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# Impact-Based Multi-Hazard Early Warning System

**Joseph Intsiful (PhD)**

Senior Climate Information and EWS Specialist  
Division of Mitigation and Adaptation

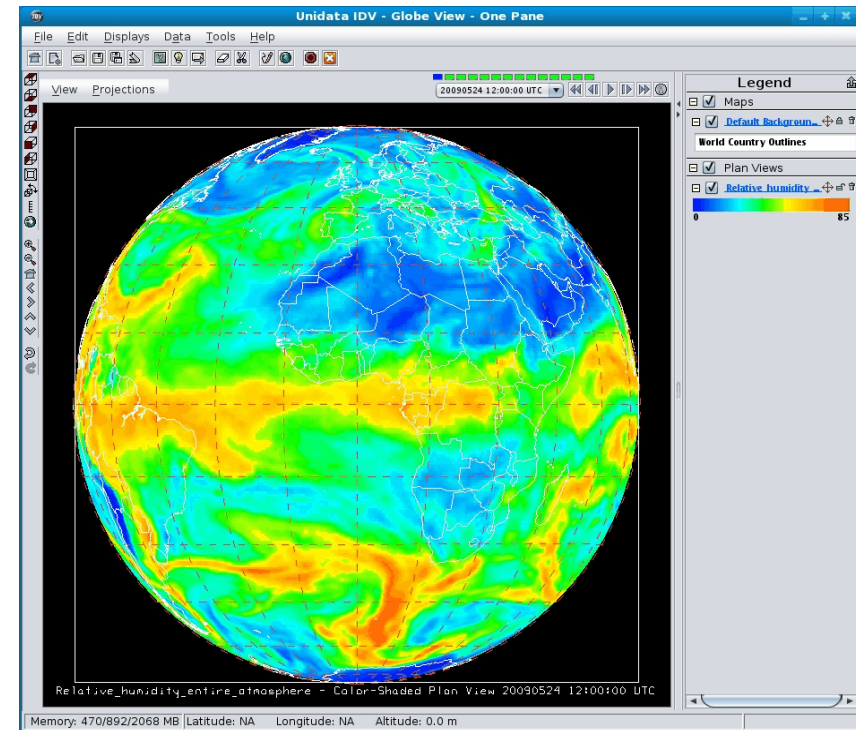
## 1. Background and Context:

- MHEWS Checklist
- Conceptual framework of IBF

## 2. Applications:

- Tropical Cyclone
- Water resources

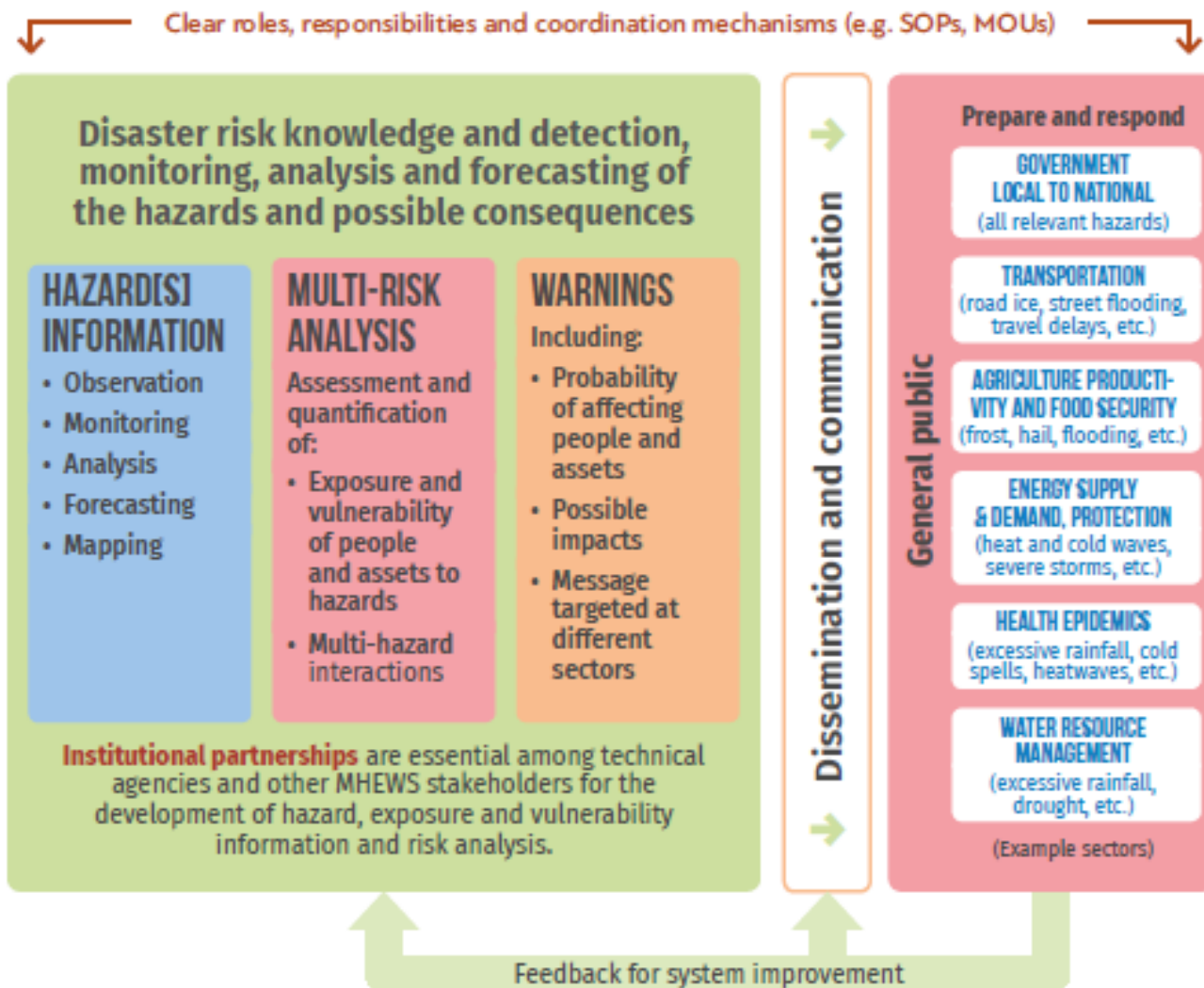
## 3. Conclusion





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# Multi-Hazard Early Warning System: Conceptual framework





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# Core Elements of A Multi-Hazard Early Warning System

## Disaster risk knowledge

- Are key hazards and related threats identified?
- Are exposure, vulnerabilities, capacities and risks assessed?
- Are roles and responsibilities of stakeholders identified?
- Is risk information consolidated?

## Detection, monitoring, analysis and forecasting of the hazards and possible consequences

- Are there monitoring systems in place?
- Are there forecasting and warning services in place?
- Are there institutional mechanisms in place?

## Warning dissemination and communication

- Are organizational and decision-making processes in place and operational?
- Are communication systems and equipment in place and operational?
- Are impact-based early warnings communicated effectively to prompt action by target groups?

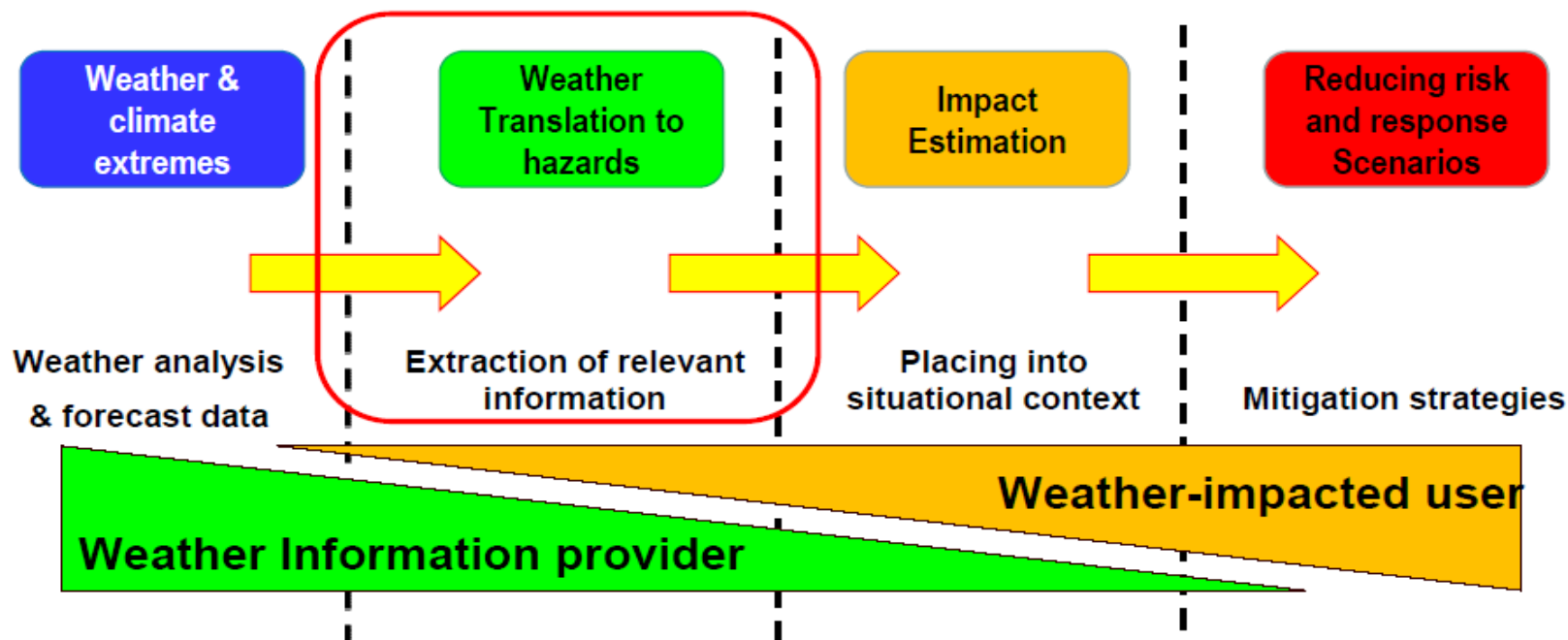
## Preparedness and response capabilities

- Are disaster preparedness measures, including response plans, developed and operational?
- Are public awareness and education campaigns conducted?
- Are public awareness and response tested and evaluated?



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# Impact-Based Forecasting : Conceptual framework



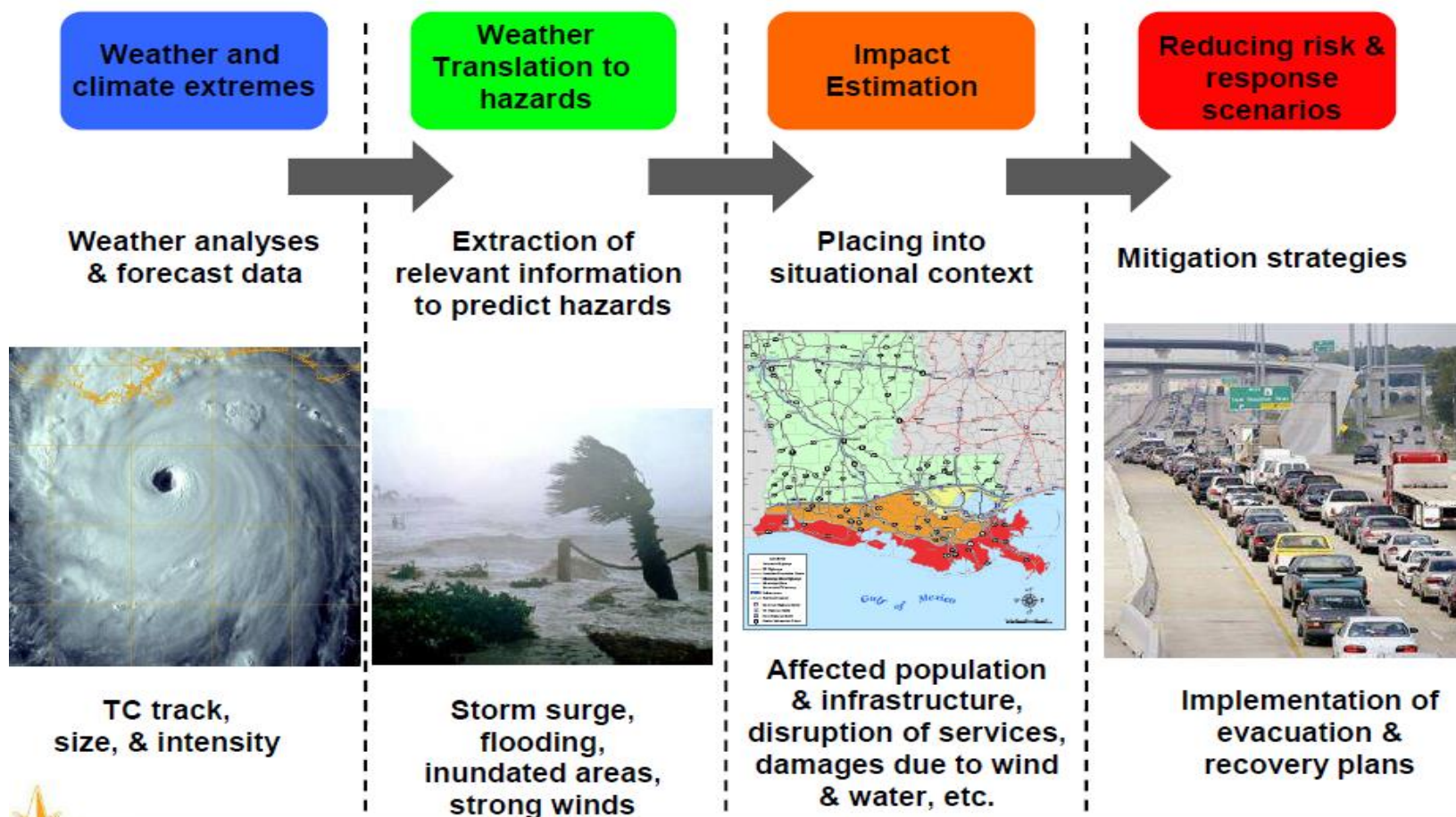
## Some examples:

Airport operation	Ceiling & visibility (flight categories)	Reduced capacity (arrival rates)	Ground delay programs
Dam operation	Precipitation & runoff (water level)	Overflow or breaking, minimal discharge	Controlled release of water
Power plant operation	Winds below/above critical thresholds	Reduced power generation	Balancing grid with other power sources



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# Impact-Based Forecasting: Application to Tropical Cyclone

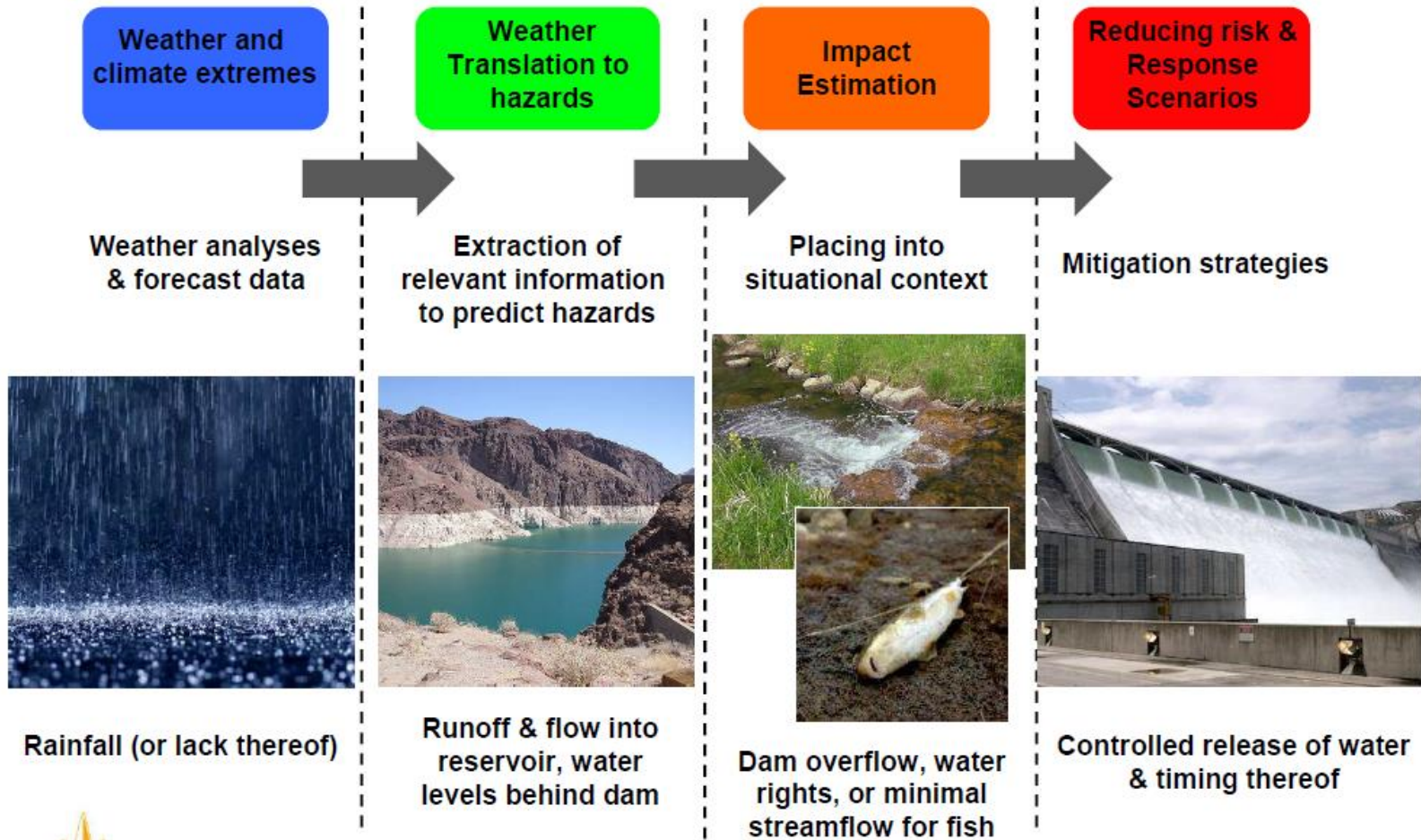






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# Impact-Based Forecasting: Application to Water Resources





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# Contacts



**Joseph Intsiful (PhD)**

*Climate Information and  
Early Warning Systems  
Senior Specialist*

*Division of Mitigation and  
Adaptation*

## Green Climate Fund

Songdo International Business District  
175, Art Center-daero  
Yeonsu-gu, Incheon 22004  
Republic of Korea

Email: [jintsiful@gcfund.org](mailto:jintsiful@gcfund.org)





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