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**Federated States of Micronesia**



FSM climate is tropical with heavy year-round rainfall, especially in the eastern islands. Its islands are located on the southern edge of the typhoon belt with typhoon season between June and December.

## Biophysical Impacts of Climate Change

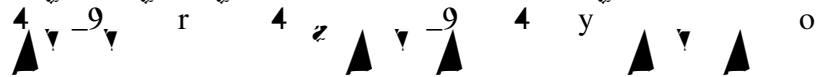
### Sea-Level Rise

Flooding in the FSM has increased in recent years. In December 2013, President Mori declared an emergency following tidal waves that flooded business properties, homes, and costines, resulting in the need to evacuate the affected areas. The storm washed meters of shoreline with seaweed and water causing coastal erosion and soil damage and 19 islands were completely inundated.

With a total of 600,000 people living on islands in its jurisdiction, FSM faces the challenge of a widely dispersed population that is vulnerable to climate change and sea level rise. On the one hand, residents of isolated islands are vulnerable due to proximity to the ocean and their geographic isolation. On the other hand, very densely populated coastal areas in the center of the islands are economically overdeveloped and crowded, so vulnerable to sea level rise. High outer ring islands are difficult to access, central areas are economically overdeveloped and crowded.

### Coral Reefs

The islands of FSM support three types of reef formations: fringing reefs, barrier reefs, and atolls. In states, islands have strong dependence on coral reefs and marine resources, both economically and culturally.





## Security Implications of Climate Change

### **Food Security**

Food security is a growing concern in FSM with increasing land pressures that strain agricultural efforts and food supply, coastal erosion, and increased incidence of pests and disease in major crops such as coconuts and taro. States such as Chuuk are particularly vulnerable because it contains 10 percent of FSM's population yet only 1 percent of its arable soil. Food security is further threatened by the current food crisis particularly by the high prices.

### **Fisheries**

Changes in climate are so affecting the variability of fish. In 1999 the catch of tuna species in FSM is only 10 percent of the 1999 catch decline that followed severe El Niño year here surface tuna schools concentrated more to the eastern part of the central Pacific away from FSM's EEZ.

## Agriculture

Eighty percent of FSM's population has subsistence or semi subsistence livelihoods. Staple food crops are pandanus, taro, breadfruit, coconut, citrus, and yams. High value agricultural products do not constitute a large part of FSM's exports. Agriculture is a major contributor to individual incomes and livelihoods. It currently accounts for 10% of FSM's GDP and in subsistence activities counted to 20% of total household income.

Because of the country's small size and limited biodiversity crop substitution facilities are limited. There are facilities to store crops and food. A lack of transportation and from certain exporting is a hindrance.

## Public Health

FSM's health care system is generally in good condition, is so very dependent on weather and climatic conditions. With its increased exposure to drought and storms, water sanitation is expected to decrease and disease outbreaks to rise. During the ENSO year of 1997-1998 there was increased incidence of skin disease. In April 1998 an outbreak of cholera in Pohnpei infected approximately 100 people and caused 10 deaths.

## Migration

The FSM's population is spread out among many islands, densities are high on the outer coast. About 60% of FSM's population and economic infrastructure are located in the coast region. Seventeen percent of FSM's total population or 100,000 people live in the outer islands.

## Internal Migration, Relocation and Climate Displacement

County relocations have already occurred within the State of Yap and others are the result of increased sea level rise on the coast and settlements after increase in their sea levels. Populations have moved from outer to more central higher islands increasing the density in the centers and leading to shortage of resources especially in Chuuk.

## External Migration

## Loss of islands

Because the FSM contains a high number of low-lying islands rising no more than two to three meters above sea level, they are at high risk of total submergence due to sea level rise. Those islands are typically located very close to the central islands and often define the borders and EEZ of the FSM.

The adverse impacts of climate change threaten the physical landscape of the FSM. Low-lying islands are at the danger of disappearing entirely or of becoming uninhabitable. No amount of adaptation to climate change can be sufficient to prevent the loss of islands.

The loss of islands is not only a result in the loss

## Conclusion

Climate change has already shown a wide variety of negative impacts on the FSM. Sea level rise is eroding natural resources, and extreme weather events are increasing in severity and frequency. At the same time, resettlement has already been triggered by these adverse impacts. Together with population pressures on the central islands, the functioning of government and the delivery of basic services can be threatened.

These impacts have implications for national security and are on the threshold of endangering regional and international peace and security in the wider Pacific island region. Countries like the FSM are on the front lines of these impacts.