

INSTITUTIONAL DEVELOPMENT PLAN 2024-2030



ACKNOWLEDGEMENT

We extend our deepest gratitude to the World Bank whose invaluable technical and finance resource contributions as a part of CARE Project have significantly contributed to prepare report on RIMES 's Institutional Development Plan 2024-2030 that articulates RIMES institutional Reform Process.

TABLE OF CONTENT

List of Figures.....	iii
List of Tables.....	iii
Abbreviations	iv
Executive Summary	vi
1. Introduction	
1.1 Background.....	1
1.2 Objective and Scope	1
1.3 Overview of RIMES.....	2
1.4 Ongoing Improvements Since 2021.....	5
1.5 RIMES unique characteristics	6
2. Institutional Development Plan	
2.1 Goal	9
2.2 Objectives	9
2.3 IDP Phased Implementation.....	10
3. Phase 1-A Implementation Strategies	
3.1 Finance Management	11
3.2 Human Resource Management	14
3.3 Strengthening Procurement Processes.....	15
3.4 Strengthening Project Management.....	15
3.5 Strengthening of Information, Communication and Knowledge Management	16
3.6 Strengthening of Monitoring and Evaluation Systems	16
3.7 Strengthening of Information Security Systems	17
3.8 Restructuring of RIMES Program Unit	19
4. Phase 1-B Implementation Strategies	22
5. Phase 1-C Implementation	
5.1 Establishment of institutional mechanisms at the country level.....	23
5.2 Transformation of RIMES as “INTEGRATOR”	24
5.3 Resource Mobilization	25
6. Action Plan	27
7. Risks and Risk Management	
7.1 Risks and Risk Mitigation Measures.....	31
7.2 Risk Monitoring and Management.....	33

ANNEXES

Annex 1. RIMES DSS Tools	34
Annex 2. Enhancement of Human Resource Performance.....	40
Annex 3. Project Management Plan.....	44
Annex 4. Design of RIMES’ Integrated Project Management Tool: ProMISe.....	46
Annex 5. Information, Communication and Knowledge Management Plan	50
Annex 6. Monitoring and Evaluation Plan	53
Annex 7. Structure of three directorates.....	55
Annex 8. SAHF Executive Council Resolution	60
Annex 9. SAHF IV Declarations	65

LIST OF FIGURES

Figure 1. Climate information and early warning system services value chain	3
Figure 2. Use of the procurement and contract management module in the procurement process.....	15
Figure 3 Current RIMES organizational structure.....	21
Figure 4 Proposed RIMES organizational structure	21
Figure 5 Data flow Hierarch	23
Figure 6. Capacity development process.....	42
Figure 7. Steps in project management planning.....	44

LIST OF TABLES

Table 1. RIMES IDP Action plan.....	27
Table 2. Risk management matrix.....	31
Table 3. Potential areas for capacity enhancement, and level of intervention.....	43
Table 4. Information and communication materials for production.....	52

ABBREVIATIONS

ADVISE	Punjab's Agro-Advisory System	ESCAP	Assessment UN Economic and Social Commission for Asia and the Pacific
AI	Artificial intelligence	ESCAPE	Evaluation System for Computing Accessibility and Planning Evacuation
AOR	Area of responsibility	EWS	Early warning system
ARRCC	Asia Regional Resilience to a Changing Climate	FAMD	Finance and Account Management Department
AWS	Amazon Web Service	FloCAST	Flood Cautioning and Alert System
BMD	Bangladesh Meteorological Department	FOCUS	Forecast Customization System
BWDB	Bangladesh Water Development Board	GCF	Green Climate Fund
CAPM	Certified associate in project management	GCF-TL	Enhancing EWS to build greater resilience to hydro-meteorological hazards in Timor-Leste project
CARE	Climate Adaptation and Resilience for South Asia project	GCM	Global Climate Model
CBDRRM	Community-Based Disaster Risk Reduction and Management	GDPR	General Data Protection Regulation
CDAAS	Climate Data Access and Analysis System	GFDRR	Global Facility for Disaster Reduction and Recovery
CFO	Chief Financial Officer	GIS	Geographic Information System
CIPS	Chartered Institute of Procurement and Supplies	GPC	Global Producing Centers
CMIP	Coupled Model Intercomparison Project of the World Climate Research Programme	HR	Human resource
COA	Chart of account	HRA	Human Resource and Administration
CORDEX	Coordinated Regional Climate Downscaling Experiment	HRO	Human Resources and Operations
COSO	Committee of Sponsoring Organizations	IBF	Impact-Based Forecasting
CRISH	Climate Risk Information System for Public Health	ICKM	Information, Communication and Knowledge management
CST	Climate Services Toolkit	ICT	Information and communication technology
DAE	Department of Agriculture Extension	IDP	Institutional Development Plan
DataEx	Climatic/Hydrometeorological Data Exchange	IFRS	International Financial Reporting Standards
DDM	Department of Disaster Management	INCOIS	Indian National Centre for Ocean Information Services
DLS	Department of Livestock Services	INSPIRE	Internet-based Simulation Platform for Inundation and Risk Evaluation
DMC	Disaster Management Center	INSTANT	Integrated Forecast Dissemination Portal
DoR	Department of Roads	IOC/UNESCO	Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization
DRM	Disaster risk management	IRI	International Research Institute for Climate and Society at Columbia University
DRRM	Disaster risk reduction and management	ISO	International Organization for Standardization
DSS	decision support system		
EC	Executive Council		
ECMWF	European Centre for Medium- Range Weather Forecasts		
E-CRA	Electronic Climate Risk		

IT	Information technology	SATARK	System for Assessing, Tracking, and Alerting Disaster Risk Information based on Dynamic Risk Knowledge
KPI	Key performance indicator		
M&E	Monitoring and evaluation		
MIS	Management Information System	SESAME	Specialized Expert System for Agro-Meteorological Early Warning for Climate Resilient Agriculture
ML	Machine learning		
MME	Multi-Model Ensemble		
MOALD	Ministry of Agriculture and Livestock Development	ShakeCast	Shakemap Broadcast
NASA	United States' National Aeronautics and Space Administration	SHOUHARDO	Strengthening Household Ability to Respond to Development Opportunities
NAVIGATE	National Vehicular and Transport Resilience Gateway	SKHub	SAHF Knowledge Hub
NDRRMA	National Disaster Risk Reduction and Management Authority	SLMC	Strengthening Last-Mile Communication in Asia project
NEX	NASA Earth Exchange	SMART	System for Multi-Hazard Potential Impact Assessment and Emergency Response Tracking
NGO	non-government organization	SME	Small- and Medium-sized Enterprises
NLAS	National Livestock Advisory System	SMS	Short Message Service
NMHS	National Meteorological and Hydrological Service	SOP	Standard Operating Procedure
NWP	Numerical Weather Prediction	SQL	Structured query language
OSD	Operational Support Directorate	SRD	Systems Research and Development
OSFAS	Ocean State Forecast and Advisory System	SRSD	Software requirements specification document
PD	Project Development	SUFAL	Supporting Flood Forecast-Based Action and Learning
PFZ	Potential Fishing Zone		
PMBOK	Project Management Body of Knowledge	TNSMART	Tamil Nadu's System for Multi-Hazard Potential Impact Assessment and Emergency Response Tracking
PMD	Program Management Department		
PMI	Project Management Institute	TOR	Terms of Reference
PMP	Project Management Professional	TSS	Technical Support Services
PMS	Performance Management System	UI	User interface
PMU	Program Management Unit	UKMET	United Kingdom's Meteorological Office (officially known as Met Office)
PRECISE	Portal for Regional Estimation of Coastal tsunami Impact using Sea-level and Earthquake information	UN	United Nations
ProMISe	Program Management Information System	UNDP	United Nations Development Programme
Pro-Track	Progress Tracker	UNEP	United Nations Environment Programme
RBAC	Role-based access control	USAID	United States Agency for International Development
RDAS	Regional Resilience Data and Analytics Service	UX	User experience
RIMES	Regional Integrated Multi-Hazard Early Warning System	WB	World Bank
SAHF	South Asia Hydromet Forum	WB-CARE	World Bank-funded Climate Adaptation and Resilience for South Asia project
		WMO	World Meteorological Organization

EXECUTIVE SUMMARY

The Regional Integrated Multi-Hazard Early Warning System (RIMES), since its establishment in 2009, has been building its technical and management capacities to meet capacity development needs and demands of its Member and Collaborating States in building climate and disaster resilience. The past 15 years demonstrated RIMES' relevance to its Member and Collaborating States, as evidenced by their increased demand for capacity development assistance in all components of the climate information and early warning system services value chain. This increased demand requires the RIMES Program Unit to grow in breadth and in depth while maintaining financial sustainability. This Institutional Development Plan (IDP) 2024-2030 lays down RIMES' growth strategies and actions over the next six years to effectively and efficiently carry out its mission and achieve its institutional objectives toward its vision of forearmed, forewarned, and resilient communities. The key features of IDP 2024-2030 are :

1. Capacity Enhancement by end of 2025: RIMES will strengthen its capacities in finance, procurement, human resources (HR), project management, and information security systems to ensure compliance with international standards. These standards include the International Financial Reporting Standards (IFRS), the Chartered Institute of Procurement and Supplies (CIPS), , and prepare for certifications such as ISO 9001 for quality assurance and ISO 27001 for information security.
 2. Ongoing Implementation of Strategic Programs: RIMES will continue to implement the WMO-RIMES Joint Strategy and Action Plan (JASP), as well as programs supported such as by UNEP, GCF, USAID, UNESCAP and other relevant and appropriate organizations and programs.
 3. Implementation of SAHF Priorities by 2025:
 - o SAHF Secretariat Role: Between 2024 and 2025, RIMES, acting as the SAHF Secretariat, will implement SAHF priorities according to the SAHF Executive Council (EC) Resolutions and SAHF IV Declarations.
 - o Establishment of Regional Centers by August 2025: RIMES will establish the SAHF/CARE-supported Regional Data Center, Knowledge Hub, and Regional Data Analytics Service (RDAS). These centers will provide comprehensive services to hydrometeorological and sectoral agencies for data hosting and analysis, facilitating the operationalization of Impact-Based Forecasting (IBF).
 - o Institutional Mechanisms by End of 2026: Under the SAHF umbrella, RIMES will create institutional mechanisms to integrate National Meteorological and Hydrological Services (NMHS) with user stakeholder institutions, enabling data sharing and the generation of Impact-Based Forecasts across the five pillars of the climate information and early warning system services value chain in selected South Asian countries. A tripartite MoU that involve NMHS and National stakeholder user institutions will facilitate co-production of impact based forecasting DSS with technical support from RIMES
 4. Transition to an "Integrator" Role by 2026: By the end of 2026, RIMES will transition from solely "Create Solutions" to also "Create and Find Solutions." This shift will position RIMES as an "INTEGRATOR," leveraging networks, expertise, and technologies through trust-based, relational partnerships rather than purely transactional relationships.
 5. Exploration of Sustainable Funding Models by 2026: RIMES will explore and establish sustainable funding models by the end of 2026. These models may include financial instruments to ensure financial sustainability.
 6. Replication of SAHF Success by 2027: During 2026 - 2028, RIMES will replicate its SAHF-driven success in South Asia to other sub-regions through partnerships with various global, regional, and national institutional mechanisms.
-

IDP Implementation Phases

The IDP will be rolled out in three distinct phases:

- ◇ Phase 1 (August 2024 – end of 2025): The focus will be on foundation-setting and capacity development, including the restructuring of the RIMES Program Unit and the strengthening of financial, human resource, procurement, project management, information security systems, and regional data analytics capabilities.
- ◇ Phase 2 (January 2026 – December 2027): RIMES will step into its role as an “Integrator,” strengthening trust-based relational partnerships and achieving sustainability through tested funding models. Concurrently, RIMES will continue implementing SAHF priorities, establishing institutional mechanisms for integrating NMHS with user stakeholder institutions to facilitate data sharing and the co-generation of Impact-Based Forecasts.
- ◇ Phase 3 (January 2028 - 2030): This phase will focus on demonstrating RIMES’ sustainability, continuous improvement in its organizational structure, operations, service delivery, and funding models..

Financing the IDP: Resources for financing IDP implementation will be from RIMES internal resources with complimentary support from development partners.

This document primarily details the strategies and actions for Phase 1. Detailed plans for Phases 2 and 3 will be developed after the completion of Phase 1.

RIMES INSTITUTIONAL DEVELOPMENT PLAN

2024 – 2030

1. INTRODUCTION

1.1 Background

The year 2024 marked the 15th year since the establishment of the Regional Integrated Multi-Hazard Early Warning System (RIMES). Over these years, RIMES has been building its technical and management capacities to meet capacity development needs and demands of its Member and Collaborating States in building climate and disaster resilience. These 15 years demonstrated RIMES' relevance to its Member and Collaborating States¹, as evidenced by their increased demand for capacity development assistance in all components of the climate information and early warning system service value chain. RIMES has significantly contributed to the increased appreciation of and in finding value by National Meteorological and Hydrological Services (NMHSs), whose heads constitute the RIMES Council, in co-development processes for effective delivery of user-tailored climate information and early warning system services. This increased demand for RIMES' services requires the RIMES Program Unit to grow in breadth and in depth yet maintaining economic sustainability.

The Climate Adaptation and Resilience for South Asia (CARE) project, being implemented by RIMES from 2020 to 2025 with support from the World Bank (WB), provided an opportunity for RIMES to evaluate its existing governance and business processes to support its requisite growth. This Institutional Development Plan (IDP) is the result of institution-wide participatory process of:

- Reviewing and mapping existing governance and business processes.
- Identifying desired/future governance and business processes; and
- Formulating strategies and actions to achieve the desired governance and business processes.

1.2 Objective and Scope

The RIMES IDP 2024-2030 lays down RIMES' growth strategies and actions over the next six years to effectively and efficiently carry out its mission and achieve its institutional objectives toward its vision of forearmed, forewarned, and resilient communities.

The IDP has the following main sections:

- 1) **Introduction.** This section presents RIMES' inception, work focus and program development since inception, ongoing improvements, its unique characteristics, and future direction that was considered in developing effective growth strategies and action plan.
- 2) **Institutional Development Plan.** This section details RIMES' strategic goal and objectives for phase-wise implementation of the IDP during the period 2024-2030.
- 3) **Phase 1-A Implementation Strategies.** This section lays out the activities and details in the restructuring of the RIMES Program Unit and strengthening of financial, human resource, procurement, project management, information security systems, and regional data analytics capabilities.

¹ Member States are countries that have completed the formalities of signing the RIMES Cooperation Agreement. Countries that are in the process of completing these formalities are referred to as Collaborating States. Currently, RIMES has 22 Member States and 27 Collaborating States from the Asia, Africa, and Pacific regions.

- 4) **Phase 1-B Implementation Strategies.** This section describes plans and activities for the establishment of SAHF/CARE-supported Regional Data Center, Knowledge Hub, and RDAS as well as the RIMES' Regional Support Services to hydrometeorological and sectoral agencies by data hosting and analysis toward operationalizing Impact-Based Forecasting (IBF) through SAHF.
- 5) **Phase 1-C Implementation Strategies.** This section focuses on the establishment of institutional mechanisms for integrating NMHSs with stakeholder institutions for sharing of data and co-producing impact-based forecasts; RIMES' shift from "creating solutions" only to "creating and finding solution" and role as "integrator"; and sustainable funding models that RIMES will explore Phase 1-C Implementation
- 6) **Action Plan.** This section lists the actions needed to achieve the strategic goal and objectives, with timeframes, implementers, estimated budget, and source of budget.
- 7) **Risks and Risk Management.** This section identifies risks to realizing the IDP's strategic goal and objectives and measures to mitigate these risks.
- 8) **Annexes.** This section provides more details on the RIMES decision support systems (DSS) or tools, enhancement of human resource performance, the proposed structure and function of three directorates, project management plan, design of the proposed Project Management Integrated System (ProMISe), ICKM plan, M&E plan, as well as the SAHF EC Resolution and SAHF IV declaration which will be part of the IDP Phase 1 implementation within the period 2024-2025.

1.3 Overview of RIMES

Over the past 15 years, RIMES served as interface institution between NHMS user stakeholder institution - connecting science, institutions, and society. Toward this end, it acquired technical and management capacities, enabling it to become a regional reservoir of inter-disciplinary expertise. It now serves as a technical arm of NMHSs, transforming data into actionable information that meets the needs of user stakeholders. Since its inception, RIMES initiated and supported Monsoon and Seasonal Forums in RIMES countries such as the South Asia Hydromet and User Outlook Forum (SASCOF), and since 2022, established the weekly Forecasters' Forum as an integral part of the South Asia Hydromet Forum (SAHF) with support from the World Bank. These Forums proved useful in providing key insights on early climate information system gaps and capacity-building requirements of NMHSs and institutional users stakeholder institutions. The forums also help identify challenges encountered by the countries that limit their use of weather and climate information for various applications.

Climate Field Schools were another important mechanism for gathering feedback from last-mile communities and farmers on access and use of weather/climate information. Through these mechanisms, it was found that one of the major gaps in the climate information and early warning system value chain was the non-availability of customized information for different user needs. To address this, RIMES established the System Research and Development Team in 2014, consisting of domain and IT experts. This team has since been developing various Decision Support Systems (DSS) to support key user sectors, including water resources, agriculture, health, and disaster management. Specific DSSs were also developed for earthquake damage assessment, tsunami inundation simulation and evacuation planning, ocean advisory services, flood cautioning and alert information, and easy access to climate change data. Details of these DSSs are provided in [Annex 1](#).

Summary key features of RIMES programs are:

Leveraging Technological Innovations and Best Practices: RIMES has developed several systems and tools through collaboration, co-production, and co-development approaches from the perspective of user institutions needs and demands. User institutions' operational needs

serve as driver RIMES of Technological Innovations and Best Practices.

Harnessing Expertise of RIMES Professionals: RIMES technical expertise has evolved and grown in transforming science data – climate, weather, hydrology, ocean etc. – into user-relevant information by integrating relevant sectoral domain data. This resulted in the establishment of pool of internal experts and specialists at the headquarters and select country offices as follows:

Domain Experts in hydrometeorology, agrometeorology, aero meteorology, climatology, oceanography, among others, lead the scientific and technical works such as modeling and forecasting.

Sectoral Experts in agriculture, public health, ocean and marine, transport, planning, business management, disaster risk management, etc. which provide technical and practical inputs in the design and implementation phases of different programs, projects, and activities.

Systems Development Specialists include data analysts, AI and ML specialists, and ICT infrastructure engineers who focus on DSS development and customer technical support such as data hosting and integration, advanced analytics, predictive modeling, and interactive visualization.

Hybrid/Blended Professionals who are knowledgeable in domain areas and programming and systems development while understanding effective sectoral applications. This home-grown pool serves as the integrator of professionals to ensure the efficient, effective, and practical translation of science data into user-relevant information:

In recent years, RIMES has been consolidating its service delivery along the five pillars of the climate information and early warning information services value chain (Figure 1):

- a) Improving data availability by facilitating seamless integration of data into platforms that can be easily accessed and used.
- b) Enhancing forecast skill and spatial and temporal resolutions through modelling, forecasting, scientific research and development, and knowledge sharing.
- c) Transforming data into usable information through development of DSSs and co-production and co-design of tailored, user-specific climate information and early warning system services for resource and risk management in various sectors and levels.
- d) Ensuring that actionable climate information and early warning products and services are accessible to last-mile communities by enhancing formats, media, and channels used to disseminate and communicate.
- e) Enabling institutional and end-users to use climate information and early warning products and services in risk and resource management policies and plans and operational decisions through training, workshops, awareness-raising, and feedbacking.

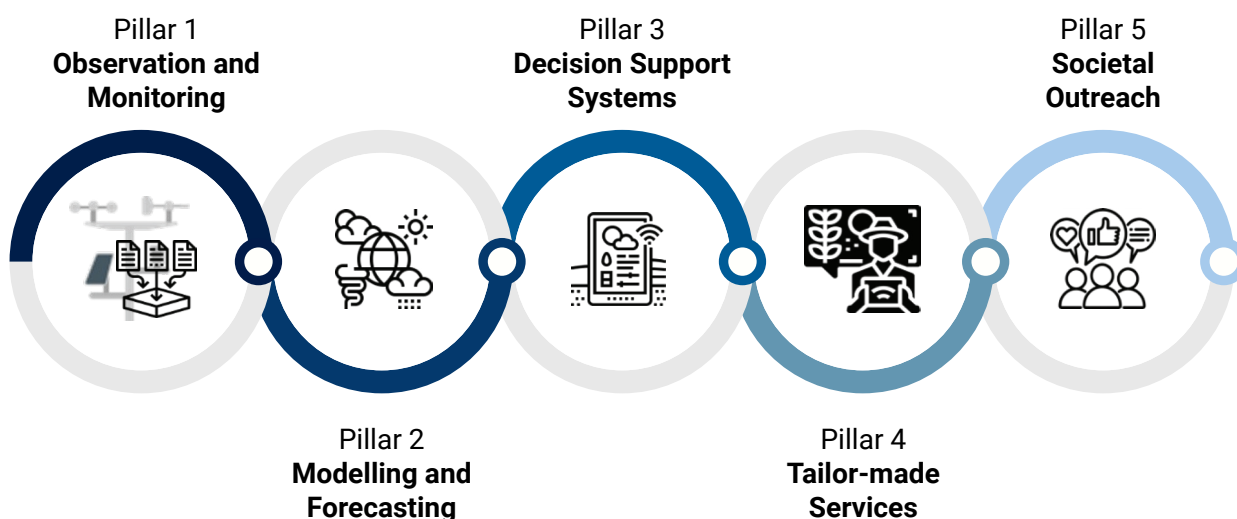


Figure 1. Climate information and early warning system services value chain

RIMES Program is designed to meet existing and emerging demands of its Member and Collaborating States, consistent with RIMES institutional objectives to deliver high-quality services at lower cost, making it an attractive and reliable partner for Member and Collaborating States and development agencies to invest in.

Building on partnerships with World Meteorological Organization (WMO), European Centre for Medium-Range Weather Forecasts (ECMWF), The World Bank, United Nations Environment Programme (UNEP)-accredited Green Climate Fund (GCF) and Systemic Observation Financing Facility (SOFF), UN Economic and Social Commission for Asia and the Pacific (ESCAP), United States Agency for International Development (USAID), and other development partners, RIMES has been expanding its service delivery in order to provide a more comprehensive and integrated suite of services for NMHSs, line ministries/agencies, and community end-users. This suite of services includes enhancing observation networks, modelling and forecasting, information and communication technology (ICT) products and services (cloud services, software systems and tools for NMHS and sectoral users), data sharing, knowledge management, technology transfer, technical support, capacity building, and expert advisory services.

RIMES was established on 30 April 2009 and registered with the United Nations (UN) under Article 102 of the UN Charter on 1 July 2009 as an international and intergovernmental institution. RIMES is owned and managed by its Member States for the provision of need-based early warning services for enhanced preparedness for, responses to, and mitigation of natural hazards.

Its mission is to build capacities of NMHSs and related technical agencies to provide actionable warning information to user institutions down to the last mile toward its vision of forearmed, forewarned, and resilient communities. Its core values are integrity and accountability (characteristic of government), innovation and efficiency (characteristic of the private sector); and commitment to and passion for societal welfare (characteristic of a non-government organization (NGO)).

Meanwhile, RIMES Institutional Objectives are to:

- a) Facilitate the establishment and maintenance of core regional observing and monitoring networks and ensure data availability for early warning purposes.
- b) Provide earthquake, tsunami, and ocean services, within the framework of the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC/UNESCO).
- c) Support NMHSs in providing localized hydro-meteorological risk information, within the framework of the WMO.
- d) Enhance warning response capacities at national, sub-national, and local levels, within national early warning frameworks.

RIMES is governed by a Council, composed of heads of NMHSs/national scientific and technical agencies that generate multi-hazard early warning information, empowered to make policy decisions on behalf of governments concerning regional early warning arrangements. A Secretariat carries out the decisions and tasks assigned by the Council and provides support to the Program Unit in managing the regional early warning facility and implementing programs and activities. The Program Unit has financial and administrative autonomy, through powers delegated by the RIMES Council. Currently, the Government of India serves as Council Chair, and Maldives as Secretariat. The RIMES Ministerial Conference, established in 2012, provides policy and resource mobilization support. RIMES' governance policy is strongly aligned with its core values and vision, and loosely coupled to create, innovate, and ensure creativity and efficiency through decentralization across the institution.

1.4 RIMES' journey since its inception

Following its inception, RIMES focused on:

- Identifying Member and Collaborating States' basic early warning needs and requirements, with priority capacity development activities, projects, and programs articulated in five-year Master Plans, prepared by the RIMES Council.
- Creating institutional mechanisms for mobilizing resources, which include Member State voluntary contributions to support the provision of core services, a program fund from additional contributions of able Member States for assisting low-capacity Member States, catalytic fund from RIMES reserve fund for developing new tools and initiating programs in low-capacity Member States that are not yet covered by donor-funded projects, and tapping Member States' technical capacities, supplementing donor assistance to low-capacity Member States and capitalizing on regional and national initiatives by UN agencies and international and non-government organizations;
- Forging partnerships with global and regional centers of excellence for access to new forecast technologies, tools, and products to support RIMES' delivery of products and services that are tailored for each Member State.
- Building NMHS capacities to meet basic early warning needs and requirements and to engage with users for integrating forecasts and early warning information in planning and decision-making processes.
- Developing intermediary user/institutional capacities to translate hazard-specific forecast information into sectoral impact forecasts for advisory generation and to engage with end-users to build capacity to access forecasts and warnings, understand and internalize risks, and act to manage/reduce risks.
- Monitoring and evaluation of capacity building initiatives, and reassessments to identify residual/further needs; and
- Facilitating institutional ownership of capacity building initiatives and sustainability of their outcomes to contribute to each Member State's climate- and disaster-resilient development efforts.

RIMES, with World Bank-supported SAHF and CARE Projects, has undertaken the following improvements since 2021:

- *Strengthening of financial management, procurement, and human resource management processes.* Policies, regulations, and manuals have been updated through KPMG and other consulting services and World Bank teams to align it with Global Standards . RIMES significantly improved its management systems from the baseline of 2019. However improvements will continue to improve its effort to meet Global standards by obtaining ISO Certifications
- *Putting in place decentralized system for many decision-making processes.* SOPs for decision-making processes of country offices and project management teams have been established.
- *Expansion of technical capacities* to provide DSS tools in new sectors such as Planning, Transport, Public Health, Livestock, etc.
- *Upgrading and linking of National DSS and knowledge hubs to regional level* such as Regional Data Analytics System (RDAS), Regional Non-GTS Data Exchange System (DataEx), and SAHF Knowledge Hub.
- *Institutionalization of Regional Mechanisms* such SAHF, SAHF EC, SAHF WGs, and Forecasters Forum.

The partnership between WMO and RIMES was further strengthened with the signing of a new Memorandum of Understanding (MoU) in 2022, replacing the earlier MoU signed in 2010. This renewed collaboration reflects recognition of RIMES' demonstrated role as an interface institution between NMHSs and climate-sensitive sectoral institutions.

Under the framework of the 2022 MoU, WMO and RIMES jointly developed and adopted a Joint Strategy and Action Plan (JASP), a unique instrument that fosters synergy between the two organizations. The JASP is provided in Annex 2.

1.5 RIMES unique characteristics

Member and Collaborating States, sectoral agencies, development partners, and other stakeholders acknowledge RIMES' institutional features:

- As an Intergovernmental body owned and managed by its Member States, RIMES is led by a Council comprised of heads of National Meteorological and Hydrological Services (NMHSs) as well as national scientific and technical agencies.
- RIMES has a unique function in its ability to convene its members to act together to solve problems, develop programs, and support activities common to all members. The South Asia Hydromet Forum (SAHF) is an example. It is a regional subset of the Council, currently led by India and Bhutan on behalf of nine RIMES Council member countries². It functions through a secretariat that is a subset of the RIMES Program Directorate and secretariat. This ensures that SAHF is a constituent body of RIMES.
- RIMES plays an important role as a backstop for its weakest member countries by providing services that underpin their operations and creates an economy of scale for all members by creating a common set of products and services that each can use. This ensures the sustainability of the services introduced and installed in low-capacity country

The stakeholders also recognize RIMES' comparative advantage because of its key attributes:

- RIMES ownership by the countries
- Access to country data
- Access to advanced technologies from global and regional partners through trusted partnerships
- In-house technical capacity, comparable to competing external consulting firms/experts
- Track record of service delivery through cutting-edge forecast and information technologies
- Sustaining project outcomes after projects end through backup support and upgrading of systems as and when the technological regime changes
- Cost-effective service delivery in terms of both quality and value for money, by leveraging its regional DSSs architecture and customizing it local client user needs at a cost of up to one-fourth of comparable market rates

1.6 RIMES Future Directions:

Transformation of RIMES as Integrator and Innovation Catalyst

Climate-related risks and other natural hazard threats are increasing in both complexity and magnitude. Better understanding of these risks/threats and more innovative solutions are necessary. However, RIMES faces shortage of hybrid professionals to make use of to meet demands of countries

To meet these challenges, RIMES' future directions will shift from solely "creating" to "creating and finding" solutions. In this way, the lengthy process of 'creating solutions'. These can be achieved by pooling and integrating relevant expertise, data, systems/solutions, and technologies through partnerships. RIMES will assume the role of an **integrator** – building partnerships, coordinating, and blending expertise, data, and systems to co-develop or co-produce solutions for providing enhanced support to its member countries. This necessitates RIMES to serve as a catalyst for innovation on behalf of its member countries.

By finding, creating, or co-designing solutions through partnerships, RIMES can guarantee that the

² SAHF Countries : Afghanistan, Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, Pakistan, and Sri Lanka.

solutions are either sustainable, fit-for-purpose, or best-in-kind. RIMES will build on and expand its relevant skills/capabilities as integrator and innovation catalyst following the realignment of policies and practices.

RIMES as the “INTEGRATOR” in Institutional Partnerships

As an “integrator,” RIMES will strategically leverage networks, expertise, and technologies from various sources through institutional partnerships. These partnerships will be cultivated and expanded based on the following key criteria:

- Trust-Based and Relational: Partnerships will be built on trust based strong relational instructional partnerships as apposed ad hoc project transactional based partnerships
- Long-Term Commitment: RIMES will seek enduring partnerships that can evolve over long time to address new challenges and opportunities.
- Mutually Beneficial: Collaborations will be designed to ensure that both RIMES and its partners achieve significant and tangible benefits.
- Cost-Effective: Partnerships will focus on maximizing value while minimizing costs.
- Scalability: Collaborations will be structured to allow for growth and adaptation, ensuring they can scale to meet increasing demands.
- Sustainability: All partnerships will be aligned with long-term sustainability goals, ensuring the longevity and resilience of initiatives.
- Relevance to Member Countries: RIMES will prioritize partnerships that directly address the varying capacities, challenges, and needs of its member countries.

Nurturing Private Sector Entities

RIMES will proactively establish and nurture private sector entities that align with its unique institutional ethos, particularly emphasizing relational partnerships for societal welfare. By investing in and collaborating with startups, RIMES aims to instill its culture and values in these entities.

Strategic Objective: By following these strategies and management instruments, RIMES and its private sector partners can effectively leverage their strengths, work toward common objectives, and avoid conflicts of interest. This joint approach not only enhances the capacity of both parties but also drives innovation, sustainability, and resilience in the climate and disaster risk management sectors across RIMES member countries.

Strengthening RIMES Operations

RIMES will enhance its capacity for finance, procurement, HR, project management, and information security systems in compliance with international standards, such as International Financial Reporting Standards (IFRS), Chartered Institute of Procurement and Supplies (CIPS), Project Management Body of Knowledge (PMBOK), Prince2 for project management, and relevant international certifications, including ISO 9001 and ISO 27001 for quality assurance and information security, respectively

Decentralized RIMES Operations

RIMES will build on the development and operational experience of the RIMES Bangladesh Country Office to further decentralize its operations across member countries. The goal is to establish a network of country offices that are fully equipped to meet the unique demands and challenges of their respective regions. While these offices have evolved with diverse capacities, they must also align with RIMES’ overarching objective of “Common but Differentiated Service Delivery”.

This “Strongly Aligned but Loosely Coupled” institutional practice will enable RIMES to address the specific needs of countries from the Pacific to the West Coast of Africa, and from the South to the North equatorial zones and at the same time adhere to Financial, HR management practices that aligns with international standards of transparency, ethics and innovation and creativity. To achieve this, RIMES will work on a plan of identifying relevant processes and tasks and appropriate authority limits for each country office, depending on the size and risks involved.

Strategic Expansion of Country Offices

RIMES will develop country offices in regions with varying governance structures, socio-economic conditions, cultural contexts, and climate/hazard risk profiles. These offices will serve as critical nodes in RIMES’ global network, leveraging their unique regional expertise and resources to enhance service delivery. However, the diversity of these environments also presents challenges, particularly in ensuring consistent service quality and maintaining alignment with RIMES’ strategic goals.

Mitigating Risks and Ensuring Continuity

One of the key risks associated with decentralized operations is the potential for business disruptions due to political and other catastrophic events which could threaten the continuity of RIMES’ 24/7 operations. To mitigate this risk, RIMES will establish alternate contingency nodes in strategically selected regions. These nodes will ensure that critical operations continue uninterrupted, even in the face of local disruptions.

Furthermore, many country offices rely heavily on donor funding, which may not be sustainable in the long-term without dedicated national budget commitments. RIMES will address this risk by developing financial strategies that include securing national budget allocations commensurate with the value of services provided by these offices. This will involve engaging with national governments to highlight the critical importance of sustained funding for RIMES operations.

Establishing Regional Centers for Enhanced Coordination

To strengthen the decentralized model and ensure seamless coordination across its global network, RIMES will establish at least two Regional Centers, each with a physical location for its Regional Headquarters. One Regional Center will be located in the Middle East and another in the Mid-West, hosted by resourceful Member States with the capacity to provide dedicated national budgets and technical resource commitments.

These Regional Centers will cater to the needs of a cluster of neighboring countries, serving as hubs for regional coordination, capacity building, and resource sharing. They will also play a key role in supporting country offices by providing strategic guidance, operational support, and technical expertise. The Regional Centers will contribute to and leverage resources from the country offices, creating a robust and resilient network that can adapt to evolving challenges and opportunities

Role of the Bangkok Central Office

The Bangkok Central Office will continue to play a strategic role in policy formulation, operational support, and coordination across the RIMES network. It will act as the central hub, connecting country offices and Regional Centers, and ensuring that all operations align with RIMES’ core principles and strategic objectives by keeping its “Strongly Aligned but Loosely Coupled” institutional model.

In line with the principle of “Unity in Diversity,” the Bangkok Central Office will foster a true federation

of country and regional offices, each contributing its unique strengths to the overall mission of RIMES. This federated approach will enrich RIMES by integrating diverse perspectives, expertise, and resources from across its global network.

Enhancing Integration and Collaboration

To further enhance the effectiveness of decentralized operations, RIMES will implement the following strategies:

- **Standardized Operating Procedures (SOPs):** RIMES will develop and implement SOPs that standardize key processes across all country and regional offices. These SOPs will ensure consistency in service delivery while allowing for flexibility to accommodate regional differences.
- **Capacity Building Programs:** RIMES will invest in continuous capacity building for staff across all offices, focusing on areas such as project management, financial management, and technical skills. This will ensure that all offices have the expertise required to meet RIMES' standards of excellence.
- **Integrated Information Systems:** RIMES will deploy integrated information systems that connect all offices, enabling real-time data sharing, collaboration, and decision-making. These systems will enhance the efficiency and responsiveness of RIMES' operations.
- **Regional Collaboration Initiatives:** RIMES will launch regional collaboration initiatives that encourage cross-border cooperation among country offices. These initiatives will foster knowledge sharing, joint project development, and coordinated responses to regional challenges.

By decentralizing its operations and establishing Regional Centers, RIMES will enhance its ability to deliver tailored services that meet the diverse needs of its member countries. This decentralized approach, supported by the Bangkok Central Office, will create a resilient, scalable, and sustainable operational model that strengthens RIMES' global impact.

2. INSTITUTIONAL DEVELOPMENT PLAN

2.1 Goal

RIMES aims to be a regional center of excellence in building end-to-end climate information and early warning system services and capacities for enhanced planning, preparedness, and decision-making among target communities and authorities, with an overarching goal to support climate- and disaster-resilient development in RIMES Member and Collaborating States.

2.2 Objectives

The IDP's specific objectives are:

1. By 2025, RIMES enhances its capacity on finance, procurement, HR, project management, and information security systems in compliance with international standards, such as International Financial Reporting Standards (IFRS), Chartered Institute of Procurement and Supplies (CIPS), and prepare for international certifications, including ISO 9001 and ISO 27001 for quality assurance and information security respectively, with concomitant restructuring of RIMES.
2. Within 2024-2025, RIMES, as SAHF Secretariat, will implement SAHF priorities as per SAHF Executive Council (EC) Resolutions and SAHF IV Declarations
 - By 2025, establish SAHF/CARE-supported Regional Data Center, Knowledge Hub, and RDAS. RIMES provides robust services to hydrometeorological and sectoral agencies for data hosting and analysis toward operationalizing Impact-

Based Forecasting (IBF)

- By 2025, under the South Asia Hydromet Forum (SAHF) umbrella, RIMES establishes institutional mechanism through binding instruments such as MoUs, in select Asian countries, that integrates NMHS with user stakeholder institutions for sharing of data and generating Impact-Based Forecasts across the five pillars of the climate information and early warning system services value chain. The RIMES Country offices and Regional Centers will facilitate instructional process and capacitate them at the National Level.
- 3. In parallel, by end of 2026, RIMES shall shift from “Create Solution” to “Create and Find Solution” and serve as “INTEGRATOR” to leverage networks, expertise, and technologies available from different sources through institutional partnerships based on trust-based relational as opposed to transactional relationships.
- 4. By end of 2026, sustainable funding models have been explored to increase RIMES’ financial sustainability through financial instruments such as “Trust Fund” and “public and private partnerships.”
- 5. By end of 2027, RIMES replicate its SAHF-driven success in South Asia to other sub-region in partnership with different global, regional, and national institutional mechanisms
- 6. By end of 2030, RIMES supports the efficient implementation of climate information and early warning system services and actions in Member and Collaborating States through advanced business management practices and established funding resources.

2.3 IDP Phased Implementation

The IDP will be implemented in 3 phases:

1. **Phase 1 (July 2024 - December 2025)** is foundation-setting and capacity development, focusing on RIMES Program Unit restructuring, strengthening of financial, procurement, project management, information security systems, and regional data analytics capabilities. Phase 1 is divided into 3 sub-phases as detailed below:

Phase 1-A will be mainly focused on:

- Strengthening of Financial Systems
- Strengthening of Procurement Systems
- Strengthening of Project Management Systems
- Strengthening of Information, Communication, and Knowledge Management Systems
- Strengthening of Monitoring and Evaluation Systems
- Strengthening of Information Security Systems
- RIMES shall reorganize its organizational structure to sustain reforms

Phase 1-B is for establishing:

- SAHF/CARE-supported Regional Data Center, Knowledge Hub, and RDAS.
- RIMES’ Regional Support Services to hydrometeorological and sectoral agencies by data hosting and analysis toward operationalizing Impact-Based Forecasting (IBF) through SAHF

Phase 1-C will focus on the following:

- Establishing institutional mechanisms, i.e., through MoUs, that integrate NMHS with user stakeholder institutions for sharing of data and participatory generation of Impact-Based Forecasts across the five pillars of the climate information and early warning system services value chain.
- Initiating the shift from “Create Solution” to “Create and Find Solution” and taking in the role as “INTEGRATOR” to leverage networks, expertise, and technologies available from

different sources through institutional partnerships .

- Exploring funding models to increase RIMES' financial sustainability through financial instruments such as "Trust Fund" and "public and private partnerships".

2. **Phase 2 (2026 -2027)** will build on realigned policies and processes and enhanced capacities at the regional level for RIMES to demonstrate its role as "Integrator," leveraging networks, expertise, and technologies available from different sources through institutional partnerships that are trust-based, relational, and long-term, to enhancing service delivery and support at the regional and country levels. RIMES will also replicate its SAHF-driven success in South Asia to other subregion while demonstrating its sustainable financial mechanisms/models.
3. **Phase 3 (2027-2030)** is for sustainability and continuous improvement, focusing on evaluation and enhancement of the organizational structure to ensure that it remains aligned with operational demands; regular assessment of operational systems to make sure that they remain efficient; exploring new technologies for enhanced service delivery; and institutionalizing sustainable funding models.

While Phase 1 implementation strategies have been detailed out in succeeding sections, detailed implementation for Phase 2 and Phase 3 will be evolved after a review of implementation experiences in early 2026.

Resources for financing IDP implementation will be a mix of internal resources from Member State contributions and World Bank-supported Climate Adaptation and Resilience (CARE) for South Asia project for accomplishing phase 1.

3. PHASE 1-A IMPLEMENTATION STRATEGIES

3.1 Finance Management

Strategies for strengthening RIMES' financial management system include:

Enhancement of RIMES Finance and Accounting Policy and Procedures. RIMES Finance and Accounting Manual provides a comprehensive basis for RIMES financial management and accounting practices. It contains thorough instructions for planning and budgeting, fund flow and disbursement mechanisms, accounting rules, bookkeeping, internal controls, asset management, banking arrangements, payment procedures, and financial reporting. The existing Finance and Accounting Policy and Procedures need to be revised to ensure that they are in line with international standards and best practices, with focus on:

- Transitioning from a modified cash basis to a full accrual basis of accounting, corresponding with International Financial Reporting Standards (IFRS), to enhance transparency and comparability.
- Enhancing risk assessment and control procedure, including fraud prevention, audit trails, and segregation of duties to improve governance and accountability.
- Improving asset management by implementing thorough procedures for acquisition, disposal, valuation, and impairment evaluations.
- Providing more financial analysis criteria, such as ratios and key performance indicators (KPIs), to improve financial decision-making and strategic planning.
- Developing a continuous training program for finance staff on accounting standards, financial management best practices, and financial software usage to improve the finance team capabilities.
- Expanding sections on external audits, including the selection process for auditors, audit frequency, and follow-up on audit recommendations, to improve financial oversight.
- Establishing the internal audit process and conducting internal audit by focusing on high

risk areas within key processes such as financial management, procurement management, project management, assets safeguarding and IT management;

- Considering recruitment of CA/CPA as the Chief Finance Officer to strengthen the Finance Management function and direction to international standards.

System and process improvement. An advanced financial management software that complements and integrates with the existing systems could be implemented, to improve accounting, budgeting, and reporting capabilities. Seamless integration with human resource (HR) and procurement systems needs to be ensured, to result in a unified and efficient management platform that follows international best practices. Specifically:

- Fully leverage SunSystem for accounting, budgeting, and financial reporting. Identify underused modules or features that could increase efficiency.
- Integrate advanced financial, HR, procurement management software that complements SunSystem. Look for tools that improve budgeting, financial reporting, and analytics capabilities, ensuring they can smoothly share data with SunSystem.
- Automate routine financial processes to reduce manual errors and free up staff for more important responsibilities. Implement workflow tools to streamline approval processes and financial operations.
- Use software with real-time financial data and analytics capabilities. This will help in making informed decisions, forecasting, and strategic planning.
- Consider software for Country Offices for financial management, reporting, and audit of local projects, linked to RIMES' central financial management process.
- Ensure comprehensive training and ongoing support are available for staff to adapt to new systems and processes effectively.

Improvement of RIMES' banking arrangements. Strategies to fill gaps in RIMES' existing banking arrangements are:

- Expansion of authorized signatories. Reliance on a single authorized signatory, currently the Director of RIMES Program Unit, for normal operations could lead to risks in operational efficiency and security. This concentration of authority might limit RIMES administration's ability to quickly respond to financial needs or emergencies and could be a single point of failure. Introducing additional authorized signatories for certain transactions or thresholds could reduce these risks and increase operational flexibility and strengthen internal controls by dividing financial responsibilities.
- Streamlining project account management. While project-dedicated bank accounts offer advantages in monitoring and reporting, they, however, introduce an increased degree of complication to bank account administration, which can cause difficulties in reconciliation. Implementing an integrated SunSystem financial management system that is capable of efficiently handling multiple accounts could reduce workload and improve real-time visibility of a project's financial situation.
- Utilizing financial technology. Utilizing financial technology. Conducting monthly bank reconciliations within fifteen days from the month's end. Implementing financial technology for bank reconciliations can automate and optimize the process, guaranteeing promptness and precision, while minimizing staff manual workload
- Currency risk management. Converting currencies other than the primary currency (US Dollars) and acknowledging gains or losses from exchange rates create a financial risk, particularly in unstable currency markets. Implementing a structured currency risk management plan, including the use of hedging instruments, or maintaining currency balances, may protect RIMES' financial position from the negative effects of currency fluctuations.
- Training and improved awareness. Conducting regular training sessions for staff engaged in financial management and operations could enhance their comprehension of the significance of segregating duties, the complex nature of handling different currencies, and how to make use of financial technologies for bank reconciliations.

- Regular review of banking arrangements. Periodic reviews of banking arrangements can identify areas for improvement, adapt to changes in the financial condition, and ensure that RIMES' banking practices remain aligned with best practices and regulatory requirements.

Implementation of the COSO Framework as part of the internal audit function at RIMES. The COSO framework is built around five interconnected components that RIMES should consider in the context of its specific operational challenges:

- Establishing a foundation for internal control, which includes the organization's culture, ethics, and structure.
- Identifying and analyzing risks to achieving objectives, which is crucial for RIMES, given its diverse operations and external partnerships.
- Actions that ensure management directives to mitigate risks to achieving objectives are carried out.
- Ensuring relevant information is identified, captured, and communicated in a form and timeframe that enables people to carry out their responsibilities.
- Ongoing evaluations to ascertain whether each component of internal control is present and functioning.

Given RIMES' operational characteristics and constraints, a tailored approach to implementing the COSO framework is necessary:

- Start by assessing and leveraging existing control mechanisms and governance structures. Even with low capacity, there might be foundational elements in place that align with COSO's principles.
- An incremental approach should be adopted, focusing on the most critical areas first, like starting with the control environment and risk assessment components.
- Develop a comprehensive capacity-building program for staff across all levels and locations to ensure understanding and buy-in for the COSO framework. This includes training on risk management, control activities, and the importance of information and communication.
- Leverage technology to overcome geographical dispersion. Implement centralized systems for risk management and internal control that can be accessed by country offices, improving consistency and efficiency.
- Given the collaboration with public sector entities, establish communication and information-sharing protocols that align with the COSO framework's principles. This will help manage risks arising from these partnerships effectively.
- Conduct a tailored risk assessment that considers RIMES' unique operational context, including its geographical dispersion, centralized payment system, and external partnerships.
- Establish mechanisms for continuous monitoring of the implementation process, leveraging feedback from internal audits and other evaluations to refine and improve internal controls over time.

Staff training and development. Training program for finance and non-finance staff could be implemented to enhance their understanding of international finance management approaches. The program could include:

For finance staff:

- Comprehensive courses on IFRS and other relevant global standards.
- Advanced courses on financial analysis, strategic financial planning, international tax laws, and compliance requirements.
- Training on the use of advanced financial management software, including capability that support best practices in accounting, budgeting, and reporting.

For both finance and non-finance staff:

- Workshops focusing on risk assessment, mitigation strategies, and creation of risk management plans.

For non-finance staff:

- Development and delivery of training modules on the basics of financial management, budgeting, and project finance to empower non-finance staff to understand financial implications of their decisions.

External support and collaboration. RIMES could engage with international finance management experts and institutions to provide advice and benchmark against best practices. This shall include:

- Collaboration with international finance institutions for guidance on best practices, policy advice, and technical assistance to provide useful information about global standards and innovative financial management practices.
- Working with finance management experts and consultants who specialize in international standards compliance, such as IFRS, to provide advice, training, and recommendations to fill gaps in current practices. A specialist or consultant could assist in designing RIMES' strategic financial plan, budgeting and reporting.

Re-designing Chart of Account (COA) to align with RIMES' strategic financial

For both finance and non-finance staff: workshops focusing on risk assessment, mitigation strategies, and creation of risk management plans

For non-finance staff: development and delivery of training modules on the basics of financial management, budgeting, and project finance to empower non-finance staff to understand financial implications of their decisions.

External support and collaboration. RIMES could engage with international finance management experts and institutions to provide advice and benchmark against best practices. This shall include:

- Collaboration with international finance institutions for guidance on best practices, policy advice, and technical assistance to provide useful information about global standards and innovative financial management practices.
- Working with finance management experts and consultants who specialize in international standards compliance, such as IFRS, to provide advice, training, and recommendations to fill gaps in current practices. A specialist or consultant could assist in:
 - Designing RIMES' strategic financial plan, budgeting and reporting
 - Re-design of Chart of Account (COA) to align with RIMES' strategic financial plan
 - Implementing a budgeting ledger in alignment with COA and set up in the SunSystem
- Joining international finance and accounting associations to provide access to a wealth of resources, including standards updates, training materials, and networking opportunities.
- Utilizing external auditors with international experience to review and validate financial processes against global standards and enhance credibility and ensure compliance.
- Engaging a support agency in developing the financial report in automation from the SunSystem as required in the strategic financial plan, and provide full support on function setup, system configuration and determine workflow of SunSystem where user dimensions are designed within module or function delegation.
- Obtain ISO 9001 and ISO 27001

3.2 Human Resource Management

RIMES already possesses a comprehensive HR policy manual that includes:

- Staff regulations
- Personnel and administration manual
- Payroll management policy
- Travel policy and procedures

These policies cover essential HR functions, including recruitment and selection, staff relations and conduct, compensation and benefits, work hours, leave and flexibility, health and safety, training and development, and equal opportunities and diversity. The objective for human resources remains to maintain a consistent, fair, and legally compliant approach to managing staff, with an emphasis on adapting to the evolving needs of the organization and its workforce.

HR policy review and enhancement. Given RIMES' commitment to keeping its policies current and relevant, the HR Management Plan includes a structured review process that aligns with regulatory changes, operational needs, and stakeholder feedback. This process is managed by a Policy Review Committee, which plays a crucial role in ensuring that RIMES' HR policies remain at the forefront of best practices and legal compliance.

- *Policy Review Committee.* The committee includes members from relevant departments, ensuring a wide range of perspectives and expertise in evaluating and updating policies.
- *Review cycle.* Policies are reviewed every three years, or as necessitated by changes in regulations, significant events, or feedback from staff members and stakeholders. This proactive approach allows RIMES to adapt quickly to external changes and internal developments.
- *Evaluation criteria.* The committee evaluates existing policies for their relevance, effectiveness, and compliance with current laws and best practices. This includes assessing policies against RIMES' strategic goals, operational efficiency, and overall well-being of its workforce.
- *Update and approval.* Proposed policy updates are developed by the committee, with a focus on enhancing clarity, ensuring fairness, and promoting a positive work environment. These updates are then presented to the RIMES Director for approval, ensuring that changes are aligned with the organization's vision and values.
- *Communication and implementation.* Once approved, policy updates are communicated to all staff members through appropriate channels. Training sessions, workshops, or informational meetings may be organized to ensure staff members understand the changes and how they apply to their roles and responsibilities.

The detailed plan for enhancing HR performance is provided in [Annex 2 B](#).

3.3 Strengthening Procurement Processes

Enhancement and implementation of RIMES Procurement Manual. The Procurement Manual provides standard procedures to guide the Procurement Team in ensuring a transparent, accountable, impartial, and fair procurement process as RIMES handles increasingly complex procurement. The summarized final procurement manual shall be published in the RIMES intranet and website to make it accessible to all RIMES staff and the public.

Training of RIMES staff on procurement policy and procedures. Training materials shall be prepared and delivered during the training for all RIMES staff. Where possible, a tutorial video presentation shall be created for use in onboarding new RIMES staff members.

Development and implementation of a Procurement and Contract Management Module. RIMES' proposed integrated project management system/tool (mentioned in section 2.4.3 and detailed in [Annex 4](#)) shall automate procurement and contract management for a more efficient procurement process (Figure 2).

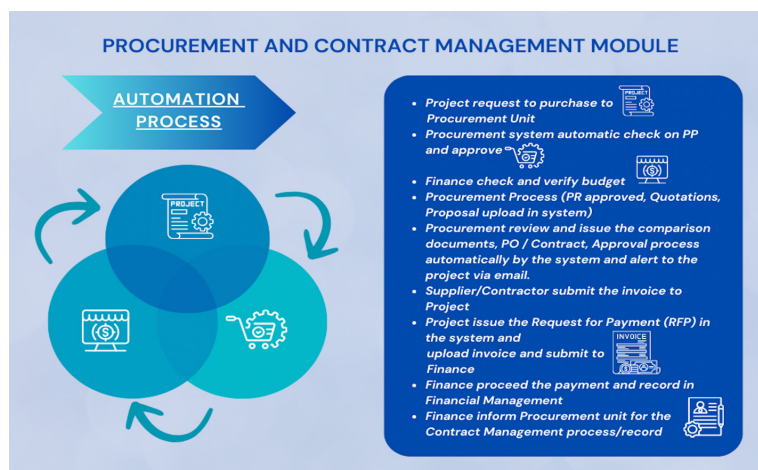


Figure 2. Use of the procurement and contract management module in the procurement process

3.4 Strengthening Project Management

Adoption of PMI's project management framework. RIMES collaborates with the public and private sectors, including governments and local communities, to develop and implement early warning/climate systems. There are numerous projects that RIMES is involved in, funded by several donors in its member countries. The number of programs and projects are increasing as well as the volume of work managed by the project managers at RIMES. A structured approach aligned with international standards such as Project Management Institute's (PMI) Project Management Body of Knowledge (PMBOK) framework is required for RIMES to effectively manage projects and teams.

Drawing on real-world case studies, practical insights, and lessons learned from the frontlines of disaster response and risk reduction, the project management framework aims to equip project managers with the knowledge and tools necessary RIMES will implement a comprehensive project management program, linked with ProMISe, to enhance institutional development and capacity building. The details of the project management plan are laid out in [Annex 3](#) and the design of the integrated project management tool, ProMISe, is shown in [Annex 4](#).

3.5 Strengthening of Information, Communication and Knowledge Management

Collaborative sharing of knowledge among project managers is vital for ensuring the successful implementation and sustained competitive advantage of RIMES projects. Thus, knowledge, as a core resource, should be managed in a more systematic and effective way. Experiences gained from individual projects, when properly documented, communicated, and made available across the various projects, provide opportunities for other project managers to learn and optimize their project performance, and, more importantly, for RIMES, to preserve institutional memory, even when key project staff departs, either by turnover or retirement.

RIMES employs various mechanisms for communicating lessons learned from previous experiences to other project managers through mentoring, informal discussions with colleagues, project review meetings, and reporting. Official documentation by project managers is generally accomplished at project close-out to convey insights on the challenges faced and successful strategies employed during project implementation, and to provide recommendations for better management of projects, should similar problems occur in the future. However, the long interval of time it takes to document these lessons is prone to insufficient or inaccurate recording of information, as memory fades over time. Further, the lack of a structured system to capture, document, store, share and retrieve information, inhibits the proper documentation, sharing of, and access to experiences and knowledge among project managers.

To ensure effective and timely sharing of experiences, lessons learned, and best practices, RIMES will establish a system which will foster diversities of operations and also collaboration and open communication among various staff, encourage a culture of learning through knowledge transfer, facilitate the smooth and effective collection and management of information and lessons learned, and ensure retention of crucial institutional experiences and knowledge for future use through communication tools like 'Slack' that can enhance work productivity and sharing of learning. The details of the proposed ICKM plan are provided in [Annex 5](#).

3.6 Strengthening of Monitoring and Evaluation Systems

Organizational monitoring and evaluation (M&E) hold a key role in fostering integration among diverse program components. This involves developing participatory program planning, monitoring, and evaluation systems, engaging in participatory research, and conducting capacity-building initiatives for the staff and partner organizations in participatory M&E. The current M&E functions at RIMES include continuous quality assurance of the program approach and interventions through internal and external monitoring missions, field visits, data collection, program reviews, and case studies. M&E activities at RIMES are currently led by each program or project, where project staff are responsible for undertaking project-based M&E. A logical framework analysis approach is employed to articulate program outcomes, objectives, results, and inputs. This multifaceted approach ensures the effectiveness, efficiency, and relevance of RIMES' programs and interventions.

Separate, project-led M&E, however, has drawbacks in terms of inconsistent data collection, limited learning opportunities, difficulty in performance measurement and strategic planning, lack of accountability across the organization, risk of duplication, reporting challenges, and concerns about sustainability. To address this gap, an M&E plan is detailed in [Annex 6](#).

3.7 Strengthening of Information Security Systems

Data security. Strategies that RIMES could employ to ensure data security are:

- Implementing robust encryption protocols for safeguarding data at rest and in transit to ensure that information is unreadable to unauthorized individuals, protecting it from potential cyber threats. Regular updates and patches to these encryption methods are crucial to guard against emerging vulnerabilities.
- Implementing access control mechanisms, which involve implementing strong authentication processes and ensuring that users have access only to the data necessary for their role. Role-based access control (RBAC) is a commonly used strategy, helping to minimize the risk of internal threats and data misuse.
- Network security, involving firewalls, intrusion detection and prevention systems, and secure network architectures, for detecting and mitigating potential attacks and unauthorized access attempts. Regular data backups and disaster recovery plans ensure data integrity and availability and involves the creation of secure and redundant copies of data. For sector-specific DSSs, each sector's unique data security requirements need to be considered; for example, specific safeguards for patient data for the health sector, and securing data with significant economic or strategic value for the agriculture sector.
- Conduct regular vulnerability assessments and penetration testing to identify potential vulnerabilities and ensure that systems are resilient against evolving cyber threats. This includes fostering a culture of security awareness among users, which involves education and training on best practices in data security, recognizing phishing attempts, and reporting suspicious activities.
- Implement process for software security audit, involving thorough examination of the application to identify any potential vulnerabilities that could lead to data breaches or security

loopholes. This can include checking for leaked shared secret, insecure data storage, and vulnerabilities in the code.

- Apply Web Application Firewall or WAF as a security measure that can help protect the application from attacks by filtering and monitoring HTTP traffic between the web application and the internet. WAF helps to prevent various types of attacks like SQL injection, cross-site scripting (XSS), and other common web exploits.
- Implement Extended Detection and Response (XDR) for unified cybersecurity threat protection, centralized threat management, improved visibility & contextual analysis of security threats. Implementing XDR will strengthen data security of RIMES by centralizing security operations, streamlining management of complex environments, leading to an efficient cybersecurity management.

Data-sharing

Data is the foundation for developing new applications and services. Shared data can be leveraged to create innovative products, enhance existing systems, or develop new features that cater to users' specific needs or requirements. Following are key considerations in data-sharing:

- ***Data ownership and sovereignty.*** Data ownership and sovereignty vary across countries, shaped by diverse legal frameworks, cultural norms, economic considerations, and technological capabilities, with interplay of national interests, policy priorities, and international commitments. They are driven by various motivations, including citizen privacy, national security, economic competitiveness, and control over digital assets. In developing countries, data ownership and sovereignty dynamics, especially in sectors like health and agriculture, involve balancing national control with the need for international collaboration. The push for digitization and open data to drive development faces challenges in infrastructure, governance, and reliance on foreign technology, which raises concerns about data sovereignty and local autonomy.

RIMES, in its operations across diverse countries and sectors, must navigate a complex landscape of data ownership and sovereignty rules. Data collection, usage, storage, and sharing require careful negotiation and respect for each nation's legal framework and policy objectives. This variance requires RIMES to establish clear agreements and understandings with NMHSs and relevant authorities in each country and ensure that its data practices align with international data protection standards, like the General Data Protection Regulation (GDPR), while respecting each country's data protection laws. RIMES may also consider certification for ISO 27001, an international information security standard. RIMES should also continuously dialogue with local authorities, sectoral experts, and legal advisors to stay updated on evolving data regulations. Establishing robust data governance frameworks that are adaptable to different legal environments, investing in secure data infrastructure that respects data sovereignty concerns, and prioritizing transparency in data practices are crucial steps.

- Ethical use of data. Use of data involves the following fundamental principles:
 - Respect of privacy is paramount in handling personal or sensitive data, and involves implementing robust data anonymization techniques and ensuring informed consent where personal data is collected.
 - Fairness and non-discrimination are important in sectors like healthcare or disaster response, where biased data or algorithms could lead to unequal treatment or resource allocation. Regular audits and reviews of algorithms and data sources can help in identifying and mitigating such biases
 - Transparency in collecting, processing, and using data is essential for building trust and facilitating informed decision-making among stakeholders. DSS users need to clearly understand what data are used and what algorithms or models are employed.
 - Accountability in data handling processes, which includes clear data governance

policies, responsibility for data accuracy and security, and channels for addressing any concerns or grievances related to data usage. RIMES must also be cognizant of the countries' cultural and societal norms, which involves respecting local views and practices regarding data, and ensuring that data use aligns with different communities' cultural and ethical expectations.

Industry trends

Advancements in science and technology provide opportunities for RIMES to address the increasing and expanding demands of its Member and Collaborating States. Below are new technologies and trends that RIMES can take advantage of to maximize opportunities:

- Optimizing and maximizing the collection, storage, and utilization of data in NMHSs and sectoral government systems to steadily build data resources that are ready for sub-national, national, and global analysis.
- Optimizing big data analysis to leverage data from different institutions and build databases that are continually enriched to support independent and collaborative analysis.
- Advancing the use of AI/ML and other technologies in data retrieval and analysis (pattern recognition algorithms, etc.) and predictive capacities.
- Advancing RIMES regional centers for AI enhanced/ AI generated customized weather/ climate impact advisories and their application.
- Modular and integrated approach towards climate change adaptation.
- Data-driven building-back-better approaches for post-disaster recovery.
- Building a comprehensive business case of the application of weather/climate information in plans and decisions in different sectors, to gain traction in government institutions vis-à-vis organic government investments on end-to-end early warning systems (EWSs); and
- Automation of relevant administrative functions/work, to promote work efficiency.

Service delivery model options

While there have been global efforts by development institutions on strengthening end-to-end early warning systems in RIMES Member and Collaborating States, country-specific approaches remain nascent due to institutional silos among the NMHS and sectoral institutions. RIMES' integrated work with NMHSs and sectoral institutions in its Member and Collaborating States, and its unique partnerships with diverse partners globally, place it at a competitive advantage in climate information and early warning system service capacity development.

Service delivery that is responsive to increasing and expanding demands of Member and Collaborating States shall focus on enhancement of existing services, development of new services, and maximum use of undervalued and underused resources of Member and Collaborating States, such as data. In doing this, RIMES will foster integrated approaches, with flexibility for modular implementation. These approaches include:

- Embedding Innovations Units with in each of 3 Directorates RIMES that will continually assess emerging and current advances in science and technology, test new ideas/tools, best management practices and pilot them in a user environment to drive innovations in climate information and early warning system service generation and application and associated management practices .
- Optimally embedding new technologies (AI, ML, big data, etc.) in system development, to strengthen data collection, curation, and analysis, including predictive capacity.
- Establishment of Centers of Excellence in climate/early warning applications in Member and Collaborating States that have mature capacities in climate information and early warning system service generation and application, to provide show windows of good practices and encourage enhanced investment in customized early warning systems.
- Capacity building of NMHSs and sectoral institutions in annually assessing their end-to-

end capacities and gaps, for developing interventions for government and development organization support.

- Development of climate change adaptation programs that complement mitigation
- Development of demand-driven services for the corporate sector
- Development of strategies for data-driven building-back-better approaches in post-disaster recovery

3.8 Restructuring of RIMES Program Unit

To sustain the reforms described in the preceding sections and to efficiently and effectively respond to RIMES Member and Collaborating States' current and emerging needs and demands, the RIMES Program Unit shall be restructured by redefining the Director of RIMES Program Unit as Director General; establishing three Directorates – Science and Technology, Societal Interface, and Operational Support; The Secretariat will notify designation of current Director Program unit as DG with approval of RIMES Council. All staff of RIMES will be appointed by DG as per staff regulations. Each Directorate will be headed by Director. DG could designate one of the Directors as Executive Director to coordinate the functions of three directorates and report to DG. Considering the need to cater to needs of Member countries of Africa Region, DG will appoint an Executive Director for Africa region to implement RIMES Program and ED Africa program will report to DG. In addition, the DG will also be supported by CFO both in operation and programme as and when needed.

The **Science and Technology Directorate (STD)** focuses on advancing RIMES' capabilities in earthquake, tsunami, ocean, weather, climate, and hydrological services, including systems research and development. It encapsulates RIMES' core scientific and technological efforts. It shall lead the development and enhancement of cutting-edge scientific research and technological solutions in the fields of earthquake, tsunami, ocean, weather, climate, and hydrological services. It shall aim to maintain and advance RIMES' position as a regional leader in multi-hazard early warning and scientific research, ensuring reliability and effectiveness of its services.

Societal Interface Directorate (SID) will be dedicated to applying scientific and technological advancements in practical, societal contexts to maximize impact and usability of RIMES' services by user stakeholder intermediary institutions and end user communities for resource and risk management. SID will leverage cutting edge data analytics technologies such as AI and ML to transform data from STD into user relevant information through DSS. The SID will enhance institutional and end-user capacities of Member and Collaborating States to apply outputs from DSS to develop tailor-made services to meet client needs. It shall bridge the gap between scientific advancements and societal needs, ensuring that RIMES' research and technology translate into practical applications with tangible socio-economic benefits.

Operational Support Directorate (OSD) ensures seamless and efficient day-to-day operation and management of the regional early warning facility, including its programs and activities. It has autonomy on its human resource and administrative functions, in line with powers delegated by the DG.

Each Directorate will be led by a director, reporting directly to the Executive Director. Further detail on all three Directorates is provided in [Annex 7](#). Department Heads shall report to respective Directors and take responsibility for day-to-day functioning of their respective departments. Leads of country programs shall be reporting to the Executive Director for strategic concerns, and to respective Directors for program/project implementation specifics.

The current organizational Structure is in Fig 3 and the proposed RIMES organizational structure is in Fig 4, the Chief Finance Officer shall report to the Director General. Audit Committee, consisting of select Member States, will be constituted with the task of receiving audit reports from the Auditor and providing recommendations to RIMES Council. One of the Audit Committee members should be a qualified accountant. Where possible, engaging external qualified accountant from

outside RIMES shall be considered. A RIMES IDP Steering Committee will also be constituted with select Member States to oversee the implementation process of IDP as well as RIMES Programs and provide recommendations. The organization structure will be reviewed for its appropriateness and practicality on a yearly basis or when the need arises.



Figure 3 Current RIMES organizational structure

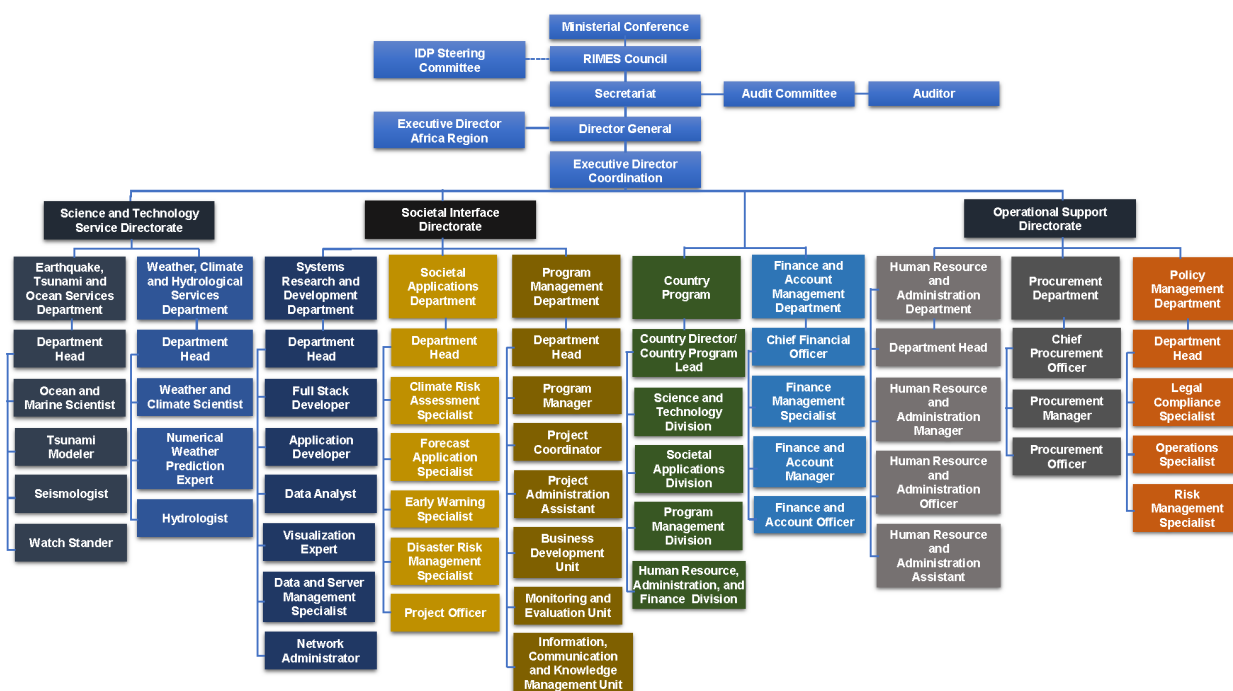


Figure 4 Proposed RIMES organizational structure

4. PHASE 1-B IMPLEMENTATION STRATEGIES

Phase 1-B will focus on the establishment of the following:

- SAHF/CARE-supported Regional Data Center, Knowledge Hub, and RDAS.
- RIMES' Regional Support Services to hydrometeorological and sectoral agencies by data hosting and analysis toward operationalizing Impact-Based Forecasting (IBF) through SAHF

The regional Data Center will host all the RIMES tools and DSSs including the recently developed SAHF Knowledge Hub (SKHub), RDAS, and country-specific, sector-specific DSSs. The unified cloud platform will efficiently address the diverse information requirements of differential users. Users of the cloud platform shall have varied levels of access which will determine the tasks/activities they can perform using the platform. While national in-situ observation metadata remains largely accessible only by respective NMHSs (and corresponding sectoral institutions), processed/analyzed data shall be made available through various analytics. The infrastructure would provide users access to multi-layer climate data and support Data Extraction, Data Storage, Data Analytics, and Data Visualization seamlessly.

RIMES is also expanding the Regional Resilience Data Analytics Services (RDAS), supporting the development of a public domain data analytics platform to undertake climate-informed policy, planning, and investment decisions for climate-resilient development using the latest CMIP6 datasets and strengthening national-level sectoral decision support system (DSSs), supporting Bangladesh, Nepal, and Pakistan in developing/enhancing interactive DSSs to enable decision-making within Ministries in the sectors of finance, planning, agriculture, and water management, among others.

SAHF Knowledge Hub brings a collaborative platform for the NMHS to interact with other countries' NMHS in the region, RIMES coordination hub, and other global/regional center for excellence, for NWP related capacity development. The following components will be integrated into the Knowledge Hub:

- Data Sharing. Observations are a critical component of good forecasts ranging from large scale measurements that provide the initial conditions for global NWP to crowd-sourced data that can be used to verify an impact-based forecast for a specific group of users. An approach for a regional observation network would be one way to optimize and maximize the benefit of observations throughout South Asia. Critical deficiencies in the network, which impact one or other countries' forecasts can be readily identified and regional or even global efforts to fill those gaps can be pursued. Data sharing will be facilitated using the Data Exchange Platform (DataEx) built under the SKHub.
- Multi-Model Forecast Data Availability. The platform will share the ensemble forecast products from leading NWP global producing centers (GPCs) and regional centers to enable NMHS to interpret and use them for their operations. An interface to verify different model performance in real time shall be incorporated through the DataEx platform under SKHub.
- Data analytics and visualization. The DataEx portal of the SKHub will have functionalities to allow users of member countries to visualize various observed data, compare observed data with forecast data, render various global forecast products. A visualization platform that would enable the NMHS meteorological staff to visualize different forecast products including the ensemble products. The platform would have necessary functions to allow the forecasters to perform forecast verification.
- E-library. An e-Library shall be maintained to host a pool of sharable electronic books, journals, publications, and other resources relating to NWP or sector-specific subjects. An institutional subscription shall be availed to allow downloading and archiving of journal articles in the repository, which shall be made available to the forecasters in the region.

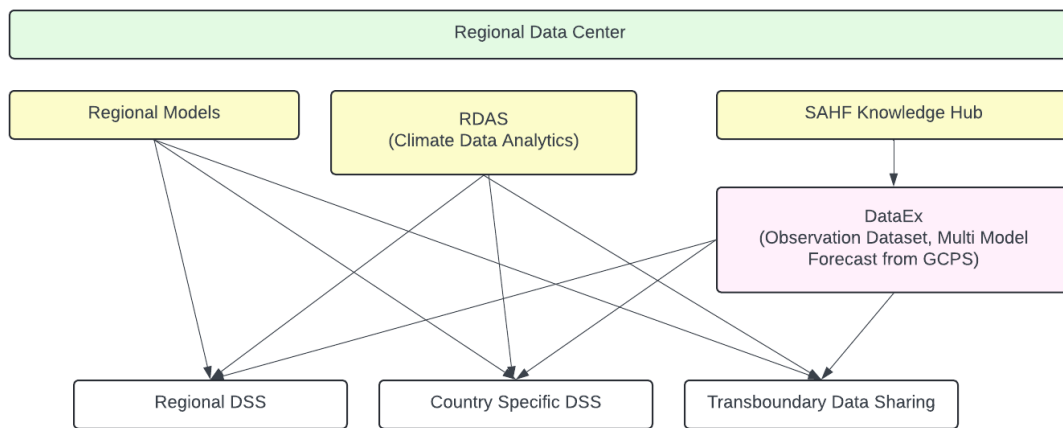


Figure 5 Data flow Hierarchy

5. PHASE 1-C IMPLEMENTATION

5.1 Establishment of institutional mechanisms at the country level

Operationalizing impact-based forecasting requires strong partnership between the NMHSs and relevant government or sectoral agencies as co-producers. It requires interoperability among the NMHSs and co-producers as well as sharing of knowledge, expertise, and data particularly on hazard, exposure and vulnerabilities to facilitate risk analysis. To promote and institutionalize such partnerships and the co-production mechanism, instruments of agreement, such as Memorandum of Understanding (MOU), shall be employed. MoUs should clearly define how the parties will work together and specify the roles and responsibilities of the parties for the development, implementation, and delivery of IBF.

The process for operationalizing IBF at the country-level should align with national policies or frameworks. It also requires capacity building of the NMHS, co-producers, users, and other stakeholders, as well as implementation mechanisms that are fully customized for country application. Such a rigorous process necessitates focused/dedicated support from RIMES. As the RIMES head office work with many member and collaborating states, it is not always possible and cost-effective for the regional office to provide all the support needed at country-level. Having country offices, therefore, allow RIMES to decentralize its services and enable hand-holding support to the respective country, if and whenever needed. This enables RIMES to have flexibility and leverage the experience and expertise in these country offices to provide support to and address demands/needs from other member countries that are closer to the country offices in terms of location, experiences, climatology, climate-related risks and threats. Hence, part of this Institutional Development Plan is the strengthening of country offices.

Strengthening of Country offices

Operation of country offices is typically overseen by Country Program Leads. However, as country programs expand, a Country Director could lead the country program, supported by a Country Coordinator. Country Program Leads/Country Directors are directly accountable to the Executive Director. Country Program Leads/Country Directors will collaborate to facilitate sharing of human resources across projects and programs, leveraging available in-country expertise. The in-country framework will consist of four key divisions, reporting to the Country Program Lead/Country Director: Science and Technology Division, Societal Applications Division, Program Management Division, and Human Resource, Administration, and Finance Division.

- The Science and Technology Division, led by a Country Technical Lead, will comprise domain experts, primarily meteorologists, hydrologists, hydrologic system developers, engineers, and system/full stack developers. This division will oversee research and development activities

related to hydrometeorological and climatological models, decision-support systems, data management and analytics platforms, and associated capacity-building programs, in collaboration with the Science and Technology Directorate of RIMES. Additionally, this division will be responsible for producing research papers and journal articles based on in-country scientific research.

- The Societal Applications Division will consist of climate services experts, forecast application specialists, disaster risk management experts, project officers, assistant project officers, and others as per project requirements. This division will conduct user need assessments and hazard, vulnerability, and risk assessments; implement community outreach programs; and evaluate community response.
- The Program Management Division will serve an overarching role in integrating the efforts of the Science and Technology and Societal Applications Divisions. This team will provide implementation support for project/program activities, collaborate with regional program management teams under the guidance of the Country Program Lead/Country Director, and participate in project/program development, partnership cultivation with various stakeholders nationally and internationally, report production, and knowledge and communication material creation. The team will comprise program managers, program coordinators, project officers, assistant project officers, and ICKM and M&E specialists.
- Under the guidance of the Operational Support Directorate and the Country Program Lead/Country Director, the Human Resources, Administration, and Finance Division will manage day-to-day human resource (HR) and administrative operations, financial monitoring, and donor reporting. This division will also support internal and external auditing, recruitment, and staff development. The division will include Head of Finance and Operations, Finance and Administration Officer, HR Officer, and their associates, as required, for implementing various projects.
- One of Country offices in each RIMES Regions will be capacitated to serve as RIMES regional center for that region to outreach RIMES programs to the cluster of neighboring Countries. RIMES Council will approve the selection of a Member State to serve as RIMES Regional Center based on set criteria such as capacity and commitment to provide sustained technical and financial and resources support to RIMES to deliver regional services to Countries and potential contribution to meet future regional demands. RIMES Regional Headquarters could be established by signing of RIMES Regional Headquarters Agreement between RIMES and the Member State as per Member States Legal frameworks. RIMES Regional Headquarters will apply RIMES Institutional template to have regional organizational structure and adopt RIMES regulations/rules and policies and be an integral part of the RIMES, reporting to the Council through the DG. Annual Progress reports and certified audit reports and other relevant documents from the RIMES Regional headquarters will be submitted through DG to RIMES Council for final approval.

5.2 Transformation of RIMES as “INTEGRATOR”

As discussed in the previous section 1.6 RIMES policies will enable RIMES as Integrator through innovative partnerships with Research /Academic /private sector institutions etc. Such partnerships that RIMES plan to build and nurture along the early warning system and climate information value chain, include but are not limited to:

- Observation & Monitoring: WMO and SOFF
- Modelling and Forecasting: NCMRWF, MET Norway, FMI, ECMWF, etc.
- Translation of data into actionable information (IBF) – universities, research centers, centers of excellence
- User-tailored services – development partners, UN agencies, NGOs, INGOs
- Research and development – technical/academic institutions, universities research

- centers, centers of excellence
- Private Sector entities

5.3 Resource Mobilization

As RIMES expand and decentralize its services and assume a bigger role as integrator, it is more important than ever for RIMES to be financially sustainable. Hence, one of the objectives of this IDP is to explore sustainable funding models, by end of 2026, to increase RIMES' financial sustainability through financial instruments such as Trust Fund, public and private partnerships, and others discussed below:

Sustaining RIMES Operations: Cost-Recovery

For the past years, RIMES operations have been financially supported by a mix of RIMES program funds contributed by Member States, donor funds mobilized by both Member States and RIMES Program Unit. In view of other emerging funding windows and potential cost-recovery sources, below is a catalogue of current and potential additional sources of funds for RIMES' sustained transition and operation.

- **Program funds.** Article 20 of the RIMES Cooperation Agreement, entered by and between RIMES and its Member States provides the stipulation on budget contribution by RIMES Member States. The countries have no mandatory obligation to contribute any amount in financial terms to RIMES; decision to do so is voluntary. Funds pledged by countries that make annual contributions on voluntary basis are programmed in RIMES' annual budget to sustain operations of the RIMES Program Unit and enable it to continue to cater to the unique needs and demands of its Member States. At the 15th RIMES Council meeting, Members States resolved to consider increasing voluntary contributions, based on improved delivery of RIMES services. RIMES Program Unit was also requested to mobilize other resources for meeting fund requirements for sustained service delivery.
- **Donor funds.** RIMES also operates through donor-funded projects across the various pillars of the climate information and early warning system services value chain. RIMES prepares and submits proposals to donors and trustees of different multi-lateral financing initiatives, available for climate and disaster resilience in support of developing countries, which include RIMES Member and Collaborating States, to address climate change challenges. With RIMES' years of experience and wide range of expertise in the EWS space, it could be a strategic partner for donors in providing services to assist or spearhead facilitation and implementation of climate-related projects and programs. Award of financial grant/support to RIMES is formalized through a letter of, memorandum of, or project cooperation agreement, which lays down the objective and scope of the award, based on approved terms of reference, implementation duration, financial and operational arrangements, and reporting requirements, among others.
- **Sustainability Reserve Funds as part of Donor Funds.** When RIMES implements donor-funded projects, especially in low-capacity Member and Collaborating States, it is fully committed to sustain project outcomes, even beyond project end-dates, until countries integrate newly created capacities into their annual finance and policy instruments, which usually takes several years. To fund this kind of commitment and provide continuous back-up support, upgrade information and communication technologies developed, and address unmet components of donor-assisted projects, RIMES mobilizes sources for sustainability reserve. RIMES experts are deputed to implement donor-assisted projects by providing Technical Support Services (TSS) for the duration required by the project. TSS costs are charged with reference to the base salaries of RIMES technical experts (i.e., up to 30% on top of experts' base salaries). Proceeds could be held in reserve and/or used for the purposes stated above. This policy will be put into practice based on donor approvals. Currently, it is not

practiced due to donor policies, however this policy will be pursued upon discussion and agreement with donors to sustain project outcomes.

- **Private Sector's Use of Climate Products and Services.** Another resource window that RIMES considers is a cost-recovery model, which will entail offering of its services, available platforms, and decision support tools for commercial use by the private sector. Climate information of different timescales is essential in making operational, tactical, and strategic decisions, resource management, and policy planning in any sector. Aside from agriculture, water resource, health, and DRM sectors, RIMES is looking at providing expert support to other high-impact sectors of energy (i.e., conventional and renewable source), transport (i.e., including road, shipping, railway and aviation), tourism, insurance, and small- and medium-sized enterprises (SMEs).

For instance, in the energy sector, planners and decision-makers can make use of weather and climate information, combined with energy-related data, for demand-supply projection, generation-load management/curtailment, maintenance procedure scheduling, energy system cost forecasting, inform trading and fuel purchasing decisions, resource assessment, climate proofing of energy infrastructure, asset management, and energy policy development. In the transportation sector, multi-timescale climate information can be used for transport management and contingency for mobility; infrastructure design, such as identification of climate adaptation options and climate proofing; preventive maintenance scheduling; master-planning growth or expansion of transport infrastructure or services (e.g., urban smart transportation or smart city); and formulation of transport development strategies/policies. In aviation and shipping, reliable and accurate weather forecasts and advisories are critical in routing of aircrafts and vessels, in consideration of extreme events, for safety, as well as for sustained delivery of services.

This cost recovery model is envisioned to improve the services of the private sector to the public, significantly reduce their losses, and efficiently restore their operations after a disaster, resulting in abridged disruption of livelihoods and income. This in turn will contribute to increasing economic resilience of communities.

RIMES will explore innovative institutional models to harness emerging forecast /IT technologies to transform data into information to meet operational needs of disaster management and other climate sensitive sectors both in private and public sector clients . Various options are

- » RIMES will operationalize RIMES Council 's approval to establish RIMES Solution . It serves as its Consulting Services arm , leveraging data and products to provide value-added services, that will generate revenue/ profit, by addressing private sector information demands, through public-private sector partnerships building further on WMO vision of private sector engagement and partnership. The income generated will be ploughed back to countries particularly low capacity countries as per Master Plan priorities approved by Council
 - » RIMES will invest to develop mentor start up private sector entities until they are ready to become independent private sector entities.
 - » RIMES could sign a Memorandum of Understanding (MoU) with private sector entities and other institutions / experts for product development and marketing of products at a cost that are advantageous to RIMES. The income from such partnerships will be applied to implement the RIMES Master Plan Priorities of RIMES Member Countries.
- **Trust Fund.** Trust funds could consist of the several different elements:
 - » Multi-Donor Trust Fund, which comprises contributions from various donors partnering with RIMES to support disaster risk reduction and resilience-building efforts aligned to its core objectives. This Fund will support RIMES' role as Regional Operation Center for low-capacity Countries.

- » Single Donor Trust Funds, which are separate funds established by individual donors to support specific initiatives or projects within RIMES member countries.
- » Umbrella Program for RIMES, which serves as a mechanism to streamline funding and implementation for various RIMES activities, pooling resources from different sources- leveraging RIMES' role as Integrator for enhancing coordination between development partners to increase the efficiency of investments.
- » Innovation Trust Fund, which focuses on fostering innovation in science and technology for RIMES member countries in weather, water, climate and related services and supporting experimentation with new approaches and technologies in this field- Leveraging RIMES Role as Catalyst like GFDRR.

The detailed plan for Phase 2 and Phase 3 will be prepared during the implementation of Phase 1.

6. ACTION PLAN

Activities to achieve the objectives and goal of the strategic plan, are listed in Table 1.

Table 1. RIMES IDP Action plan

GOAL: A regional center of excellence in building end-to-end climate information and early warning system services and capacities for enhanced planning, preparedness, and decision-making among target communities and authorities, with an overarching goal to support climate- and disaster-resilient development in RIMES Member and Collaborating States				
Objective 1. By June of 2025, RIMES enhances its capacity on finance, procurement, HR, project management and information security systems in compliance with international standards, such as International Financial Reporting Standards (IFRS), Chartered Institute of Procurement and Supplies (CIPS), Project Management Body of Knowledge (PMBOK), Prince2 for project management, and relevant international certifications, including ISO 9001 and ISO 27001 for quality assurance and information security, respectively. RIMES shall reorganize its organizational structure to sustain reforms.				
Activities	Timeframe	Implementers	Indicative Budget (USD)	Funding Source
Phase 1-A				
1.1 Restructuring of the RIMES Program Unit		RIMES Program Unit	Not required (internal implementation)	
1.1.1 Conduct a comprehensive review of the current organizational structure	Jul-Sep 2024			
1.1.2 Finalize, approve, and implement the approved organizational structure with approval from the RIMES Council: re-assign and onboard new staff; provide training on new roles.	Oct – Nov 2024			
1.1.3 Prepare for ISO Certification	2025			
1.2 Strengthening of RIMES' financial management system		Finance and Account Management Department	47,500 Consultant: 17,500 Procure System: 30,000	RIMES
1.2.1 On-boarding of Chief of Finance (Consultant); Enhancement of Finance and Accounting Policy and Procedures; Training of finance staff	2025			
1.2.2 Procurement and implementation of an advanced financial, HR, and procurement management software to complement the SunSystems	2025			
1.2.3 Improvement of banking arrangements, which includes expansion of authorized signatories, preparation and implementation of a currency risk management plan	2025			
1.2.4 Integration of the COSO framework into RIMES' internal audit function	J2025			
1.2.5 Development of training programs and materials; training of non-finance staff on basics of financial management, budgeting, project finance, and risk management	2025			

1.3 Strengthening human resources	2025	Operational Support-HR	47,500	RIMES
1.3.1 Onboarding of HR Specialist (Consultant); HR policy review and enhancement	2025	Operational Support-HR	Consultant: 17,500 Procure System: 30,000	RIMES
1.3.2 Enhancement of the performance evaluation system, including training	2025			
1.3.3 Procurement and implementation of, and training on automated PMS; Table-top exercise for FM, procurement, and human resource units; Simulation exercise for IT Department; Simulation exercise for earthquake and tsunami operations	2025			
1.3.4 Enhancement of the performance evaluation system, including training; Assessment of capacity development needs and interventions; Finalization of capacity development targets by department/unit; Development of a comprehensive capacity development program; Evaluation of effectiveness of capacity development interventions	2025			
1.4 Strengthening of RIMES' procurement processes	J2025	Operational Support-Procurement	47,500	RIMES
1.4.1 On-boarding of CIPS/WB Procurement Specialist (Consultant); Development, finalization, and publication of RIMES Procurement Manual; Development and testing of the procurement and contract management module, including procurement of a system developer	J2025	Operational Support-Procurement	Consultant: 17,500 Procure System: 30,000	RIMES
1.4.2 Preparation of training materials, including tutorial video, and training of RIMES staff on the RIMES Procurement Manual and the procurement and contract management module	J2025			
1.5 Strengthening project management systems	2025	Program Management Department	25,000	RIMES
1.5.1 Onboarding of PMI Specialist (Consultant); Development of PMI-compliant SOP, guidelines, and templates for project management; Integration of standard process and procedures into the ProMISe tool	2025	Program Management Department	Consultant: 25,000	RIMES
1.5.2 Assessment of training need and Training promotion, selection, and organizing PMI certification courses for staff	2025			
1.5.3 Formulation and implementation of the M&E framework, including reporting templates (e.g., progress reports, service satisfaction)	2025			
1.6 ProMISe development and implementation	2025	RIMES Program Unit/IT Department	20,000	RIMES
1.6.1 Onboarding of 1 full-stack developer, and 1 Graphic designer/UI/UX Expert; Design finalization and approval (including knowledge-sharing module)	J2025	RIMES Program Unit/IT Department	Full Stack Developer; 6 m: 10,000	RIMES
1.6.2 Interface development, testing, and refinement	2025			
1.6.3 Training on system operation and maintenance; Experimental operation and quality assurance; Full operationalization	2025		Graphic Designer; 6 m: 10,000	

1.7 Strengthening of RIMES Information, Communication, and Knowledge Management	2025	Operational Support	33,000	RIMES
1.7.1 Constitution of an ICKM Team; Review and updating of RIMES' ICKM strategy	2025		ICKM Specialist; 9 m: 10,000	
1.7.2 Development and implementation of capacity development program for program, project, and country teams	2025		ICKM Officer; 9 m: 8,000	
1.7.3 Review and enhancement of RIMES website and social media accounts, knowledge and learning hubs	2025		Website Implementation Firm: 15,000	
1.8 Strengthening of Information Security Systems	2025	RIMES Program Unit	35,000	RIMES Internal budget
1.8.1 Onboarding of Cybersecurity Specialist (Consultant); Conduct security audit, implement strategies, data backups, disaster recovery plans, vulnerability assessments, and penetration testing	2025		Consultant; 9 m: 25,000 IT security staff; 9 m: 10,000	
1.8.2 Strengthen data sharing mechanisms with member and collaborating states; Ensure alignment with international data protection standards	2025			
1.8.3 Prepare for ISO 270001 certification, to align RIMES information and network security practices with international information security standards	2025			

Objective 2. Within 2024-2025, RIMES, as SAHF Secretariat, will implement SAHF priorities as per SAHF Executive Council (EC) Resolutions and SAHF IV Declarations

- By August 2025, establish SAHF/CARE-supported Regional Data Center, Knowledge Hub, and RDAS. RIMES provides robust services to hydrometeorological and sectoral agencies for data hosting and analysis toward operationalizing Impact-Based Forecasting (IBF)

Activities	Timeframe	Implementers	Indicative budget (USD)	Funding source
Phase 1-B				
2.1 Establishing a Digital Center for data, analytics, and hazard impact prediction tools	Jul-Dec 2024	RIMES -IT Department and Domain Expert	175,000	Already established through CARE project

Under **Objective 2.** By end of 2025, under the South Asia Hydromet Forum (SAHF) umbrella, RIMES establishes institutional mechanism through binding instruments such as MoUs, in select South Asian countries, that integrates NMHS with user stakeholder institutions for sharing of data and generating Impact-Based Forecasts across the five pillars of the climate information and early warning system services value chain.

Objective 3. In parallel, by end of 2026, RIMES shall shift from “Create Solution” to “Create and Find Solution” and serve as “INTEGRATOR” to leverage networks, expertise, and technologies available from different sources through institutional partnerships based on trust-based relational as opposed to transactional relationships

Objective 4. By end of 2026, sustainable funding models have been explored to increase RIMES' financial sustainability through financial instruments such as “Trust Fund” and “public and private partnerships.”

Activities	Timeframe	Implementers	Indicative budget (USD)	Funding source
Phase 1-C				

3.1 Establishing institutional mechanism, in select South Asian countries under the SAHF umbrella, integrating NMHS with user stakeholder institutions for sharing of data and generating Impact-Based Forecasts	2025-2026	RIMES-	10,000	- RIMES
3.1.1 Support regional collaborations including organization and regular conduct of SAHF Executive Council Meetings, regional climate outlook forums, and other SAHF activities	2025-onwards, regularly			
3.1.2 Support collaboration of NMHSs and user stakeholder institutions through organization and regular conduct of national climate outlook or monsoon forums	2025-onwards, regularly			
3.1.3 Review of the countries' national policies and frameworks in climate services for alignment of IBF	2025-2026			
3.1.4. Dialogues, consultations, and workshop for NMHSs and co-producer agencies to discuss data-sharing and IBF co-production mechanisms; roles and responsibilities for the development, implementation, and delivery of IBF; communication strategies, institutionalization and sustainability, and drafting of MOUs.				
3.1.5 Capacity building of NMHSs, sectoral and stakeholder agencies for the operationalization of IBF	2025-2026			
3.1.6 Endorsement of MOU to relevant government agency leadership and implementation of approved MOUs for operationalizing IBF	2025-2026			
3.2 Strengthening country offices in select countries in Asia to decentralize its service delivery and leverage capacities to support other countries	2025 onwards	RIMES Program Unit	10,000	RIMES Internal Budget
3.2.1 Constitution of country teams/on-boarding of relevant expertise that will provide technical support at the country level as well as to other countries in the region	2024-2025			
3.2.2 Capacity building of the country team members by RIMES experts from the regional office and other established country offices	2024-2025		1,00,0000	Member States
3.2.3 . Establish two regional centers one in Middle East and another one Mid -West to support cluster of neighboring countries				

3.3 Shifting from “create solutions” only to “create and find solution” and RIMES serving as “INTEGRATOR”	2024-2026	RIMES Program Unit	10,000	RIMES Internal Budget
3.3.1 Scoping of available expertise, data, systems/solutions, or tools that could address gaps and needs or be beneficial for member countries	2024 onwards, regularly			
3.3.2 Initiating discussions with relevant institutions/organizations and assessing possibility of forging partnerships following RIMES criteria for partner selections	2024 onwards, as needed			
3.3.3 Building or nurturing partnerships with other relevant technical institutions or development organizations, through MoUs or Memorandum of Agreement (MoA)	2024 onwards, as needed			
3.3.4 Presentation/discussion of relevant systems/solutions/tools to member countries to facilitate acceptance	2024 onwards, as needed			
3.3.5 Onboarding of Capacity Building Integrator	2024			
3.3.6 Capacity building of member countries to facilitate adoption of relevant systems/solutions/tools	2024 onwards, as needed			
3.4 Explore sustainable funding models to increase RIMES’ financial sustainability through various financial instruments	2024-2026	RIMES Program Unit	10,000	RIMES Internal Budget
3.4.1 Showcase improved delivery of RIMES services at the RIMES Council meetings to encourage increased voluntary contributions of member countries	2024-2026, yearly			
3.4.2 Scope and participate in calls for proposals by donors and trustees of different multi-lateral financing initiatives for climate and disaster resilience.	2024-2026, regularly			
3.4.3 Mobilize sources of sustainability reserve funds by discussing and forging agreements with donors of projects, financial grants, etc. awarded to RIMES	2024 onwards, as needed			
3.4.4 Market scoping for climate service needs among the private sector.	2024-2026			
3.4.5. Explore innovative institutional models to adopt private sector service delivery models.	2024-2026			
3.4.6 Development and establishment of trust fund	2024-2026			

The detailed plan for Phase 2 and Phase 3 with specific activities will be laid out during the implementation of Phase 1.

7. RISKS AND RISK MANAGEMENT

7.1 Risks and Risk Mitigation Measures

Risks to realizing the IDP goal and objectives, their potential effects on RIMES, and risk mitigation strategies were identified and are presented in Table 2. These measures aim to reduce the probability of risks from occurring, or to reduce their impacts.

Table 2. Risk management matrix

Goal: A regional center of excellence in building end-to-end climate information and early warning services and capacities for enhanced planning, preparedness, and decision-making among target communities and authorities, with an overarching goal to support climate- and disaster-resilient development in RIMES Member and Collaborating States			
Objective	Risks	Effects	Mitigation measures
1. By December of 2025, RIMES enhances its capacity on finance, procurement, HR and information security systems in compliance with international standards, such as International Financial Reporting Standards (IFRS), Chartered Institute of Procurement and Supplies (CIPS), Project Management Body of Knowledge (PMBOK), Prince2 for project management, and relevant international certifications, including ISO 9001 and ISO 27001 for quality assurance and information security, respectively. RIMES shall reorganize its organizational structure to sustain reforms.	Partial approval by the RIMES Council of some of the provisions in the IDP due to recurring cost that could be incurred	Capacities in finance, procurement, HR and information security systems may still not be compliant to international standards and may not be able to effectively support IDP implementation and contribution to the five pillars of the climate information and early warning systems value chain	<ul style="list-style-type: none"> Ensure IDP is effectively developed with compelling, relatable, and strong rationale, with clear cost-recovery during the transition period, and gradual integration into country annual budgets through policy advocacy
	Lack of financial resources		<ul style="list-style-type: none"> Mobilize resources from external and internal sources
	Constraints to hire qualified and experienced expertise		<ul style="list-style-type: none"> Leverage expertise in the country offices
	Nonconformance findings may prevent achievement of initial ISO certifications		<ul style="list-style-type: none"> Strengthen processes internally through careful planning, preparations, and with the support of an expert in relevant certifications or standards

Objective	Risks	Effects	Mitigation measures
2. Within 2024-2025, RIMES, as SAHF Secretariat, will implement SAHF priorities as per SAHF Executive Council (EC) Resolutions and SAHF IV Declarations	Disruptions of access to server/cloud infrastructure due to technological, power, and other logistical constraints	<ul style="list-style-type: none"> RIMES' systems and support will be inefficient and irrelevant to meet requirements of NMHSs and sectoral agencies for the operationalization of IBF 	<ul style="list-style-type: none"> Invest in hardware, software, and relevant infrastructure that will reduce disruptions and ensure continuous access to the server/cloud infrastructure
2.1 By August 2025, establish SAHF/CARE-supported Regional Data Center, Knowledge Hub, and RDAS. RIMES provides robust services to hydrometeorological and sectoral agencies for data hosting and analysis toward operationalizing Impact-Based Forecasting (IBF).	Prolonged policy change process in accessing country data for development of value-added services	<ul style="list-style-type: none"> Knowledge-sharing and resource management will not be optimized among and across institutions and communities 	<ul style="list-style-type: none"> Demonstrate the value of data-sharing and participation of stakeholder agencies in DSS development
2.2 By end of 2025, under the South Asia Hydromet Forum (SAHF) umbrella, RIMES establishes institutional mechanism through binding instruments such as MoUs, in select South Asian countries, that integrates NMHS with user stakeholder institutions for sharing of data and generating Impact-Based Forecasts across the five pillars of the climate information and early warning system services value chain.	Insufficient financial resources to maintain and manage the servers		<ul style="list-style-type: none"> Mobilize resources from external sources to provide catalytic support for development of innovative DSSs. Ensure adequate allocation of internal funding for system management and maintenance
	Lack of human resources and technical capacity in low-capacity countries		<ul style="list-style-type: none"> Ensure that partners are technically capacitated in using the data platforms and DSS before DSS handover. Provide long-term back-up support to low-capacity countries to sustain outcomes. Build capacities at the country offices to provide continuous and long-term support to in-country stakeholders Ensure reliable operation of the knowledge and learning hubs and portals.
	Lack of institutional mechanisms between NMHSs and sectoral agencies to share data and co-develop impact-based forecasts		<ul style="list-style-type: none"> Provide support and facilitate establishment of institutional mechanisms and agreements between NMHS and sectoral agencies for data sharing and co-development of IBF products, through signing of agreements
	Inadequacy of regular and effective communication with partners		<ul style="list-style-type: none"> Conduct regular coordination and socialization activities with partner institutions.
	The stability of the political environment in the country may affect the RIMES country office's efforts as well as the sustainability of service delivery in that respective country		<ul style="list-style-type: none"> Develop contingency plans to mitigate the potential negative impact of political instability at country level

Objective	Risks	Effects	Mitigation measures
3. In parallel, by end of 2026, RIMES shall shift from “Create Solution” to “Create and Find Solution” and serve as “INTEGRATOR” to leverage networks, expertise, and technologies available from different sources through institutional partnerships based on trust-based relational as opposed to transactional relationships.	<p>Prolonged process of establishing institutional partnerships</p> <p>Hesitation of member countries in adopting new systems/solutions/technologies/tools</p>	Available expertise, systems/solutions, and technologies from different sources will not be leveraged in a timely manner	<ul style="list-style-type: none"> • Ensure proposed partnership mechanisms are effectively developed with compelling and strong rationale and benefits for all parties are emphasized • Ensure adequate and appropriate preparation and capacity building of the member countries to accept and adopt new systems/solutions and technologies
4. By end of 2026, sustainable funding models have been explored to increase RIMES’ financial sustainability through financial instruments such as “Trust Fund” and “public and private partnerships.”	<p>Lack of sustainable funding/financial resources</p> <p>Incongruity of RIMES’ and donors’ cost-recovery, accounting and finance policies and practices</p>	<ul style="list-style-type: none"> • Funding may remain highly dependent on donor-funded projects • Cost-recovery mechanisms and other related business management practices will not be updated to effectively support IDP implementation and contribution to the five pillars of the climate information and early warning systems value chain 	<ul style="list-style-type: none"> • Ensure the IDP presents clear cost recovery during the transition period, and gradual integration into country annual budgets through policy advocacy • Ensure donor-funded projects will be able to kickstart key activities to demonstrate cost-recovery. • Mobilize resources from external and internal sources • Ensure effective communication with donors for the alignment or agreement on cost-recovery mechanisms, accounting and finance policies and practices

Risks and risk mitigation strategies for Objectives 5 and 6 will be assessed and identified during the implementation of IDP Phase 1

7.2 Risk Monitoring and Management

Arrangements for risk monitoring and management regarding this IDP are detailed below:

- a) The RIMES Council. The RIMES Council will have an oversight role. Members will be updated yearly on the status of implementation of risk mitigation measures, including emerging risks and trends.
- b) Audit Committee. The Audit Committee, reporting to the RIMES Council, ensures that internal audit provides assurance to the Council on the appropriateness of implementation of risk management strategies and the effectiveness of risk management processes, methodologies, and internal controls. The Committee also ensures that external audit reviews control that impact on the preparation of financial statements, as part of its audit processes.
- c) Risk Management Team. The Risk Management Team, reporting to the RIMES Council, is led by the Executive Director, with the Directors of the three Directorates as members. The Team is responsible for implementing risk management effectively, assigning risk owners in their departments. It follows-up on mitigation measures that are implemented under each department, and reviews risk and mitigation information in twice-a-year meetings.
- d) Department Heads are accountable for implementing risk management effectively on a day-to-day basis. They lead and manage the implementation of risk mitigation measures, including the identification and reporting of new/emerging risks. They are responsible for regular risk monitoring and updating of the risk management matrix (Table 3).

Annex 1. RIMES DSS Tools

From 2014 to 2018, RIMES developed/customized several software systems and tools for various countries. From 2019 onwards, RIMES continued to expand its software services with development of more systems and tools at the regional, national, and local levels. Table A1 lists the systems and tools developed by RIMES.

Table A1. RIMES-developed decision support systems and tools

RIMES DSS	Acronym	Description
Developed in 2014-2018		
Shakemap Broadcast	ShakeCast	First developed by USGS, this is an automated post-earthquake damage assessment tool that makes use seismic data. RIMES customized ShakeCast for estimating risks to population and critical facilities using real-/near real-time data from an earthquake event. It uses exposure data at the smallest administrative unit e.g. village level population data and detailed building inventory and appropriate building vulnerability functions. Potential damage information is sent to registered users by SMS, fax, and email. Bulletins are updated based on improved earthquake parameters for the event.
Portal for Regional Estimation of Coastal tsunami Impact using Sea-level and Earthquake information	PRECISE	RIMES developed this tsunami forecasting tool to determine tsunami arrival time, directivity, amplitudes and inundation. PRECISE combines preliminary earthquake information: magnitude and epicenter location, with a pre-computed tsunami database to generate a comprehensive forecast with points along coasts that would be potentially affected. The system uses sea-level information obtained from DART buoys and tidal gauges to update and validate forecasts.
Internet-based Simulation Platform for Inundation and Risk Evaluation	INSPIRE	Web portal with modules for identifying tsunami sources, simulating tsunami propagation and inundation, integrating exposure data, and performing tsunami loss estimation. Analysis modules handle multi-dimensional vulnerability data and different levels of data accuracy. Customized for Myanmar, Philippines, and Sri Lanka
Evaluation System for Computing Accessibility and Planning Evacuation	ESCAPE	Web portal that supports evacuation planning. It maps and advises on the fastest evacuation routes to shelters, considering topographic condition, land use, location of critical facilities, and population density, age, and gender. It also determines evacuation basins and shelter capacity. Customized for Myanmar, Philippines, and Sri Lanka.
Ocean State Forecasting and Advisory System	OSFAS	Web-based tool for providing customized forecasts and real-/near real-time observation data on local ocean/marine conditions, including warning bulletins based on 3-day marine forecasts and a user-friendly feedback system for validating forecast information. In addition, the system has capability to track wave rider buoy location and has an alert messaging service in case of buoy drift. Moreover, the system can provide information from INCOIS' Marine Fishery Advisory (derived from satellite images and Potential Fishing Zone (PFZ) advisories) and Coral Reef Mapping and Reef Health Monitoring (derived from satellite images and Coral Bleaching Alert System). Customized for Maldives, Seychelles, and Sri Lanka. It is also in the process of customization for Timor-Leste.
Climate Data Access and Analysis System	CDAAS	CDAAS is a web-based portal useful for analyzing different global climate models, gridded observation datasets, and downscaled regional climate model products. It is designed to serve the end-user to easily generate powerful visualizations as well as experts for detailed analysis. Users with access to the system can select the region of interest and get the respective data sets in various formats for further analysis. The tool handles data from three different sources and is categorized primarily based on the horizontal grid resolution of the models, which includes CMIP5 Global Climate Models (GCMs), Coordinated Regional downscaling experiments (CORDEX), and NEX NASA datasets.

Forecast Customization System	FOCUS	<p>RIMES developed FOCUS, with support from the UK MET under the ARCCC, intending to support the NHMSs in the region to access and generate customized seasonal forecasts using the inbuilt Multi-Model Ensemble (MME) methods. The tool also supports the validation and verification of the estimates.</p> <p>FOCUS was initially designed with a blend of GCMs integrated from both COPERNICUS and IRI Data Library. With the recent changes and closure of support to many models in the Data Library, the FOCUS tool was also updated with new and latest models. Currently 18 GCM models are available in the FOCUS tool.</p>
Flood Cautioning and Alert System	FloCAST	<p>Web-based system for generation of basin discharge and river level forecasts based on 3-day and 10-day weather forecasts and real-time water level observations, analysis and mapping of flood risks, and generation and issuance of appropriate advisories. The system has modules for correction of biases in rainfall and discharge forecasts and ingests real-time observation data for water level monitoring.</p> <p>Customized and operational in several countries including Bangladesh, Bhutan, Myanmar, Nepal, Philippines, and Sri Lanka</p>
Specialized Expert System for Agro-Meteorological Early Warning	SESAME	<p>Web portal for generating and disseminating crop management advisories for specific crops at particular growth stage, based on weather and climate information at four different timescales, which are:</p> <ul style="list-style-type: none"> • 3-day high resolution weather forecast to inform daily decision-making • 10-day weather forecast (separated into two pentads) for planning week-ahead activities • Monthly outlook for planning activities that require longer lead time • 3-monthly outlook for long-term seasonal planning <p>SESAME maps crop sensitivity to a particular weather condition, processes how the predicted weather will influence crop growth, and generates crop advisories using crop-specific decision trees and machine-learning algorithm. The system has capabilities for disseminating bulletins via email, SMS, fax, social media (Facebook), and mobile app, as well as capability for receiving user feedback. SESAME generates:</p> <ul style="list-style-type: none"> • real-/ near real-time or most recent observation data and weather information for the past decade, month, and season to aid understanding of current and recent historical weather condition. • daily weather forecast, daily update of the pentads (five-day spells), and monthly and 3-monthly outlooks; information on the normal for the pentad, decade, monthly, and 3-monthly climate. • crop management advisories, accompanying the forecasts and outlooks. <p>Customized and operational in several countries including Bangladesh, Bhutan (as Agromet Decision Support System or ADSS), Cambodia, Fiji, India, Papua New Guinea (as, Sri Lanka, Pakistan, Myanmar. It is also currently being customized for Timor-Leste.</p>

System for Assessing, Tracking, and Alerting Disaster Risk Information based on Dynamic Risk Knowledge/ System for Multi-Hazard Potential Impact Assessment and Emergency Response Tracking	SATARK/ SMART	<p>Web GIS-based system that utilizes weather, geophysical, and oceanic forecast products to assess potential impacts, disseminate impact management options, and evaluate risk reduction strategies. The mobile applications communicate the risk, issues alerts, and receives feedback on responses to these alerts.</p> <p>SATARK is operational and integrated into operations of Odisha State Disaster Management Authority (OSDMA) in India. It generates impact-based forecasting and assists disaster managers to take forecast-based early actions.</p> <p>SMART, operational in Tamil Nadu, India as TNSMART, generates and disseminates weather forecasts, forecast-based risk maps, and accompanying advisories. The system can visualize emergency response resource locations and quantities and can also display updates from the ground that are entered by the registered users, thus allowing disaster managers to track and manage ongoing emergency response.</p> <p>SATARK/SMART is also currently being customized for Timor-Leste.</p>
Climate Risk Information System for Public Health	CRISH	<p>Public health advisory system that is based on 3-day and 10-day forecasts of extreme weather conditions for diseases that have high correlation with weather patterns, such as malaria and dengue. This expert system analyzes and maps localities that have likelihood of disease occurrence, generates and disseminates weather forecast products with accompanying health advisories for each disease, displays real-time disease surveillance data, and receives feedback from users.</p> <p>Developed for Tamil Nadu, India and also currently being customized for Timor-Leste.</p>
Developed from 2019 onwards		
Regional Resilience Data and Analytics Service	RDAS	<p>It is developed by RIMES as a cloud-based, open-access platform combining climate and sectoral data with analytic capacities to inform policy, planning and investment decisions in the region. RDAS is implemented by RIMES through the Climate Adaptation and Resilience (CARE) for South Asia Project in three countries of South Asia (Bangladesh, Nepal, and Pakistan) with funding from the World Bank Group.</p> <p>The platform uses machine learning to train models based on historical climate analysis and deploys the trained models to infer and predict on new or unknown datasets for future decision contexts. Users have seamless access to th</p>
Climate/Hydrometeorological Data Exchange	DataEx	This is a dynamic platform that enables secure exchange of country-specific meteorological data (archived station dataset with metadata and real-time data) and access to high-resolution forecast products from the European Centre for Medium-Range Weather Forecasts (ECMWF).
SAHF Knowledge Hub	SKHub	This would serve as a one-stop platform for “Products” support such as the real-time observation data sharing, forecast data visualization, ensemble forecast products analysis linked to geospatial data analytics, and “Capacity and service delivery” training and orientation support like need-based on-the-job training, online discussion forums to discuss issues and doubts, interactive and live conferencing support. It is an integrative effort, and it will be developed in a scalable and phased manner to accommodate future demands.
DSS for the Ministry of Agriculture and Livestock Development (MoALD), Nepal		This tool, developed for the Ministry of Agriculture and Livestock Development (MOALD), includes a module for district-wise crop advisory based on weather conditions, e.g., rainfall and temperature, crop growth stages, and seasons.
DSS for Multi-Hazard Early Warning (SATARK customized for NEPAL and as per the National portal - BIPAD), Nepal		<p>This DSS was designed based on NDRRMA requirements and is currently in the process of integration with forecasts for lightning, flash flood, landslides and forest fire. Ongoing enhancements on the NDRRMA DSS involve: i) development of a flash flood prediction model based on rainfall threshold for a particular district (using daily forecasts and eventually, hourly forecasts based on the availability of data), ii) data integration into the DSS, and iii) database assessment of NDRRMA's BIPAD Portal.</p> <p>The NDRRMA DSS can be accessed through http://np-satark-test.rimes.int/</p>

National Vehicular and Transport Resilience Gateway	NAVIGATE	<p>Developed for Nepal's Department of Roads (DoR) under the World Bank CARE project. It was initiated to provide real-time and forecasted extreme weather conditions and scenario-based decision-making using climate change projection datasets. Recent developments in the DSS include: (i) road safety alerts for heavy rainfall (threshold generation), flood, fog, smog; (ii) user authentication module; (iii) uploading/updating functions for road closure, bridge closure, CRUD function for road and bridge information; (iv) uploading/updating/integration of DHM forecast data and observation data; (v) segmentation of the strategic road network (SRN) datasets, road-wise/highway-wise.</p> <p>The DoR system can be accessed through https://np-dor-test.rimes.int</p>
Upgrading Nepal's Agriculture Management Information System	ADVISE (upgraded NAMIS)	<p>In collaboration with the Ministry of Agriculture and Livestock Development (MOALD), RIMES is upgrading Nepal's Agriculture Management Information System (NAMIS). Stakeholder consultations to ascertain user needs and requirements were undertaken in 2022. The system includes data repository to add pest and crop data, crop calendar/crop phenology model (GDD-based); advisory management for weather -phenology, weather-pest and general crop management; and the forecast and alerts.</p>
Integrated Forecast Dissemination Portal	INSTANT	<p>This tool provides local-level weather forecasts and alerts on extreme events (such as extreme rainfall and temperature, and lightning events). It was also designed to incorporate an electronic climate risk assessment (e-CRA) module for providing risk information (hazard, exposure, vulnerability and capacity) to support local government authorities in making risk-informed decisions related to disaster risk reduction and management.</p> <p>It has been customized for various areas including Ukhiya Upazila in Cox's Bazar and Bogura, Bangladesh; Melamchi and Paanch Pokhari Municipalities, Nepal; Chitral District, Pakistan; Kalutara and Ratnapura Districts, Sri Lanka.</p>
Bangladesh Agro-Meteorological Information Service	BAMIS	<p>It is a dynamic web portal developed under Agro-Meteorological Information Systems Development Project for disseminating agro-meteorological services and other related information to different users especially to the farmers in Bangladesh. Meteorological data from Bangladesh Meteorological Department (BMD) and hydrological data from Bangladesh Water Development Board (BWDB) will be consolidated in BAMIS portal. After being translated and validated by the DAE Agromet Technical Committee, the information will be disseminated, at present, to the 30000 lead farmers. It will be linked with other relevant stakeholders including DAE officials.</p>
National Livestock Advisory System (Bangladesh)	NLAS	<p>DSS for livestock sector developed by RIMES under the CARE for South Asia Project. NLAS is expected to be at the core of the Department of Livestock Services (DLS), Bangladesh's climate resilient extension service. It provides the following products:</p> <ul style="list-style-type: none"> • Hazard alerts (heavy rainfall, heatwave, cold wave) at sub-district level • Temperature-Humidity Index (THI) alerts, initially for cattle (in particular, the Australian breed which is 30% of cattle population) at district level • Weather forecast at sub-district level • Population (statistics and contribution to the GDP) • Monthly and seasonal advisory, based on consultations with the Department of Livestock Services Technical Working Group • District-wise bulletins for heatwave, flood, and flash flood in Bangla and English languages • Analytics: disease analytics and station-wise climate analytics

Risk Anticipation for Preparedness and Informed Decision-Making Portal (Bangladesh)	RAPID	<p>It is an integrated web platform for linking impact-based forecasts with early actions. The initial framework and design of the portal was drafted and presented during a consultation workshop on July 2023 with DDM. It is designed to visualize information about impact-based forecasting, inundation maps, vulnerability maps, and the FBA matrix to enable informed decision-making and timely interventions. Recent enhancements in the system include:</p> <ul style="list-style-type: none"> • Incorporation of E-CRA, local level bulletins, latest voice message bulletins, etc. • Addition of an FbA Matrix calculator for accelerating the decision-making process prior to an anticipated flood event. Using this dynamic calculator, location-specific early actions can be calculated against different forecast scenarios.
Climate-Informed Planning and Development DSS, Pakistan	CLIM-PLANNeD	The DSS prototype was developed to aid Pakistan's Ministry of Planning, Development and Special Initiatives (MOPDSI) in climate-informed project appraisal.

RDAS, DataEx, and SKHub development is ongoing. RIMES is also developing decision support systems (DSSs) for planning, finance, and transport sectors, and upgrading its systems for DRM, agriculture, ocean/marine, health, and water sectors to assist countries to transition to impact-based forecasting, for more efficient management of risks and to capitalize on potential climate benefits.

Table A2 provide more details including the status of the tools that have been customized and operationalized for Member and Collaborating States. RIMES can enhance the efficiency, effectiveness, and relevance of these systems through continuous innovation that takes advantage of current and new technologies and practices.'

Table A2. RIMES' systems and tools developed for Member and Collaborating States

Name	System type/ Classification	Project name	Deployment on production		
			Country/ies	Status	Deployment Year
Data-sharing platform					
DataEx	Data exchange platform for hydro-meteorological observations and forecast products	SAHF	All	Actively used	2022
Forecasting systems					
CDAAS	Climate data access and analysis system for generation of climate change projections	Capacity Building on Generation and Application of Downscaled Climate Change Projections	Initial: Sri Lanka, Myanmar, Pakistan Current: RIMES area of responsibility (AOR)	Actively used	2016
FOCUS	Probabilistic seasonal climate forecasting system	Strengthening EWS in Cambodia to support climate-resilient development and adaptation to climate change	Initial: Cambodia Current: RIMES AOR	Actively used	2019
MetWorkX	Forecaster Workstation	Enhancing EWS to build greater resilience to hydro-meteorological hazards in Timor-Leste (GCF-TL)	Timor-Leste	Not Yet Deployed	2024
CST	Climate services toolkit	Developing Capacities for Effective Climate Services in Bhutan	Bhutan Current: Southern African Development Community (SADC) region	Actively used in Bhutan; Under development for SADC	2021
Forecast dissemination systems					

Name	System type/ Classification	Project name	Deployment on production		
			Country/ies	Status	Deployment Year
INSTANT	Forecast dissemination portal	UNDP Cox's Bazar Disaster Risk Reduction	Bangladesh (Cox/s Bazar)	Actively used	2020
		SLMC	Nepal (Melamchi)	Deployed for Testing	2023
			Pakistan	Not Yet Deployed	2024
			Sri Lanka	Not Yet Deployed	2024
RAPID	Forecast dissemination portal	SUFAL-II	Bangladesh	Deployed for Testing	2023
Upazila-Specific Forecast	Forecast dissemination portal	SHOUHARDO II	Bangladesh	Actively used	2020
Impact forecasting and advisory systems					
Farmer Beneficiary Database	Data storage system	WB-CARE	Bangladesh	Not Yet Deployed	
SESAME	Agriculture advisory system	Developing an agromet DSS for farm advisory	India	Old version deployed; new	2018
		Developing an agromet DSS for farm advisory	Bhutan	version deployed in Bhutan in 2024	2019
		Expansion of decision support system for agriculture (UNESCAP Project - Phase 2)	Cambodia		2018
			Fiji		2018
		Strengthening of Myanmar's Multi-Hazard EWS	Myanmar	Actively used	2015
		Expansion of decision support system for agriculture (UNESCAP Project - Phase 2)	Papua New Guinea	Old version deployed; new version deployed for testing	2018
			Sri Lanka		2019
SESAME PLUS	Agriculture advisory system	ARC	Bangladesh	Actively used	2022
NLAS	Livestock advisory system	WB-CARE	Bangladesh	Actively used	2023
DMC Database Portal	Data storage system	Provati III	Bangladesh	Actively used	2022
OSFAS	Ocean state forecasting and advisory system	Development and implementation of an integrated ocean information system for Indian Ocean countries -Phase 1	Comoros, Maldives, Mozambique, Seychelles, Sri Lanka	Actively used	2017-2018
FloCAST/Flood DSS	Flood forecasting and advisory system		Bhutan	Actively used	2022
			Myanmar	Actively used	
		WB-CARE	Bangladesh	Deployed for Testing	2023
SATARK	Potential hazard impact forecasting and advisory system	Operational Systems for Integrated Disaster Risk Management for Odisha	India (Odisha)	Actively used	2019
TNSMART		TNSMART Project	India	Actively used	2018
CRISH	Health advisory system				
KIOSK Dashboard	KIOSK Application	SUFAL-I	Bangladesh (Kuri-gram, Gaibandha, Jamalpur)	Actively used	2021
Kiosk Monitoring System	KIOSK Application	WB-CARE	Bangladesh	Actively used	2023

Annex 2. Enhancement of Human Resource Performance

Enhancement of the performance management system. This comprises:

- Performance evaluation and self-assessment. RIMES is committed to implementing a comprehensive and dynamic performance evaluation system that emphasizes alignment with strategic goals and encourages personal growth and accountability. This system is designed to foster a culture of continuous improvement and excellence by incorporating the following key components:
 - Establishment of performance indicators. KPIs will be established at the beginning of each evaluation cycle for:
 - Measurement of staff performance. Supervisors will provide staff members with performance indicators, committing in advance to use these as basis for assessing their performance.
 - Measurement of achievement of staff, department, and organizational goals
 - Measurement of the performance-based HR framework
 - Measurement of compliance with organizational policies, procedures, and Code of Conduct, including adherence to legal and ethical standards, as well as internal guidelines.

Staff members' compliance to RIMES' Code of Conduct is a critical component of the evaluation process, to reinforce the importance of ethical behavior and organizational values.

- Facilitation of staff self-assessment, promoting self-reflection on achievements and areas for improvement
-
- Procurement and implementation of an automated Performance Management System. An automated Performance Management System (PMS) that aligns with RIMES' strategic goals and enhances the comprehensive performance evaluation system shall be procured and implemented. It shall involve:
 - Preparation and requirements gathering
 - Conduct of a detailed analysis of current performance management practices to identify strengths, weaknesses, and areas for improvement
 - Defining specific requirements for the PMS, including the ability to establish performance indicators, measure performance against KPIs, assess goal achievement, ensure compliance, and facilitate staff self-assessment
 - Engagement of stakeholders across departments to gather diverse needs and expectations from the PMS.
 - Procurement. This involves market research and vendor selection and contracting
 - Implementation planning
 - Development of a detailed implementation plan, including timelines, milestones, and resource allocation
 - Establishment of an implementation team, with representation from HR, IT, and other key stakeholders
 - Preparation for change management, including communication strategies and training plan to introduce the new system to staff members for adoption
 - System installation, testing and implementation
 - System installation, customization, and integration with RIMES' existing HR systems
 - System test and roll-out training of users

- Performance-based HR framework training. This includes:
 - Workshops for supervisors on setting and measuring performance indicators aligned with strategic objectives
 - Training for all staff members on engaging with the RIMES performance evaluation system, with focus on self-assessment and receiving multiple feedback sources

Introduction of an automated HR Information System. RIMES is set to enhance HR operational efficiency and strategic decision-making capabilities through the introduction of a sophisticated HR software system. This initiative aims to automate key HR functions, leverage analytics for improved decision-making, and bolster data security across the organization. To maximize the benefits of this system and ensure its effective integration into RIMES' HR processes, the following measures will be implemented:

- Designation of a Reviewer for Staff Data Revisions. A dedicated reviewer will be appointed to oversee revisions of staff data within the HR software system. This role will be crucial in ensuring the accuracy and integrity of HR data, facilitating the correction of any discrepancies, and maintaining up-to-date information on all staff members.
- Maintenance of a Change Log for Staff Data. To foster accountability and enable efficient error tracking, a comprehensive change log will be maintained for all staff data. This log will record every modification made within the system, including who made the change, what was changed, and when the change occurred. This level of transparency and traceability will be instrumental in auditing HR data and processes.
- Configuration of Approval Workflows for HR Transactions. Approval workflows for various HR transactions will be configured within the system, requiring oversight by line managers and the Head of the Operational Support Department. This step is designed to establish a clear, structured process for all HR-related actions, from leave requests and expense approvals to significant changes in staff members' status. By implementing these workflows, RIMES aims to enhance the efficiency and accountability of its HR operations, ensuring that all transactions are reviewed and approved by appropriate level of authority.
- Comprehensive Training Program. This component enhances the overall effectiveness of the proposed enhancements, which includes:
 - Intensive training for HR staff on the functionalities of the HRIS system, focusing on data entry, analytics, security, and privacy compliance
 - Introductory sessions for all RIMES staff on using the HRIS system for submitting timesheets, applying for leave, and accessing payroll information

Procurement of the HR Information System will undertake the strategy below to ensure that the system that is selected best fits RIMES' operational needs and strategic objectives:

- Need assessment and definition of requirements. This involves an internal audit of existing HR processes to identify inefficiencies and areas for improvement; consultation with all key stakeholders across HR, IT, and operational departments to gather information on system requirements; and defining the technical, functional, and security specifications of the system.
- Procurement. This includes market research, and vendor selection and contracting.
- Implementation planning. This involves development of a comprehensive implementation plan, outlining timelines, resource requirements, and risk mitigation strategies, including the creation of an implementation team comprising HR, IT, and other stakeholders for project oversight.
- System installation, testing, and implementation. This involves system set-up, customization, and testing, including HR staff training.

Professional development. Human resource focus has been on meeting program/project requirements in response to demands from Member and Collaborating States. Expansion of RIMES operations would exert more pressure for the current staff members to multi-task. Staff capacity building is an area that needs to be prioritized henceforth in RIMES. The capacity building process will take the approach shown in Figure 8.



Figure 6. Capacity development process

This cyclical process aims to ensure that staff members' skills and competencies keep up with evolving international standards and match the requirements of expanded operations. Regular assessments will highlight capacities that are required and need to be filled, either by training/re-training existing staff members (a priority) or hiring new staff members. These assessments shall be conducted:

- Every 6 months for financial management, procurement, and human resources, using table-top/ situational exercises to test operational efficiency. Frequency could be adjusted to annual as capacities of these operational units mature.
- Annually for 24/7 earthquake and tsunami operations and the IT Department through simulation exercise to test SOPs and practice staff members involved in their defined roles
- Annually for all staff members, integrated in the annual staff performance evaluation at the end of the year

Assessment results will also feed into enhancement of policies, procedures, and operational manuals. Interventions identified by staff members will be prioritized as high, medium, or low according to their significance to operational/institutional efficiency, effectiveness, and accountability. Interventions prioritized as:

- High will be implemented within 3 to 6 months of the assessment
- Medium will be implemented within 1 year of the assessment
- Low will be implemented within 1.5 years of the assessment

Capacity building interventions could focus on operational competence, efficiency, and accountability; leadership/management, coordination, knowledge-sharing, and communication; and service delivery (Table 3).

These interventions shall be consolidated into a comprehensive capacity development program that would also include:

- Regular training sessions on various topics relevant to staff roles and RIMES' evolving needs, including technical skills, soft skills, and updates on compliance and best practices
- Opportunities for certification and advanced training in specific areas relevant to staff roles and career paths
- Structured programs aimed at enhancing professional competencies and capabilities of all staff members. These programs will cover critical thinking, problem-solving, project management, and digital literacy, among others.

Table 3. Potential areas for capacity enhancement, and level of intervention

Areas of enhancement	Department/Unit	Intervention level and frequency		
		Basic	Intermediate	Managerial
Operational competence, efficiency, and accountability	All Departments/ Units, including Country Offices and their Units	For new staff, on entry to RIMES	<ul style="list-style-type: none"> For newly onboarded staff, immediately on entry to RIMES Immediate training for Finance Management, Procurement, and Human Resources staff members for implementing enhanced processes Other requirements as needed per onward assessment 	<ul style="list-style-type: none"> For newly onboarded managers, immediately on entry to RIMES For existing department/ unit managers, as needed per assessment
			<ul style="list-style-type: none"> Customized refresher trainings to be integrated in annual staff events 	
Leadership/ management, coordination, knowledge-sharing, and communication	All Departments/ Units, including Country Offices and their Units	For newly onboarded staff, immediately on entry to RIMES	<ul style="list-style-type: none"> For newly onboarded staff, immediately on entry to RIMES For existing staff, as needed per assessment 	<ul style="list-style-type: none"> For newly onboarded managers, immediately on entry to RIMES For existing managers, as needed per assessment
			<ul style="list-style-type: none"> Customized refresher trainings to be integrated in annual staff events 	
Service delivery to Member and Collaborating States	<ul style="list-style-type: none"> Climate, Weather, Hydrology, and Earthquake/ Tsunami Departments Societal Applications Science, Technology, and Innovation Department Country Offices and relevant Units 	For newly onboarded staff, immediately on entry to RIMES	<ul style="list-style-type: none"> For newly onboarded staff, immediately on entry to RIMES For existing staff, as needed per assessment 	<ul style="list-style-type: none"> For newly onboarded managers, immediately on entry to RIMES For existing managers, as needed per assessment
			<ul style="list-style-type: none"> Customized refresher trainings to be integrated in annual staff events 	

Training materials will be curated in the Capacity Building module of ProMISe. These could include self-training guides in pdf and interactive audio-video training modules. Schedules shall be logged in the Calendar module of ProMISe as priority events; the system shall notify staff members of priority events to avoid scheduling of other/competing events during the period.

A Capacity Development Specialist shall lead the development and implementation of the capacity development program to train human resource, considering RIMES' requirement for highly specialized experts that meet RIMES' program needs, who are often not readily available in the job market. RIMES needs to explore innovative ways, such as developing skilled human resource within country offices, and leverage it from different country offices to implement programs in other countries. Investment required for the Capacity Development Specialist could be sourced from country offices that borrow experts.

The effectiveness of capacity building initiatives will be assessed annually by RIMES M&E Unit.

Annex 3. Project Management Plan

Establishing a Project Management Plan. The first step for designing a successful project management plan is to develop standardized project management processes and methodologies based on PMI standards. This includes defining project initiation, planning, execution, monitoring, and closing processes (Figure 5). The plan will also ensure that these processes are documented and accessible to all project stakeholders.

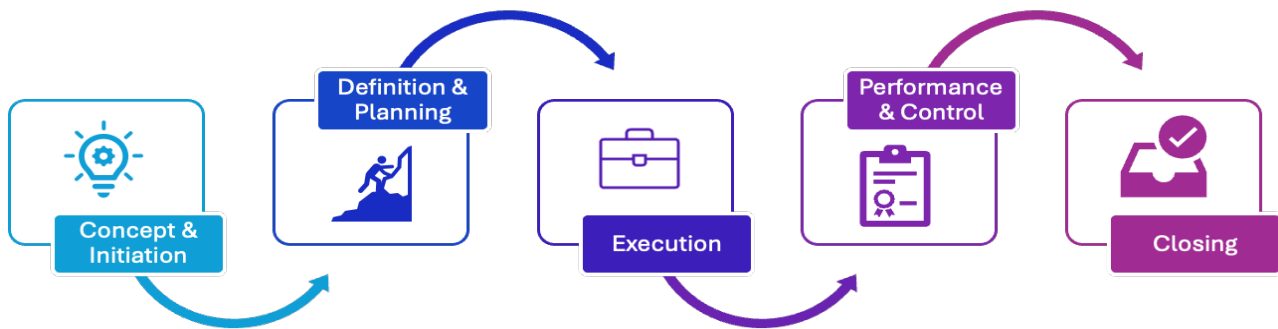


Figure 7. Steps in project management planning

A standardized project charter format should be finalized so that overall management can be easier to supervise. This will define the objectives, project scope, deliverables, stakeholders, resource/budget summary, timeline, etc. RIMES may develop an automated template and integrate in ProMISe to connect assigned staff members, including the project manager, during project initiation.

The comprehensive project management plan shall be linked to the ProMISe portal to support project planning, progress tracking, stakeholder management, etc.

Training on project management. A comprehensive training curriculum will be developed based on identified training needs and organizational priorities for project management. RIMES will craft a comprehensive curriculum that incorporates basic tool and techniques of PMI training methods. To maximize effectiveness and engagement, RIMES will collaborate with certified institutions or experts to design customized modules and incorporate multiple delivery methods, such as instructor-led sessions, workshops, online courses, and self-paced learning.

- **Training Delivery and Implementation.** The training promotion phase will begin with actively facilitating training opportunities across various communication channels to generate interest and encourage widespread participation of project managers. In addition, RIMES shall provide continuous support and resources to all employees, enabling them to reinforce learning and seamlessly apply newly acquired skills at work.
- **Train and certify professionals based on the PMI standards.** RIMES will strengthen the overall project management system through training of team members and project managers and certification programs accredited by PMI. RIMES will arrange several project management training sessions to ensure employees are resourceful and can execute projects following PMI guidelines. During training sessions, topics including, but not limited to, risk management, budget planning, programming and database management, and research methodologies will be covered. RIMES shall facilitate employees to pursue certifications, such as Project Management Professional (PMP) and Certified Associate in Project Management (CAPM), and provide funding opportunity for all department heads and in-country project managers. Also, IT professionals shall gradually obtain certifications, such as VMware certification, System

Administration Certification, Amazon Web Service (AWS), Microsoft SQL certification, etc., for effectively managing IT-enabled projects.

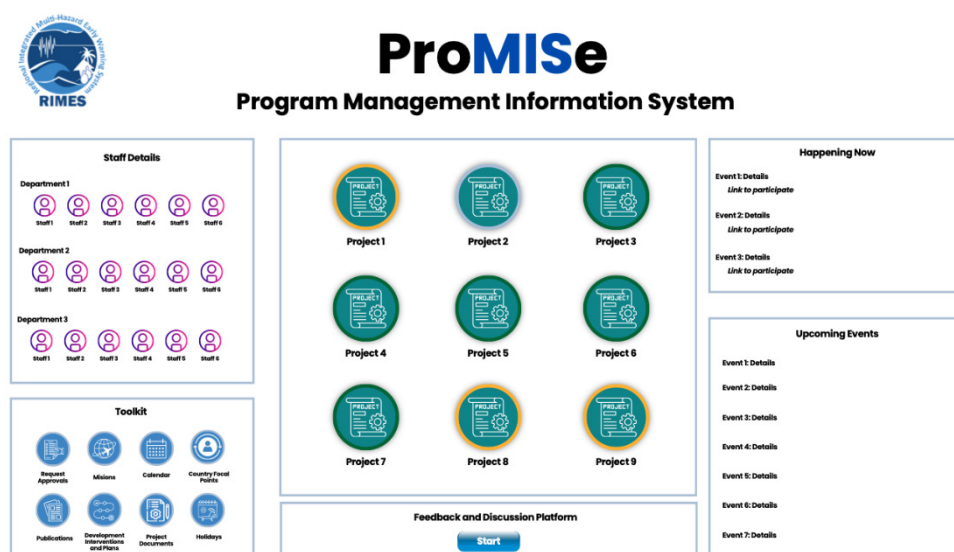
- ***Development of SOP and guidelines, and management system audit.*** RIMES shall formulate a detailed SOP, maintaining PMI standards in project management, along with necessary guidelines and templates for management practice. Continuous monitoring and auditing shall take place annually to ensure proper management and ensure smooth operations. Feedback and recommendations shall be addressed, and an iterative process shall take place to improve management capacity continuously. This will be supported by internal and external audits to minimize finance errors in budget allocation, expenditure, accounting bookkeeping, etc. Half-yearly internal audit can be conducted, and an annual external audit shall be arranged so that donor requirements can be satisfied.
- ***Ensuring compliance with PMI standards.*** Regular assessment and validation of project management practices against PMI standards and guidelines shall ensure alignment and compliance. RIMES shall establish collaboration through a Memorandum of Agreement or other means of agreement with PMI to stay abreast of updates and revisions to PMI's PMBOK framework and incorporate relevant changes into organizational processes and methodologies.
- ***Full development of RIMES integrated project management tool: ProMISe.*** As RIMES expands its services to its Member and Collaborating States, project management requires more resources, particularly staff time. This increased staff time requirement for project management has compounding impacts on project management efficiency, institutional platforms for knowledge-sharing, and cost for project management. While commercial tools are available for various project management purposes, the cost for licenses, subscriptions, annual renewals, and additional services are exorbitant and unsustainable. Moreover, these commercial project management tools cannot be fully customized for RIMES requirements. To address these challenges, RIMES will fully develop ProMISe³, an integrated/one-stop tool for project management, to promote efficiency, maximum coordination of efforts, and sustained knowledge-sharing among RIMES staff and consultants (differential access levels shall be provided to staff and consultants). Annex 3 presents the proposed interface design and features of ProMISe.

Annex 4. Design of RIMES' Integrated Project Management Tool: ProMISe

ProMISe is an integrated/one-stop tool for project management for promoting efficiency, maximum coordination of efforts, and sustained knowledge-sharing among RIMES staff and consultants. ProMISe will enable the following in a single platform:

- Progress tracking of all of RIMES projects;
- Access to relevant information and tools on projects management;
- Coordination, and where feasible, cross-integration of project activities/events; and
- Feedback and knowledge sharing.

The figure below shows the proposed interface design.



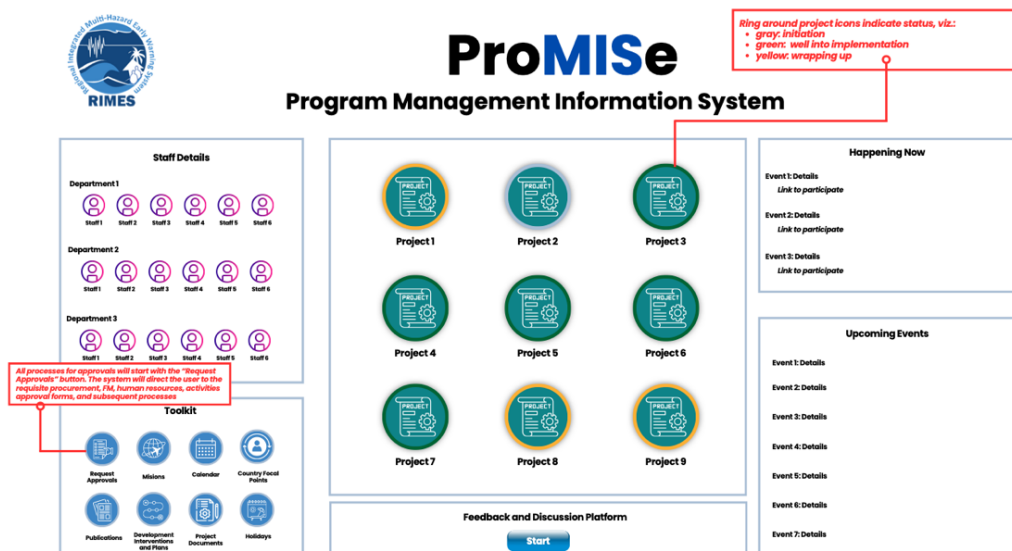
Proposed ProMISe interface design

RIMES will fully develop ProMISe considering the gaps in its existing Management Information Systems (MIS) – RIMES MIS and CARE MIS, needs of project management teams, and current and emerging technologies. The system will consist of the following modules:

- **Staff Details.** This module provides summaries of staff competencies/expertise, project involvements, and project-wise focus of work
- **Toolkit.** This module provides staff and consultants a set of interconnected/interlinked tools for procurement, financial management, and human resource management; tools for managing time of staff, activities, resources, and documentation will also be available. The tools will be interconnected, causing one action to prompt the next action to be fulfilled, until a process is completed (example provided in the box below). Use of the tools in the toolkit will also update the modules in Pro-Track (Progress Tracker). Submitted documents will be automatically filed/curated in respective repositories/modules.
- **Happening Now.** This module contains ongoing events, with access details provided. Online links will automatically open for RIMES staff/consultants for encouraging cross-project participation and knowledge-sharing/learning.
- **Upcoming Events.** This module provides project events of up to 2 months' lead time, with details to offer project staff and consultants with opportunities to coordinate and collaborate on interconnected/correlated activities.
- **Feedback and Discussion Platform.** This module allows RIMES staff to articulate comments/feedback as they arise, and obtain responses from relevant colleagues. The platform shall encourage dynamic exchange of ideas on any relevant topics among staff members at any

time. The platform will be designed to categorize comments/feedback/discussions as open or closed forums. For closed forums, comment/feedback senders or discussion initiators would be able to identify staff/colleagues to be involved in such feedback forum. Open forums, on the other hand, provides avenue for everyone to join in the discussion.

- **Project Status.** This module provides a snapshot of all the projects that RIMES is actively implementing. The ring color around the project icons are indicators of the project status (see figure below), which will be automated per the following category and criteria⁴:
 - Gray: initiation
 - 1 month⁵ from inception date for project duration of 6 months to 1 year
 - 3 months from inception date for project duration of 2 to 5 years⁶
 - 6 months from inception date for project duration of 6 years and longer
 - Green: well into implementation
 - for all projects, the period immediately after the initiation stage until just prior to the wrapping up stage
 - Yellow: wrapping up
 - 1 month prior to date of project closure for project duration of 6 months to 1 year
 - 3 months prior to date of project closure for project duration of 2 to 5 years
 - 6 months prior to date of project closure for project duration of 6 years and longer



Indicators of project status in ProMise (red box top right) and details relative to “Request for Approvals” button (red box bottom left)

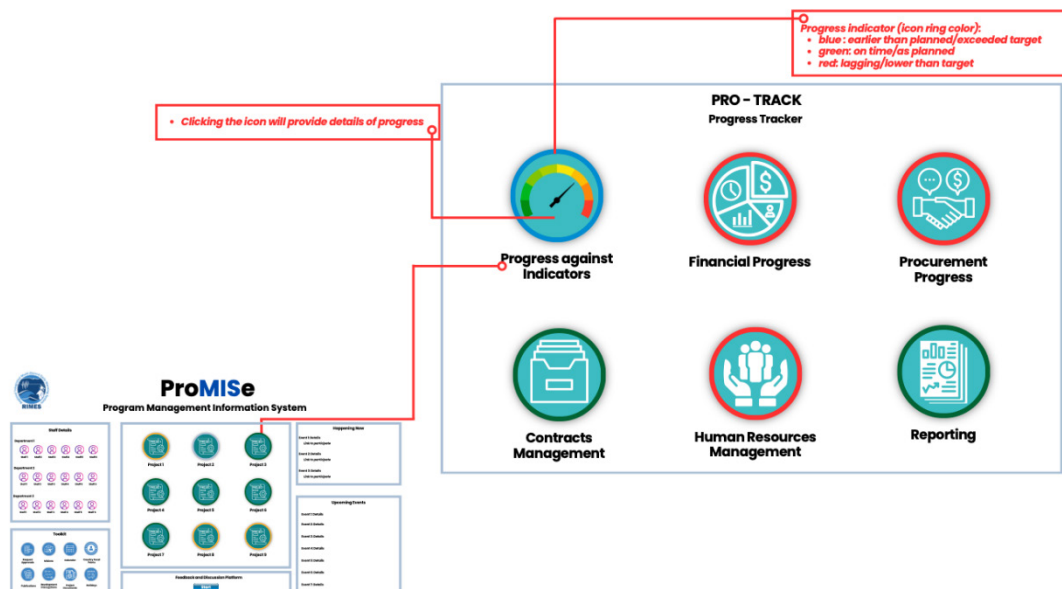
Clicking the project icons within the Project Status module will direct the user to Pro-Track (see figure below), which will provide analytics/information on:

- Progress against indicators
- Financial progress
- Procurement progress
- Contract management progress
- Human resource management progress
- Reporting

⁴ The assumptions taken in this categorization is that the longer the project duration, the wider the stakeholder focus and the more intricate the associated complexities

⁵ 1 month is equivalent to 30 days

⁶ To date, 5 years is RIMES' longest project period



Proposed details of Pro-Track

The ring color around each module in Pro-Track will indicate:

- Blue: earlier than planned/exceeded target
- Green: on time/as planned
- Red: lagging/below target

The ring colors in Pro-Track are signals for project managers to address areas that need more/immediate attention at a particular time (areas that are red signify below performance). The automated Pro-Track will be designed to provide updated status of project implementation for any ongoing project at any time at a click of a button (or click of few buttons). Clicking the icons in Pro-Track will provide details of specific project areas being tracked to enable project managers and other relevant staff to address concerns.

- Knowledge-sharing. A knowledge-sharing module with simple, but robust, fast, and user-friendly search capability/function shall be developed into ProMISe. Components and contents of the template for documenting experiences, lessons learned, and best practices are proposed as follows:
 - Project information
 - Project ID/Code
 - Project Name
 - Responsible Unit/Department
 - Responsible Person/s
 - Donor ID/Code
 - Donor Name
 - Countries covered
 - Project Goal
 - Project Objectives
 - Project Components/Activities
 - Project Deliverables/Results/Outcomes
 - Project Staff Involvement
 - Project background/rationale
 - Project's critical information
 - Highlights (e.g., pitfalls, best practices, improvements)
 - General (e.g., technical issues, coordination issues, stakeholder issues, risk management, cost, resources, schedule, communication)
 - Specific (e.g., similar projects, similar deliverables [i.e., products/systems/trainings], contact person for clarification)
 - Project expert directory
 - Expert ID

- Name
- Domain knowledge
- Skills and capacities
- Country experience
- Past/current projects and designation
- Contact details (e.g., email, mobile number, WhatsApp number, etc.)
- Project documents
 - Project proposal/Project Information
 - Project Results Framework and Theory of Change
 - Work Plan and Budget
 - Progress Reports
 - Project Review Reports
 - End-of-Project Report
 - Mid-term Evaluation Report
 - End-of-Project Evaluation Report
 - Training Assessment Reports
 - Participant Satisfaction Survey Reports
 - User Satisfaction Survey Reports
- Issues (collective reporting of issues as they occur, by more relevant staff; for each project teams/units)
 - Issues ID
 - Subject/Issue (brief description of the problem)
 - Issue description (i.e., cause/s and impact/s of the problem)
 - Actions taken (how the issue was handled)
 - Recommendations for improvements (how to avoid similar problems in the future)
 - Project stage (i.e., initiation, planning, execution, performance and monitoring, close)
 - Category of issue (e.g., scope, time, cost, quality)
 - Other project teams/units involved
 - Importance of issue
 - Frequency of issue
 - Follow up needed
 - Logger's name
 - Logging date
- Lessons Learned (top LLs evaluated by project managers and relevant staff for reporting; for project managers)
 - Lessons Learned ID
 - Subject
 - Background of LL
 - Benefits of LL
 - Link to document
 - Logger's name
 - Logging date
- Best Practices (extracted from top LLs for future use; for project managers/steering committee)
 - Good Practices ID
 - Good practice
 - Success factors (brief description on the steps taken)
 - Link to document
 - Logger's name
 - Logging date

The modules in ProMiSe will be interlinked – updates in one module will cause corresponding updates in other modules. The system will be built smart, incorporating technologies to train the system to identify patterns, and assist staff to complete the work more efficiently (e.g., the system will not allow uploading of documents that are not fully-filled; errors can be identified in forms and automatically returned to the sender for rectification).

Annex 5. Information, Communication and Knowledge Management Plan

RIMES will establish a centralized system for sharing experiences, lessons learned, and best practices which aims to foster collaboration and open communication among various staff, encourage a culture of learning through knowledge transfer, facilitate the smooth and effective collection and management of information and lessons learned, and ensure retention of crucial institutional experiences and knowledge for future use. The system will be developed as part of ProMiSe to ensure synergy in RIMES systems.

External communication shall reach out to a wide range of audiences via a suite of impactful information and communication materials, using different media and platforms to enable target groups to appreciate RIMES contribution to sustainable development, encourage action, and facilitate change of behavior.

Constitution of an ICKM Team. The Information, Communication and Knowledge Management (ICKM) Team consists of the ICKM Unit, ICKM focal points of each project, RIMES website administrator. Key roles and responsibilities are as follows:

- Head of Program Management Department (PMD) guides RIMES' ICKM efforts, ensures that initiatives support and align with RIMES' mission and goals, oversees the ICKM Team's relationship with stakeholders involved in ICKM activities, and monitors the change management aspects of ICKM
- ICKM Specialist focuses on the change management aspects of ICKM, and leads information and knowledge management activities, which includes:
 - Design and implementation of systems and processes for capturing, storing, and sharing knowledge;
 - Management and maintenance of RIMES' Learning Management System;
 - Knowledge capture and documentation, working with ICKM focal points of each project;
 - Collecting and updating project information, and knowledge storage, sharing, and retrieval processes i working with ICKM focal points of each project e; and
 - Development, management, and dissemination of communications about RIMES ICKM program to keep the ICKM team and project staff members and country teams aware of new ICKM practices and tools.
- Communications Specialist leads the design and implementation of the communication strategy and focuses on the content aspects of communication
- Project ICKM focal points are tasked in implementing the ICKM program in their respective projects, in addition to their official role in the project, in collaboration with their project managers. They work with the ICKM Specialist and the Communications Specialist on the content aspects of ICKM and in identifying new ICKM opportunities.
- Web Designer conceptualizes creative website ideas, and designs engaging and responsive website pages
- Graphic Designer packages information and communication materials to effectively convey the intended message to target audiences
- RIMES website administrator supports online communication efforts

Review and updating of RIMES' ICKM strategy. The review and updating of RIMES' ICKM strategy shall consider the following:

- Standardized process for knowledge capture and documentation. Capturing and documenting project experiences, best practices, and lessons learned could consider a three-tiered process:
 - Documentation by project teams of key issues and solutions (e.g., coordination, communication, system development, finance, procurement, human resources, etc.) as they occur
 - Documentation and validation by project managers of key lessons learned through monthly project meetings to ensure accuracy, reliability, and relevance of information
 - Regular reporting/review of lessons and identification of best practices by the ICKM Team

- RIMES communication program that engages with various stakeholders. Keeping in mind the needs and interests of RIMES varied stakeholders (Table 1), focus of RIMES' stakeholder-tailored communication program shall be:
 - Decision- and policy-makers in governments: RIMES shall demonstrate the impacts of user-driven, end-to-end development interventions, not only in the context of anticipatory actions/preparedness measures undertaken to save lives and/or protect/optimize assets/livelihoods, but also in the potential economic value of such anticipatory actions/preparedness measures, to influence governments to:
 - Replicate/upscale impactful development interventions for economies of scale
 - Promote/facilitate legal instruments/policies to ensure that development gains/project impacts are maximized and sustained
 - Promote a strong culture of proactively addressing evolving interdisciplinary requirements for multi-hazard resilience across sectors
 - Support/facilitate enhanced contribution to RIMES in terms of resources for maintaining and upscaling RIMES operations, and data for harnessing the exponential value of intra- and inter-country collaborations facilitated by RIMES
 - Local institutions and communities. RIMES shall highlight best practices, lessons learned, and season-on-season/year-on-year benefits from sustained stakeholder-owned development interventions so that local institutions and communities can:
 - Articulate to government entities and/or donors/development organizations their required capacity building requirements, taking inspiration from such good practices and lessons learned from other areas
 - Benefit from these tested interventions and sustain them
 - Build a culture of pro-activism and dynamicity in articulating unmet/evolving demands, and steering development initiatives to meeting such demands
 - Continually provide evidences on the benefits from investments in the climate information and early warning system services value chain
 - Donors and development partners. RIMES shall highlight the processes, impacts, and value of RIMES user-focused interventions across the pillars of the climate information and early warning system services value chain, and the economic value of such impacts to RIMES Member and Collaborating States, to steer the focus of donor and development partner resources on:
 - Interventions that meet user demands, while addressing comprehensively the different pillars of the climate information and early warning system services value chain to effectively meet such demands
 - Replicating/upscaling interventions that have proven impacts, for economies of scale
 - Sustainable capacity development processes/development interventions, rather than compartmentalized and short-term project initiatives that are mismatched to ground realities

Communication instruments shall include:

- A dynamic website that regularly highlights the progress of RIMES work across the pillars of the climate information and early warning system services value chain. The website shall particularly bring emphasis on evidence of the benefits of or breakthroughs in application of climate information and early warning system services in institutions and communities, lessons from the ground for guiding subsequent work, and advances in science and technology that have immensely contributed to the realization of the value of climate information and early warning system services. These shall be captured in catchy and rich narrative, graphic, and/or video formats. The website shall integrate a feedback mechanism where stakeholders can volunteer their own photo stories, experiences from the ground, and videos/video stories. The Communications Specialist shall ensure quality of volunteered materials from stakeholders. RIMES will advocate for Member and Collaborating States to embed a link of its website in relevant government websites.

- A quarterly digest to promote not only RIMES work in implementing programs/projects, but also introduce new/revolutionary ideas, challenge conventions through innovations and pioneering thoughts/models, and encourage fresh/new ideas from stakeholders on resilience and sustainability
- Promotional activities during RIMES Council meetings and RIMES Ministerial Conference to highlight RIMES work and seek collaborations/partnerships
- Program/project-wise advocacy sessions, back-to-back with the RIMES Ministerial Conference, for high-level government officials
- Collaborations with television stations in Member and Collaborating States, to ensure that relevant activities have television mileage
- Leveraging of social media platforms that regularly highlight feature stories to encourage public discussion, knowledge sharing, and influence planning and decision-making. Like the website, engaging, interesting, and informative reports and information and communication materials through media blurbs/cards and short videos shall be uploaded to social media platforms and managed frequently to widen outreach.
- Converting training materials/sessions into learning management modules to broaden their reach and efficiently sustain the training programs. This shall foster information, knowledge, and learning exchange among stakeholders.
- Updating RIMES' branding guidelines for programs and projects
- Production of interactive/vibrant brochures, fliers, and other printed materials, updating these at least annually to regularly fine-tune them to stakeholders' needs. RIMES shall ensure availability of these materials year-round, for ready sharing to stakeholders as needed
- Production of program/project-specific summary infographics/reports and/or video production, to capture program/project processes, lessons learned, and impacts
- Different versions of annual reports/annual accomplishment summaries for various audiences: infographic for those who prefer brief, catchy information, and full-blown narrative report for stakeholders who need/prefer more details. A short video production of annual accomplishments and subsequent priorities shall also be produced.

Table 4. Information and communication materials for production

Daily/Weekly	Quarterly	Annually	As needed
<ul style="list-style-type: none"> ◦ Website ◦ Mobile application with alert functions ◦ Social media platforms 	<ul style="list-style-type: none"> ◦ Website ◦ Digest 	<ul style="list-style-type: none"> ◦ Annual report/annual accomplishment summary ◦ Video production ◦ Publication of research papers in reputed international journals 	<ul style="list-style-type: none"> ◦ Television ◦ Brochures, fliers, and other printed materials ◦ Program/project-specific videos ◦ Program/project-specific summary infographics/reports ◦ Promotional activities ◦ High-level advocacy sessions

Development of knowledge-sharing module. A knowledge-sharing module with simple, but robust, fast, and user-friendly search capability/function shall be developed

Staff training. The ICKM Specialist will lead the training need assessment and subsequent development and implementation of a capacity building program that targets program, project, and country teams. The training program shall include orientation on the ICKM strategy; training on ICKM tools and practices; and retrieval; and effective engagement and communication with high-level government partners, local institutions and communities, donors and development partners, the media, and other stakeholders.

Annex 6. Monitoring and Evaluation (M&E) Plan

An M&E Team is proposed for centralized tracking of progress of and upholding the desired quality of work across all programs and projects. It shall promote and/or implement standardized practices, data-driven decision-making, and a widespread and demonstrated organizational impact. Its functions need to be seamlessly integrated with the organization's program management information system for monitoring interventions. The Team shall contribute to the Program Management Unit's (PMU) function of staying up-to-date about developments and emerging trends within the development sector, which involves gathering intelligence about the priorities and strategies of bilateral and multilateral development partners and in strategic thinking about the relevance and appropriateness of these developments for RIMES. The Team shall also contribute to the PMU's efforts of diversifying and broadening RIMES' donor base and in formulating a resource generation strategy to ensure the long-term sustainability of the organization.

Constitution of an M&E Team. The M&E Specialist, along with project/program managers and their designated focal points for reporting, ICKM Specialist, and the IT Specialist in charge of ProMISe constitute the M&E Team. Its main responsibility is to initiate continuous improvements in programs and projects, with emphasis on enhanced efficiency, effectiveness, relevance, impact, and sustainability of initiatives. Roles and key responsibilities are as follows:

- Head of PMD guides RIMES' M&E efforts, ensures that initiatives support and align with RIMES' mission and goals, and monitors the change management aspects of M&E
- M&E Specialist, reporting to the Head of PMD, focuses on the change management aspects of M&E, oversees the M&E Team's relationship with stakeholders involved in M&E activities; leads the formulation and implementation of the M&E framework; leads reflective workshops for gauging progress and identifying lessons for course correction; conducts spot checks in the field for quality assurance and data validation; provides regular updates to project/program managers and other stakeholders; and ensures high-quality and secure data storage systems
- Project/Program managers, in addition to their official role in the project, are tasked in keeping abreast of overall project progress, indicator milestones, and targets; implementing changes and course correction measures using inputs from the M&E Specialist; and in providing research assistance, including the design of tools for data collection, analysis and reporting
- Project/Program designated focal points for reporting, working with their project managers, acquire data from the field to feed into project indicators according to the project's M&E plan, conduct data quality assurance and data validation, interact with ProMISe in providing data, and share inputs from the field for course correction, learning, and documentation of lessons
- IT Specialist works with the M&E Team in operating and maintaining ProMISe

Formulation of M&E framework. The framework shall guide systematic progress monitoring toward achievement of expected results, provide frequent and comprehensive reporting on these results, and seamlessly integrate lessons learned into management decisions and future programming initiatives. The framework shall operate as a strategic driver for achieving and surpassing project objectives by actively identifying areas for improvement, mitigating risks, and facilitating a culture of continuous learning and enhancement. Framework formulation shall consider:

- Active involvement of project/program staff in the coordination of monitoring, evaluation, and dissemination practices within the organization. This participatory method aims to create synergy and collaboration among team members.
- Evaluation practices that adhere to established standards (PMI-recommended performance techniques like variance analysis, trend analysis, and quality control tools), guaranteeing the credibility, impartiality, transparency, and usefulness of evaluation exercises, ensuring the integrity of the evaluation process
- Consistent use of a project logical framework approach. This structured approach helps in clearly defining project objectives, expected results, and the means to measure success,

providing a systematic and organized foundation for evaluation.

- Monitoring of trained participants' progress and work performance after training to assess impact. Regular reviews of training programs should be conducted to identify areas that require improvement or adjustment.
- Continuous orientation and capacity-building sessions on M&E to promote M&E as a performance measurement tool
- Foster continuous improvement and audit
- Effective coordination among the M&E Team, other project/program personnel, and stakeholders. This collaboration is essential for maintaining uniformity in guidelines, criteria, procedures, and reporting.

Staff training. Led by the M&E Specialist and IT Specialist, the M&E Team will train project teams on the M&E framework and use of ProMISe for project monitoring and evaluation.

Annex 7. Structure of Three Directorates

1. SCIENCE AND TECHNOLOGY DIRECTORATE

The Science and Technology Directorate focuses on advancing RIMES' capabilities in earthquake, tsunami, ocean, weather, climate, and hydrological services, including systems research and development. It encapsulates RIMES' core scientific and technological efforts. It shall lead the development and enhancement of cutting-edge scientific research and technological solutions in the fields of earthquake, tsunami, ocean, weather, climate, and hydrological services. It shall aim to maintain and advance RIMES' position as a regional leader in multi-hazard early warning and scientific research, ensuring reliability and effectiveness of its services.

The Science and Technology Directorate consists of three (3) departments with functions as described below:

(1) Earthquake, Tsunami, and Ocean Services Department, and (2) Weather, Climate and Hydrological Department

Preserving its original organizational structure, but reporting to the Science and Technology Director, these two Departments, comprising of oceanographers, tsunami modelers, seismologist, meteorologists, climatologists, NWP modelers, hydrologists, agriculture experts and data scientists will be in charge of development and refinement of cutting-edge methodologies and technologies in hydro-meteorology, climatology, earthquake, tsunami, and oceanography and their applications in risk reduction and resource management. Activities could include developing advanced forecasting models, data assimilation, and new approaches in weather-ready and climate-smart decision-making. Both Departments shall work with the System Research and Development (SRD) Department in developing/customizing tools and systems for the countries and testing these in operational and user environments, as well as in operating and maintaining data and forecasting systems, such as DataEx, SESAME, FloCAST, SMART, FOCUS, OSFAS etc.

(3) Systems Research and Development Department

Expanding demands from Member and Collaborating Countries put more pressure to the SRD Team at RIMES. The existing SRD Department undertakes research and development on digital systems, operation and maintenance of existing digital systems, and responding to day-to-day information technology (IT) requirements (which has been devolved partly to the existing Human Resource and Operations (HRO) Department). RIMES' current engagement with a select pool of climate impact modelers/researchers is ad hoc. Due to increasing and fast-evolving stakeholder demands, RIMES has to gradually integrate this select pool of modelers/researchers as full-time staff. With lean human resource, RIMES' focus has been to quickly address Member and Collaborating States' requirements, leaving little room for the SRD Department to engage in capacity building activities and innovative research programs that expand developers' creativity and skills in areas of RIMES specialization.

Structure of the SRD Department. The SRD Department would have the following specific/dedicated compartments of work/activities, while also strongly interconnected:

- An Innovations Unit, comprising of solution architects, data analysts, full stack developers, DevOps Engineer, visualization experts, and user interface/user experience (UI/UX) Developer, will be working with the Weather, Climate, and Hydrological Services Department and Earthquake, Tsunami, and Ocean Services Department in developing and testing new tools and/or customizing existing tools to integrate new technologies or steer the systems to evolving requirements of user sectors and NMHSs. System developers in projects⁷ for digital tool/system development will be entrenched in the Innovation Unit, while also reporting to project leads/managers/directors. Project leads/managers/directors will work closely with

⁷ Minimum capacity in digital systems development will be established in each department for efficiency and redundancy/fallback, and cross-department learning/knowledge transfer.

solution architects, to ensure that targeted tools are developed as required by the projects. The Innovation Unit will employ latest technologies to ensure optimum system connectivity, data flows, pattern analyses and recognition, and efficiency. Projects will contribute to staff costs, commensurate to the required work from the SRD Department. The Innovation Unit's focus is on digital tool development/ customization and full operationalization. Once fully operationalized, the Innovation Unit will deploy the completed/fully operationalized tools to the RIMES Center for Data, Analytics, and Impact Prediction Tools.

- System Operations, Management, and Maintenance Unit, will take charge of and ensure the management, maintenance, redundancy of operations, and security of the systems/tools once these are fully developed/customized and operationalized by the Innovation Unit.
- IT Support Unit will take responsibility of IT requirements vis-a-vis RIMES' day-to-day administrative operations.

Updating of the Systems Research Development Strategy and Roadmap. The SRD Strategy and Roadmap will be updated for integrating technological innovation and best practices. The strategy describes value-addition to SRD systems and services, based on requirements of various stakeholders, while the roadmap defines the execution of the strategy, which includes key development work, timeline, and dependencies.

Expanding collaborations with leading global research/scientific institutions⁸. These collaborations aim to continuously integrate good practices and latest scientific and technological advances in RIMES' services for Member and Collaborating States.

Effectiveness of the Systems Research and Development Department will be periodically assessed by the RIMES M&E Unit.

2. SOCIETAL APPLICATION AND INSTITUTIONAL DEVELOPMENT DIRECTORATE

The Societal Application and Institutional Development Directorate will be dedicated to applying scientific and technological advancements in practical, societal contexts to maximize impact and usability of RIMES' services, aiming at enhancing community preparedness, climate and disaster resilience, and institutional capacities among Member and Collaborating States through tailored programs and activities. It shall bridge the gap between scientific advancements and societal needs, ensuring that RIMES' research and technology translate into practical applications with tangible benefits for communities at risk.

This directorate is comprised of two departments, the functions of which are described subsequently.

Societal Applications Department is mainly in charge of translating outputs from the Weather, Climate, and Hydrological Department and Earthquake, Tsunami, and Ocean Services Department to societal and sectoral applications for resource management and climate and disaster risk mitigation. Key staff members include the Disaster Risk Management Specialist, Climate Risk Assessment Specialist, Forecast Application Specialist, Early Warning System Specialist, Community-Based Disaster Risk Reduction and Management (CBDRRM) Specialist, and Anticipatory Action Specialist, among others. The Strategic Partnership Advisor will also be part of this Department to facilitate forging of partnership agreements, particularly tripartite partnership and data-sharing agreements among RIMES, the NMHS, and sectoral agencies or key stakeholders. Sectoral experts, such as Agriculturist, Marine-biologist, Epidemiologist, Tourism Expert, and Economist may also be included, based on needs of Member and Collaborating States. The Department will also facilitate the development and deployment of the different systems and DSSs, in collaboration with the SRD Department.

Program Management Department (PMD) leads the implementation of various donor-funded

⁸ RIMES has a pioneering partnership with ECMWF on data sharing and assimilation, for enhancing and providing value added services to Member States and Collaborating Countries.

projects. Typically, each project is managed by at least a Project Officer/Coordinator and Project Administration Officer, reporting to a Program Manager for strategic guidance and overall technical and administrative oversight. The Department consists of the Business Development Unit, ICKM Unit, and M&E Unit. Activities to develop project management, ICKM, and M&E capacities are discussed in the succeeding Annexes.

Business Development Unit has two distinct but inter-connected responsibilities to “create and find” best fit technologies to meet RIMES current and emerging demands. As indicated in the RIMES Master Plan 2021-2025, the RIMES Council is responsible for mobilizing resources for Master Plan implementation, while the Program Unit is responsible for formulating and implementing projects and programs, in collaboration with NMHSs, sectoral agencies, technical partners, and local stakeholders. RIMES Program Unit prepares and submits solicited or unsolicited proposals to donors and trustees of different multi-lateral financing initiatives for climate and disaster resilience in support of developing countries, which include RIMES Member and Collaborating States.

A Business Development Unit shall be created, reporting to the Head of the Program Management Department. The Unit shall be headed by a Project Development (PD) Specialist, having the following key responsibilities:

- Lead proposal development. The PD Specialist shall work closely with the rest of the RIMES Program Unit, including NMHSs, sectoral agencies, technical partners, and local stakeholders.
 - He/She shall mobilize technical capabilities of experts from the Science and Technology Directorate to develop state-of-the-art and effective methodologies and approaches.
 - He/She shall work with the Weather, Climate, and Hydrological Services Department, Earthquake, Tsunami, and Ocean Services Department, and Innovations Unit of the SRD Department to define and frame proposals based on user requirements, emerging trends, and innovative technologies
 - He/She shall refine the proposal based on the local context and stakeholders’ capacities through his/her interaction with the Societal Applications Department
 - He/She shall coordinate with the Operational Support Directorate to ensure cost-effectiveness of project activities, while efficiently contributing to RIMES cost-recovery mechanism
- Regular scoping for funding opportunities

The PD Specialist may be supported by Project or Research Assistants, as necessary, to ensure timely and quality submission of proposals.

Considering RIMES’s limitations to cater to the needs and demands in the context of rapid technological advances, RIMES will increasingly play an Integrator role to leverage the best of technologies through Partnership. The Business Development Unit will also evolve policies and procedures to rope in partners to deliver services.

ICKM Unit. An information, communication, and knowledge management (ICKM) Unit shall be established, reporting to the Head of the Program Management Department, and led by the ICKM Specialist, supported by a Communications Specialist, Web Designer, and Graphic Designer. Working with ICKM focal points of each project and with the SRD Department’s website administrator and IT Specialist for ProMiSe, the Unit is responsible for:

- Updating, implementing, monitoring, and evaluating RIMES’ ICKM strategy;
- Capturing and documenting experiences and knowledge generated from the projects, with focus on both explicit and tacit knowledge; and
- Communicating RIMES programs, projects, and activities, and their impacts to stakeholders.

M&E Unit. A Monitoring and Evaluation Unit shall be established for centralized tracking of progress and upholding the desired quality of work across all programs and projects. It shall promote and/or implement standardized practices, data-driven decision-making, and a widespread and demonstrated organizational impact. Its main responsibility is to initiate continuous improvements in programs and projects, with emphasis on enhanced efficiency, effectiveness, relevance, impact, and sustainability of initiatives. Its functions need to be seamlessly integrated with the organization's program management information system for monitoring interventions. This unit shall consist of the M&E Specialist, along with project/program managers and their designated focal points for reporting, ICKM Specialist, and the IT Specialist in charge of ProMISe. Roles and key responsibilities are as follows:

- Head of PMD guides RIMES' M&E efforts, ensures that initiatives support and align with RIMES' mission and goals, and monitors the change management aspects of M&E.
- M&E Specialist, reporting to the Head of PMD, focuses on the change management aspects of M&E, oversees the M&E Team's relationship with stakeholders involved in M&E activities, leads the formulation and implementation of the M&E framework, leads reflective workshops for gauging progress and identifying lessons for course correction, conducts spot checks in the field for quality assurance and data validation, provides regular updates to project/program managers and other stakeholders, and ensures high-quality and secure data storage systems.
- Project/Program managers, in addition to their official role in the project, are tasked in keeping abreast of overall project progress, indicator milestones, and targets; implementing changes and course correction measures using inputs from the M&E Specialist; and in providing research assistance, including the design of tools for data collection, analysis and reporting.
- Project/Program designated focal points for reporting, working with their project managers, acquire data from the field to feed into project indicators according to the project's M&E plan, conduct data quality assurance and data validation, interact with ProMISe in providing data, and share inputs from the field for course correction, learning, and documentation of lessons.
- IT Specialist works with the M&E Team in operating and maintaining ProMISe.

3. OPERATIONAL SUPPORT DIRECTORATE

The Operational Support Directorate (OSD) ensures seamless and efficient day-to-day operation and management of the regional early warning facility, including its programs and activities. It has autonomy on its human resource and administrative functions, in line with powers delegated by the Executive Director.

The Operational Support Directorate consists of four departments, the functions of each are described subsequently.

Finance and Account Management Department: Finance Management Unit under the existing HRO Department will be restructured to report directly to the Executive Director, ensuring a more streamlined and efficient decision-making process. A professional Chief Financial Officer (CFO) will lead the Finance and Account Management Department (FAMD), embodying the strategic vision and operational efficiency required for RIMES to achieve its objectives. There are challenges to hiring, however, with high salary demands by local professionals, as well as prohibitions in Thailand on hiring of foreign individuals for financial management roles. An alternative solution is to explore the establishment of the Financial Management Unit in Bangladesh. This location offers a strategic advantage in terms of accessibility to qualified professionals and cost-efficiency.

Internal Audit Unit: Internal audit would further strengthen financial oversight. An Internal Audit Unit shall be created, comprising of an Audit Committee from RIMES Council members that report to the RIMES Council, an Audit Manager that reports directly to the Executive Director to ensure

independence and impartiality in the audit process, and possibly outsourcing internal audits to professional firms. Audit findings will be presented to the RIMES Council for review and action.

Audit Committee: The Audit Committee plays a pivotal role in the governance and accountability framework of an organization. It serves as a critical component in overseeing the integrity of financial reporting, the independence and performance of internal and external auditors, and the compliance of the organization with legal and regulatory requirements. Its responsibilities extend to both internal and external audit functions, ensuring that these activities are conducted effectively, and that they contribute to the organization's overall accountability:

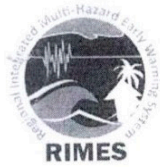
- Internal audit oversight:
 - Provide oversight of the internal audit function, ensuring it has the necessary resources, independence, and authority to execute its duties effectively
 - Approve the internal audit charter, plan, and priorities, ensuring that they are responsive to the organization's risks and operational effectiveness
 - Evaluate the performance of the internal audit function, ensuring it is effective in identifying and mitigating risks and in enhancing internal controls
 - Oversee the establishment and review of the organization's internal control systems and risk management processes, ensuring that they are appropriately designed and functioning effectively
 - Review reports from the internal audit, assess significant findings, and monitor management's implementation of audit recommendations
- External audit oversight:
 - Review the organization's annual financial statements and related disclosures before publication
 - Assess the results of the external audit, including any significant findings and recommendations, and ensure that management takes appropriate corrective actions

Human Resource and Administration Department: To accommodate growth and enhance operational efficiency, the Human Resource and Administration (HRA) Department could be expanded to include an HRA Manager, HRA Officer, and HRA Assistant.

Procurement Department: A Procurement Department shall be created from the existing team that performs purchasing functions under the existing HRO Department. The Department, reporting to the Director of Operational Support, shall be led by a Chief Procurement Officer, supported by a Procurement Manager and Procurement Assistants.

Policy Management Department: This Department is mandated to monitor and initiate policy changes and improvements, in collaboration with other Departments. It periodically identifies and mitigates operational risks and provides legal reviews. The Legal Compliance Specialist, Operations Specialist, Risk Management Specialist, and Internal Control Analyst shall comprise this Department.

Annex 8. SAHF Executive Council Resolution



RESOLUTION OF THE 3rd SAHF EC MEETING

In Hybrid Mode, Conrad Hotel, Bangkok, Thailand, on 30 November

2023 Adopted on 30th November 2023

We, heads/representatives of National Meteorological and Hydrological Services and Executive Committee (EC) members of South Asia Hydro-met Forum (SAHF) of Afghanistan, Bangladesh, Bhutan, India, Maldives, Myanmar, Nepal, Pakistan, and Sri Lanka, met in Bangkok on 30 November 2023 to review the progress of SAHF program and provide future directions to SAHF. We hereby:

Appreciate the leadership role and significant contribution of Chair and Co-Chairs of SAHF EC for providing strategies and future direction to SAHF process since its inception.

Appreciate the continuing role of RIMES in managing, coordinating, and facilitating SAHF activities on behalf of the EC.

Appreciate the SAHF Working Groups (WGs) for providing evidence-based reports on gaps in the current observations and monitoring, modelling, and forecasting, impact-based forecasting and capacity building efforts both at regional and national levels and providing recommendations for enhancing delivery of weather, water, climate, ocean, and capacity building services.

Appreciate the World Bank for providing continuous support to SAHF program since its inception in 2018, funded by the UK Government and the European Union (EU) through PARCC & RAP, and the EU-SAR DRM Program, managed by GFDRR.

SAHF Strategies for future directions.

Reaffirm commitment to contribute to regional pooling of resources and leveraging them to meet specific country needs to achieve economy of scale in applying investments.

Resolve to expand SAHF to include the heads of the hydrology agencies in each of the member countries, where meteorology and hydrology are not combined.

Resolve to expand and deepen SAHF to enhance the capability of all SAHF members to meet the needs of each country to make better decisions to minimize the adverse impact of weather-, water and climate- related hazards and maximize the social and economic benefit of improved services.

Resolve to achieve the above by continuing to strengthen each link in the hydro met value chain - observation and monitoring, modelling and analytics, impact-based forecasts, tailored services, and integrated services to create user-oriented decision support systems relevant to national needs.

Reaffirm the importance of maintaining the Data Exchange Platform (DATAEX), ongoing regional numerical weather prediction, the SAHF knowledge hub and forecast verification activities, developed, and operated by RIMES on behalf of SAHF members, for current and future needs.

Resolve to commit financial resources to strengthen SAHF secretariat with additional human and other required resources.

Agree to actively engage with other EU institutions in particular engaged in Digital Earth and GLORI (Global to Regional ICON Digital Twin) efforts, and other non-EU institutions such as UKMET and expanding cooperation with ECMWF, MET NORWAY for increased data sharing, improved use of model outputs to improve the accuracy of forecasts.

Recognize the need for sustained capacity building of members for project implementation in respect of all 4 thematic areas and trans-thematic areas of SAHF.

Appreciate the support extended by UK Government and UKMET Office through WISER program to support the implementation of regional IBF priorities.

Resolve to continue capacity building efforts under the umbrella of SAHF.

Resolve to share data through DATAEX platform amongst SAHF Members countries through MoU process wherever required for mutual benefit towards monitoring and detection of severe weather.

Recognize/appreciate the regional support provided by India through regional collaboration mechanism and institutions like RSMC-Tropical Cyclones, RSMC- Severe Weather Forecasting Programme, RSMC-South Asia Flash Flood Guidance.

Resolve to integrate regional guidance from other platforms to SAHF in respect of Flash Flood Guidance, multi-satellite images and data, coastal inundation forecasting etc.

Resolve to upkeep and maintenance of observation systems sustainably for providing public good services such as early warning for safety and security of communities

Appreciate the need for providing value added and tailormade services to other users of on demand and it is the shared responsibility of all users of climate services to bear the cost of maintaining and upkeeping of observation of networks.

Resolve to provide value added services on to those users who demand such value-added services through a cost recovery instruments for meeting the cost of maintaining observation networks to reflect equitable cost sharing of all users of data.

Agree to share scan synchronized radar data amongst members of SAHF for early warning purposes through commonly evolved operational protocol.

Resolve to establish regional processing center for real-time precipitation data grid for South Asia at SAHF secretariat.

Resolve to establish operational centers of expertise hosted by SAHF members to develop and share skills in tailored and integrated services including, but not limited to, applications of mountain meteorology, marine and coastal services, and impact-based multi-hazard early warning systems and services.

Recognize the importance of decision support systems (DSS) that enable a wide range of data and information to be shared and exchanged between producers and users of digital services.

Appreciate the contribution of CARE project Component 1 in establishing DSSs through co-production of services with stakeholders institutional mechanisms and application of these DSS tools in pilot countries – Bangladesh, Nepal and Pakistan and to enable RIMES to have a suite of DSSs as well as RDAS assets that SAHF could leverage, customize and replicate it in CARE non-pilot countries in the SAHF region.

Request RIMES to build on its current expertise in DSS to create a regional center of excellence for DSS collaboratively with partners from within and outside the region to share best practices and further the development of digital solutions for decision making.

Resolve to develop strategies to strengthen public-private engagement; to enhance climate services; to support the development of routine social and economic analyses to measure the progress of SAHF; building on RIMES Climate Data Access and Analysis System (CDAAS), Regional Data Analytics System (RDAS) and Copernicus Climate Changes Service (C3S), among others; to develop regional observational network combining radar, satellite and in situ measurements; to ensure all SAHF members have equal capacity to visualize, use and integrate model data and other information into the forecast process; to ensure SAHF members are able to take advantage of new data sources and tools.

Recognize the importance of access to the highest quality numerical weather prediction products from ECMWF, IMD, NCMRWF, and INCOIS and contributing to ongoing model and analytical development including strategical verifications.

Resolve to overcome issues that impede data exchange among SAHF members and between SAHF and ECMWF.

Recognize the importance of engaging development partners in SAHF and develop promotional documents demonstrating the SAHF value.

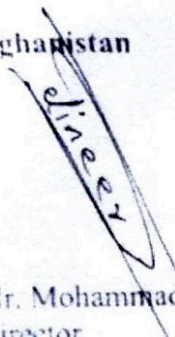
Resolve to establish a technical advisory group to provide technical and strategic advice to the SAHF EC and WGs.

Resolve to establish a development partner group based on existing frameworks to encourage the use of SAHF as the primary cooperation platform of developing future regional projects and to encourage future investment in the region with the help of SAHF support.


Appreciate expansion and deepening of SAHF program and respond to the needs of SAHF members.

SAHF EXECUTIVE COUNCIL REPRESENTATIVES
IN ATTENDANCE

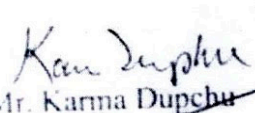
Afghanistan


Mr. Mohammad Nasim Murdi
Director
Afghanistan Meteorology Department


Bangladesh


Mr. S. M. Quamrul Hassan
Meteorologist
Bangladesh Meteorology Department

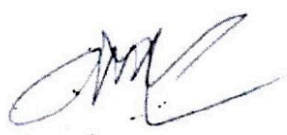
Bhutan


Mr. Karina Dupchu
Director
National Centre of Hydrology and Meteorology


India


Dr. Mrutyunjay Mohapatra
Director General
Meteorology Meteorological Department
Vice President & PR of India with WMO


Maldives


Mr. Ali Shareef
Deputy Director General
Maldives Meteorological Service

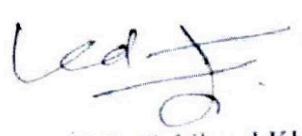
Myanmar


Dr. Kyaw Moe Oo
Director General
Department of Meteorology and Hydrology
Ministry of Transport and Communications

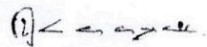
Nepal


Dr. Jagadishwor Karmacharya
Director General
Department of Hydrology and Meteorology

Pakistan


Mr. Mahr Sahibzad Khan
Director General
Pakistan Meteorological Department

Sri Lanka



Mr. Athula Karunanayake
Director General and PR with WMO
Department of Meteorology

Annex 9. SAHF IV Declarations

- The strategic role of the SAHF Executive Council, and the Resolution of the 3rd SAHF Executive Council Meeting adopted on 30th November 2023;
- The assistance provided by RIMES in managing, coordinating and facilitating SAHF activities on behalf of the SAHF Executive Council;
- The support provided by the World Bank, the Global Facility for Disaster Reduction and Recovery (GFDRR), the World Meteorological Organization, Met Office United Kingdom (UK), Indian Meteorological Department (IMD), the UK Foreign, Commonwealth and Development Office and the European Union;
- The collaborations and contributions by regional governments, agencies, and stakeholders.

RECOGNIZING

- The strategic engagement between RIMES and WMO, which has materialized into a joint strategy and action plan;
- The significance of the strategic partnership between the European Centre for Medium-Range Weather Forecasts (ECMWF) and SAHF, enabling the delivery of high quality, high-resolution and timely forecasts;
- The potential benefits of continued collaborations, regional networks and institutions, and data sharing;

AFFIRM

Our shared commitment to advancing hydrometeorological and related services in South Asia by promoting and strengthening:

- Alignment with WMO Regional Association II (RA-II), through the inclusion of SAHF activities in their Operating Plan. SAHF, as a sub-regional mechanism, will effectively contribute to Plan's objectives by fostering a cohesive approach to addressing priority themes such as strengthening of observation network and data sharing, utilization of radar data and techniques, capacity building on integrated services - including polar and high mountain activities, marine and coastal services, and impact-based multi-hazard early warning;
- The relationship between SAHF and ECMWF, by enhancing the use of ECMWF products in the region. SAHF will contribute effectively to ECMWF's requirements for observation data, facilitating data exchange among SAHF members and ECMWF; model verification, through the Data Exchange Platform (DATAEX); and enhancing forecasters' capacities in

utilizing ECMWF products. This will be achieved through the deployment of regional capacity-building programs and the promotion of ECMWF products' use in sector applications;

- Enhanced collaboration between SAHF and technical partners, including the European Meteorological Network (EUMETNET) and the Systematic Observations Financing Facility (SOFF), to strengthen the hydromet value chain in South Asia. This includes promoting the exchange of best practices in observation, forecasting and capacity building and exploiting synergies to enhance weather, water and climate services. This will ensure all SAHF members have the capacity to visualize, use and integrate model data and other information into the forecast processes, maximizing the social and economic benefits of these services;
- Co-development of hydromet services among NMHSs and South Asia regional institutions, including RIMES, Indian National Centre for Ocean Information (INCOIS), International Centre for Integrated Mountain Development (ICIMOD), and National Centre for Medium Range Weather Forecasting (NCMRWF);
- Enhanced collaboration between SAHF and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Centre for Weather and Climate (BCWC) to develop and advance regional weather and climate modelling, promote related applications and enhance capacity building.

RECOGNIZING

- The need for adequate resources to fully implement the SAHF plan and program,

EMPHASIZE

- The need for stronger coordination among development partners to avoid duplication, explore synergies and ensure optimal allocation of financial resources, and pledge to strengthen resource mobilization efforts at national level. We also reaffirm the use of SAHF as the primary cooperation platform for developing regional projects and encourage both, private and public investments in the region.

ENCOURAGE

- Collaboration with academia and private sector, including start-ups in the region, to support capacity development, the testing and adoption of new technologies and applications such as machine learning, artificial intelligence and radar techniques, and to realize the benefit of advances in science and technology for South Asia region;

- Collaboration with academia to contribute to the supply of skilled hydromet personnel to meet the needs of South Asia region for the future;
- Collaboration among NMHSs and regional institutions to share and propagate new knowledge and techniques;
- Collaboration with communities and school based hydromet observation networks for increasing local awareness and coproduction of alerts for extreme events at local scales.

RECOGNIZING

- The urgency to enhance preparedness and response to weather-related hazards in South Asia, we

REAFFIRM

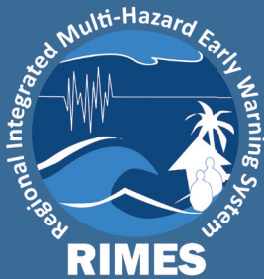
- Our commitment to implement a regional effort to reinforce people-oriented, impact-based, multi-hazard early warning systems and services, and request RIMES to lead this effort by defining communities of practice adopting a collective, “whole-of-society” approach;
- The importance of ensuring that all SAHF members have the same opportunity to minimize the adverse impacts of weather, water and climate related hazards;
- Continued collaboration among agencies and NMHSs to share new knowledge and techniques;

CALL

- For increased synergies between SAHF and the United Nations-led Early Warnings for All initiative to ensure that communities at risk receive timely, accurate, and actionable alerts, contributing to the overall resilience of the region;
- For enhanced access to information and capacity to mainstream hydromet applications;

COMMIT

- To enhance climate services in support of community resilience, by building on RIMES Climate Data Access and Analysis System (CDAAS), Regional Data Analytics System (RDAS) and Copernicus Climate Changes Service (C3S), among others;
- To engage with potential users so they can maximize the benefits from new developments.



REGIONAL INTEGRATED MULTI-HAZARD EARLY WARNING SYSTEM (RIMES)

2nd Floor, Outreach Building, Asian Institute of Technology (AIT) Campus
Klong Nung, Klong Luang Pathumthani 12120, Thailand



+66 2516 0120



+66 2516 5762



rimes@rimes.int



www.rimes.int



www.facebook.com/rimes.int



www.linkedin.com/company/rimes-int