimated to be \$1,347,500 USD. Funds are needed for personnel, travel within the region, equipment, vehicles, and data acquisition.

<b>Category</b>	<b>Project Expense</b>	<b>In-kind Contribution</b>	<b>Total Budget (US \$)</b>
<b>Personnel (Salary/Benefits)</b> 3 U S Scientists and 1 counterpart each from Saipan and Kosrae	500,000		500,000
<b>Travel</b>	120,000		120,000
<b>Direct Implementation Costs</b> Construction Materials	30,000		30,000
<b>Equipment- 2 computers, 2 map plotters, communication equipment</b>	45,000		45,000
<b>Operational Costs (first five years) – Marine craft rental, fuel, vehicle expenses</b>	25,000		25,000
<b>Data Acquisition- LIDAR of Saipan coast if necessary</b>	500,000		500,000
<b>Sub Total</b>			1,225,000
Contingency 10%			122,500
<b>Total Project Expenses</b>			<b>\$1,347,500</b>

Contact person: Edwin Harp, US Geological Survey, 1711 Illinois Street, Golden, CO 80401 –  
e-mail: harp@usgs.gov