SOUTH ASIA HYDROMET FORUM III

EVOLVING PROTOCOLS & SUPPORT SYSTEMS FOR IMPACT-BASED FORECASTING

SATARK : Impact Forecast System

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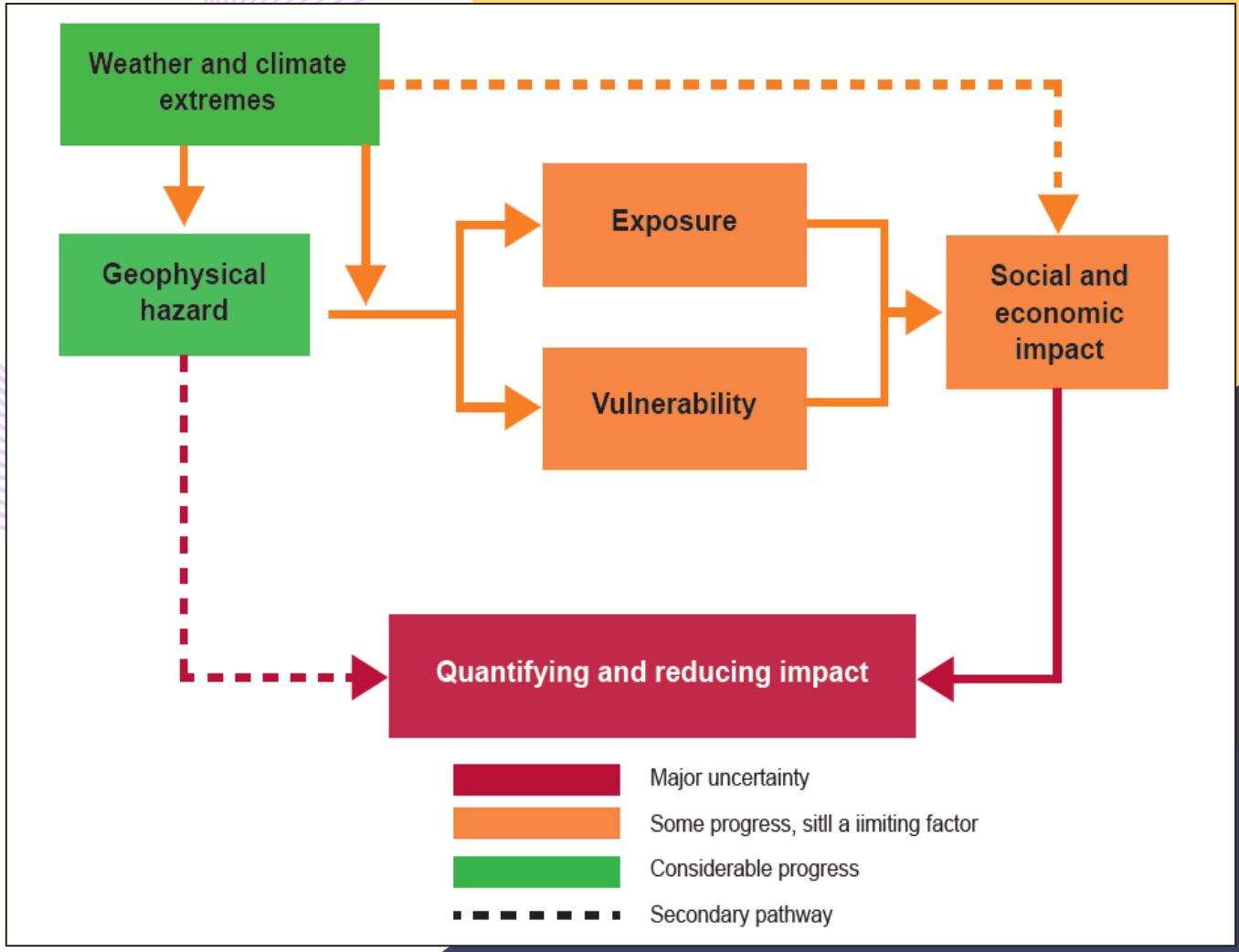
OSDMA: Odisha State Disaster Management Authority

- Odisha, formerly called Orissa, state of India, located in the northeastern part of the country and eastern seaboard of India
- The geo-climatic conditions make almost the entire State vulnerable to different disasters
- The state is one of the most disaster prone area in the country with a 480 Kms of coastline frequently affected by cyclones
- Eleven major river systems creates frequent floods. Lightning, heatwaves droughts are also of serious concern
- About two-third of the total cultivated area being rain-dependent, drought poses a serious threat at regular intervals in the event of failure of Monsoon
- Some part of the state comes under Earthquake Risk Zone-III (Moderate Damage Risk Zone) covering 44 out of the 106 urban local bodies with Tsunami also a potential hazard for the State

Impact – Based Forecasting for Early Action

- Impact-based forecasting provides the information needed to act before disasters to minimize the socio-economic costs of weather and climate hazards.
- Organizations and individuals can make critical decisions to ensure that resources and supplies are in place to take early action and to respond as soon as it is safe to do so.

- Flash floods, floods, landslides, cyclones and drought, in particular, give rise to multiple casualties and significant damage to livelihoods and property.
- In order to significantly reduce losses, communities and individuals need to be more resilient through actions that integrate weather and climate information in decision-making.
- IBF should provide information
  - Population at risk
  - Agriculture area at risk
  - Livestock at risk
  - Expected economic damage
  - Inundation area
  - Safety measures



For Developing an Impact-based Forecast System

Assessing Risks

Are the hazards and the vulnerabilities well known?

Are risk maps and data widely available?

Monitoring and Early Warning

Develop hazard monitoring and early warning services

Are the right parameters being monitored?

Can accurate and timely warnings be generated?

Dissemination and Communication

Communicating risks and early warnings .

Do warnings reach those at risk?

Is the warning information clear and actionable?

Response Capability

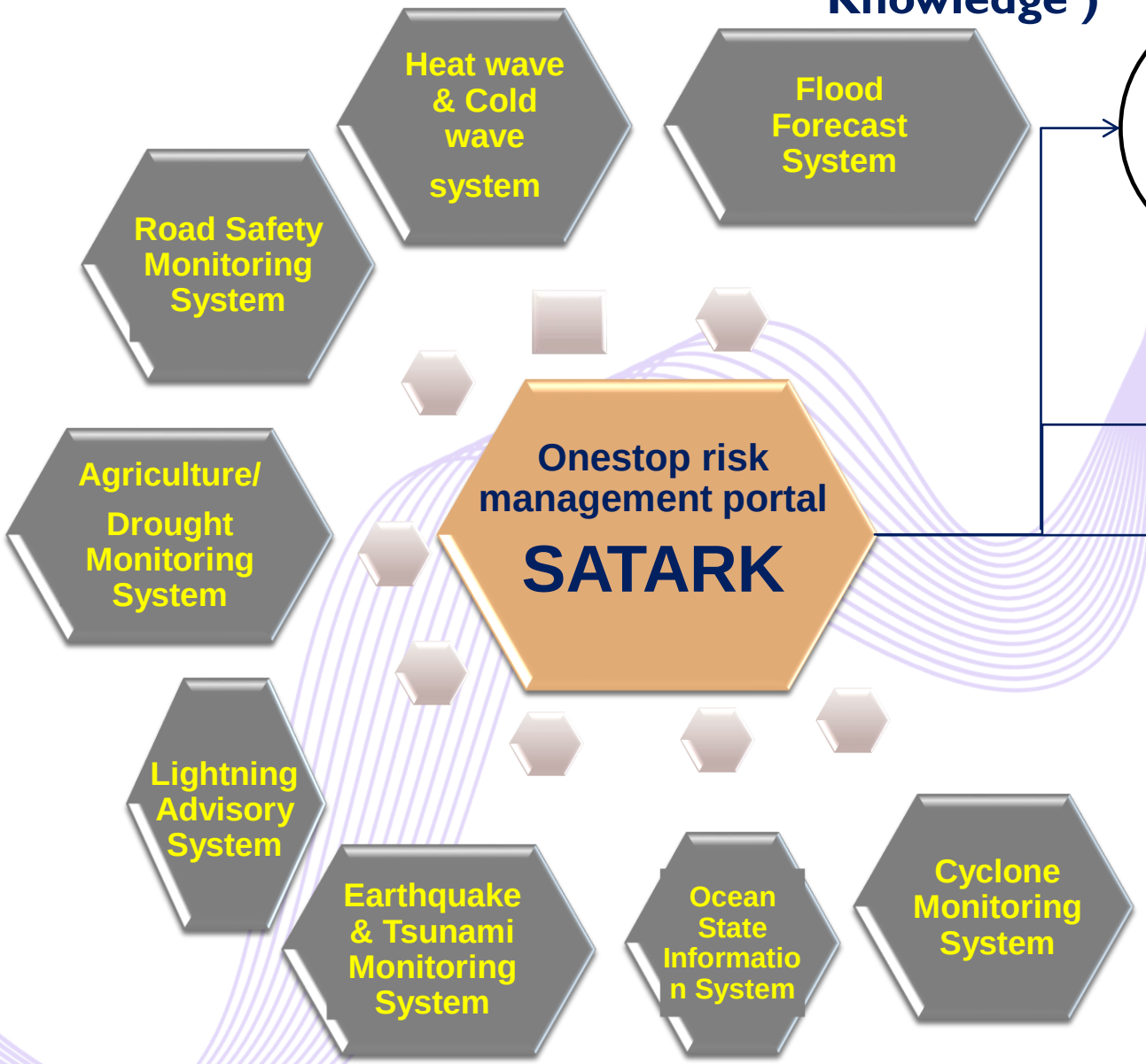
Build national and community response capabilities

Are response plans up to date and tested?

Are people prepared and ready to react to warnings?

SATARK

(System for Assessing, Alerting & Tracking Disaster Risk Information based on Dynamic Risk Knowledge)



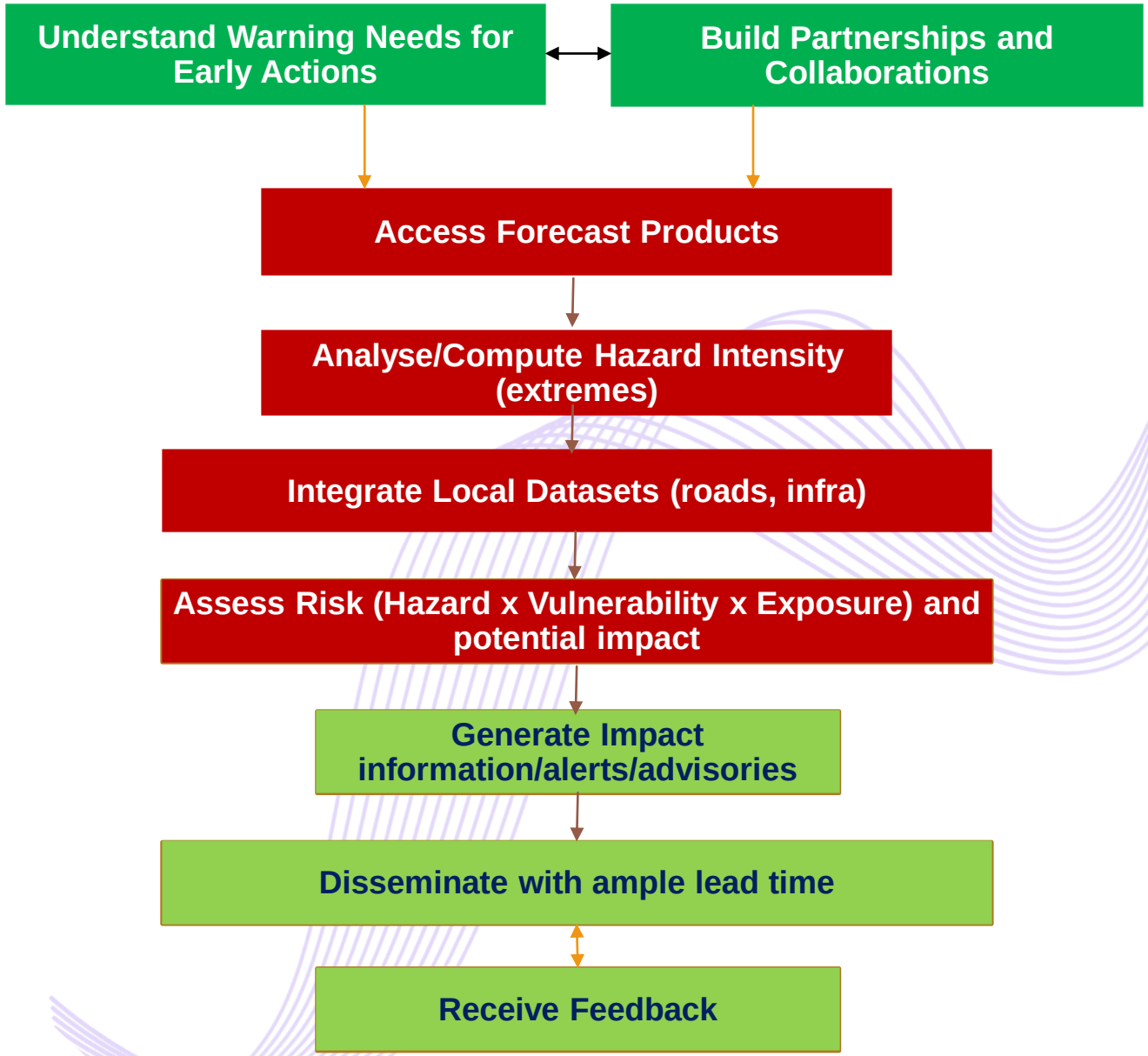
In collaboration with Regional Integrated Multi hazard Early warning System for Africa and Asia (RIMES)."SATARK" a one-stop risk management portal, has been developed using cutting edge technologies to provide actionable early warning information for improved disaster management.

The system translates weather forecast products into user-friendly actionable advisories, based on thresholds drawn from historical patterns, to ensure effective preparedness in place to minimize the risk.

- It offers impact-based forecasting, which drives actions to save lives, protect property, and livelihoods.

- SATARK is a web/smart-phone based Decision Support System that aids in provision of timely early warning information for different hazards. The mobile application is available in both Odia (regional language) and English languages.

SATARK: Framework for Impact based forecast and Warning service



An institutional framework between stakeholders like DOA, DOWR for data and service

SATARK integrates forecast products from primary sources like India Meteorological Department (IMD), European Center for Medium range weather forecast (ECMWF) and SRC observations were also integrated

SATARK assesses the impacts of the forecasted climate and weather phenomenon and generates the warnings based on the level and severity of impacts using defined thresholds

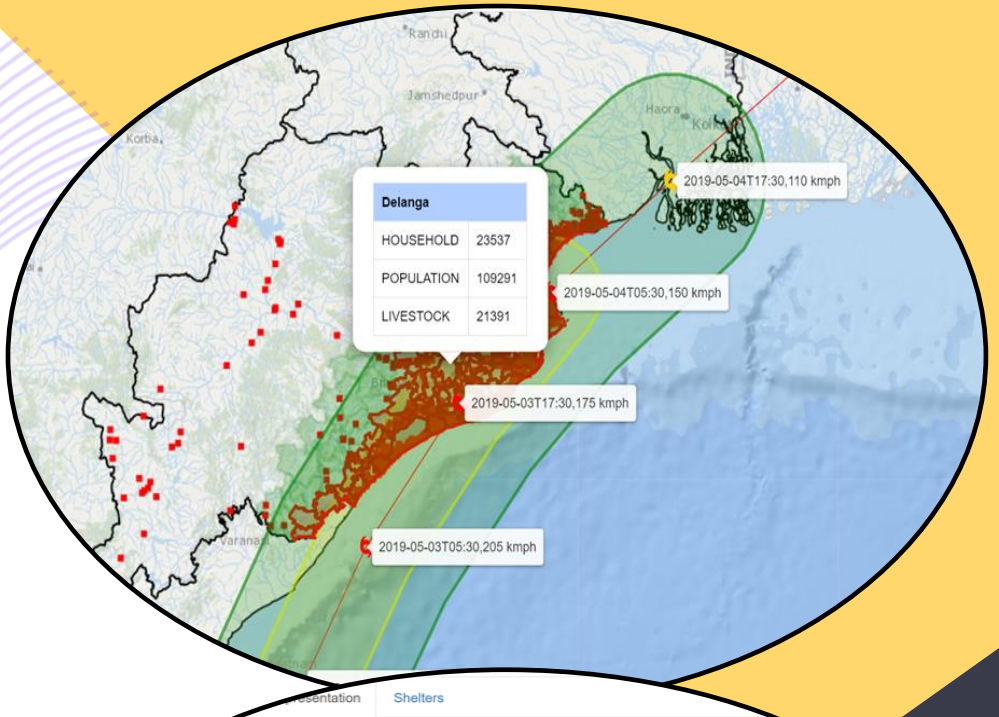
Early warning information disseminated through mobile application, automatic email advisories, SMS services and receive feedback through the app

Case Study: Impact Forecast Results for Cyclone FANI

- Based on the assigned model forecast the system automatically identifies the vulnerable regions which are to be effected by the cyclone.

- The impact has been assed based on the severity of the storm.

- The Brown color indicates regions with a Low level of Alert.
- The Yellow color indicates regions with a Moderate Level Alert..



	HOUSEHOLD			POPULATION			LIVESTOCK			
	Urban	Rural	Household Total	Male	Female	Total	Cow, Buffalo	Sheep, Goat	Horse, Camel	Donkey, Pony
ahanaga	43912	0	43912	71265	67104	138369	10866	25386	16220	0
Khaira	32402	0	32402	89199	90685	179884	9728	25614	18605	0
Oupada	8948	0	8948	42048	40869	82917	3644	11597	8193	0
Simulia	35679	0	35679	62017	59499	121516	8817	18941	10800	0
Soro	66303	6811	73114	72428	68179	140607	9111	26318	10789	0
Balasore	41782	0	41782	127278	119769	204704	8387	25697	13462	0
lagiri	31939	0	31939	64713	64647	129360	2464	10729	6055	0
na	21597	0	21597	92220	87824	180044	10677	30166	19569	0
	37186	0	37186	100840	96419	197259	16616	30761	15167	0
	30559	0	30559	96779	91989	188768	10264	35050	12130	
	43912	0	43912	146701	136885	283586	23245	14063	8042	
		0	32997	104480	99610	204090	16767	38085		

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2021

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

Thank you

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