



Foreign, Commonwealth
& Development Office

SOUTH ASIA HYDROMET FORUM III

**USER-FOCUSED TAILOR-MADE WEATHER AND CLIMATE SERVICES DRIVING THE CLIMATE/
EARLY WARNING INFORMATION VALUE CHAIN**

Benefits of Climate Information Services to National Economy: rationale for investing on NMHSs

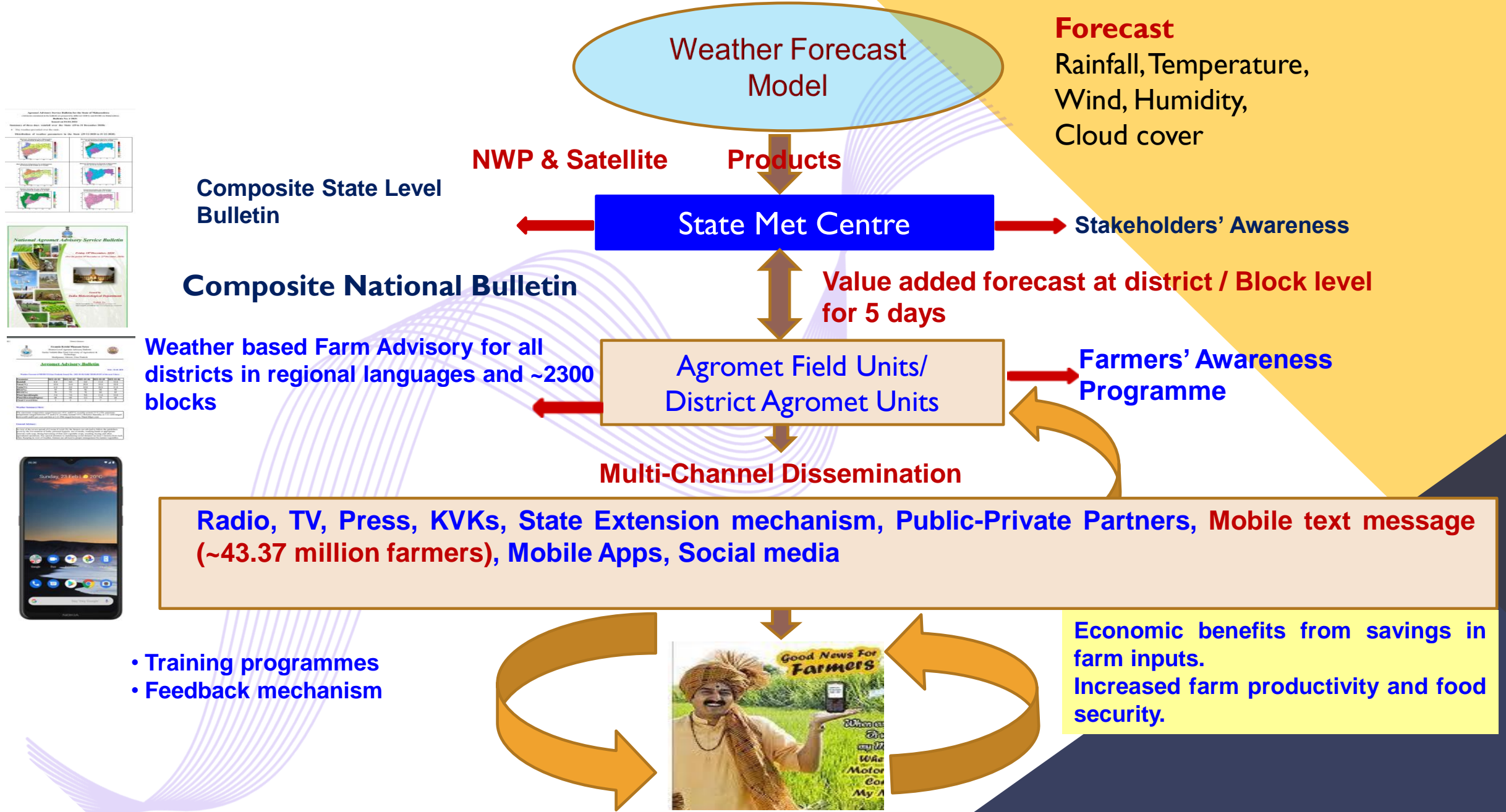
a study by

National Council of Applied Economic Research

**Dr Parvinder Maini
Ministry of Earth Sciences, Govt of India**

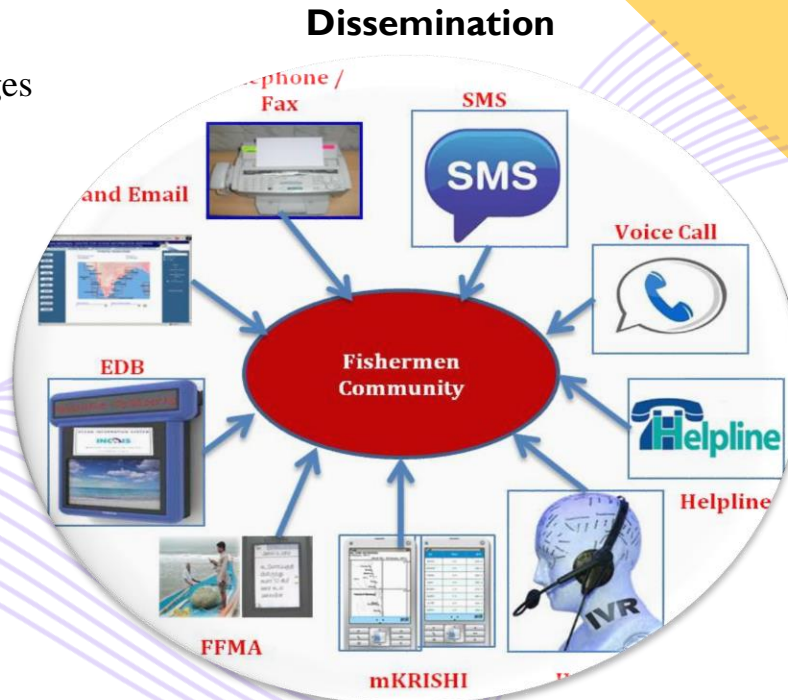
**November 15-18, 2021
Annual Event- Virtual**

Agrometeorological Advisory Services (AAS) to Farmers



Marine Advisory Service

- Potential Fishing Zones (PFZ)
- Tuna Fishery Advisories (Tuna PFZ)
- Daily Advisories (Map & Text) for 1233 Fishing Villages (exc. Ban & HWs)
- Multi lingual advisories in local units
- **Multilingual SMS** directly from PFZ Lab
- Advisories contains
 - PFZ / Tuna fish locations
 - Surface Currents
 - Bathymetry
 - Indian Coast & EEZ
 - Restricted Zones
 - Major Fishing Villages
 - Maximum fishing Depth (for Tuna PFZ)



GAGAN based GEMINI

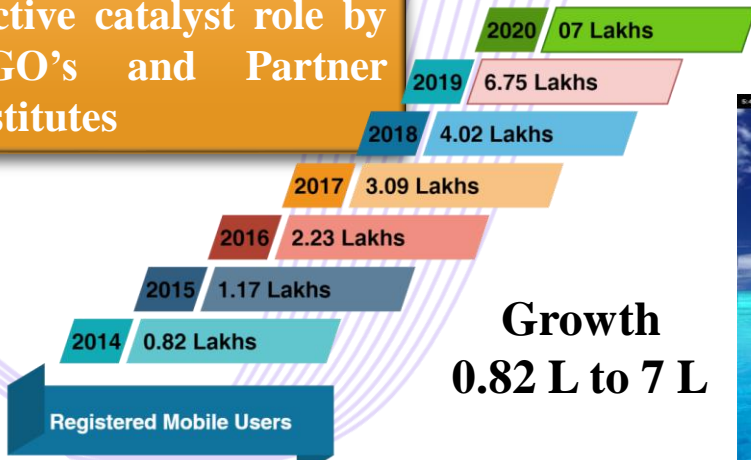
Satellite based Solution

Simple & Easy Integration
Economic
Plug & Play

Looking for Ocean Info.

INCOS

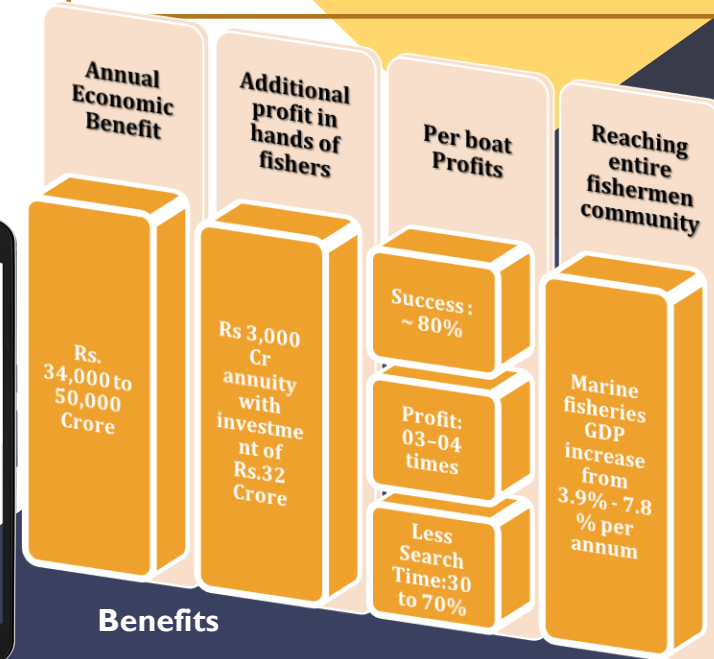
- Key role by Mobile based dissemination methods
- Active catalyst role by NGO's and Partner institutes



PFZ Mobile App to Ocean Services Mobile App



Multilingual SMS Services



Phase –I :Impact Assessment and Economic Benefits of Weather and Marine Services (2010)

(a) Agromet Advisory Services (AAS)

- Only 24% of the farmers at the district level are aware of AAS
- The economic profit estimates vary between 500 billion (where 24 per cent farmers receive weather information) to 2.1 trillion (where all farmers receive weather information).

(b) Fishery Service :Potential Fishing Zones (PFZ)

- 90% of the fishermen are aware PFZ advisory
- NGO interface helped in awareness and facilitating knowledge transfer
- If all fishermen adopt PFZ : GDP grows from 0.81% to 2.04%
- Total annual net economic benefits is estimated to lie in the range of 340 billion to 500 billion.

Phase –II (2012)

(a) Aviation Service:

- ❑ NMHs should have monopoly rights in provision of met services
- ❑ Airport Authority of India should earmark 850 million at current Route Navigation Facility Charges rates (in 2011–12 prices)

(b) Desalination

- ❑ LTTD is eco-friendly, maintenance free and easily operable
- ❑ Overall cost works out to ~15 cents per litre of desalinated water
- ❑ Using RO technology reduces fish catch by 30%

(c) Lobster/ crab fattening and Ornamental Fish hatchery

- ❑ Technology requires further hand holding: NGO interface
- ❑ Scale up through SHG and Special purpose vehicles,

Adoption of LTTD technology and setting up of hatcheries in coral Islands, MoES programmes can increase the domestic product and employment by over 10-20%

Phase –III (2015)

(a) Agromet Advisory Services (AAS)

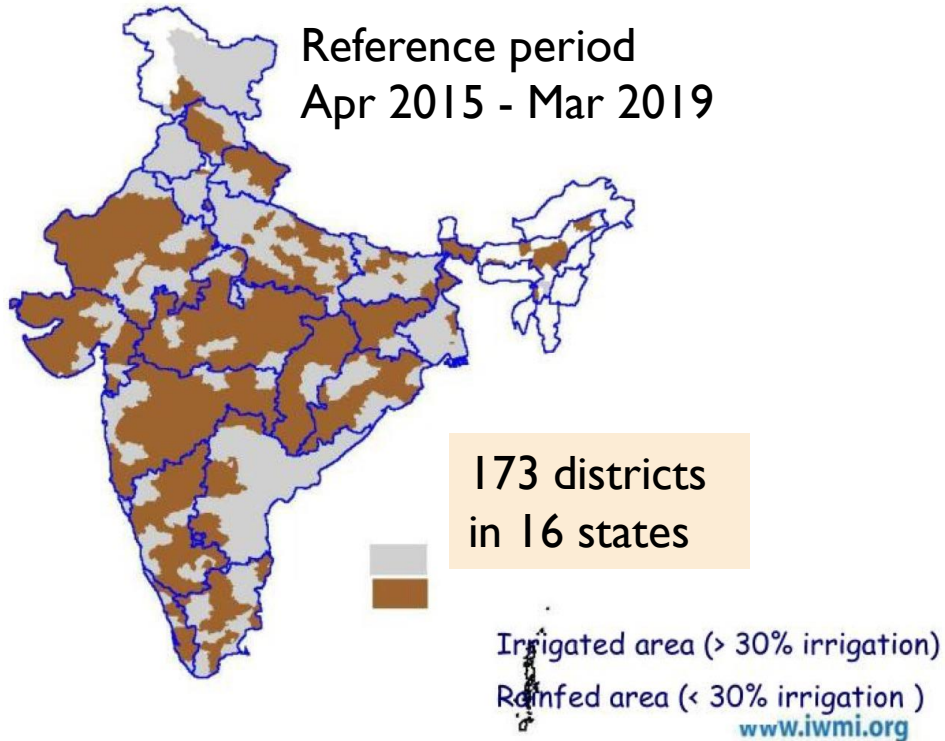
- ❑ 93% of the farmers aware and 95 % say reliable
- ❑ The annual economic profit is 420 billion, 600 billion and 670 billion for 4, 11 and 28 principal crops respectively
- ❑ AAS has potential of generating net economic benefit upto 3.3 trillion, 4.7 trillion and 5.2 trillion for 4 , 11 and 28 principal crops respectively over a 25 year useful life

(b) Fishery Service :Potential Fishing Zones (PFZ)

- ❑ PFZ can double the marine fishery GDP (from 3.9% to 7.8%)
- ❑ 30 billion Addnl profit to fishers, 238 billion over 25 year useful life
- ❑ Estimated Environment Benefit works to an annuity of 362 billion (carbon credits) , 2.84 trillion over 25 year useful life

More non-conventional data assimilated into the models, higher resolution, Timely dissemination., interface with NGO for awareness

Phase –IV (2020): Impact of investment in Monsoon Mission & HPC



- **Estimated Economic benefits of agricultural households (farmers and livestock owners) is ~ 480.56 billion over a period of 5 years**
- **Estimated Economic benefits of fisher households is ~23.9 billion over a period of 5 years**

Total economic benefit is 504.47 billion over the 5-year period

An initial investment of ~ 10 billion, NMM and HPC facilities result in a 50-fold increase in its economic benefits

- **10.7 million BPL agricultural households in rainfed areas**
- **0.53 million BPL fisherfolk households**

The logo for the South Asia Hydromet Forum III 2021 features a stylized, flowing ribbon that starts in blue at the top left, curves through green and yellow, and ends in orange at the bottom left. The text 'SOUTH ASIA' is positioned to the left of the ribbon's middle section.

SOUTH ASIA

HYDROMET FORUM III

2021

**PROGRAM TO SUPPORT SOUTH ASIA REGIONAL DEVELOPMENT IN
OPERATIONAL FORECASTING AND SERVICE DELIVERY**

SAHF Website: <https://sahf3event.rimes.int/>