Climate Adaptation and Resilience for South Asia

1st Bi-annual Progress Report

10 July to 31 December 2020

Enabling environment of climate resilience policies and investments in South Asia.

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RIMES

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Acronyms

ADPC	Asian Disaster Preparedness Center
AMIS	Agriculture Management Information System
BMD	Bangladesh Meteorological Department
BPDB	Bangladesh
BWDB	Bangladesh Water Development Board
CARE	Climate Adaptation Resilience
CWG	Coordination Working Group
DHM	Department Hydrology and Meteorology
DOLI	Department of Local Infrastructure
DOR	Departments of Road
DSA	Daily Subsistence Allowance
DSS	Decision Support System
EOC	Emergency Operations Center
ERD	Economic Relations Division
ESD	Environmental and Social Development
ESF	Environment and Social Framework
FMS	Finance Management Specialist
FMR	Financial Monitoring Report
GED	General Economics Division
ICKM	Information, Communication and Knowledge Management
IA	Implementing Agency
IT	Information Technology
IUFR	Interim Unaudited Financial Report
LGED	Local Government Engineering Department
MIS	Management Information System
MOA	Ministry of Agriculture
MOALD	Ministry of Agriculture and Livestock Development
MOCC	Ministry of Climate Change
MODMR	Ministry of Disaster Management and Relief
MOEFCC	Ministry of Forests and Environment
MOEWRI	Ministry of Energy, Water Resources and Irrigation
MOF	Ministry of Finance
MOFE	Ministry of Forests and Environment
MOFL	Ministry of Fisheries and Livestock
MOPDSI	Ministry of Planning, Development and Special Initiatives
MOWR	Ministry of Energy, Water Resources and Irrigation
NAMIS	Nepal Agriculture Management Information System
NDRRMA	National Disaster Risk Reduction and Management Authority
NGO	Non-governmental Organization
NMHS	National Meteorological and Hydrological Services
NPC	National Planning Commission
PAD	Punjab Agriculture Department
PIU	Project Implementing Unit
PMD	Pakistan Meteorological Department

RDAS	Regional Data Analytics Services
RFQ	Request for Quotations
RHD	Roads and Highways Department
SID	Sindh Irrigation Department
SAHF	South Asia Hydromet Forum
SAR	South Asian Region
SDU	System Development Unit
SESAME	Specialized Expert System for Agro-Meteorological Early Warning
SEU	Sectoral Expert Unit
SFP	Sectoral Focal Point
SMS	Short Message Service
SOE	Statement of Expenditure
SPN	Special Procurement Notice
STEP	Systematic Tracking of Exchanges in Procurement
TOR	Terms of Reference
TWG	Technical Working Group
UN	United Nations
WARPO	Water Resources Planning Organization

CARE SOUTH ASIA

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RIMES

Project Name	Climate Adaptation and Resilience for South Asia		
Project ID	P171054		
Approval Date	12 May 2020	Expected Closing Date	05 August 2025
Effectiveness Date	10 July 2020	Amount of Funding	USD 12,000,000
Report No.	1		
Reporting Period	10 July 2020 to 31 December 2020	Date of Submission	10 February 2021
Beneficiary Countries	South Asian Region, Bangladesh, Nepal, Pakistan	Implementing Agency	Regional Integrated Multi-hazard Early Warning System (RIMES)

1. Project Overview

1.1 Background

Socio-economic impacts of climate-related hazards in South Asian countries continue to threaten the countries' economic growth, particularly in key sectors such as agriculture, water, and infrastructure. During the 16th Summit of the South Asian Association for Regional Cooperation (SAARC) in 2010, these countries collectively resolved to strengthen climate resilience. The Climate Adaptation and Resilience for South Asia (CARE) Project aims to contribute in translating this policy into actions through enhanced regional cooperation and knowledge on climate resilience and adaptation, and development of standards and guidelines to facilitate climate-resilient planning and investments.

1.2 Project Development Objective

The Project's Development Objective is to create an enabling environment for climate-resilient policies and investments across South Asia, with the following indicators:

- Increased access to regional climate data and analytics for climate-informed decision-making;
- National-level decision-making and planning that are better climate risk-informed;
- Regional climate resilience guidelines incorporated into national standards;
- Sectoral investments supported to include climate risks and resilient design; and
- Institutional capacities strengthened to undertake climate-informed policies and planning.

1.3 Project Components

The project has three components, for implementation over 5 years:

1. Promoting evidence-based climate-smart decision-making, to enhance access to data required for risk-informed planning and investments;

2. Enabling climate-resilient policies and standards for development, to enhance transformation of policies and capacities for climate resilience and adaptation across South Asia; and
3. Project management and implementation support.

Component 1 is implemented by RIMES and the focus of this progress report. This component involves the creation of a regional resilience data and analytics service (RDAS) platform and decision-support systems (DSSs) for selected sectors of agriculture, water, road transport, planning and finance in Bangladesh, Nepal, and Pakistan. Component 1 also includes the capacity development of users of these systems and their products. The RDAS is a cloud-based open-access platform for acquiring, storing, managing, processing, analyzing, visualizing, and reporting data, for use in screening climate risks to inform investments. The DSSs are sector-specific systems, linked to the RDAS, and used to assist users in sectoral planning and decision-making.

Component 3 involves the establishment and operation of the RIMES Project Implementation Unit (PIU), which provides project management support, supervision, monitoring and evaluation of project outputs.

Table 1. Project summary for RIMES' component

COMPONENT		COST (US$ million)
Component 1	1.1 Expanding SAR Regional Resilience Data and Analytics Services	3.5
	1.2 Strengthening national level sectoral DSSs	6.0
	1.3 Supporting Climate-Informed Decision-Making	0.5
	Sub-total	**10.0**
Component 3	Project Management	2.0
	Total Project Cost	**12.0**

1.4 Project Beneficiaries

The main project beneficiaries under Component 1 include:

- Component 1.1 RDAS: SAR countries
- Component 1.2 National level sectoral DSSs: Bangladesh, Nepal, Pakistan

Table 2. Beneficiary departments and ministries

Country	Departments
Bangladesh	General Economic Division, Bangladesh Planning Commission; Ministry of Finance; Department of Agricultural Extension; Department of Livestock Services; Ministry of Water Resources; Bangladesh Water Development Board; Flood Forecasting and Warning Center; Water Resources Planning Organization; Local Government Engineering Department; Ministry of Road Transport and Bridges; Roads and Highways Department; Bangladesh Meteorological Department.
Nepal	Ministry of Finance; National Planning Commission; Ministry of Agriculture and Livestock Development; Ministry of Energy, Water Resources and Irrigation; Ministry of Physical Infrastructure and Transport; Department of Road; Department of Local Infrastructure; National Disaster Risk Reduction and Management Authority; Department Hydrology and Meteorology.
Pakistan	Ministry of Planning, Development and Special Initiatives; Ministry of Finance; Punjab Agriculture Department; Sindh Irrigation Department; Ministry of Climate Change; Pakistan Meteorology Department.

1.5 Activities and Expected Outputs

The project is being implemented for five years, starting from its effective date on 10 July 2020 until 25 August 2025.

Table 3 below provides the status of programmed activities during the 1st semester of project implementation, covering the period 10 July – 31 December 2020.

Table 3. Semester 1 work plan

Activities	2020 J	A	S	O	N	D	Remarks
1. Promoting evidence-based climate-smart decision making							
1.1 SAR Regional Resilience Data and Analytics Services (RDAS)							
1.1.1 Preliminary activities							
1.1.1.1 Assessment of existing data portals	■	■	■	■			Technical assessment report with recommendations completed, Oct 2020 (see Appendix 1)
1.1.2 RDAS Prototype System							
1.1.2.1 RDAS prototype system development					■	■	Template of RDAS dashboard developed, Sep 2020 Development of RDAS prototype system framework led by RIMES regional team -ongoing
1.2 Strengthening national level sectoral decision-support systems for resilient development							
1.2.1 Preparatory activities							
1.2.1.1 High level scoping meetings with World Bank	■	■	■				Virtual kick-off meetings completed, Sep 2020
1.2.1.2 Stakeholder mapping, inception meetings, and agency meetings	■	■	■	■	■		Bilateral technical consultations completed, Nov 2020 Revised work plan, based on stakeholder requirements, submitted to World Bank, Dec 2020 List of SFPs (see Table 6)
1.2.1.3 In-depth assessment of users' investment planning and decision-making processes, and information product and service needs	■	■	■	■	■	■	User needs assessment overall approach, methodology and tools developed by regional experts (see Appendix 2), Dec 2020 Desk review of existing systems -ongoing Consultation with sectoral agencies to understand their decision-making contexts and processes -ongoing
1.2.1.6 Technical meeting on RDAS and DSS systems				■	■		National stakeholder consultation in Pakistan, Nov 2020
1.2.2 Development of DSS for Ministry of Planning, Development and Reforms -Pakistan							
1.2.2.1 Assessment of user needs (refer to 1.2.1)						■	Coordination and consultation with MOPDSI -ongoing
1.2.3 Development of DSS for Ministry of Finance -Pakistan							
1.2.3.1 Assessment of user needs (refer to 1.2.1)						■	Coordination with MOF -ongoing
1.2.4 Development of SESAME -Punjab, Pakistan (Priority system in Pakistan)							
1.2.4.1 Assessment of user needs (refer to 1.2.1)						■	Technical assessment of the SESAME system led by RIMES team in Bangkok with support from IT Expert in Pakistan, completed (see Appendix 4) Consultation with Punjab Agriculture Department -ongoing
1.2.4.2 Development of DSS framework and finalization of data parameters						■	Activity led by RIMES regional team with support from IT Expert in Pakistan -ongoing
1.2.5 Improving DSS for Sindh Irrigation Department -Pakistan							
1.2.5.1 Assessment of user needs (refer to 1.2.1)						■	Consultation with Sindh Irrigation Department -ongoing
1.2.5.2 Technical assessment of existing DSS with the Sindh Irrigation Department					■	■	Technical assessment led by RIMES regional team with support from IT Expert in Pakistan -ongoing
1.2.6 Upgrading BAMIS for Agriculture -Bangladesh							
1.2.6.1 Assessment of user needs (refer to 1.2.1)						■	Coordination and consultation with DAE-ongoing
1.2.6.2 Technical assessment of BAMIS			■	■	■	■	Follow up on RIMES MoU with DAE to access back-end code of BAMIS -ongoing
1.2.7 Improving SESAME for Livestock Subsector -Bangladesh (Priority system in Bangladesh)							
1.2.7.1 Assessment of user needs (refer to 1.2.1)						■	Coordination and consultation with DLS -ongoing
1.2.7.2 Technical assessment of SESAME for Livestock		■	■	■	■	■	Outcomes of initial technical assessment led by RIMES regional team with support from IT Expert in Bangladesh reported (see Appendix 5)

Activities	2020 J	A	S	O	N	D	Remarks
1.2.7.3 Enhancement of DSS framework and finalization of data parameters						■	Activity led by RIMES technical team in Bangkok with support from IT Expert in Bangladesh -ongoing
1.2.8 Upgrading the Online Road Network Portal - Bangladesh							
1.2.8.1 Assessment of user needs (refer to 1.2.1)						■	Coordination and consultation with sectoral agencies (led to adjustments in the workplan, i.e., transport DSS to be developed for both RHD and LGED use) -ongoing
1.2.9 Enhancement of FloCAST -Bangladesh							
1.2.9.1 Assessment of user needs (refer to 1.2.1)						■	Coordination and consultation with sectoral agencies -ongoing
1.2.9.2 Technical assessment of FloCAST						■	Activity led by RIMES technical team in Bangkok, including discussions with FFWC and BMD, particularly on forecast module enhancements -ongoing
1.2.10 Enhancement of the Delta Portal -Bangladesh							
1.2.10.1 Assessment of user needs (refer to 1.2.1)						■	Coordination with sectoral agencies -ongoing Discussion with MOWR, WARPO, BWDB to access back-end program of Delta Portal
1.2.11 Development of Portal for Finance, ERD and Planning -Bangladesh							
1.2.11.1 Assessment of user needs (refer to 1.2.1)						■	Coordination with MOF & ADPC to identify a focal point, where a tripartite MoU was drafted for MOF as convener of SFPs in Bangladesh-ongoing
1.2.12 Supporting DHM -Nepal (Priority system in Nepal)							
1.2.12.1 Assessment of DHM's hydrological and climate collection and data management system, and climate products (refer to 1.2.1)						■	Assessment report for EWS in Nepal completed (see Appendix 3) Consultation with DHM (led to work plan revisions covering meteorological and hydrological impact forecasting) -ongoing
1.2.12.2 Technical assessment of DHM hydrological forecasting portal	■	■	■	■	■	■	Technical assessment report with recommendations prepared by RIMES technical team in Bangkok with support from IT Expert from Nepal completed (see Appendix 6)
1.2.12.3 Enhancement of data collection and management system						■	Activity led by RIMES regional team with support from the IT Expert in Nepal -ongoing
1.2.13 Upgrading AMIS -Nepal							
1.2.13.1 Assessment of user needs (refer to 1.2.1)						■	Coordination with MOF & MOALD as the latter awaits MOF endorsement of the project (SFP for MOALD not yet confirmed) -ongoing
1.2.13.2 Technical assessment of AMIS				■	■	■	Activity led by RIMES regional team with support from the IT Expert in Nepal (requires MOF endorsement to gain access to back-end code of NAMIS) -ongoing
1.2.14 Development of DSS for Transport Sector - Nepal							
1.2.14.1 Assessment of user needs (refer to 1.2.1)						■	Consultation with sectoral agencies led to revisions to the work plan where transport DSS is now intended for use by DOR and DOLI -ongoing
1.2.15 Enhancing the Public Finance Management System for Ministry of Finance -Nepal							
1.2.15.1 Assessment of user needs (refer to 1.2.1)						■	Coordination with MOF & ADPC for the latter's endorsement of the project -ongoing
1.2.16 Enhancing the DSS for the National Disaster Risk Reduction Management Authority (NDRRMA)							
1.2.16.1 Assessment of user needs (refer to 1.2.1)						■	Consultation with sectoral agencies led to the inclusion of NDRRMA as project beneficiary -ongoing
3. Project Management and Implementation Support							
3.1 Project Management and Implementation Support							
3.1.1 Enhancement of HR, procurement and finance systems							TOR for consultant submitted Accounting software procured, Oct 2020
3.1.2 Documentation, dissemination/ knowledge-sharing	■	■	■	■	■	■	Co-development of branding guidelines, newsletter with ADPC completed Development of front-end MIS, CARE project materials completed Website content development and social media posts -ongoing
3.1.3 Project implementation support, monitoring, evaluation and reporting	■	■	■	■	■	■	World Bank trainings on procurement and finance attended Designated account opened, Aug 2020 IUFR for 2nd quarter submitted, Aug 2020 Computing equipment for PIU procured, Sep 2020 Staff recruitment -ongoing (see Appendix 7)

Activities	2020 J	A	S	O	N	D	Remarks
							Temporary MIS for RIMES team shared Further development of back-end project MIS -ongoing Monthly PIU meeting -ongoing Monthly CWG meeting with ADPC -ongoing Preparation of 1st bi-annual progress report for submission to World Bank -ongoing
3.1.4 External audit and evaluation							TOR for consultant for financial audit submitted

2. Progress Summary

2.1 Project Initiation

Following its approval on 12 May 2020, meetings through various platforms were held to present Component 1 of the CARE project to its stakeholders in South Asia, e.g., World Bank kickoff and technical consultation meetings, and 11th and 12th RIMES Council Meetings.

2.1.1 RIMES Council Meetings

The CARE project was first introduced to the RIMES Council on 21 January 2020 by the World Bank team, at its 11th Council Meeting in Pathumthani, Thailand. The Council, composed of heads of National Meteorological and Hydrological Services (NMHSs) and national scientific and technical agencies generating multi-hazard warning information, welcomed and endorsed the project. Noting its alignment with the RIMES Master Plan, the Council resolved to integrate the project into regional and national programs of pilot countries, sustain the project beyond the project period, and leverage enhanced capacities to broaden and deepen the project to assist all participating countries in South Asia.

On 8 June 2020, a virtual meeting among RIMES Council Members of South Asia in 8 countries in Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, was organized to i) announce CARE Project's approval, ii) generate project support, and iii) receive inputs on the RDAS components and functionalities. The meeting underlined the analytical support that the regional RDAS platform and national decision support systems will provide to its sectoral users in climate resilience policymaking and investment planning, noting global and regional open-source data will be integrated into the RDAS platform, which shall be an open-access system; while local data shall reside within the DSSs, and shall have different levels of user access/ permissions. Countries' support to the project, specifically, in the development of the systems was further highlighted in the meeting.

Project updates were presented during the 12th RIMES Council meeting 26 on November 2020 by the World Bank CARE Project Task Team Lead, Mr. Haris Khan; RIMES and ADPC Project Directors, Ms. Carlyne Yu and Mr. Irfan Maqbool, respectively.

2.1.2 World Bank Kickoff Meetings

The World Bank team, in collaboration with RIMES and ADPC teams, organized a series of online meetings from 8-17 September 2020 to introduce the project to its government beneficiary departments, in particular for the agriculture, water, transport, planning and finance sectors in Bangladesh, Nepal and Pakistan. The meetings were held to present and receive feedback on the project framework, work plan, and support requirements; receive updates on completed and ongoing relevant efforts, and identify synergies with these efforts; concur on project implementation arrangement, including roles and responsibilities of partners; agree on the timeline of project implementation, including project milestones and coordination mechanisms; and identify departmental focal points to lead and facilitate project activities in each country. One-pager consolidated summary notes were shared with the respective departments for their review, guidance and inputs to in-depth technical consultations following the initial kick-off meetings.

Table 4. Project kickoff meeting highlights and outcomes for Component 1

Highlights	Outcomes
Nepal	
○ The project kickoff meetings in Nepal were virtually held from 8-9 September 2020, with participants from 8 institutions: - Ministry of Finance (MOF) - Ministry of Forest and Environment (MOFE) - Department of Hydrology and Meteorology (DHM) - National Disaster Risk Reduction and Management Authority (NDRRMA) - Department of Road (DOR) - Ministry of Energy, Water Resource and Irrigation (MOEWRI) - National Planning Commission (NPC) - Ministry of Agriculture and Livestock (MOALD) ○ RIMES presented its planned activities for the different sectors under Component 1 ○ RIMES assured DHM that access to historical station data will be restricted/remain under DHM control; and that raw datasets will be transformed into information that will benefit other sectors ○ RIMES to integrate DHM forecasts with various sector-specific layers, e.g., critical infrastructure, terrain/ geologic parameters, hazards and risks, EOCs, etc. ○ RIMES assured it will build on existing systems, where available, by assessing gaps in the current system and addressing them through enhancement of its processes/ functionalities	○ Stakeholders: - Welcomed the project and its planned activities, as it addresses climate change issues in disaster-prone Nepal - MOFE, NDRRMA, MOEWRI, NPC noted its indirect benefits through the RDAS platform and improvement of weather and climate information through the DHM portal - Appreciated its usefulness and effectiveness in enhancing and sustaining existing systems, e.g., DHM and NAMIS portals; and support for the automation and communication of weather and climate information to its sectoral users - Noted the opportunity for data sharing and learning among member countries, as the project is regional - Assured provision of necessary support for executing the project, including participation in follow up meetings and nomination of focal point ○ DHM identified its project focal point: - *Dr. Indira Kandel*, Senior Divisional Meteorologist ○ MOEWRI requested flexibility in the work plan, e.g., DHM technical training; RIMES to address DHM's capacity building needs through a parallel World Bank project, *SAHF* ○ RIMES to include enhancement of NDRRMA portal in the workplan ○ NDRRMA offered to use various mechanisms and forums at the highest level and offered access to existing inventory assets, including bridge and road networks, collected under a World Bank project, *Strategic bridges and roads* ○ RIMES requested NPC's assistance in accessing statistical/ demographic data through its *Statistics Office* ○ Summary notes indicating planned activities and support requirements to be shared with stakeholders, for their guidance and comments ○ Recommended to involve academic and private sectors in the process
Pakistan	
○ The project kickoff meetings in Pakistan were virtually held from 14-15 September 2020, with participants from 4 institutions: - Ministry of Planning, Development and Special Initiatives (MOPDSI) - Ministry of Climate Change (MOCC) - Punjab Agriculture Department (PAD) - Sindh Irrigation Department (SID) ○ RIMES presented its planned activities for the different sectors under Component 1 ○ RIMES to integrate outputs from guidelines, processes, and capacity building activities developed under Component 2, and other initiatives, into the DSSs	○ Stakeholders: - Welcomed the project, noting its usefulness and the various support it will provide - MOCC noted its indirect benefits through the RDAS platform and use/linkage of weather and climate information and products and services into their processes/systems - Expressed keen interest in participating ○ Appreciate receiving summary notes indicating planned activities and support requirements for their guidance and comments ○ Recommendations include:

Highlights	Outcomes
	- Detailed dialogues to be held immediately for updating the work plan, timeline, and capacity requirements; ensuring its alignment with ministry agenda; and to facilitate and expedite mobilization/ implementation process - Provide institutional support who can be placed with the MOPDSI to take care of the CARE project - Support for the steering committee
Bangladesh	
○ The project kickoff meetings in Bangladesh were virtually held from 16-17 September 2020, with participants from 6 institutions: - Ministry of Water Resources (MOWR) - General Economic Division (GED), Bangladesh Planning Commission - Ministry of Agriculture (MOA) - Ministry of Fisheries and Livestock (MOFL) - Local Government Engineering Department (LGED) - Ministry of Finance (MOF) ○ RIMES presented its planned activities for the different sectors under Component 1 ○ RIMES noted ongoing works and potential areas of collaboration and assured a collaborative approach to the process, building on existing cross-cutting data available within various agencies ○ GED noted challenges in data that needs to be reviewed, e.g., sedimentation, water discharge, salinity, etc. ○ DAE recommended the upgrading of its agro-met hub/ control room and exploring synergy with AMISDP and CARE projects ○ MOA noted challenges in productivity, sustainability and climate change issues; and proposed several interventions	○ Stakeholders: - Welcomed the project, noting the opportunities that will be provided as Bangladesh is very vulnerable to climate change - The water sector appreciated the benefits of the DSS and its complementarity with the Delta Plan (BDP) 2100 and Jamuna River Economic Corridor - Expressed its commitment to support the project - Expect outputs from the project to be useful ○ MOF nominated its project focal point: - *Ms. Milia Sharmin,* Deputy Secretary, Budget Wing ○ Summary notes indicating planned activities and support requirements to be shared with stakeholders, for their guidance and comments ○ Recommendations include: - BWDB, WARPO, BPDB as partners in the process - Maximize synergy and use of resources with other projects, including a mechanism for data access and knowledge exchange, coordination and implementation arrangements

2.1.3 Technical Consultation Meetings

Bilateral technical consultation meetings with government beneficiary departments were jointly organized by RIMES and ADPC from September to December 2020 to confirm the project activities, support requirements and expected outputs for 2020 and 2021; and to finalize focal person within each department.

These meetings resulted in adjustments in the Year 1 work plan which was submitted to and approved by the World Bank in December 2020. Meeting highlights and outcomes are shown in Table 3.

Table 5. Technical consultation meeting highlights and outcomes for Component 1

Highlights	Outcomes
Bangladesh	
○ RIMES technical team continue to engage with stakeholders in Bangladesh to understand their decision-making context and processes	○ Agriculture - DAE nominated its SFP (ongoing process) ○ Finance, ERD and Planning

Highlights	Outcomes
○ Agriculture - MOU with DAE developed for facilitating the collaboration of the project; RIMES Bangladesh following up DAE feedback on MoU which will facilitate access to BAMIS portal - RIMES in discussion with the BAMIS Project team on their plans to enhance the system, a move considered similar to CARE Project activity ○ Transport - RIMES Bangladesh securing access to RHD and LGED portals - RHD appreciated the support that can be provided by the DSS in terms of incorporating climate change in designing for the long term, while short-term planning and reconnaissance is useful for operational purposes - LGED emphasized that even though there is one transport sector portal developed, LGED and RHD should have different streams in the system ○ Water - RIMES Bangladesh in discussion with MOWR, WARPO, and BWDB for DSS development for flood forecasting and integrated water resources management - RIMES has discussed with General Economic Division of the Planning Commission on the Delta Knowledge Portal - RIMES advised exploring potential ways of utilizing and accessing transboundary data - RIMES to streamline information during the data integration process, so data analytics can inform prioritization of investment decisions - RIMES to improve FloCAST with integrated exposure information and hydromet data	- A tripartite MoU (MOF, RIMES, ADPC) drafted for sharing with MOF for the latter's leadership as convener of SFPs in Bangladesh - MOF nominated its SFP (ongoing process) ○ Livestock - DLS nominated its SFP (ongoing process) ○ Transport - DSS for transport is now planned to be developed for use of both RHD (roads up to district level) and LGED (infrastructure up to union level) - LGED and RHD nominated their SFPs ○ Water - RIMES Bangladesh has regular discussions with FFWC and BMD on FloCAST enhancements, particularly the forecast modules - MOWR nominated its SFP (ongoing process) - FFWC finalized its SFP - WARPO to finalize SFPs ○ Cross-cutting - BMD finalized its SFP
Nepal	
○ RIMES technical team continue to engage with stakeholders in Nepal to understand their decision-making context and processes ○ Agriculture - MOALD recommended RIMES to discuss among larger group of ministries and support the ministry in extending agro-meteorological service to the entire country - Efforts to gain access to back-end code are stalled as MOALD is still waiting for MOF endorsement of the project - SFP for MOALD is not yet confirmed ○ Disaster management - RIMES to incorporate risk assessment, if any, in RDAS system - RIMES to integrate both hazard and climate change perspectives in NDRRMA's BIPAD portal ○ Planning and Finance - RIMES and ADPC met with MOF to finalize the latter's endorsement of the project, a requirement	○ Agriculture - Ongoing coordination with MOALD, MOF and ADPC to finalize SFP ○ Disaster management - NDRRMA has been added as a project beneficiary - NDRRMA finalized its SFP ○ Planning and Finance - MOF awaiting an official letter before endorsing the project to other ministries/ departments ○ Transport - Transport DSS is now intended for use of both DOR and DOLI - DOLI and DOR finalized their SFPs ○ Water - DHM portal is more refined to cover meteorological and hydrological impact forecasting - Workplan for the portal development now includes numerous components including forecast verification, forecast bias correction,

Highlights	Outcomes
by other ministries, e.g., MOALD, MOFE, MOF to move forward - RIMES needs NPC approval to access climate and sectoral data, e.g., population trend, vulnerability, weather and climate-related risk, etc. - A stakeholders' meeting is proposed to be held in case of reappointment of SFP to ensure proper turnover and continuity of discussions with MOF ○ Water - DHM indicated that the new database system for integrating hydromet data from various data sources, e.g., real-time AWS, manual, radar, gridded, satellite, etc. is almost complete and may require RIMES assistance in data quality control - RIMES to assist DHM data management where most information will flow through - RIMES to assess activities within DHM to avoid duplication with other projects - RIMES reassured that data will be completely secured, noting plans for cloud storage - Regular coordination between RIMES and DHM on weather/ climate data sharing to assist DHM in packaging and integrating into sectoral planning and decision-making ○ Transport - RIMES to integrate existing databases with databases under development (e.g., RAMS to be developed under SRCTIP project) - Detailed audit of databases to be conducted	metadata management, flood frequency and flood impact analytics - MOEWRI and DHM finalized their SFPs
Pakistan	
○ RIMES technical team continue to engage with stakeholders in Pakistan to understand their decision-making context and processes ○ Finance - Ongoing coordination with MOPDSI and ADPC to identify an SFP for MOF ○ Planning - RIMES was advised to go through MOPDSI, as convener of SFPs, when approaching other federal/ provincial ministries/ departments - MOPDSI recommended arranging a Steering Committee to convene all federal/ provincial stakeholders for discussing key project activities - MOPDSI shared project requirements based on government priorities	○ A national stakeholders' consultation meeting was held in Islamabad from 9-10 November 2020 to finalize key priorities in Pakistan ○ Agriculture - Acknowledged importance and necessity of proposed agromet DSS - Assured full support in data collection, identification and linking with other line departments - Proposed to integrate existing advisory generation and dissemination process and pest management tool in the DSS - PAD, finalized its SFP ○ Finance - MOF to finalize its SFP ○ Planning - MOPDSI finalized its SFP - MOPDSI shared the final work plan in December ○ Water - RIMES to enhance existing portal through the integration of drought monitoring and satellite data, customization of drought indices, and development of drought advisory - SID finalized its SFP ○ Cross-cutting - PMD finalized its SFP

One of the crucial recommendations during these discussions was made by MOPDSI, that is, to require implementing agencies (IAs) to officially course communication and coordination of project activities and requirements to other beneficiary ministries/ departments through the MOPDSI, as the convener of all SPFs in Pakistan. Noting that Pakistan has a federal form of government, this mechanism was vital in ensuring smooth implementation of activities from project start.

Through the "National consultation on finalizing sectoral priorities for climate-smart finance, policy, planning, agriculture and water resources management sectors in Pakistan", jointly organized by RIMES and ADPC in Islamabad from 9-10 November 2020, various government stakeholders/officials were convened in a national consultation meeting to discuss and finalize key priorities in Pakistan. The meeting also highlighted areas where the project can collaborate and create synergies with ongoing initiatives by the government and other sectors. Outcomes of deliberations, including revised work plan and recommendations, were forwarded to the MOPDSI for consideration and approval. The final work plan was submitted by MOPDSI in December 2020.

Another key outcome of the bilateral meetings was the finalization of sectoral focal points (SFPs) within each beneficiary ministry/ department to provide i) guidance on the work plan and implementation arrangements; ii) monitor and review progress and gaps; and iii) coordinate with other ministries/departments to ensure efficient and effective implementation of the project. Conveners of SFPs have been defined for each country: MOF for Bangladesh and Nepal, MOPDSI for Pakistan.

Identification of SFPs went well for beneficiary ministries/ departments in Bangladesh, especially since RIMES has built long-term partnerships with BMD and the agriculture, livestock and water sectors. For DLS, RIMES will continue to work with its technical working group for DSS development; while SFP for MOWR underwent a series of changes during this period due to staff turnover (e.g., retirement, transfer). Similarly, SFP finalization went smoothly for Pakistan, since MOPDSI took the lead in project implementation, with only SFP for MOF remaining to be finalized. For Nepal, the process was delayed due to frequent turnovers of SFPs for MOF; while other sectors, e.g., MOALD await official endorsement by MOF to move forward. Table 4 provides the status of SFPs for each beneficiary country.

Table 6. List of sectoral focal points as of 31 December 2020

Sector	Ministry/ Agency	Focal Point Details
Bangladesh		
Finance *(Convener of SFP in Bangladesh)*	**Ministry of Finance (MOF)**	Ongoing process: **Mr. Md. Hasan Maruf** Joint Secretary, ERD **Ms. Milia Sharmin** Deputy Secretary, FD
Planning	**General Economic Division (GED), Bangladesh Planning Commission**	**Mr. Nazrul Islam** Joint Chief
Agriculture	**Department of Agricultural Extension (DAE)**	**Dr. Md. Shah Kamal Khan** Project Director, AMIS DP
Livestock	**Department of Livestock Services (DLS)**	Ongoing process: **Mr. Mohammad Shah Alom Biswas** Upazila Livestock Officer (L/R Post)
Water	**Ministry of Water Resources (MOWR)**	Ongoing process: **Mr. Mahmudul Islam** Additional Secretary
	Flood Forecasting and Warning Center (FFWC)	**Engr. Arifurzzaman Bhuiyan** Executive Engineer

Sector	Ministry/ Agency	Focal Point Details
	Water Resources Planning Organization (WARPO)	Ongoing process: request letter sent to WARPO
Transport	**Local Government Engineering Department (LGED)**	**Mr. A.K.M. Luthur Rahman** Additional Chief Engineer & Director
	Roads and Highways Department (RHD)	Ongoing process: **Mr. Abdul Awal Molla** Superintending Engineer **Ms. Annesha Das Hasi** Executive Engineer, Environmental Division
Cross-cutting	**Bangladesh Meteorological Department (BMD)**	**Dr. Md. Abdul Mannan** Meteorologist
Nepal		
Finance *(Convener of SFP in Nepal)*	**Ministry of Finance (MOF)**	Ongoing process: **Mr. Ishwori Prashad Aryal** Undersecretary
Planning	**National Planning Commission (NPC)**	Ongoing process: **Dr. Chakrapani Acharya** Program Director, EMD
Agriculture	**Ministry of Agriculture and Livestock Department (MOALD)**	Ongoing process: requires MOF endorsement of the project **Mr. Shankar Sapkota**
Water	**Ministry of Energy, Water Resources and Irrigation (MOEWRI)**	**Mr. Ram Gopal Kharbuja** Joint Secretary, HED
	Department of Hydrology and Meteorology (DHM)	**Dr. Indira Kadel** Senior Divisional Meteorologist
Transport	**Department of Roads (DOR)**	**Mrs. Pushpanjali Khanal** Unit Chief, GESU
	Department of Local Infrastructure (DOLI)	**Mr. Krishna Bahadur Katwal** Senior Divisional Engineer
Cross-cutting	**National Disaster Risk Reduction and Management Authority (NDRRMA)**	**Mr. Anil Pokhrel** Chief Executive
Pakistan		
Planning *(Convener of SFP in Pakistan)*	**Ministry of Planning, Development and Special Initiatives (MOPDSI)**	**Mr. Faisal Baloch** Deputy Chief Planning Commission
Finance	**Ministry of Finance (MOF)**	Ongoing
Agriculture	**Punjab Agriculture Department (PAD)**	**Mr. Rana Mahmood Akhtar** Chief, Planning and Evaluation Cell
Water	**Sindh Irrigation Department (SID)**	**Mr. Ehsan Leghari** General Manager
Cross-cutting	**Pakistan Meteorological Department (PMD)**	**Dr. Muhammad Riaz** Director General

2.1.4 Coordination mechanism

Project Implementation Unit (PIU). In close collaboration with the sectoral and technical teams, this unit handles the day-to-day management and coordination of the project. Country units established in Bangladesh, Nepal and Pakistan leads implementation and coordination of country-specific activities.

Implementing agency (IA) coordination. The Coordination Working Group (CWG), composed of RIMES and ADPC PIUs, was established to foster close coordination and collaboration of project activities, leveraging on each other's technical capacities and competencies. The CWG, since August 2020, holds monthly meetings to discuss implementation progress and plans, and potential areas of collaboration. A mechanism for jointly organized activities was initiated to ensure a systematic and consistent approach to stakeholder engagement. To support this, a temporary data sharing and coordination mechanism, using Google Drive, was setup to include

information on project partners and stakeholders; status and coordination of sectoral focal points, required data and jointly organized events; and relevant project documents.

Similarly, a Technical Working Group (TWG), composed of various RIMES and ADPC experts is being established to apprise and streamline collaboration of each other's initiatives and activities, on a technical level.

National coordination. SFPs within each beneficiary ministry/ department shall be convened by respective Ministries of Finance in Bangladesh and Nepal and Ministry of Planning, Development and Special Initiatives in Pakistan every 6 months to review progress, assist in challenges in implementation, provide recommendations for improvements, and ensure that there are no gaps or duplication of efforts during implementation.

Regional coordination. The project will take advantage of the regional coordination mechanisms already in place within the IAs, e.g., RIMES' Council and ADPC's Regional Consultative Committee, for strategy policy discussions, guidance, annual review of project impact, knowledge sharing and lessons.

2.2 Sub-component 1.2: Expanding SAR Regional Resilience Data and Analytics Services (RDAS)

This sub-component supports the development of a public domain data and analytics platform, namely the Regional Resilience Data and Analytics Service (RDAS) platform to make climate-informed policy, planning and investment decisions for climate resilient development. RIMES has setup a technical team to develop the RDAS system, composed of 5 in-house and 3 recruited regional IT experts led by the RDAS-DSS Lead; 4 in-house and 2 recruited regional sectoral experts led by the Climate Applications Specialist. RIMES is in the process of hiring a consulting firm for the RDAS full system development.

The RDAS system will be developed in two phases: i) the prototype system, which will finish within the year 2021; and ii) the full system, which is expected to be completed within the third year of project implementation. Activities under this sub-component for this reporting period include i) desk review and technical assessment of global and regional data analytics service portals, and ii) RDAS prototype system development.

2.2.1 Assessment of existing global and regional data and analytics service portals

Technical assessment of existing global and regional data and analytics service portals aims to review and assess the purpose, primary functions, usability, and key features of these portals that can aid in RDAS system development; identify data interoperability, database architecture, data source and format, and data access mechanism (API/ web services). Appendix 1 provides details on outcomes and recommendations of this assessment.

In addition to the virtual meeting conducted in June 2020 to present the CARE project and RDAS system to RIMES Council Members in South Asia, RIMES also conducted initial meetings with NASA from June to July 2020, to confirm that consultations with global and regional institutions (e.g. WMO, ECMWF, IMD) on data sharing/ integration in RDAS, platform content, analytics, graphical user interface, etc. are organized throughout the RDAS design and development.

2.2.2 RDAS prototype system development

The RDAS prototype system will include basic functionalities that allow the users to interactively and intuitively access, analyze, and visualize relevant data (curated from remote sensing and in-situ monitoring and subsequent analysis), and share basic climate-related information. The first version of a searchable modern data and analytical services catalog is being developed with available data, analytical services and basic metadata. Work under this activity include development of the RDAS dashboard template, the initial version of which was presented to beneficiary departments in each country in September 2020; and the development of the RDAS system framework, which is currently led by the RIMES technical team in Bangkok.

2.3 Sub-component 1.2: Strengthening national-level sectoral decision support systems (DSSs)

This sub-component supports the development/enhancement of national/sub-national DSS platforms of beneficiary departments in the three countries in Bangladesh, Nepal and Pakistan. RIMES has setup a technical team to support these systems, composed of 9 in-house and 3 recruited national IT experts led by the RDAS-DSS Lead; 4 in-house and 2 recruited regional sectoral experts led by the Climate Applications Specialist; and is currently in the process of hiring consulting firms in the three countries.

Prototypes of three priority systems, one for each beneficiary country, will be completed within the year, including i) SESAME for Livestock in Bangladesh, ii) DHM for Nepal, and iii) SESAME for Agriculture in Pakistan. Activities under this sub-component for this reporting period include i) preparation of user needs assessment approach, methodology, and tools; ii) desk review and technical assessment of systems; and iii) prototype development of priority systems.

2.3.1 Desk review and user needs assessment

Desk review to map stakeholders in each sector, assess existing DSSs/portals, and identify gaps/requirements is being conducted by sectoral experts who are already onboard, followed by user needs assessment to identify the sector's weather/climate information needs and requirements, decision-making contexts, data availability and accessibility and technical capacity. Preparatory work, e.g., development of user needs assessment approach, methodology, and tools, provided in Appendix 2, has been initiated by regional sectoral experts, for further customization by national experts in their respective sectors.

An desk review of Nepal's early warning system was conducted during this semester to evaluate its technical, legal and practical status, and in particular, the status of four key elements of EWS (Figure 1) to inform the development of appropriate sector-specific DSS for climate related disaster preparedness in Nepal. The activity involved i) desk review of existing practices, ii) consultation meetings with selected key organizations and experienced professionals working on the EWS, and iii) documentation of the assessment of existing status and areas for improvement. The assessment considered the following systems: i) flood early warning system, ii) glacial lake outburst flood early warning system, iii) landslide early warning system, iv) epidemic warning and reporting system, v) forest fire detection and monitoring system, and vi) agricultural management information system. The study revealed that the flood EWS is relatively more advanced among

EWSs in Nepal; has progressed on two elements: i) monitoring and warning services, and ii) dissemination and communication; but requires more attention on the other two: i) risk knowledge, and ii) response capability. The rest of the EWSs have yet to be operationalized through the development of all four key elements of an EWS. The study also revealed gaps in the system and provided the following recommendations for an effective EWS in Nepal:

- Promotion of comprehensive risk assessment encompassing vulnerability, exposure and capacity to foster impact-based warning
- Adoption of advanced technologies and innovative approaches on all four key components and cross-cutting issues
- Enhancement of station network, especially in smaller river basins
- Improvement of forecast accuracy using bias correction and observed data assimilation techniques and increase in forecast lead time to provide ample time for preparedness
- Clear mandates and accountabilities between authorities and agencies guided by adequate legal and technical guidelines
- Monitoring, evaluation, accountability and learning (MEAL) system embedded as an integral part of the system
- Development of guideline to identify activities encompassing all EWS elements and cross-cutting issues and delineate the roles and responsibilities of all government and non-government stakeholders
- Development of standard operating procedures at all levels of governance linking early warnings to early actions

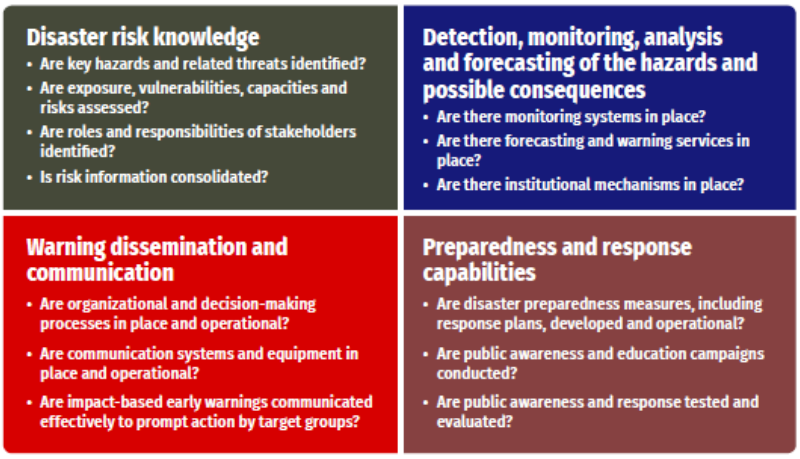

Figure 1 Key elements of people-centered early warning system (WMO, 2018)

Appendix 3 provides detailed outcomes and recommendations of this assessment.

2.3.2 Technical assessment of existing systems

Technical assessment of existing systems has been conducted to identify the system's usability, design, programming language, analytics, etc. to provide inputs to the development and enhancement of DSSs for climate-informed decision-making in the beneficiary ministries/ departments. This activity involved technical consultation with stakeholders to determine data requirements and receive recommendations for DSS development. Detailed outcomes and recommendations of each system assessed are provided in Appendices 4 to 6.

The Specialized Expert System for Agro-Meteorology Early Warning (SESAME) system developed by RIMES with the agriculture sectors, NMHSs and development partners in various countries, is a tool that uses climate information for managing resources and climate risks and will be used as a base system in developing the DSSs for the Punjab Agriculture Department in Pakistan. Following technical consultations with stakeholders, SESAME for Agriculture in Pakistan will be designed to integrate weather/ climate data with agriculture data for different kinds of crops in Pakistan (e.g., crop type, variety, seasonality, growth stages, ideal weather conditions; crop weather calendar and advisories, etc.) to ensure efficient use of water resources and to prevent excessive drought stress and over-watering, especially for crops sensitive to flooding or waterlogged conditions. The tool is expected to benefit the following users: i) policymakers, ii) operational-level users (e.g., extension workers), and iii) end-users (e.g., farmers). Plans for system customization covers i) integration of forecast model outputs at different forecast lead times for the forecast data management system, ii) integration of real/ near-real time observation data and weather information; and daily weather forecast into the bulletins, including forecasts and outlooks for crop management advisories, iii) flexibility in the crop management module, iv) integration of forecast verification and validation module, and v) customization of dissemination system for bulletins (e.g., email, SMS, fax, social media, mobile). Outcomes and recommendations from stakeholders are as follows i) detailed assessment of existing tools, processes and procedures by the national agriculture expert, including the pest advisory system, ii) integration of pest attack hot spots and automated advisory generation process into the DSS, and iii) ensure timely dissemination of information to end-users or farmers (e.g., mobile application with dual language support, voice over advisory, call center facility, robocalls) for effective decision making. Some challenges highlighted in the assessment include i) setting up of a mechanism to collect and process data in a centralized system, as multiple organizations are involved in this process, and ii) lack of institutional capacity in terms of human resources and technical capacity which can be addressed through continuous and institutional capacity building mechanisms.

DSS for Livestock in Bangladesh, in consultation with the national level TWG formed during an earlier collaboration between RIMES and DLS in Bangladesh in November 2019, aims to enhance livestock extension service and farmer's resilience by reducing risks in the livestock sector from natural events, climate variability and maximizing benefits of favorable weather/ climate conditions through better decision-making with livestock advisories. The system will be designed to incorporate climate-risk informed advisory service for the livestock sector, including the use of multi-scale forecasts, climate projections for tactical and strategic decision making, integration of weather and climate data and their linkage with the livestock sector for disease surveillance, vaccination schedule, fodder management, housing management, etc. The tool is targeted for use by: i) livestock extension service providers, ii) district and sub-district DLS office, and iii) private sector actors. Plans for customizing the system include i) integration of a forecast verification system to analyze the forecast's accuracy at various locations, ii) integration of future climate projections for livestock zones for policymaking, iii) custom analytics engine to overlay various layers of information for generating user-specific analytics, iv) integration of real-time data to aid operational users in mobilizing resources, e.g., disease outbreak, v) development of advisories for location and animal-specific livestock management and required vaccination for diseases combining weather forecast and preset rules. One of the challenges identified during the assessment is the insufficient information on climate interactions and rising heterogeneity of climate with other drivers of transition in livestock systems, as problems in fodder and livestock shelter include frequently occurring threats, e.g., floods and cyclones. A successful and operationalized community-based food and shelter management has been recommended to reap the full benefits of the DSS.

The regional team and IT Expert in Nepal assessed DHM's hydrological and meteorological data collection, processing, analysis, publication and dissemination system, weather and hydrological forecasting system, and the data and forecast sharing mechanism to identify gaps and requirements and to provide guidance on the enhancement of the DHM portal. A series of consultations were conducted with DHM to discuss and finalize activities for the enhancement of its portal which includes i) development of a web portal for weather forecast verification and bias correction, ii) improvement of the existing flood forecasting system and development of a flood impact-based DSS, and iii) training and capacity building for DHM meteorologists and hydrologists. The system is designed for DHM operational staff as its main user, including other beneficiaries, e.g., Ministries/ Departments working in the field of climate and disaster risk management, humanitarian agencies, UN organizations, Red Cross Movement, international/ national NGO's, development partners, insurance companies, consulting firms, and the general public. Plans for system customization include i) inclusion of forecast data from multiple sources and its comparison with observation data, including data warehousing forecast verified data into the forecast and verification module, ii) utilization of state-of-the-art machine learning and deep learning algorithms methods for weather forecast bias correction, including data warehousing of forecast bias-corrected data, iii) visualization of raw, verified, and bias-corrected weather forecast data using different charts, e.g., line graphs, heat maps, etc., and iv) dissemination through the interface and standard protocols such as CAP, SMS, email mobile application, etc. Detailed gaps in the system are provided in the technical report while challenges in data availability, field data collection and reliability of secondary data (DEM, exposure layers, sensitivity, and adaptive capacity have been observed.

2.3.3 Development of framework and finalization of data parameters

Following outcomes of stocktaking and assessments, the RIMES regional team and IT Expert already onboard have initiated the design and development of the DSS framework of the three priority systems, including system architecture, schema, software and data services platform, functionality, information flow, graphical user interface, navigation, security level/s, hosting, linkage with RDAS and NMHSs data, products and services. For DSS development, opportunities to optimize work have been realized as modules developed for one system are/may apply to other systems.

2.4 Project Management and Specialized Support

Before approval of the project in May 2020, initial work has been done by RIMES to ensure a successful take off of the project, including the development of a project operational manual reviewed and approved by the Bank, preparations for the opening of a designated account, assigning of existing staff to key PIU and regional positions, drafting of TORs for new positions, and finalization of the five-year work plan and budget.

As the project became effective on 10 July 2020, RIMES established its Project Implementation Unit (PIU) and assigned its CARE Project Director to lead its CARE Project Team which is composed of three units – the Project Implementation Unit (PIU), which is responsible for the overall management, coordination and implementation of the project; the Sectoral Expert Unit (SEU), which is responsible for the user needs assessments as well as capacity-building on RDAS and DSS for all sectoral users at various levels; and System Development Unit (SDU), which looks after

the development of the RDAS and national DSSs. Country coordinators, which are key positions for ensuring coordination and general supervision of in-country activities, have been identified. A total of 6 regional and 12 national sectoral experts will implement user needs assessment activities, while a total of 3 regional consultants, 3 national IT experts, 4 consulting firms (1 for RDAS and 3 for national DSSs), and several in-house IT staff will support the system development.

2.4.1 Procurement

Training. A two-part virtual training series on the use of STEP was delivered by Ms. Neena Shrestha on 15 May and 11 June 2020. Part one provided an overview of the STEP process, work flow and interface, while part two focused on STEP terminologies, guidance on the creation of a procurement plan and uploading of procurement documents. Following the trainings, RIMES staff were able to upload and update procurement plans and documents using STEP.

Staffing. The process for hiring PIU staff and consultants involved the development of TORs, advertising of positions, shortlisting and interview of applicants, and contract management. Supporting documents, e.g., sample contract for an individual consultant; shortlisting form, to ensure that applicants were compared fairly and matched requirements of the position; interview and scoring sheets for application evaluation; and reference check, have been submitted to the Bank for review and reference.

Out of 15 PIU positions, 7 are in-house staff: *Project Director, Monitoring and Evaluation (M&E) Specialist, Project Accountant, Project Analyst, Country Coordinators* in Bangladesh, Nepal and Pakistan; 3 were recruited: *Environment and Social Safeguards (ESS) Specialist, Finance Management (FM) Specialist, Information, Communication and Knowledge Management (ICKM) Specialist;* 1 ongoing selection as the position required reprocessing: *Procurement Specialist*; 2 consultants are in varying stages of the procurement: Consultant for Financial Audit, Consultant for Strengthening RIMES Procurement and Finance Systems; 1 national staff recruited: *Country Lead (Technical) in Nepal*; and 1 national staff for hiring next year: *Project Associate,* to assist in the coordination of activities in Pakistan, following MOPDSI recommendation.

The sectoral team is composed of 26 positions which have mostly been filled. Out of 11 regional positions, 5 are in-house regional staff: *Climate Applications Specialist, Climate Scientist, Regional Agriculture Expert, Regional Water Expert*, and *eLearning Specialist*; 2 regional experts were recruited: *Regional Planning and Finance Expert, Regional Transport Expert;* while 4 regional experts are for recruitment next year. Out of 15 national experts in various stages of recruitment, there are 6 staff in Bangladesh, 5 staff in Nepal and 5 staff in Pakistan; sector-wise: *3 Agriculture Experts, 1 Livestock Expert, 2 Transport Experts, 2 Water Experts, 4 Planning and Finance Experts, and 3 GIS Experts for recruitment next year*.

The system development team has completed the recruitment of 19 positions, while 4 consulting firms are expected to be onboard by April 2021. Out of 17 regional positions, 13 are in-house regional staff: *RDAS-DSS Lead, RDAS Developer, RDAS Quality Assurance Specialist, RDAS Data Scientist, RDAS System Administrator, DSS Developer for Agriculture, Water, Disaster, and Hydromet, DSS Developer for Planning, Finance and Transport, DSS Quality Assurance Specialist, DSS Data Scientist for Agriculture, Water, Disaster, and Hydromet, DSS Data Scientist for Planning, Finance and Transport, DSS System Administrator for Agriculture and Water, DSS System Administrator for Planning and Finance, DSS Administrator for Transport, Disaster and Hydromet*;

and 3 regional consultants were recruited for developing the RDAS prototype system: *Data Scientist, Visualization Expert* and *Web Application Developer*. Three national IT experts were recruited for frontloading priority systems in the countries. With regards to the 4 consulting firms, 1 regional firm will focus on RDAS full system development and 3 national firms will develop the national DSSs in the countries.

Office. The project shall take advantage of the long-term partnerships built with the National Meteorological and Hydrological Services (NMHSs) –as RIMES Member and Collaborating States. In addition to the expertise and experience available within the NMHSs, its participation in project activities, as providers of weather and climate information to various sectoral agencies, is key in ensuring the successful implementation of the project. Hence, office arrangements for in-country staff were made with the NMHSs. In light of Covid-19, however, in-country staff are encouraged to work from home. Regional staff, on one hand, are currently working at the RIMES office in Pathumthani, Thailand.

Procurement of goods. This process mainly involved small contracts which required publication of Request for Quotations (RFQs) and Specific Procurement Notices (SPNs), and quotations from at least 3 vendors. Sample procurement forms were submitted to the Bank for review and were found acceptable, e.g., purchase requisition form, request for quotation, vendor evaluation form, comparative statement form, and purchase order form.

Contracts have been awarded to two firms, *Pragma Technology* for computing and office equipment for PIU and DSS activities and *Triforce Global Solutions Limited* for the accounting software in September and October 2020, respectively. Other equipment to be procured in 2021 include: photography and video production equipment for ICKM activities, computing equipment for RDAS and DHM-Nepal activities.

Appendix 7 provides details on the status of staff hiring and procurement of goods under the approved Procurement Plan for 2020-21.

2.4.2 Budget and Finance

Training. An FMS was hired on 17 August 2020 to coordinate and manage all budget and finance-related matters. Three virtual trainings were delivered by the World Bank Finance Team led by Mr. Syed Waseem Abbas Kazmi on 16 July, 6 October, and 10 November 2020. The first training provided an overview of World Bank disbursement processes, including the creation of a designated account and the use of Client Connection. Following trainings focused on World Bank's Statement of Expenditure (SOE) terminologies and report template.

Budget, Disbursement and Expenditure. The authorized signatory letter for RIMES was submitted to the Bank on 1 July 2020. On 10 August 2020, a designated account, solely for project use, was opened. The first disbursement, totaling US$ 499,374 based on forecasted expenditure until year-end, was made to RIMES on 29 September 2020. Expenditure from 1 June to 31 December 2020 covered RIMES technical inputs, staff salaries based on the number of days allotted by each staff to the project; goods, e.g., computing equipment and accounting software; operating expenses, e.g., national consultative workshop costs in Pakistan (including domestic travel, DSA, meeting materials), office rental and utilities; communication, e.g., job posting, website domain name and software packages for hosting the project MIS, online meeting platform (Zoom), etc.; stationery

and other consumables. The annual budget plan, initially cleared by the Bank in April 2020, is being updated to account for changes in the revised annual work plan following consultation with stakeholders. The project budget with expenditure from 1 June to 31 December 2020 is provided in Table 7. Variances in excess of 10 percent for Individual Consultants (54%) and Operating Costs (59%) can be respectively attributed to the following: i) consultants expected to be onboard by December have yet to complete the hiring process; while ii) operating costs remained low since the regional office is still being set up.

Table 7. Project budget with expenditure from 1 June to 31 December 2020

Description	Planned	Actual	Variance		Forecast For next 6 mos.
			Amount	%	
RIMES Technical Inputs	175,670	175,670	-	0%	206,020
RIMES PIU Staff	108,173	106,266	1,907	2%	116,694
Goods	88,000	88,952	-952	-1%	97,000
Individual Consultants	109,202	50,380	58,822	54%	505,180
Consulting Firms	-	-	-	-	270,554
Non-consulting services	-	-	-	-	-
Operating Costs	54,725	22,372	32,353	59%	140,254
Total	**535,770**	**443,640**	**92,130**	**17%**	**1,335,703**

Reporting. IUFR for May to June 2020 was submitted to the Bank on 23 August 2020 using the RIMES template. Expenditure was minimal and covered only salaries of 5 time-based staff, office space rental and utilities, communication and consumables. To streamline financial reporting, another training is being planned to orient RIMES and ADPC finance teams on the use of the World Bank's IUFR template.

2.4.3 Communication

The ICKM Specialist, who joined the team on 16 July 2020, coordinated and managed all ICKM-related needs of the project, including the development of an annual ICKM plan and strategy to support activities and events programmed for the first year, graphic identity system for use in promotional materials, e.g., project document and presentation templates, design of the project's front-end MIS website, content for and maintenance of website and social media platforms (e.g., Facebook, Twitter, etc.) to increase project visibility, co-development with ADPC of the project's branding guidelines, quarterly newsletter and mechanism for communication and uploading of project information and website content.

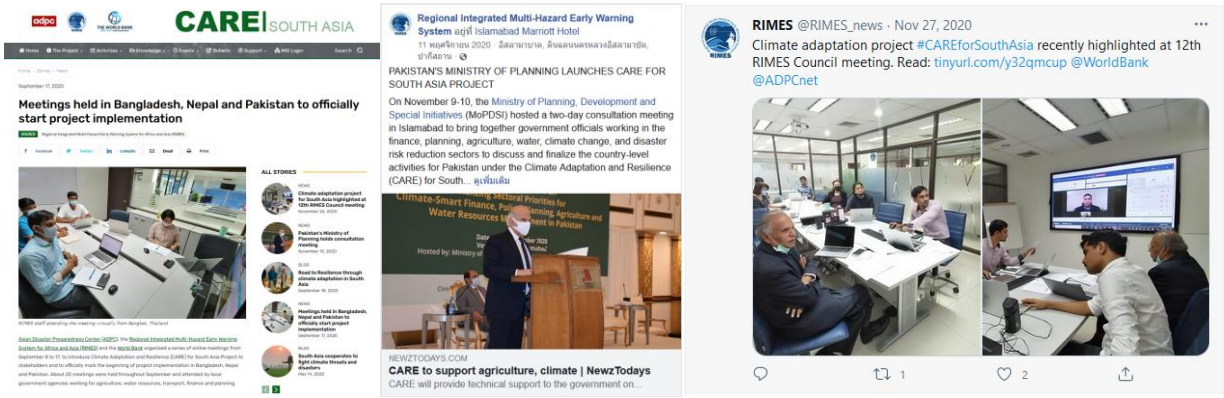

Figure 2 News articles published on (L-R): CARE MIS front-end website, RIMES' Facebook and Twitter accounts

Stakeholder awareness of the project was raised through the following regional/ national events:

1. Meeting with RIMES Council of South Asia on 8 June 2020 (organized by RIMES)
2. CARE Project Kickoff Meeting -Nepal in 8-9 September 2020 (organized by World Bank)
3. CARE Project Kickoff Meeting Pakistan in 14-15 September 2020 (organized by World Bank)
4. CARE Project Kickoff Meeting -Bangladesh in 16-17 September 2020 (organized by World Bank)
5. National consultation on finalizing sectoral priorities for climate-smart finance, policy, planning, agriculture and water resources management sectors in Pakistan in 9-10 November 2020 (co-organized by RIMES and ADPC)
6. 12th RIMES Council Meeting in 25-26 November 2020 (organized by RIMES)

2.4.4 Environmental and Social Management

The ESS Specialist who joined the team on 1 September 2020 is responsible for managing environment and social risks and impacts following the World Bank's Environment and Social Framework (ESF) and is expected to provide technical and advisory support to screen, assess, manage, supervise and report on the environment and social risks associated with sub-project planning and implementation; coordinate with World Bank and ADPC counterparts; ensure the functioning of the grievance mechanism; and provide training to staff and consultants, as required. Recommendations from the World Bank's Environmental Analyst, Ms. Nimanthi Attapattu, were integrated into Version 2.0 of the CARE project's operations manual submitted in July 2020. As of this reporting period, no complaints nor grievances were received.

2.4.5 Monitoring, Reporting and Evaluation

M&E system. An M&E system has been established to monitor key achievements, indicators, and progress, which are backed up with evidenced-based reporting (e.g., actual outputs and deliverables) to guide the management team in its decision making for improving project performance. An annual M&E plan is developed consistent with the annual work plan, and provides details on M&E tools, methods for collecting data, responsibility and timeline of deliverables. Monitoring of project implementation against agreed timelines, milestones, and budget are undertaken through monthly PIU meetings, chaired by the Project Director and involving the M&E Specialist, Lead for RDAS and DSS Development, Climate Applications Specialist, Finance Management Specialist, Project Accountant, ICKM Specialist, Procurement Specialist, Country Coordinators and IT Experts. The meetings are conducted to appraise the team on the progress; evaluate targets to ensure that the project is on track or in need of adjustments; identify issues and challenges encountered and corresponding solutions or potential adjustments to be taken; and identify good/ best practices and lessons learned. A simple data collection system between regional and in-country staff has been developed using the Google shared drive, where monthly progress reports and timesheets, including detailed activity reports are uploaded. Information from these sources including technical and project management reports feed into the bi-annual progress report for the period covering 1 June to 31 December 2020, currently being prepared for submission to the Bank.

Project MIS. RIMES is jointly developing an online project MIS with ADPC and with guidance from the World Bank to streamline monitoring and reporting of key processes and activities under the project. The MIS, which is hosted by RIMES at www.mis.careforsouthasia.info, has two aspects. The

front-end interface presents project information and updates to the general public (e.g., news articles on ongoing or recently concluded activities, upcoming events, etc.), and provides a platform for obtaining users feedback (e.g., grievances, online survey/ polling, community forum), among others. The back-end interface, which receives and delivers data from the front-end, caters mainly to the management and reporting of the various aspects of the project, such as monitoring of key accomplishments and indicators, budget and finance, procurement and contract management, grievance redress mechanism, event management, etc. Access to different modules in the back-end is customizable per user, and the same platform can be adopted by in-country firms to address their monitoring and reporting needs. The Bank, where both IAs report to, can access both RIMES' and ADPC's components, while neither can access the other's systems or information, unless granted. Similarly, in-country consulting firms may use the same platform, where access can be granted to either RIMES or ADPC and the World Bank. Meanwhile, a temporary MIS managed through a Google shared drive to communicate implementation progress and deliverables to regional and in-country staff is being used until the official MIS is fully developed.

2.4.6 Documentation

CARE Project documents are developed by the World Bank, in collaboration with RIMES and ADPC, to guide project implementation:

- *Project Appraisal Document* - provides a detailed description of the project (April 2020)
- *Financing Agreement* - details legal financial obligation of IAs (May 2020)
- *Environment and Social Commitment Plan (ESCP)*
- *Stakeholder Engagement Plan (SEP)*

In addition, the following project documents are reviewed and regularly updated by the CARE project team, as needed, based on unfolding operational realities to ensure more efficient and effective project implementation, subject to approval by the World Bank:

- *Project Operations Manual* - describes standard mechanisms for components, subcomponents and activities; outlines implementation guidelines for RIMES' PIU, SFPs and relevant ministries and departments in the project focus countries; and provides direction and assistance to the PIU, SFPs, and government agencies. This document, initially developed on 18 April 2020, was revised on 13 July 2020 to include slight changes on PIU organogram, updates on the procurement plan, modifications on Environment and Social Safeguards, integration of annexes on the project description, screening checklist & ESCP.
- *Annual work plan and budget* – provides details on project activities, milestones, timelines and budget for the current project year. The first version of these documents was initially approved by the Work Bank in April 2020 and were later revised to reflect adjustments made by project beneficiaries to the work plan during technical consultations. The final version of the annual work plan for the year 2020-21 has been approved by the World Bank on 9 December 2020, while the annual budget plan is currently being revised following the revised annual work plan.
- *Annual procurement plan* – provides details on procurement plan for the year 2020-21. This document, initially approved on 3 June 2020, underwent several changes, with the latest version (Version 7) approved on 15 December 2020.

Regular meetings established to monitor the status of project implementation and streamline national, regional and IA-level coordination were documented:

- *CWG Meeting* – monthly inter-agency coordination meetings facilitated by RIMES and ADPC every other month
- *RIMES PIU Meeting* – monthly coordination meetings between regional and country PIUs
- *RIMES Council Meeting* – annual meetings with RIMES Council Members composed of heads of National Meteorological and Hydrological Services (NMHSs) and national scientific and technical agencies generating multi-hazard warning information

The following monitoring reports detail the status of coordination and progress of project activities:

- *Country-specific monthly progress report* – highlights status of activities implemented during the reporting period; summary of results vs. targets, implementation issues, challenges, solutions/adjustments taken, lessons learned; plan for next reporting period; and reference to other supporting documents (e.g., activity-based reports, etc.), prepared by country coordinators, IT experts, GIS experts, data analysts, etc.
- *Activity report* – details the purpose of the activity (e.g. agency meetings), including issues, challenges, solutions and adjustments taken as well as lessons learned; follow-up actions required; key people met; and other relevant documents related to the activity
- *Quarterly financial monitoring report (FMR)*
    - Financial report - includes the source of project funds, use of funds by project activity, and cash forecast, prepared by the FMS
    - Progress report - includes output monitoring report and a summary of project progress, prepared by team leaders and consolidated by the Project Director
    - Procurement management report - includes procurement process monitoring report for goods and consulting services, and contract expenditure report for goods and consulting services, prepared by the Procurement Specialist
- *Annual financial statement and audit report* – includes SOE, IUFR, etc. prepared by the FMS for submission to the Bank; and annual audit report prepared by an external auditor, containing a separate opinion as to whether FMRs submitted during the year, and procedures and internal controls involved in their preparation, can be relied on to support related disbursements
- *Bi-annual report* - the M&E specialist, through the PD, prepares the report for the SFP during the bi-annual coordination meeting to review progress and provides M&E results and updates to the World Bank as well as to RIMES Council during the latter's annual Council Meeting. Implementation of activities vis-a-vis SEP/ESCP is monitored and reported bi-annually by the ESS specialist, to the SFP and the World Bank for monitoring of the environment, social, health and safety performance of the project. This progress report is the first bi-annual report for submission to the World Bank.
- *Inception report* – details highlights and outcomes of discussions during technical consultations with SFPs in the beneficiary countries
- *Technical report* – details purpose, methodology, results and recommendations of each completed activity, e.g., technical assessment of existing systems, user needs assessment, module development, system development, etc. Technical reports accomplished within this reporting period are appended to this progress report, as follows:
    - User needs assessment approach, methodology, and tools
    - Technical report on Early Warning System, Nepal
    - Technical report on the assessment of existing regional and global data portals

- Technical report on the assessment of SESAME for Agriculture, Punjab, Pakistan
- Technical report on the assessment of SESAME for Livestock, Bangladesh
- Technical report on the assessment of DHM Forecast Management Tool, Nepal

3. Outcomes and Lessons Learned

Key outcomes during this period include:

- Successful grounding of the project within the SAR region, particularly in Bangladesh, Nepal, and Pakistan
- Receptivity of project stakeholders and their keen interest to participate and support project activities led to the finalization of work plans and SFPs within each beneficiary ministry/ departments
- Gaps and requirements of priority systems were identified and recommendations for improvement were provided through stakeholder consultations and technical assessment of existing systems
- Establishment of national, regional and inter-agency coordination mechanisms to streamline project coordination, communication, implementation and activities
- Development of the CARE Project MIS to communicate progress of the project

Lessons learned during this period include:

- Ensuring smooth implementation of project activities requires multi-agency cooperation in the countries, with a focal agency taking the lead in coordination and implementation, e.g. MOF for Bangladesh and Nepal, MOPDSI in Pakistan
- Flexibility in project implementation was needed to address issues, e.g., Covid-19 related travel restrictions, which were addressed virtually through online meetings
- Engagement with new institutions is a process that requires time. For some agencies, official project endorsement by the convener of SFPs is required, e.g., MOF in Nepal; or a Memorandum of Understanding (MOU) is needed, e.g., MOF and DAE in Bangladesh before the project can be implemented and access to the systems granted.

4. Summary of Accomplishments against Targets

Table 8 below summarizes project accomplishments against targets for the period 10 July – 31 December 2020, according to the project's results framework.

Table 8. Accomplishments against targets for the period 1 July to 31 December 2020

Expected Outputs	Status as of previous reporting period	Targets	Status/ Accomplishments	Gaps, causes, recommended adjustments
Project Development Objective 1: Regional cooperation and information for climate resilience enhanced				
Improved access to regional climate information and analytics for climate-informed decision making in select sectors	○	○ Regional consultation meetings organized ○ Regional technical team established ○ Existing global and regional systems assessed ○ RDAS dashboard developed ○ RDAS prototype system development initiated	○ Consultation meetings held from Jun 2020 onward with RIMES Council and global/ regional institutions, e.g., NASA, WMO, ECMWF, IMD on data sharing/ integration in RDAS, platform content, analytics, GUI, etc. ○ Desk review and technical assessment of existing global and regional systems undertaken by RIMES regional team: RDAS system team development led by RDAS-DSS Lead and the sectoral team led by Climate Applications Specialist ○ RDAS prototype system development led by RIMES regional team is ongoing ○ Hiring of consultants for RDAS prototype system has been completed; TOR for RDAS consulting firm is being reviewed by the Bank	○
National-level decision making and planning tools are better climate risk informed in select sectors	○	○ National consultation meetings organized ○ Sectoral focal points identified ○ Agreement on work plan and activities achieved ○ Implementation arrangements finalized ○ Existing national systems/ processes assessed	○ Bilateral discussions with national stakeholders held from Sep 2020 onward to identify user requirements and to finalize SFPs, work plan and priority activities; including integration of hydromet forecasts in sectoral DSSs with NMHSs ○ National consultation convened by MOPDSI in Nov 2020 to ensure smooth project implementation in Pakistan ○ SFPs identified and led by MOF in Bangladesh and Nepal; MOPDSI in Pakistan ○ Country coordinators conducted preliminary user needs assessments with sectoral agencies	○ RIMES regional team attended meetings virtually due to COVID-19 travel restrictions ○ Frequent turnover due to retirement or transfer delayed finalization of some SFPs ○ Tripartite MOU with MOF Bangladesh, RIMES and ADPC is being developed to start implementation of

Expected Outputs	Status as of previous reporting period	Targets	Status/ Accomplishments	Gaps, causes, recommended adjustments
			○ Desk review and assessment of priority systems, e.g., i) DSS for Livestock -Bangladesh, ii) DHM portal -Nepal, and iii) SESAME for Agriculture -Pakistan led by RIMES regional team, Country Lead and IT Expert in Nepal ○ TORs for DSS consulting firms under Bank review	activities and ensure access to existing systems ○ Official endorsement of MOF Nepal required by agencies to move forward
Project Development Objective 2: Climate resilience in policies, planning and investments in focus countries enhanced				
Institutional capacities within select sectors strengthened to undertake climate informed policies and planning	○	○ Stakeholders mapped out	○ Beneficiary ministries/ departments identified areas for capacity building/ trainings	○ Webinars to introduce DSSs and their application in various sectors were recommended to enhance stakeholder knowledge
Intermediate Result - Component 1: Promoting Evidence-based Climate Smart Decision Making				
A regional resilience data and analytics services platform (RDAS) developed and accessible	○	○ Existing global and regional systems assessed ○ RDAS prototype system development RDAS dashboard developed	○ RIMES regional team conducted desk review and technical assessment of existing global/ regional systems to review and assess the purpose, primary functions, usability, and key features of these portals that can aid in RDAS system development; identify data interoperability, database architecture, data source and format identification, and data access mechanism ○ A template of the RDAS dashboard was presented during kickoff meetings in Sep 2020 ○ RDAS prototype system design and architecture is an ongoing development	○
Number of climate-informed decision-making tools and systems developed/ enhanced in focus countries	○	○ Enhancement of 3priority systems: i) DSS for Livestock -Bangladesh, ii) DHM portal -Nepal, and iii) SESAME for Agriculture -Pakistan, initiated	○ Consultations with beneficiary ministries/ departments on DSS content, analytics, GIU, etc. is ongoing ○ A template of select DSSs dashboards developed	○
Percentage of gender-disaggregated data analytics developed that	○	○ Data requirements identified	○ RIMES regional team and country coordinators are conducting technical consultations with stakeholders to identify sectoral data needs and requirements	○

Expected Outputs	Status as of previous reporting period	Targets	Status/ Accomplishments	Gaps, causes, recommended adjustments
contributes to narrow the gender gap in climate change vulnerability			○ RIMES ESS specialist hired in Sep 2020 ○ RIMES shared with ADPC a temporary mechanism for coordinating data collection and sharing	

5. Planned Activities

Table 9 lists the activities planned for Semester 2 of the project.

Table 9. Work plan for the period 1 January to 30 June 2021

Activities	2021 J	F	M	A	M	J	Expected Outputs/Remarks
1. Promoting evidence-based climate-smart decision making							
1.1 SAR Regional Resilience Data and Analytics Services (RDAS)							
1.1.1 Preliminary activities							
1.1.1.2 Sector-specific data analysis	■	■	■	■	■	■	Existing global and regional sectoral data assessed and inventoried for SAR
1.1.1.3 Data collection and digitization	■	■	■	■	■	■	Sectoral data collected and digitized for SAR
1.1.2 RDAS prototype system development							
1.1.2.1 RDAS prototype system development							RDAS prototype system data management module developed
1.1.3 RDAS full system development							
1.1.3.1 Solution architectural design				■	■	■	Approach, methodology and work plan for RDAS full system developed Solution architectural design initiated
1.2 Strengthening national level sectoral decision-support systems for resilient development							
1.2.1 Preparatory activities							
1.2.1.3 In-depth assessment of users' investment planning and decision-making processes, and information product and service needs	■	■	■	■	■		Consolidated report on DSSs, portals and information databases in SAR
1.2.1.4 Meeting for presentation of assessment outcomes				■	■	■	Stakeholder feedback integrated into DSSs
1.2.2 Development of DSS for Ministry of Planning, Development and Reforms -Pakistan							
1.2.2.1 Assessment of user needs (refer to 1.2.1)	■	■	■	■	■		Customization of user needs assessment approach, methodology and tools for the planning sector in Pakistan Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the planning sector in Pakistan
1.2.2.2 Development of DSS framework and finalization of data parameters				■	■	■	Development of DSS framework initiated
1.2.2.3 Development of data management module				■	■	■	Development of data management module initiated
1.2.3 Development of DSS for Ministry of Finance - Pakistan							
1.2.3.1 Assessment of user needs (refer to 1.2.1)	■	■	■	■	■		Customization of user needs assessment approach, methodology and tools for the finance sector in Pakistan Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the finance sector in Pakistan
1.2.3.2 Development of DSS framework and finalization of data parameters				■	■	■	Development of DSS framework initiated
1.2.3.3 Development of data management module				■	■	■	Development of data management module initiated
1.2.4 Development of SESAME -Punjab, Pakistan							
1.2.4.1 Assessment of user needs (refer to 1.2.1)	■	■	■	■	■		Customization of user needs assessment approach, methodology and tools for the agriculture sector in Pakistan Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the agriculture sector in Pakistan
1.2.4.2 Development of DSS framework and finalization of data parameters	■	■	■	■	■	■	Development of DSS framework initiated
1.2.4.3 Development of data management module				■	■	■	Development of data management module initiated
1.2.5 Improving DSS for Sindh Irrigation Department -Pakistan							
1.2.5.1 Assessment of user needs (refer to 1.2.1)	■	■	■	■	■		Customization of user needs assessment approach, methodology and tools for the water sector in Pakistan Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the water sector in Pakistan
1.2.5.2 Technical assessment of existing DSS with the Sindh Irrigation Department	■	■	■	■			Technical assessment report on existing DSS for SID

Activities	2021 J	F	M	A	M	J	Expected Outputs/Remarks
1.2.5.3 Development of DSS framework and finalization of parameters							Development of DSS framework initiated
1.2.5.4 Enhancement of data management module							Enhancement of data management module initiated
1.2.6 Upgrading BAMIS for Agriculture -Bangladesh							
1.2.6.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the agriculture sector in Bangladesh Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the agriculture sector in Bangladesh
1.2.6.2 Technical assessment of BAMIS							Technical assessment report on BAMIS
1.2.6.3 Development of DSS framework and finalization of data parameters							Development of DSS framework initiated
1.2.6.4 Enhancement of data management module							Enhancement of data management module initiated
1.2.7 Improving SESAME for Livestock Subsector - Bangladesh							
1.2.7.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the livestock sector in Bangladesh Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the livestock sector in Bangladesh
1.2.7.2 Technical assessment of SESAME for Livestock							Technical assessment report on DSS for Livestock
1.2.7.3 Enhancement of DSS framework and finalization of data parameters							Enhancement of DSS framework initiated
1.2.7.4 Enhancement of data management module							Enhancement of data management module initiated
1.2.8 Upgrading the Online Road Network Portal - Bangladesh							
1.2.8.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the transport sector in Bangladesh Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the Online Road Network portal in Bangladesh
1.2.8.2 Technical assessment of Online Road Network portal							Technical assessment report on Online Road Network portal
1.2.8.3 Development of DSS framework and finalization of data parameters							Development of DSS framework initiated
1.2.8.4 Enhancement of data management module							Enhancement of data management module initiated
1.2.9 Enhancement of FloCAST -Bangladesh							
1.2.9.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the water sector in Bangladesh Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the FloCAST system in Bangladesh
1.2.9.2 Technical assessment of FloCAST							Technical assessment report on FloCAST
1.2.9.3 Development of DSS framework and finalization of data parameters							Development of DSS framework initiated
1.2.9.4 Enhancement of data management module							Enhancement of data management module initiated
1.2.10 Enhancement of the Delta Portal -Bangladesh							
1.2.10.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the water sector in Bangladesh Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the Delta Portal in Bangladesh
1.2.10.2 Technical assessment of the Delta Portal							Technical assessment report on Delta Portal
1.2.10.3 Development of DSS framework and finalization of data parameters							Development of DSS framework initiated
1.2.10.4 Enhancement of data management module							Enhancement of data management module initiated
1.2.11 Development of Portal for Finance, ERD and Planning -Bangladesh							
1.2.11.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the finance, ERD and planning sector in Bangladesh Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and

Activities	2021 J	F	M	A	M	J	Expected Outputs/Remarks
							development for the Portal for Finance, ERD and Planning in Bangladesh
1.2.11.2 Development of DSS framework and finalization of data parameters							Development of DSS framework initiated
1.2.11.4 Development of portal interface							Development of portal interface initiated
1.2.12 Supporting DHM -Nepal							
1.2.12.1 Assessment of DHM's hydrological and climate collection and data management system, and climate products (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for DHM in Nepal Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the DHM Portal in Nepal
1.2.12.2 Technical assessment of DHM hydrological forecasting portal							Technical assessment report on the Delta Portal
1.2.12.3 Enhancement of data collection and management system							Enhancement of data management module initiated
1.2.13 Upgrading AMIS -Nepal							
1.2.13.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the agriculture sector in Nepal Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the NAMIS Portal in Nepal
1.2.13.2 Technical assessment of AMIS							Technical assessment report on the NAMIS Portal
1.2.13.3 Development of DSS framework and finalization of data							Development of DSS framework initiated
1.2.13.4 Enhancement of data management module							Enhancement of data management module initiated
1.2.14 Development of DSS for Transport Sector - Nepal							
1.2.14.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the transport sector in Nepal Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the transport sector in Nepal
1.2.14.2 Development of DSS framework and finalization of data							Development of DSS framework initiated
1.2.14.3 Development of data management module							Development of data management module initiated
1.2.15 Enhancing the Public Finance Management System for Ministry of Finance -Nepal							
1.2.15.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the finance sector in Nepal Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and enhancement of the Public Finance Management System in Nepal
1.2.15.2 Technical Assessment of Existing Portal							Technical assessment report on existing portal
1.2.15.3 Development of DSS framework and finalization of data							Development of DSS framework initiated
1.2.15.4 Development of data management module							Development of data management module initiated
1.2.16 Enhancing the DSS for the National Disaster Risk Reduction Management Authority (NDRRMA)							
1.2.16.1 Assessment of user needs (refer to 1.2.1)							Customization of user needs assessment approach, methodology and tools for the finance sector in Nepal Reports on desk review, assessment outcomes, recommendations and technical inputs on DSS design and development for the NAMIS Portal in Nepal
1.2.16.2 Technical assessment of the NDRRMA portal							Technical assessment report on DSS for NDRRMA
1.2.16.3 Development of DSS framework and finalization of data							Development of DSS framework initiated
1.2.16.4 Enhancement of data management module							Enhancement of data management module initiated
1.3 Technical capacity building of users							
1.3.1 User Engagement							Total of two webinars conducted
3. Project Management and Implementation Support							
3.1.1 Enhancement of HR, procurement and finance systems							Report on assessment of existing HR, finance and procurement policy and procedures

Activities	2021 J	F	M	A	M	J	Expected Outputs/Remarks
3.1.2 Documentation, dissemination/ knowledge-sharing							Q1 and Q2 2021 newsletter Project MIS customization Website content developed and social media posts uploaded
3.1.3 Project implementation support, monitoring, evaluation and reporting							Computing equipment for RDAS and DHM activities procured Hiring of consulting firms and individual consultants Q4 IUFR 2nd bi-annual report Monthly and quarterly progress reports Monthly meetings: RIMES PIU/technical teams; CWG; TWG
3.1.4 External audit and evaluation							Q3-Q4 2020 financial audit

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