

CLIMATE CHANGE AND VULNERABILITY OF COASTAL VILLAGES IN TAMIL NADU

Weather - daily condition of the atmosphere in terms of temperature, atmospheric pressure, wind and moisture.

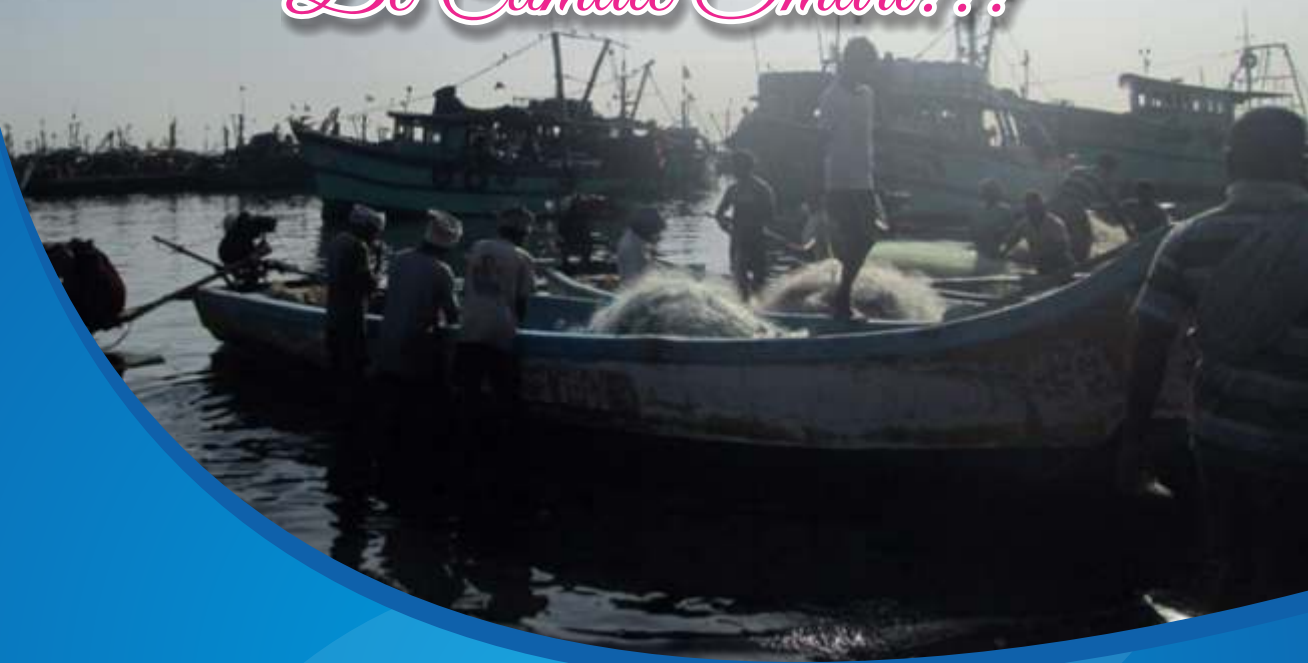
Climate - prevailing weather conditions in, and typical to, an area over long periods of time.

Climate change - long-term change in the normal weather pattern which includes change in temperature, precipitation and wind pattern among other things.

Global warming - gradual increase of earth's average surface temperature due to emission of green house gases such as carbon dioxide

Climate change is mainly the effect of human activities such as burning of fossil fuels, land conversion, deforestation, infrastructure development, industrial processes and from agriculture processes.

Be Smart!
Be Aware!!
Be Climate Smart!!!



ICAR-CENTRAL MARINE FISHERIES RESEARCH INSTITUTE

www.cmfri.org.in

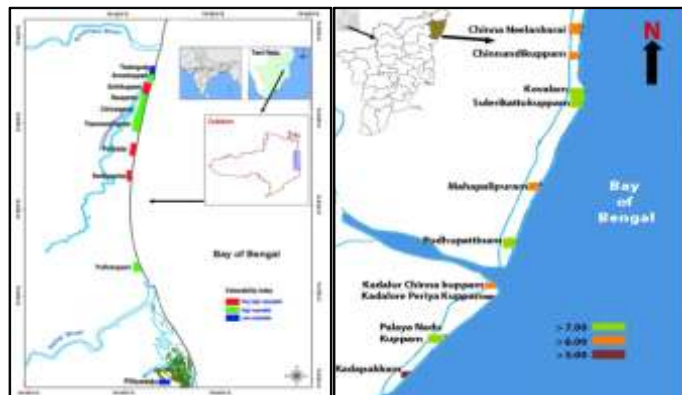
NATIONAL INNOVATIONS ON CLIMATE RESILIENT AGRICULTURE



Vulnerable areas of Cuddalore and Kancheepuram district

Chennai research centre of CMFRI conducted vulnerable studies in 10 villages each in Cuddalore and Kancheepuram coastal districts by using 5 different indicators namely, environment, fishery, economic, social and development drivers and 119 attributes.

Fishers were asked to rank between 1-5 indicating the severity of the vulnerability; 5 indicates very high and 1 is negligible.



HIGHLY VULNERABLE VILLAGES

Cuddalore:
Pettodai, Reddiarpettai and Sothikuppam

Kancheepuram:
Pudupattinam, Palaya Nadu Kuppam and Sulerikattukuppam

Vulnerable villages of Cuddalore and Kancheepuram districts

Major causes of vulnerability

Coastal district	Environment	Fishery	Social	Economic	Development Drivers
Kancheepuram	Pudupattinam (Extreme weather events)	Suleri kattu kuppam (Decrease in catch)	Kadulur Chinna kuppam (Infrastructure sensitivity)	Kovalam (Increased cost of fishing)	Mamallapuram (Anthropogenic activities)
Cuddalore	Pettodai (Habitat destruction)	Thammanam pettai (Change in species composition)	Sothikuppam (Lack of social participation)	Reddiar pettai (Increase in cost of fishing)	Sothikuppam (Infrastructure drivers)



Major cyclone and floods due to global warming in Tamil Nadu

Name	Month and year	Place	Causes	Impact
Vardah (Mini Tsunami)	12 th December 2016	Chennai, Kancheepuram, Thiruvallur coastal districts	Very severe cyconic storm 140 km wind speed, heavy rainfall	10 fishers died, 810 mechanized, 1445 FRB and 728 Catamaran boats damaged, 7792 nets and 5931 engines damaged
Chennai flood (worst rain in 100 years)	November 8 to December 14, 2015	Chennai and other parts of Tamil Nadu	Heavy rainfall, Flooding, water inundation	Most of Chennai city flooded 422 died
Pattinapakkam Sea incursion	June 2014	Mainly Pattinapakkam	Strong wind and 10-12 high feet waves	Sea water incursion in more than 100 house holds
Nilam (Deadliest cyclone)	October 31, 2012	South India	Very severe cyclonic storm	1,50,000 evacuated, more than 200 boats were damaged
Thane	December 29, 2011	Mainly Cuddalore and Puducherry	Very severe cyclonic storm, Wind speed 140 kmph	48 died
Jal	October 2010	Chennai and other parts of Tamil Nadu	Severe cyclonic storm	70000 evacuated, 54 died
Nisha	November 26, 2008	Tamil Nadu	Cyclonic storm Heavy rainfall flooding	189 died
Tsunami	December 26, 2006	Nagapattinam, Kanyakumari, Cuddalore, Chennai and Puducherry	Earthquake - Richter scale 9, 100 feet high tides	In Tamil Nadu-8000 died Nagapattinam-6000 died

Mitigation and Adaptation options

- Construction of sea walls
- Identify new fishing grounds based on PFZ information of INCOIS
- Changing craft and gear combinations
- Promoting artisanal and traditional eco-friendly fishing
- Reducing fuel usage to reduce GHG emissions
- Preparedness based on climatic events
- Strictly following Government regulations
- Identifying new alternate livelihood options like open sea cage farming
- Participatory fishery resource and habitat management
- Help in awareness generation in neighbouring villages

Prepared by: **R.Geetha, Shoba Joe Kizhakudan, M.Shanti and P.U. Zacharia**

For more information, please contact

DIRECTOR

ICAR-CENTRAL MARINE FISHERIES RESEARCH INSTITUTE

P.O Box No. 1603, Ernakulam North P.O, Kochi 682018, Kerala, India
CMFRI Pamphlet No. 42/2017/NICRA