

# CLIMATE CHANGE AND FORCED MIGRATION HOTSPOTS

## From Humanitarian Response to Area-wide Adaptation

**Bonn Climate Talks**

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# Extreme Climatic Events and Refugee Operations

- Many refugee emergencies develop in border areas that are particularly vulnerable to the effects of climate change, due to their geographic location, general prevailing conditions (e.g. poverty, over-population) or relative isolation from political decision-making
- Refugees are also affected by extreme climatic events
- Can a lose-lose situation be turned into a win-win?

# The Case of Dadaab Refugee Camps in Northern Kenya



# Dadaab Refugee Camps

- Population – 235,455 refugees (Dec. 2008) in the camps and 160,000 residents in Dadaab town
- The camps were initially designed for 90,000
- 5,000 new arrivals per month in average in 2008
- Congestion, limited water availability, stretched sanitation system, health hazards
- Situated in the flood plain

# Kenya - Flood Frequency

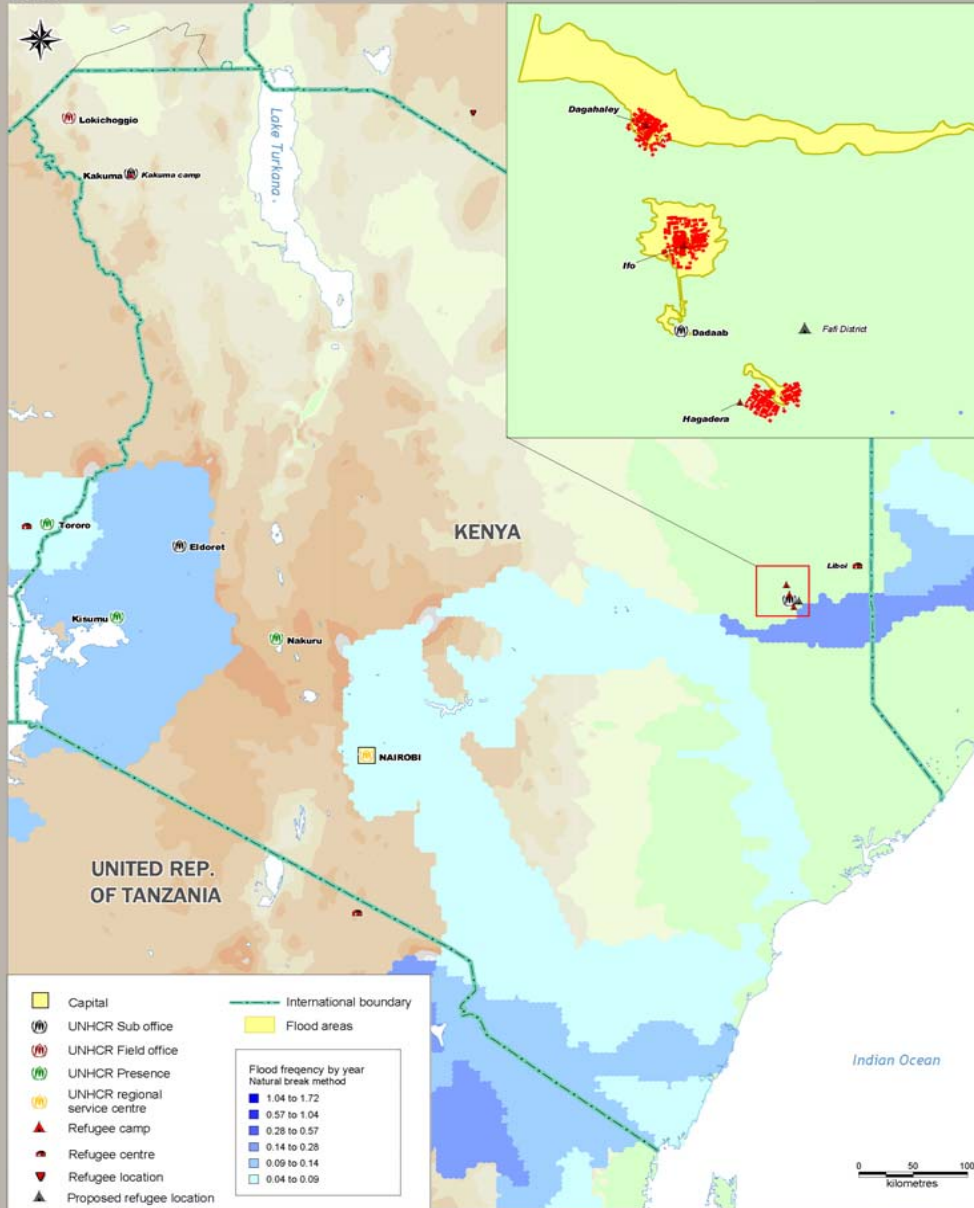
As of September 2008



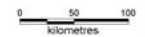
FIGO  
Field Information and  
Coordination Support Section  
Division of Operational Services

Sources:  
UNHCR, Global Height Digital Mapping  
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Capital	International boundary																
UNHCR Sub office	Flood areas																
UNHCR Field office	<table border="1"> <thead> <tr> <th colspan="2">Flood frequency by year</th> </tr> <tr> <th colspan="2">Natural break method</th> </tr> </thead> <tbody> <tr> <td></td> <td>1.04 to 1.72</td> </tr> <tr> <td></td> <td>0.57 to 1.04</td> </tr> <tr> <td></td> <td>0.28 to 0.57</td> </tr> <tr> <td></td> <td>0.14 to 0.28</td> </tr> <tr> <td></td> <td>0.09 to 0.14</td> </tr> <tr> <td></td> <td>0.04 to 0.09</td> </tr> </tbody> </table>	Flood frequency by year		Natural break method			1.04 to 1.72		0.57 to 1.04		0.28 to 0.57		0.14 to 0.28		0.09 to 0.14		0.04 to 0.09
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Refugee camp																	
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Refugee location																	
Proposed refugee location																	



# Kenya - Drought frequency

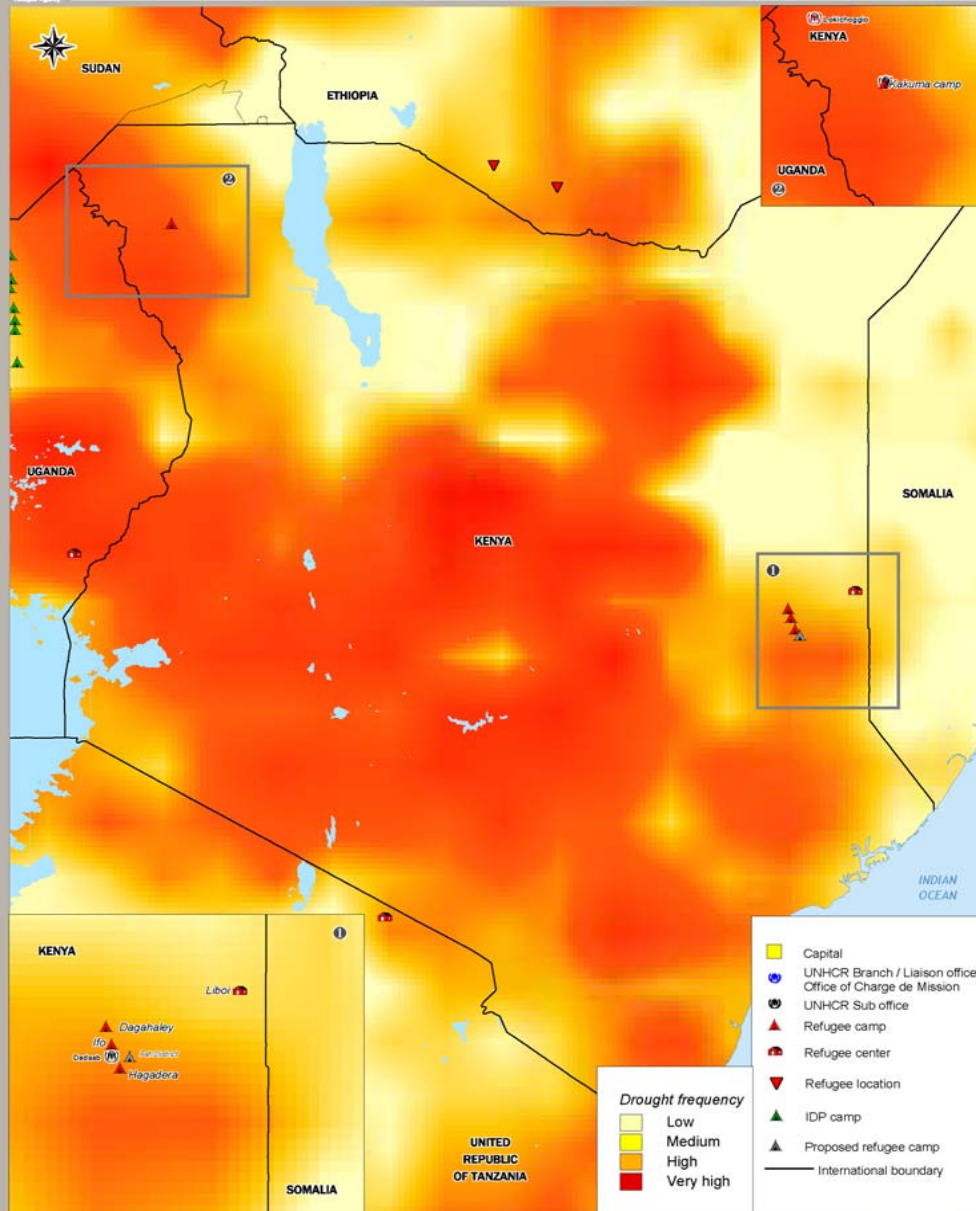
As of August 2008



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Source:  
 UNHCR: Global Insight digital mapping  
 © 1999 Europe Technology Ltd  
 UNEP: GFDL-Europe / Drought  
 frequency between 1950 and 2001

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- Capital
- UNHCR Branch / Liaison office
- Office of Charge de Mission
- UNHCR Sub office
- Refugee camp
- Refugee center
- Refugee location
- IDP camp
- Proposed refugee camp
- International boundary

**Drought frequency**

- Low
- Medium
- High
- Very high

# Floods in Dadaab

- Climate – Harsh, average temperature above 40 degrees
- Frequently flooded (1997, 2006)
- In 2006, two people killed, 78,000 uprooted, latrines overflowed, UNHCR operations disrupted
- A number of cases of fever, eye and skin infections, diarrhea reported

# Flood in 2006 – Dadaab





# Flood in 2006 – Dadaab



# Planned Relocation from Dadaab to new site

- Relocation is planned for up to 120,000 people to de-congest the existing camps and to accommodate new arrivals
- The new settlements are to promote
  - co-existence by having common communal infrastructure (e.g. market place, slaughter house, sports facilities)
  - community development approach (e.g. inclusion of the area in development planning process)
  - environmentally sound planning and practice (e.g. environment impact assessment, energy efficient stoves, alternative energy)

# Co-Development and Co-Existence in Dadaab

- The host community is involved in planning and reaps the benefits of
  - Education and health services
  - Improved livelihoods
  - Managed resources (water; livestock; etc.)
  - Climate change adaptation
- Refugee presence attracts international assistance and contributes to development in the area

# The Case of Refugee Settlements in Teknaf, South East Bangladesh



# Teknaf, South East Bangladesh

- 9,000 unregistered refugees in a makeshift camp on the bank of the Naf River
- Refugee shacks were on muddy ground – vulnerable to flooding, cyclones, high tides

# Bangladesh - Flood Frequency

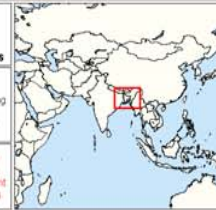
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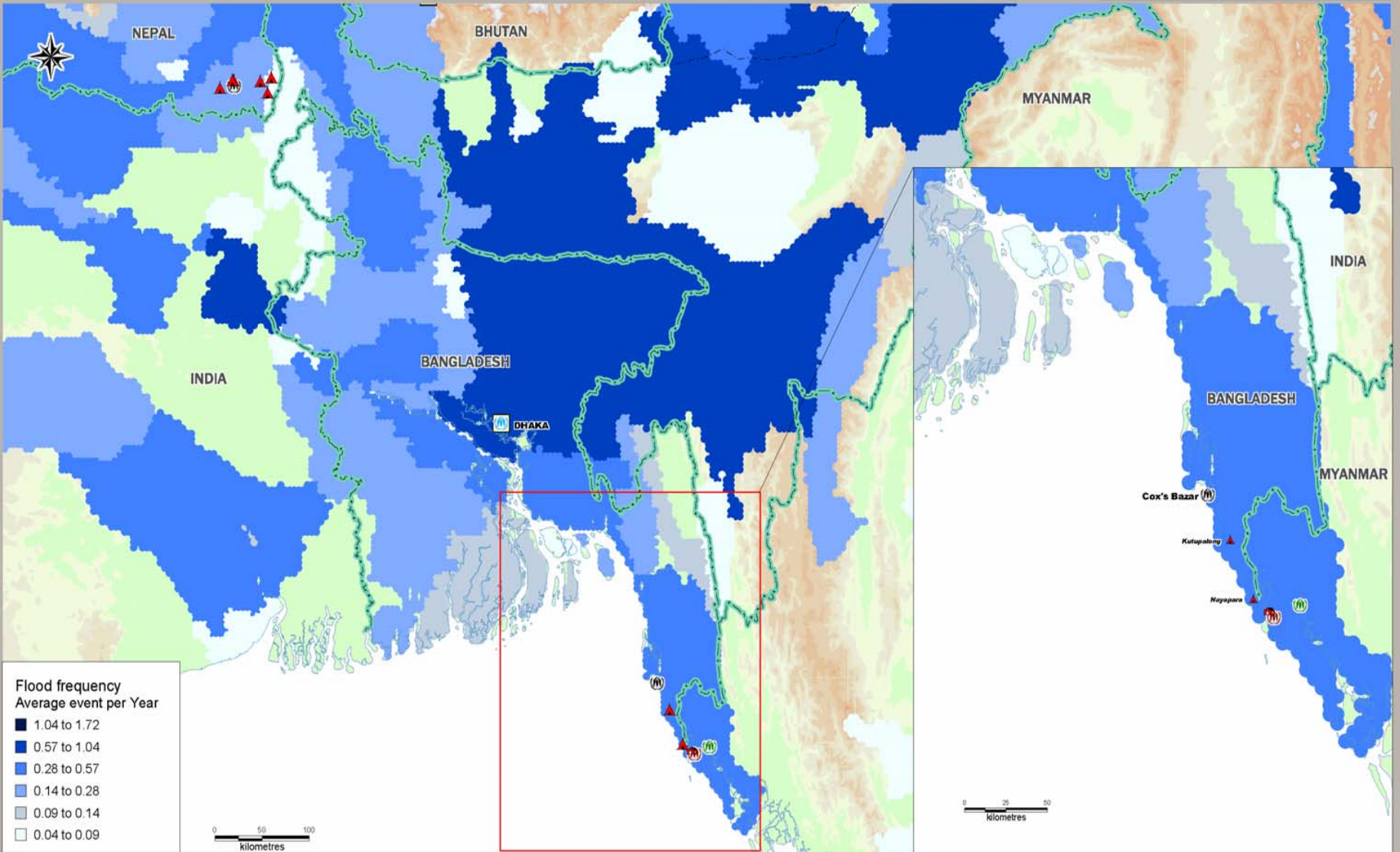
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Capital	<b>Elevation</b> (Above mean sea level)
UNHCR Regional office	3,250 to 4,000 metres
UNHCR Sub office	2,500 to 3,250 metres
UNHCR Field office	1,750 to 2,500 metres
UNHCR Presence	1,000 to 1,750 metres
Refugee camp	750 to 1,000 metres
Refugee transit center	500 to 750 metres
International boundary	250 to 500 metres
	0 to 250 metres
	Below mean sea level



Flood frequency  
Average event per Year

- 1.04 to 1.72
- 0.57 to 1.04
- 0.28 to 0.57
- 0.14 to 0.28
- 0.09 to 0.14
- 0.04 to 0.09

0 50 100  
kilometres

0 25 50  
kilometres

# Camp in Tal



# Impacts of Cyclones

- Natural disasters affect refugees and locals alike => need for integrated and multi-sectoral approach
- The cyclones result in injuries, loss of lives, and extensive damages to crops, roads, shelters, and other infrastructures
  - February 1993 – 1 refugee died and 81 refugees injured. 61% refugee shed structures and over 50% of latrines severely damaged
  - May 1994 – 61 refugees died and 637 refugees injured. 70% of refugee shed structures severely damaged
  - November 1995 – No deaths or injuries but many refugee sheds flattened
  - May 1997 – No deaths but some injuries. Refugee sheds damaged
  - September 1997 – No refugee injuries or deaths
  - May 1998 – No refugee injuries or deaths



# Cyclone Preparedness Plan of Action

- Establish co-ordination committees both at Dhaka and Cox's Bazar with representatives of the line ministries, UN agencies, international organizations, and NGOs
- The aim is to ensure an effective emergency response in all sectoral activities within 24 hours e.g. evacuation, repair of damaged health, shelter structures

# Relocation of Unregistered Refugees to Leda

- In 2007, the government agreed to relocate 9,000 unregistered refugees from the banks of tidal river to a safer site in Leda.
- The move was facilitated by Islamic Relief.



# The Camp at Leda

- More secure and well laid out in 20 acres
- Basic needs supported by NGOs including Islamic Relief funded by the European Commission and UNICEF
- A health care center operated by Islamic Relief
- The incidence of disease has dropped significantly after the relocation

# Co-Development UN Joint Programme

- More comprehensive and better coordinated UN response through joint initiative in Teknaf and Ukhia Upazilas
- Target group – vulnerable populations, women and children in particular
- Key components – Livelihood, education, health, water & sanitation, protection of children and youth against exploitation
- It includes horticulture plantation, mangrove afforestation, establishment of climate resilience shelters, disaster preparedness

# Conclusion

- Highly vulnerable populations including refugees will face greater risk due to the impact of climate change
- Adaptation measures are essential to reduce vulnerability and build resilience to extreme events
- Preparedness is of paramount importance for disaster risk reduction, emergency response, and post-disaster rehabilitation
- Local populations face the same challenges, which requires a co-existence, co-development approach that is integrated and multi-sectoral
- Within governments, as well as within international aid agencies, humanitarian actors need to engage with development actors to link short-term and long-term adaptation efforts

**Thank you!**

**[www.unhcr.org/climate](http://www.unhcr.org/climate)**

# Camp During Rainy Season

