Climate Risk Management Approaches for Loss and Damage Reduction

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Structure

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2) CRM contribution to damage and loss reduction

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4) Way forward: Damage and loss assessment as a national policy advocacy tool for investment in CRM

Climate Risk Management Approach

CRM

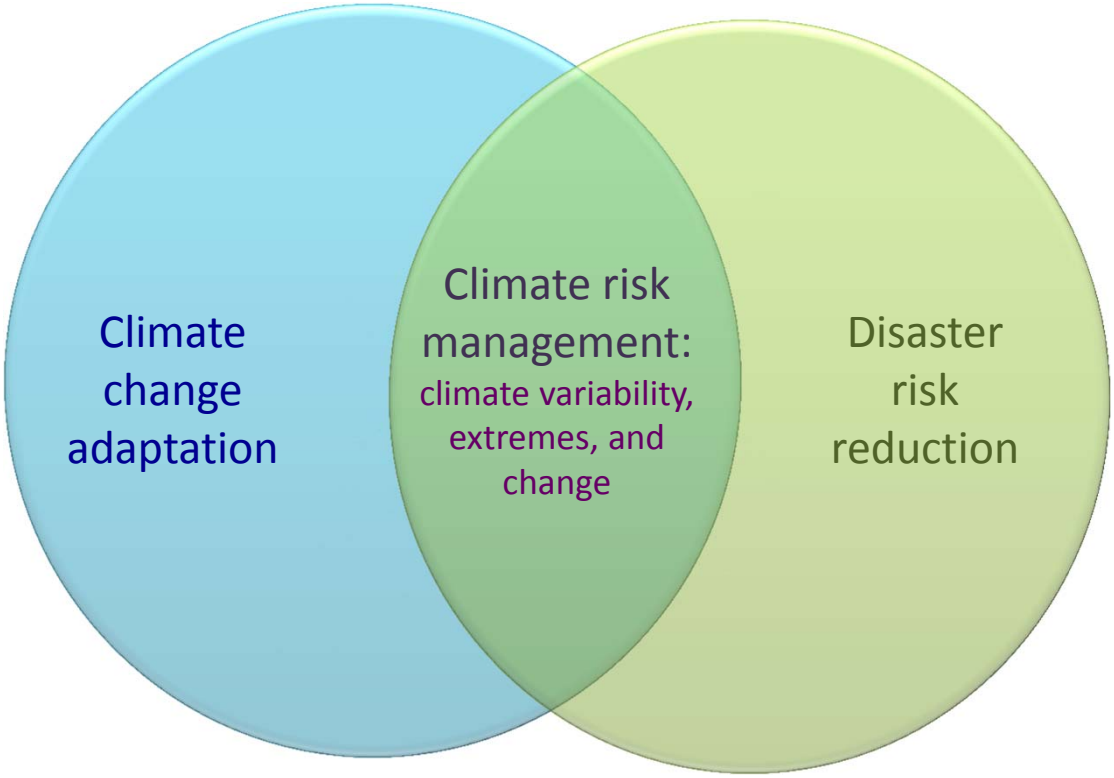
•Takes into account both the risks triggered by current climate variability and projected Climate Change trajectories

• Designed to anticipate and manage risks on a continuous basis.

•Integrates CCA , DRR and Development domains - treating climate risk systemic to development

The Climate Risk Management approach

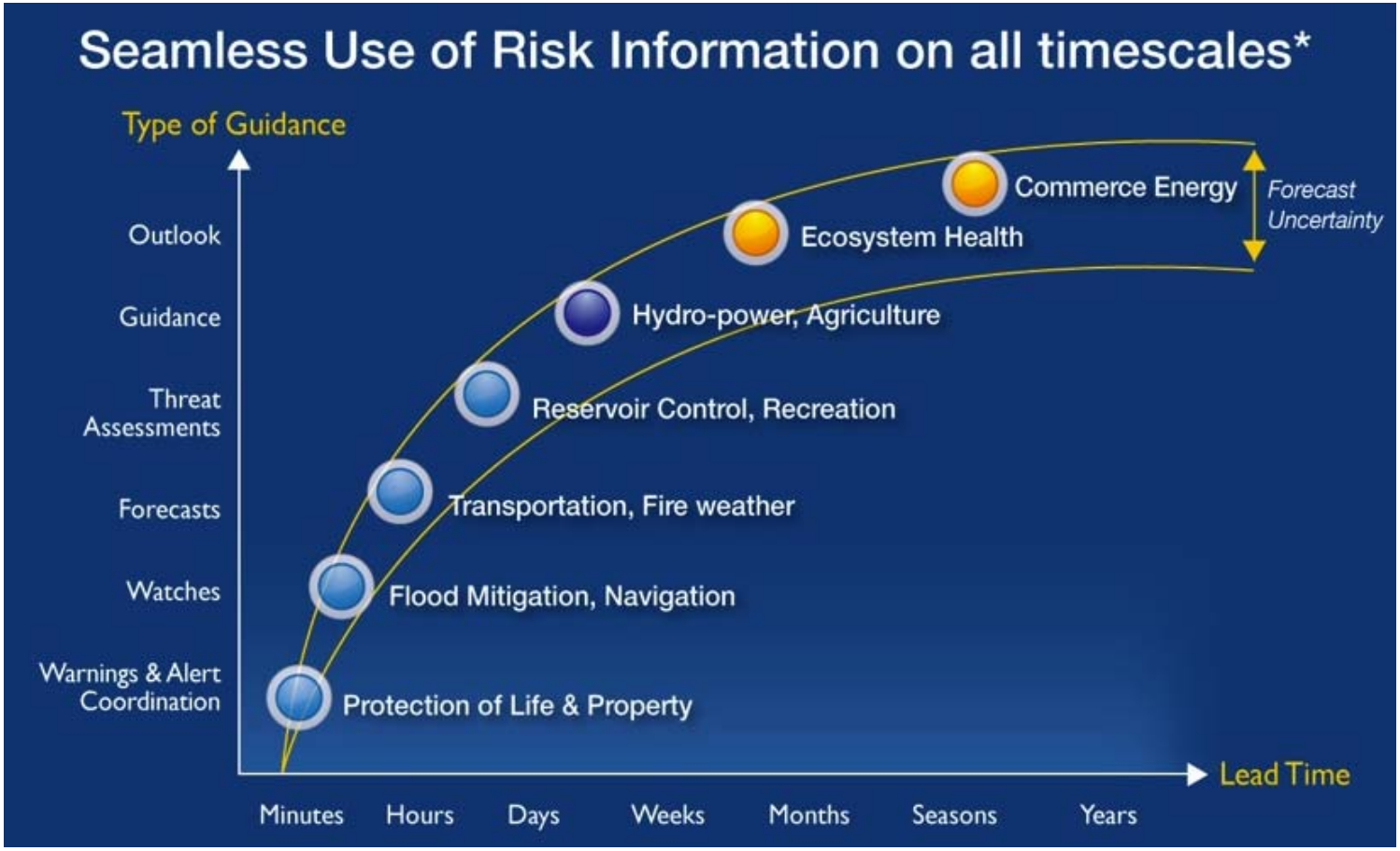
Integration of CCA, DRR and development domains



The Climate Risk Management approach

- **Generation of user-relevant climate information**
  - **Differing user needs, demands, and decision context**
  - **Different timescales:**
    - **Observed climate trends: past and observed climate data**
    - **Weather forecasts: up to 15 days lead time**
    - **Climate predictions: monthly and seasonal scales**
    - **Climate change projections (decades into the future)**

The Climate Risk Management approach



CRM contribution to damage and loss reduction

3-5 day forecasts in the agriculture sector, Bangladesh

Hazard		
Cyclone	Sidr 2007 damage to agriculture, fishery, and livestock	USD 23.4 million
	Investment in early warning technology, training over 10-year period	USD 3.1 million
	Total avoidable damage to agriculture using probabilistic forecasts, assuming 2 instances of such damages over 10 years: 23.4 x 0.8 x 2	USD 37.44 million
	Total benefit/ total cost: 37.44 / 3.1	**USD 12.08 / USD 1 investment**

CRM contribution to damage and loss reduction

3-5 day forecasts: other countries

Country	Hazard	Benefit/ Cost
Bangladesh	Cyclones	40.85
Sri Lanka	Floods	0.742
Bangladesh	Floods	44.1
Thailand	Floods	10.76
Vietnam	Hydro-met	10.4

CRM contribution to damage and loss reduction

5-10 day forecasts in the agriculture sector, Bangladesh

Hazard		
Flood	Jul-Aug 2007 damage to agriculture, forests, fishery, and livestock	USD 206.76 million
	Investment in early warning technology, training over 10-year period	USD 3.1 million
	Total avoidable damage to agriculture using probabilistic forecasts, considering severity, return period, event frequency over 10 years: 206.76 x 0.8 x 8.33	USD 1,377.85 million
	Total benefit/ total cost: 1,377.85 / 3.1	**USD 44.47 / USD 1 investment**

CRM contribution to damage and loss reduction

Monthly and seasonal forecasts

Country	Value of forecast
Philippines *(2002-2003 El Niño)*	USD 20 million (one province, one season)
India *(2002 drought)*	USD 80 million (one state, one season) or USD 480 million (one state over 30 years) USD 1.2 billion input costs could have been saved at farm level
Indonesia *(El Niño 2002)*	USD 1.5 million (50 districts with CFA forecasts) USD 7.5 million (potential, 250 districts) Benefit/ cost: 100

CRM experience: Bangladesh

2000 baseline:

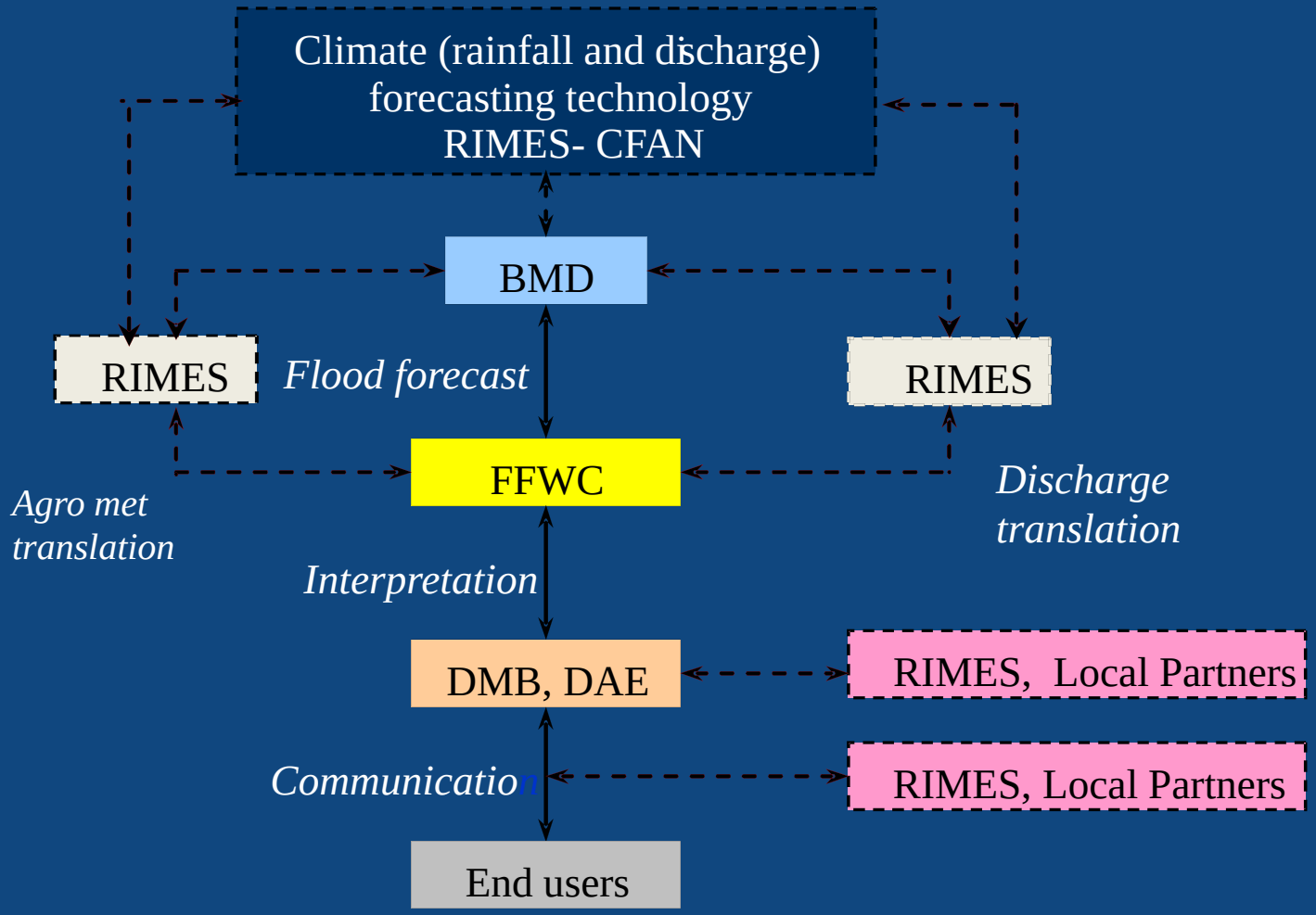
- Flood forecast lead time: up to 48 hours
- Lead time is insufficient to modify decisions
- Danger level nomenclature not understood by potential users
- Flood forecast stations available only at few major locations
- No mechanism to relate forecast information to user needs at specific locations
- Information flow is mostly unidirectional (producer to user)

CRM experience: Bangladesh

Interventions:

- Understanding of user needs and livelihoods and decision contexts
- Development of forecast models for 10 days, monthly, and season-ahead lead times
- Improvement of hydrological observing system
- Communication of forecast uncertainty
- Training of users on forecast application: forecast interpretation, potential impact assessment, identification of management options
- Forecast producer-user dialogues (local level, national level – Monsoon Forum)
- Demonstration of forecast application
- Application monitoring; quantification of economic benefits

Institutional Collaboration For Sustainable End-to-end Flood Forecasts System



CRM experience: Bangladesh

Success factors:

- Inter-disciplinary, multi-stakeholder participation:
  - BMD, FFWC, DAE, DMCs, NGOs, CBOs, communities
  - Prediction, interpretation, translation, message construction, communication, response, feedback
- ESCAP-supported RIMES - hand-holding until national and local systems fully integrate CRM – Institutional as opposed to adhoc project based approach

Challenges:

- Resource constraints for end users to respond to forecasts
- Investment constraints to build capacity to integrate new tools

Way forward

- Losses partially assessed are from episodic high-impact, low frequency events
- Losses from non-episodic events, e.g. slight variations in climatic factors, which have far-reaching impacts, are **not assessed**
- Impacts on sectors having backward and forward linkages, leading to cascading impacts to national economy are **not assessed**
- Lag effects of events are not considered in assessments, e.g. drought that lingers for 3-4 years
- Hence true costs of damage and losses are under-estimated. Estimates of true costs could be an effective policy advocacy tool for CRM investment