

The Security Implications of Climate Change: Challenges for Maritime Security

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Overview

- Context: Climate change and security
- Direct impacts of climate change on maritime security
- Indirect impacts of climate change on maritime security
- Conclusion

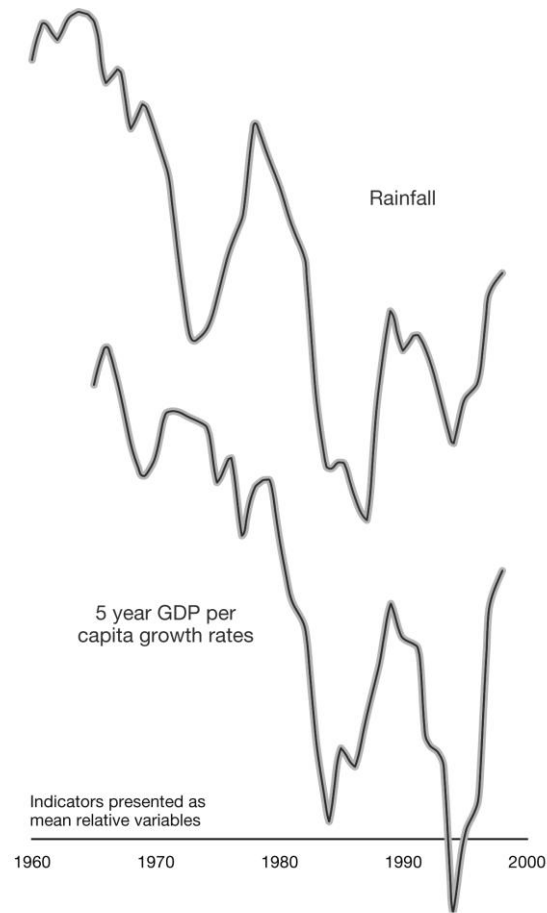
The security dimensions of climate change

- Climate change impacts, such as rising global mean temperature may lead to **direct impacts** on maritime security
 - These include: **Armed conflict (unlikely)**
 - **Failure of critical infrastructure (very likely)**
- Climate change impacts may lead to **indirect impacts** on maritime security
 - These include: **new shipping routes in the Arctic (likely)**
 - **New commercial, touristic and military activities in the Arctic (very likely)**

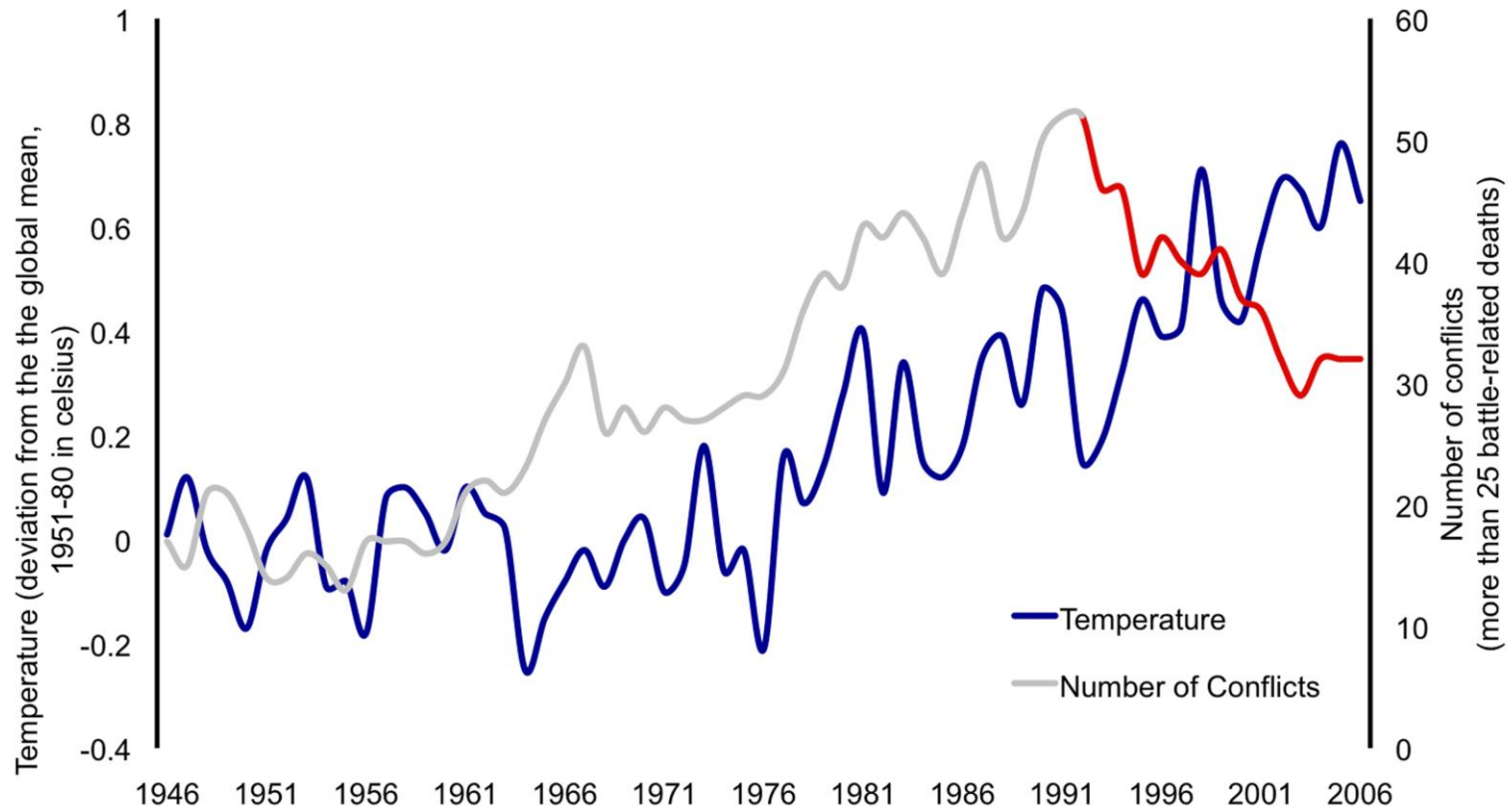
Direct impacts of climate change on maritime security

- Climate change will lead to more **armed conflict**
- Precipitation or temperature indirectly affects economic activity
- Low economic performance in turn can lead to armed conflict
- Rising food prices can lead to social unrest
- Meteorological disasters can lead to migration and to conflict

Resource Scarcity – Rainfall and Economic Growth



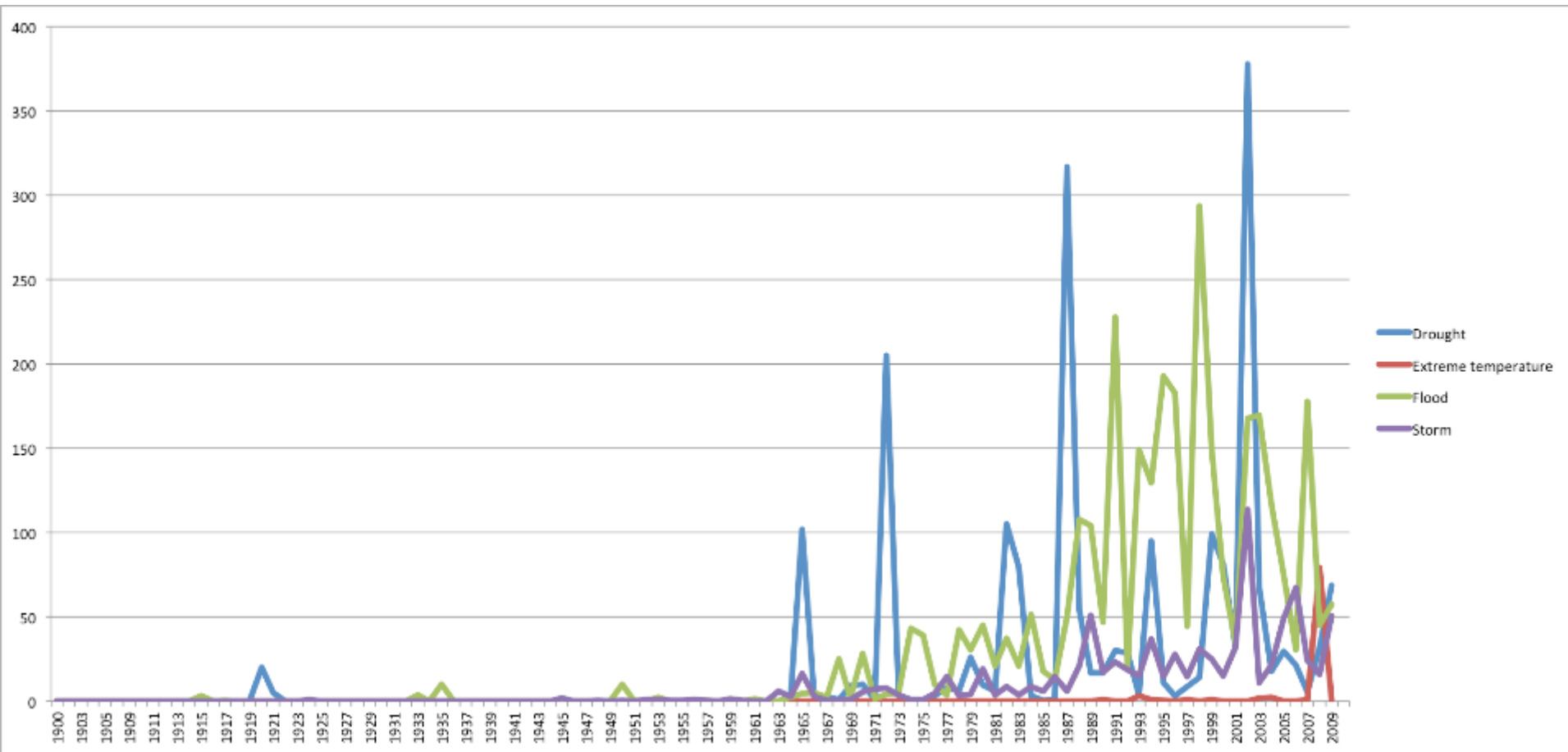
Climate Change and Security – Conflicts and Temperature



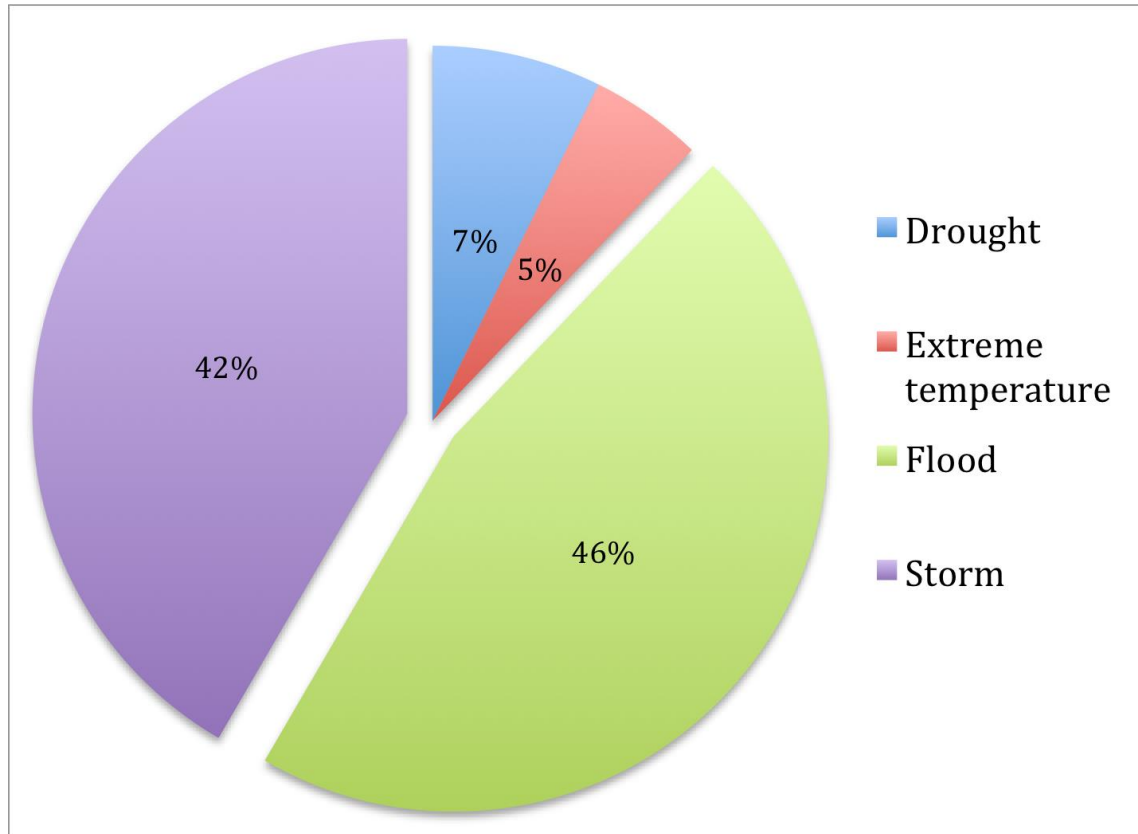
Direct impacts of climate change on maritime security

- Climate change and the impact on **critical infrastructure** important for maritime shipping and industry
- Stronger tropical cyclones can lead to infrastructure failure (closure of seaports by affecting energy processing and container shipping industries)

Affected people by disaster type, 1990-2010 (millions)

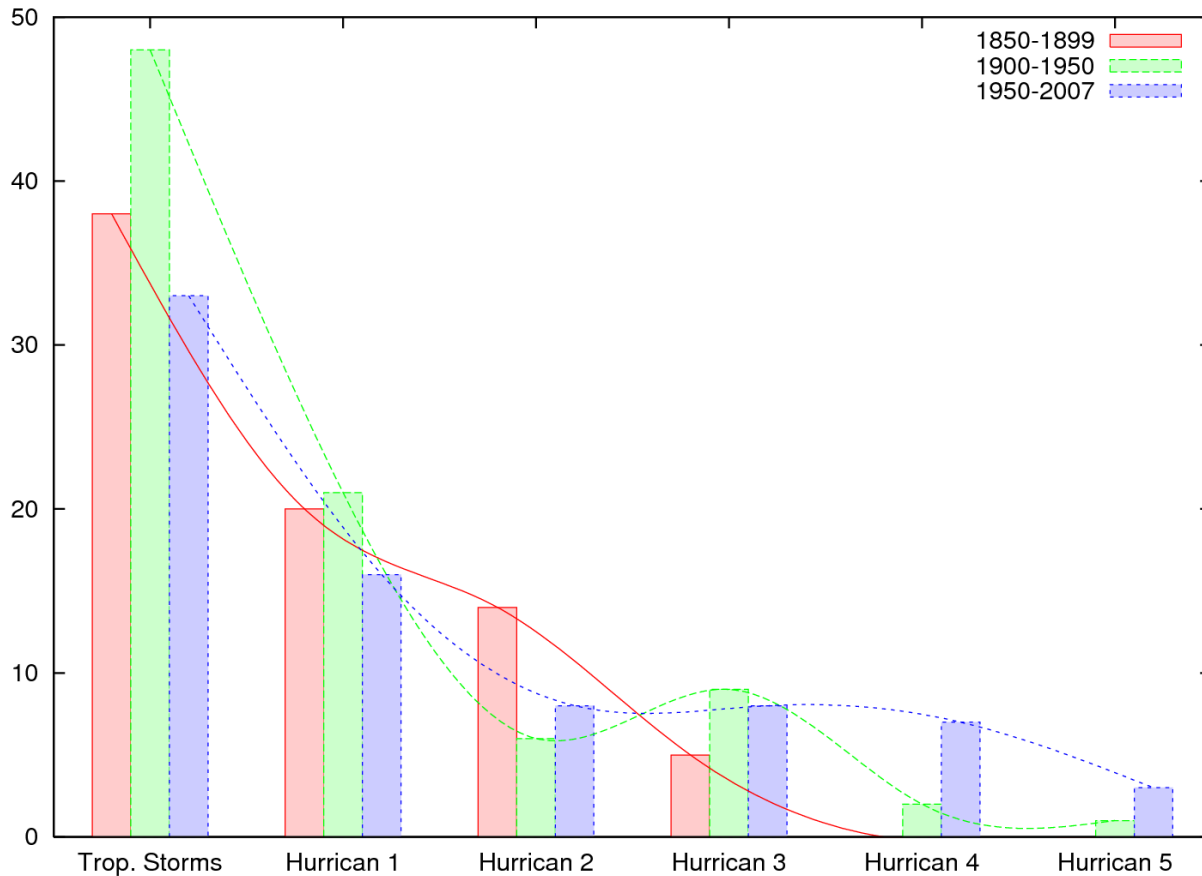


Total Number of Disasters, 1900-2010

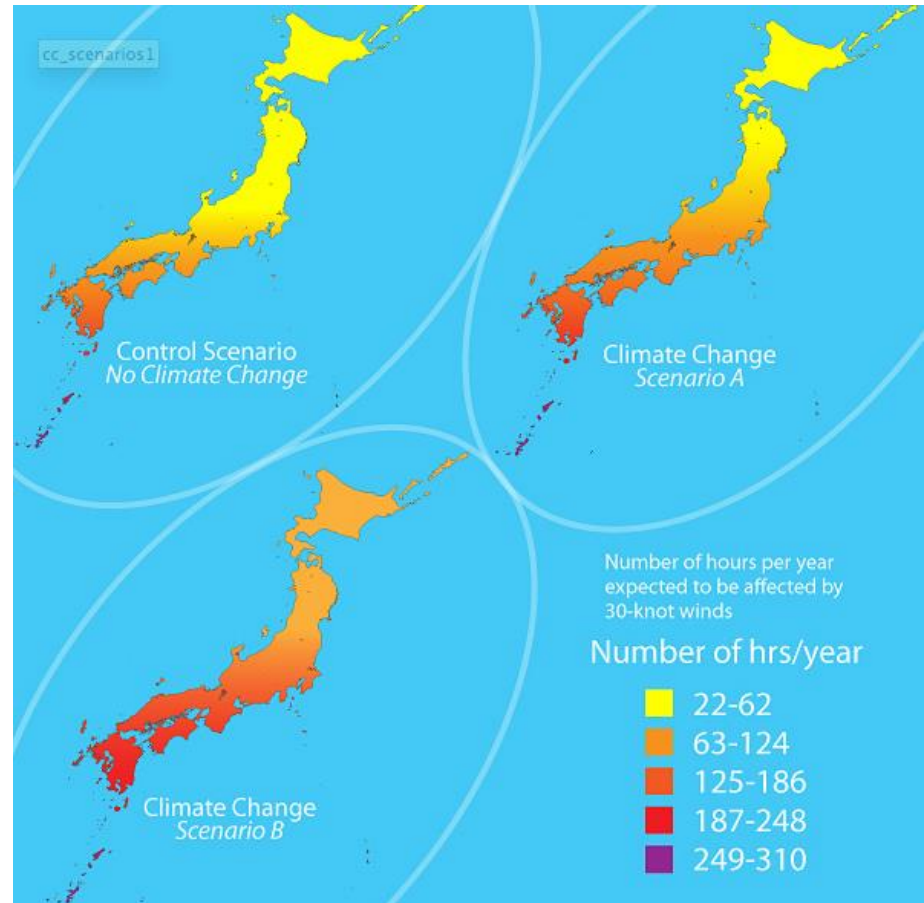
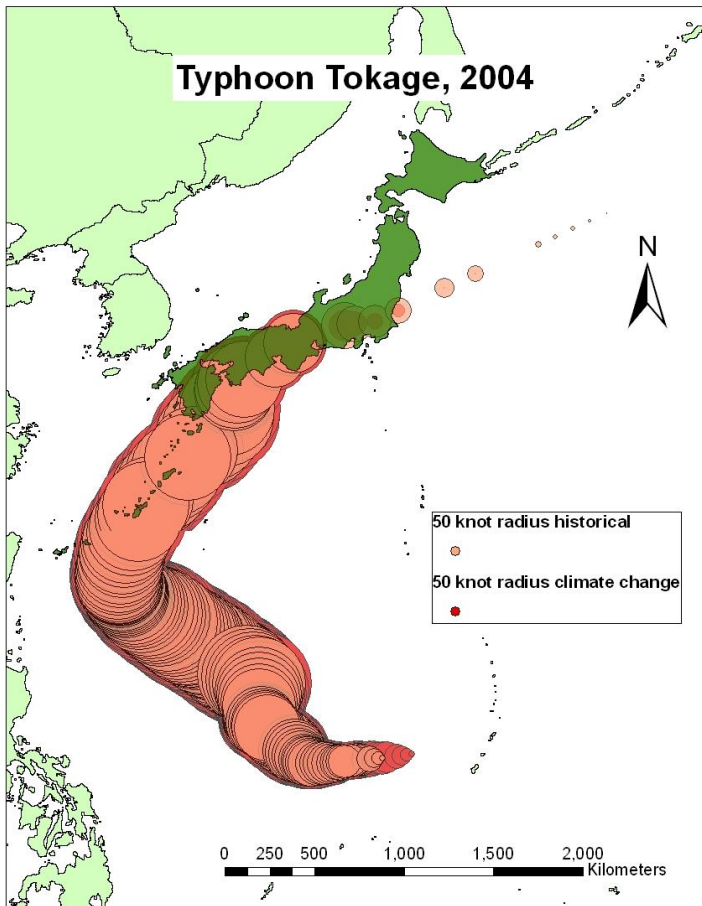


Source: EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be – Université Catholique de Louvain – Brussels – Belgium. Last accessed: 22 September 2010.

Number of tropical storms and hurricanes (category 1-5) between 1850 and 2007 in the surrounding area of Hispaniola island (Longitude: 68'-77'; Latitude:16'-22')



Impact on critical port infrastructure



Indirect impacts of climate change maritime security

- Arctic summer ice will melt in its entirety
- New shipping routes, ice free North-East passage: The northern routing is about 5000 nautical miles shorter in distance
- New commercial activities, such as oil and gas exploration in the Arctic
- More tourist activities (cruise ships) in the Arctic
- Increased military activity in the Arctic
- **But:**
- Challenges relating to **search and rescue; better forecasting of weather, sea ice and ocean conditions**
- **Environmental implications** with oil spills in the Arctic waters being a major challenge for environmental protection (Deepwater Horizon disaster)
- **Disputes over international borders** are more likely

Conclusion: Maritime security in an interdependent world

- Port infrastructure and energy processing refineries are at risk
- Geo-political tensions over resource exploitation in the Arctic and Antarctica
- Potentially more insecurity in terms of piracy along the coasts of failed states