



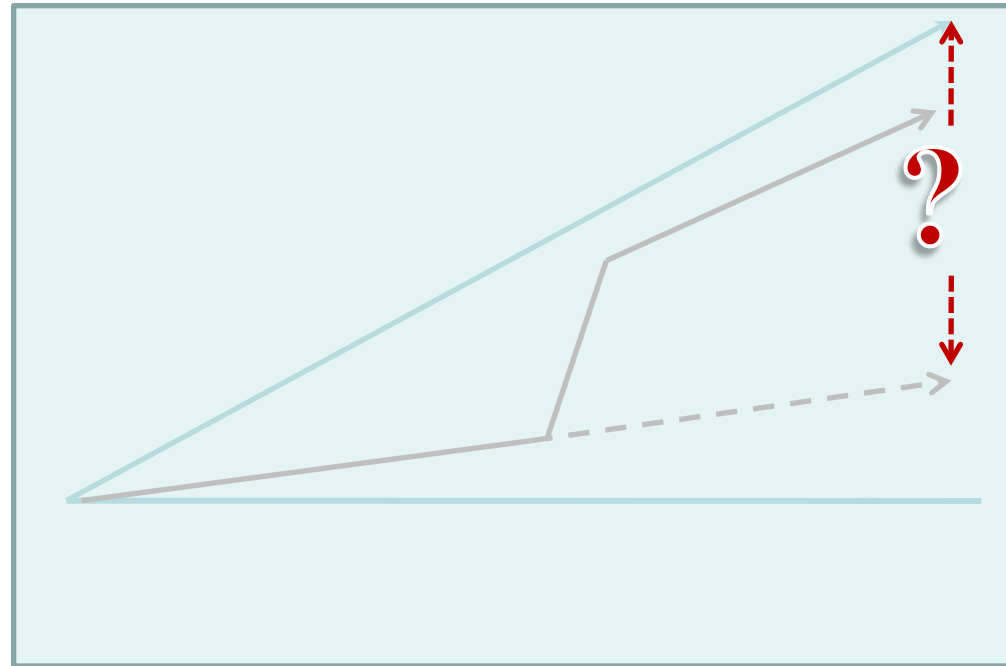
World Meteorological Organization

Weather • Climate • Water

The WMO Severe Weather Forecasting Demonstration Project (SWFDP):

Why a project on severe weather forecasting?

- Dramatic developments in weather and climate prediction science
- Leading to improved alerting of hydro-meteorological hazards, at ever-increased precision, reliability, and lead-times of warnings
- Developing countries, including LDCs and SIDSs, saw little progress
- Increasing gap in application of advanced tools and technology in forecasting and early warnings
- WMO SWFDP attempts to close this gap, by applying the ‘*Cascading Forecasting Process*’ (regional frameworks)





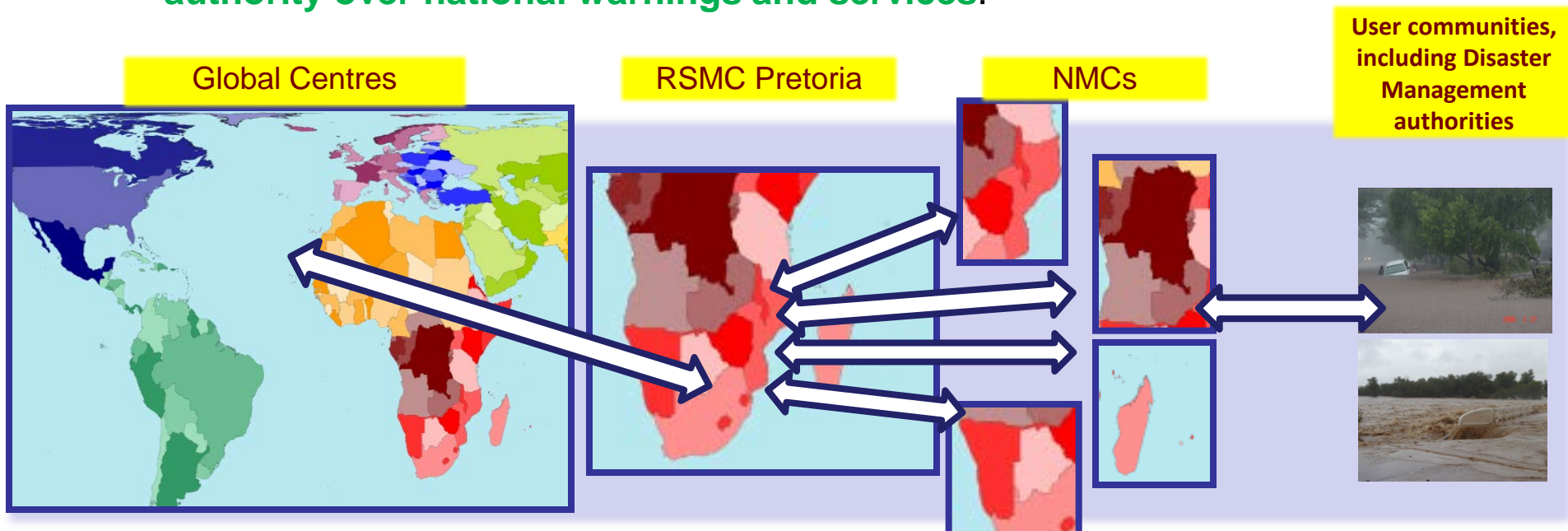
SWFDP Characteristics

- Collaboration between Global, Regional and National Centres
- Contribution of Public Weather Services (PWS) and other Programs (HWR, MMO etc)
- Use of 'Cascading Forecasting Process'
 - High value information moved from Global to Regional to National through Severe Weather Forecasting Demonstration Project (SWFDP)



SWFDP Cascading Forecasting Process – efficient delivery of GDPFS

- Global NWP centres to provide available NWP/EPS and sat-based products, including in the form of probabilities, cut to the project window frame;
- Regional Centres to interpret information received from global centres, prepare daily guidance products (out to day-5) for NMCs, run limited-area model to refine products, maintain RSMC Web site, liaise with the participating NMCs;
- NMCs to issue alerts, advisories, severe weather warnings; to liaise with user communities, and to contribute feedback and evaluation of the project;
- NMCs have access to all products, and maintained responsibility and authority over national warnings and services.





SWFDP Main Goals

- Implement the WMO's GDPFS three-level system – the '*Cascading Forecasting Process*'
 - ✓ International collaboration among operational centres at global, regional and national levels
 - ✓ Improve the skill of products from WMO operational centres through feedback and forecast verification
 - ✓ Continuous learning and modernization
 - ✓ Address the needs of groups of “like-countries”
- Improve lead-time of Warnings
- Improve interaction of NMHSs with their users
- Identify areas for improvement and requirements for the WMO Basic Systems





SWFDP Strengths

- Cost effectiveness;
- Simplicity;
- NMHSs need good internet only;
- Highly operational;
- Capacity development through specialized training programme
- improved forecasts and lead-time of warnings
- Country Representatives decide on geographical area and weather elements of focus.
- Dedicated websites (Global & Regional Centres)





SWFDP Implementation process

Four Phases approach

Phase I - Overall Project Planning: This phase includes the preparatory work necessary to prepare the project specifications, and to identify the possible participating centres and to select suitable regional subprojects according to the geographical area, the type of severe weather and the chosen period for the experimentation.

Phase II: Regional Subproject Implementation Planning and Execution.

- Preparation of the detailed specifications (data and products to be exchanged, performance measurements, reviewing and reporting)
- Country Reps (RSMT) develop subproject implementation plan, including a training programme, and to manage its implementation and then to carry out the Demonstration.





SWFDP Implementation process

Four Phases approach

Phase III: Evaluation of SWFDP Regional Subproject :

- Evaluation of the progress reports
- Tracking and analysis for further improvement
- Continuous evaluation, training and reporting

Phase IV: Regional Subproject Long-term Sustainability and Future Developments:

- Sustain operations and expand partnerships through continuous development, regular trainings and sharing knowledge.
- Future capability and technology developments, and to foster broadening of activities in synergy with other WMO Programmes.
- **Responsibility of management to be taken by the concerned Regional Association**





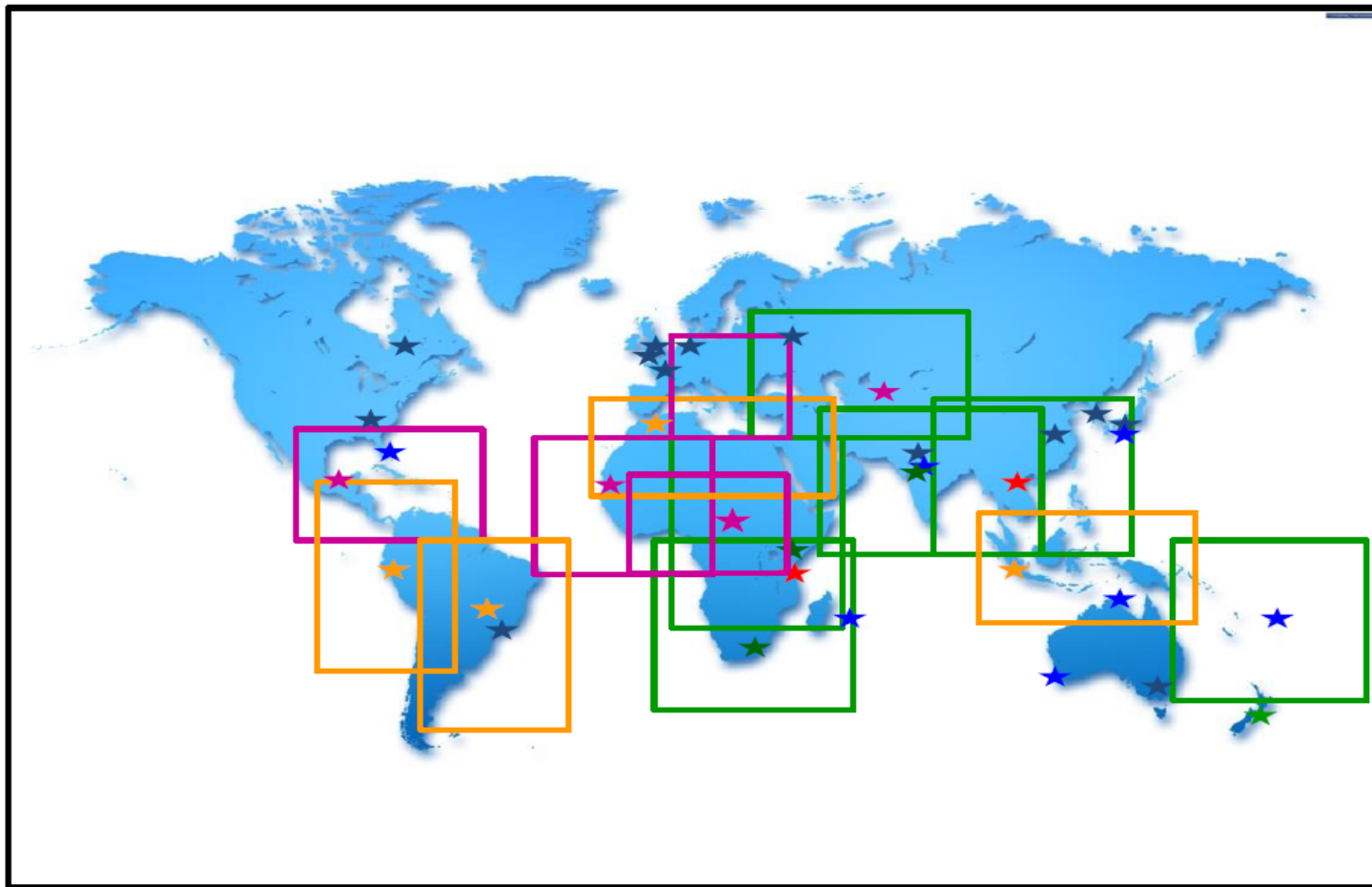
Role and Responsibilities of Participating Countries

- **Identify the Country Representatives on Regional Sub-project Management Team which will develop the Implementation Plan**
 - Agreement on warning criteria for severe weather elements (Temp, Wind, Pcpn , TSTM etc)
 - Agreement on when to begin the demonstration phase (phase II) – **Depends on Securing RSMC/RFSC**
 - Provide quarterly reports including some stats on their warnings- Data-based available
- **Agreement on RSMC/RFSC for the provision of guidance**



SWFDP: Existing projects and Future directions

Green color boxes represent the domains of existing SWFDP regional subprojects. **Pink** and **Orange** color boxes signify the regions for future SWFDP subprojects which will be developed within next 1-2 years and 3-5 years respectively. Contributing Global Centres and RSMCs /RFSCs are also shown for each of the SWFDP regional subprojects.



- Cost effective;
- Simplicity;
- NMHSs need internet only;
- Highly operational focus;
- Capacity development with improved forecasts and lead-time of warnings





SWFDP Synergies

SWFDP linkages are developed with various programmes and projects wherever appropriate

- Flash Flood Guidance System (FFGS)
- Tropical Cyclones Programme (TCP)
- **SAT-Nowcasting (South Africa)**
- MMO-Coastal Inundation Forecast Demonstration Project



SWFDP – An option for Central America?

- SWFDP is being implemented in the lesser Antillas
- Modelling capability exists in the sub-region
- Capacity for one Centre to provide guidance to others
- Opportunity for collaboration between operational forecasters
- Access to products from Global Centres (NCEP, Canada, ECMWF, UK Met on dedicated web
- Capacity building – Training (NWP outputs interpretation and public weather services
- Donors funding



The Process to initiate SWFDP in a Region

- The Region, through its President, requests the Secretary-General to implement SWFDP in the Region. The request could also be part of a Decision at an RA session
- Proceeding with planning
 - Identification of Resources (WMO Secretariat)
 - Identification of Participating Country representatives (RA with WMO Secretariat)
 - Identification of participating Regional Centres and Global Centres (WMO Secretariat)
- Meeting of RSMT to develop the Implementation Plan and decide on demonstration phase (WMO Secretariat)
- Identification and commitment of a Regional entity to take on responsibilities for the operational phase (RA in collaboration with the Secretariat)
- Implementation (RA & WMO Secretariat)





World Meteorological Organization

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Thank You

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