# DELIVERY OF WARNINGS OF HYDROMETEOROLOGICAL HAZARDS – SOUTHERN AFRICA REGION

## ROADMAP

# ROADMAP

- A roadmap is a tool to recognize assets (existing or needed) the relationships between these assets and the skills, technologies and requirements to meet future needs and goals

- Displays interaction between goals, needs, and requirements over time

  - Provides actionable steps required to meet a goal(s)

  - Shows interdependencies among the steps

  - Shows any alternate steps to optimize existing or future resources

- Each roadmap is unique and dynamic
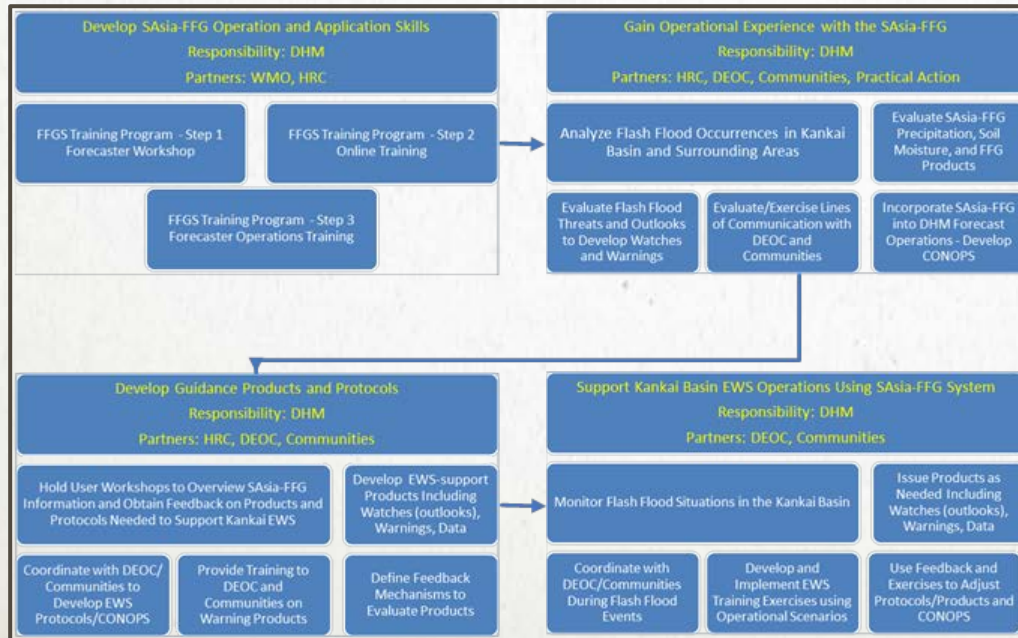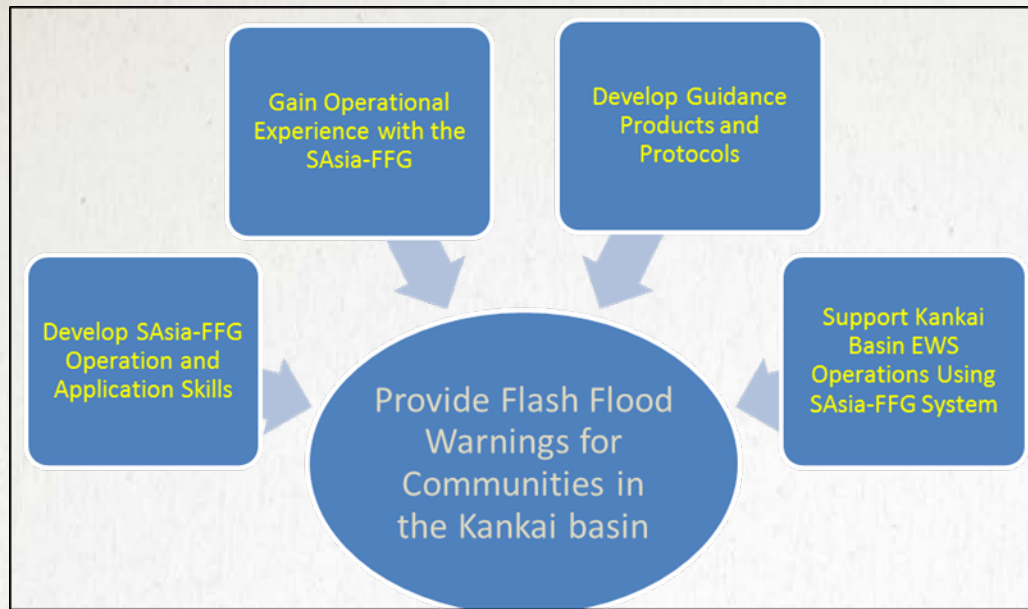
# ROADMAP

- Objective: for each participating country NMHS to develop a roadmap (or planning tool) designed to meet the project goal

- Goal: improve the accuracy , lead time, communication and dissemination of severe weather and flash flood warnings to communities
  - Integrate product development and training outcomes from the WMO Project *On Improving Service Delivery of Severe Weather and Flash Flood Warnings to Communities in Southern Africa*
  - Need to account for the End-to-End Early Warning System process

- Define actionable steps – primary, secondary (gaps), etc.

- Define interdependencies between steps

- Define responsibilities and partners

- Define a format

# ROADMAP

## Key Concepts for Roadmap Steps

- Well developed governance and institutional arrangements support the successful development and sustainability of effective early warnings systems

- Important focus is on partnerships between stakeholders
  - Tasks can't be managed by a single agency
  - Leveraging resources as needed
  - Commitment to information exchange
  - Share costs, knowledge, lessons learned
  - Ensure a consistent message (e.g., warnings)

# ROADMAP

## Key Concepts for Roadmap Steps

- NMHSs must understand the decision-making process made by all sectors affected by the hazard to ensure that information is tailored to the specific needs of the user
  - Efficient, clear and timely communication of weather- and warning-related data and information and understanding its effect on the user operations and needs
  - Operations and needs could vary widely for each stakeholder for a given event
  - Quantitative understanding of the social and economic cost and benefit of the warnings
  - Understanding and conveying the uncertainty in the warning
  - Understanding the decisions that depend on the warning
  - Level of acceptance of false alarms (positives or negatives)

- Good communication is important for an effective warning system

# ROADMAP

Proposed Primary Actionable Steps for Early Warning

- **Early Warning Systems as a component of disaster risk management policies. Legislation and planning at national-to-local levels**
  - Need to have the mandates, procedures, and protocols in place for early warning

- **Technical and operational capacities for observing, detecting, monitoring, forecasting and warnings**
  - Need to identify gaps in NMHS capacities

- **Warning and other product development and applications**
  - Need to identify mechanisms to ensure appropriate products for stakeholders

- **Communication and dissemination mechanisms from national-to-local levels**
  - Need to identify gaps in communication – infrastructure improvement, mandates, protocols

- **Support Early Warning System Operations**
  - CONOPS

# ROADMAP

SOME IDEAS

- **Early Warning Systems as a component of disaster risk management policies. Legislation and planning at national-to-local levels**
    - o What disaster management plans, procedures, and protocols need developed
    - o What mandates, procedures, protocols for emergency situations need developed
    - o What political commitment for disaster risk management, disaster plans, legislations, roles and responsibilities need developed
    - o Do key stakeholders need identified
    - o What interfaces between NMHSs and stakeholders for provision of information products, services and advice need developed

- **Technical and operational capacities for observing, detecting, monitoring, forecasting and warnings**
    - o What observation networks, data/information tools, procedures/protocols (e.g., SWFDP/FFG operations manuals or procedures) and meteorological and hydrologic forecasting infrastructure need developed (identify gaps)
    - o What available resources need optimized/improved for product and service development
    - o How to integrate the SWFDP/SARFFG linkage program outputs
        - ▪ What training is needed on the two systems (operational or otherwise)

# ROADMAP

- **Warning and other product development and applications**
  - o What coordination mechanisms for interactions of the NMHS with key stakeholders for understanding of their needs and requirements for warnings and specialized forecast products and services (e.g., content, format, delivery, lead-time, communication of technical limitations) need developed
  - o What mechanisms for the establishment of on-going dialogue between the NMHS and disaster management agencies are needed (to understand changing needs and requirements)
  - o What capacity building and training approaches to improve product development, delivery, usability, evaluation and interpretation between the NMHS and stakeholders are needed
  - o How to integrate the SWFDP/SARFFG linkage program outputs

- **Communication and dissemination mechanisms from national-to-local levels**
  - o What infrastructures and protocols for dissemination of warnings, specialized forecasts and other products developed by the NMHS to the stakeholders to ensure data and information reach the target users need developed
  - o What mandates/roles of the NMHS and other disaster management agencies for warning dissemination need developed (is identification of what can be sent to the public and by whom, what can be sent by the NMHS needed)
  - o What mechanisms for improving warning dissemination through formal and informal channels need developed (including feedback mechanisms before, during, and after an event)

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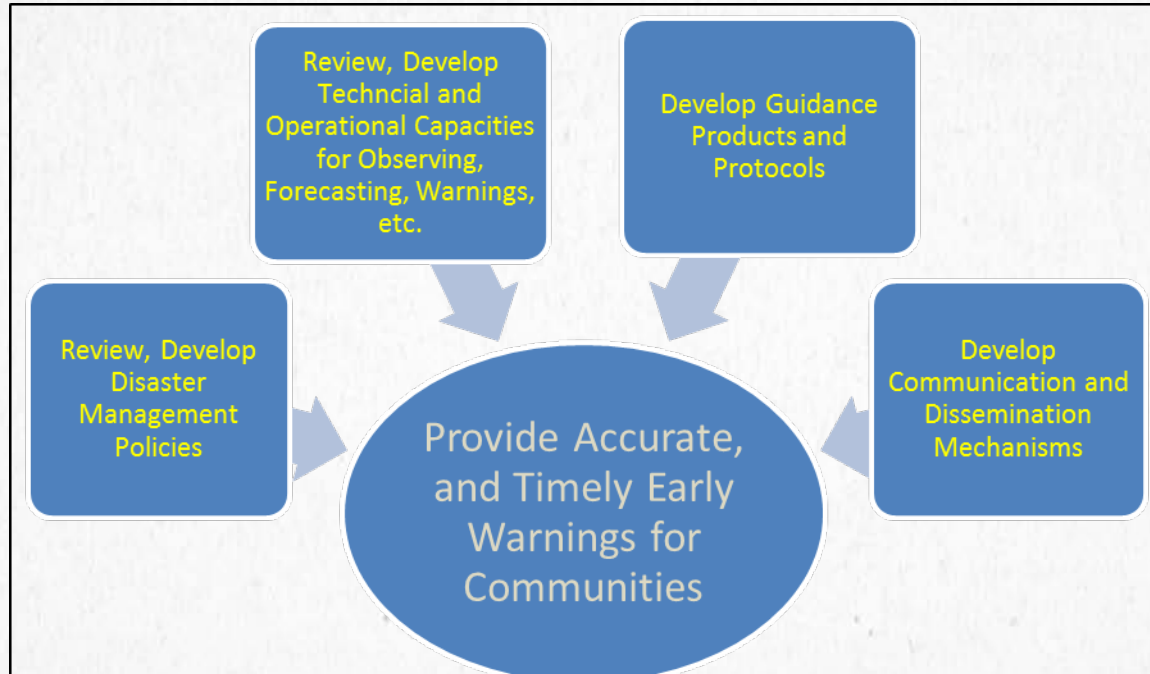
# ROADMAP

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