



PERFORMANCE AGREEMENT

BETWEEN

**CHAIRMAN, GOVERNING BOARD AND DIRECTOR,
CENTER FOR HYDROLOGY AND METEOROLOGY (NCHM)**

(July 1, 2019 – June 30, 2020)

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Preamble

The Performance Agreement is entered into between the Prime Minister and , .

The objectives of this Performance Agreement are:

- a) To establish clarity and consensus about annual priorities for the consistent with the 12th Five Year Plan , and Government's other priorities;
- b) To make the fully responsible for driving implementation and delivering the results against the annual priorities;
- c) To provide an objective and fair basis for evaluating the overall performance at the end of the year;

The Performance Agreement represents an important accountability mechanism for inculcating a performance based culture at all levels of government.

THEREFORE, the parties hereto agree as follows:

Section 1: Vision, Mission and Objectives

Vision

Center of excellence in Hydrology, Meteorology and Cryosphere Science and Services.

Mission

Monitoring and understanding of hydrology, weather, climate and cryosphere, for timely provision of information and services to protect lives and property and support national needs for ecologically balanced sustainable development.

Core Values

Commitment and loyalty in delivery of products and services

Integrity;

Professionalism in support of science, research, objectivity, impartiality, and excellence;

Mutual respect, cultural sensitivity and non-discrimination.

Objectives

- 1) End-to-end operational National Framework for Climate Services (NFCS)
- 2) Water quality improved
- 3) To provide effective and efficient admin, direction and related common support services
- 4) Hydro-meteorological and cryosphere disasters assessed & reduced
- 5) Access to hydro logical information and understanding of national water availability improved

Section 2: Objectives, Success Indicators & Target

Objective	Weight	Action	Success Indicator	Unit	Weight	Excellent [100%]	Very Good [90%]	Good [80%]	Fair [70%]	Poor [60%]
End-to-end operational National Framework for Climate Services (NFCS)	30	Weather forecast and advisories on extreme weather events issued	Weather forecast and advisories on extreme weather events issued	Number	10	6	5	4	3	2
		Aviation met services provided	Aviation met services provided	Number	10	3	N.A	2	N.A	1
		Climate services provided	Climate services provided	Number	10	10	9	8	7	6
Water quality improved	8	Measurement of suspended sediment loads in major rivers	Measurement of suspended sediment loads in major rivers	Number	8	1 (16)	0 (16)	N.A (16)	N.A (16)	N.A (16)
To provide effective and efficient admin, direction and related common support services	5	To provide effective and efficient directorate & services	Provided effective and efficient directorate & common services	Days	5	5 working days	7 working days	10 working days	12 working days	14 working days

Hydro-meteorological and cryosphere disasters assessed & reduced	37	Assessment of hydrological hazard conducted.	Assessment of hydrological hazard conducted.	Number	9	5 (9)	4 (8)	3 (7)	2 (6)	1 (5)
		Assessment and monitoring of cryosphere and associated hazards conducted	Assessment and monitoring of cryosphere and associated hazards conducted	Number	10	5 (30)	4 (29)	3 (28)	2 (27)	1 (26)
		Hydro met and Flood/GLOF warning network enhanced.	The critical hydro-met/GLOF infrastructures & network enhanced & maintained	Number	9	5 (226)	4 (225)	3 (224)	2 (223)	1 (222)
Access to hydrological information and understanding of national water availability improved	20	Flood forecast, GLOF/Flood warning/advisories issued	Flood forecast, GLOF/Flood warning/advisories issued.	Number	9	2	N.A	N.A	N.A	1
		Mean Annual Flow of River Basins Generated	Mean annual flow of main river basins generated	Number	10	3	2	N.A	N.A	1
		Monitoring and Transmission of hydromet data	Monitoring and Transmission of hydro-met data to HQ	Days	10	Within 35 days	Within 40 days	Within 45 days	Within 50 days	Within 55 days

Section 3: Trend values of success indicators

Objective	Action	Success Indicator	Unit	Actual Values [FY 2018-19]	Target Values [FY 2019-20]	Projected Values [FY 2020-21]	Projected Values [FY 2021-22]	Projected Values [FY 2022-23]
End-to-end operational National Framework for Climate Services (NFCS)	Climate services provided	Climate services provided	Number	8	10	12	13	14
	Weather forecast and advisories on extreme weather events issued	Weather forecast and advisories on extreme weather events issued	Number	6	6	7	7	8
	Aviation met services provided	Aviation met services provided	Number	3	3	4	5	6
Water quality improved	Measurement of suspended sediment loads in major rivers	Measurement of suspended sediment loads in major rivers	Number	15	16	17	19	20
To provide effective and efficient admin, direction and related common support services	To provide effective and efficient directorate & services	Provided effective and efficient directorate & common services	Days	1	2	3	4	5

Hydro-meteorological and cryosphere disasters assessed & reduced	Assessment and monitoring of cryosphere and associated hazards conducted	Assessment and monitoring of cryosphere and associated hazards conducted	Number	4	9	14	18	23
	Hydro met and Flood/GLOF warning network enhanced.	The critical hydro-met/GLOF infrastructures & network enhanced & maintained	Number	221	226	233	240	240
	Assessment of hydro-logical hazard conducted.	Assessment of hydrological hazard conducted.	Number	6	9	12	15	18
	Flood forecast, GLOF/Flood warning/advisories issued	Flood forecast, GLOF/Flood warning/advisories issued.	Number	1	2	4	6	8
Access to hydro logical information and understanding of national water availability improved	Mean Annual Flow of River Basins Generated	Mean annual flow of main river basins generated	Number	0	1	2	3	4
	Monitoring and Transmission of hydromet data	Monitoring and Transmission of hydro-met data to HQ	Days	40	35	30	35	20

Section 4: Definition of Success Indicators

Success Indicator	Description	Data Collection Methodology	Data Collection Frequency	Data Source
Weather forecast and advisories on extreme weather events issued	<p>This SI measures the number of services provided as follows:</p> <ul style="list-style-type: none"> a. Daily weather forecast (365 days) b. Weather reports c. Operation of 24/7 shift d. Operation and maintenance of systems (GTS, HimawariCast and WRF) e. Extreme weather advisories f. Common Operating Platform (SmartMet) 	Advisories/Log book/Forecast report	Annually	WFS, WCSD, NCHM
Aviation met services provided	<p>This SI is measured by the number of services provided as follows:</p> <ul style="list-style-type: none"> a. Operation and maintenance of aviation met equipment at all airports b. Meteorological observations and reports (METAR/SPECI) c. Up-gradation of meteorological observation at airports 	Data report & physical progress	Annually	AMS, WCSD
Climate services provided	<p>This SI measures the number of services/reports generated as follows:</p> <ul style="list-style-type: none"> a. National Climate Forum (NCF) b. Seasonal prediction (summer outlook) c. Seasonal prediction (winter outlook) d. Climate monitoring (annual) e. Historical climate information and data f. Update weather and climate information on the NCHM website g. Climate projection for Bhutan 	Reports and Data records	Annually	WCSD, NCHM

	<p>h. Climate monitoring (monthly)</p> <p>i. Weather and seasonal information for agromet services</p> <p>j. Quality control of agro-met data</p>		Annually	HOID, NCHM
<p>Measurement of suspended sediment loads in major rivers</p>	<p>This indicator will measure the establishment of sediment sampling station and sediment laboratory to measure the suspended sediment data that are required for water quality assessment for watershed management and hydropower planning and development and planned to set up a station at 1. Kerabari on Puratsang Chhu</p> <p>*note*: Target of 16 FY2 inclusive of target achieved in previous FY & baseline of 15, however in FY 2019-20 NCHM have targeted 1 activity to be completed as mentioned above.</p>	Data Record	Annually	HOID, NCHM
<p>Provided effective and efficient directorate & common services</p>	<ol style="list-style-type: none"> 1. The number of days required to complete the works after the HRC endorsement 2. Regular common ICT services for the center in days 3. Timeline by which the bill settlement, budgeting works completed 	Admin Record	Annually	Directorate(AFS, HRS) NCHM
<p>Assessment of hydrological hazard conducted.</p>	<p>This indicator measures the number of activities carried out such as hydrological hazard assessment, Flood hazard map generation pre-feasibility studies for flood early warning systems as follows:</p> <ol style="list-style-type: none"> 1. Hydrological and flood hazard assessment for major river basin and sub basins of (Amo Chhu, Wangchhu (Thim Chhu, Pa Chhu and 	Technical report/Hazard maps	Annually	HWRS, NCHM

	<p>Haa Chhu), Gamri Chhu under Manas)</p> <p>2. c. Flood hazard map preparation for settlements along major river basin of Bhutan(Amo Chhu, Thim Chhu, Pa Chhu, Haa Chhu, Gamri Chhu,)</p> <p>3. d. Updation of Flood hazard maps of Chamkhar Chhu and Mangde Chhu</p> <p>The Indicator will be assessed as cumulative value. (9- total cumulative value while 6 is already there and 3 more assessment will be carried out).</p>			
<p>Assessment and monitoring of cryosphere and associated hazards conducted</p>	<p>This indicator measures the number of cryosphere activities conducted such as monitoring of glaciers, glacial lakes and associated hazards as follows:</p> <p>Annual monitoring of benchmark glaciers (Thana and Gangju La) – 2 activities</p> <p>Annual monitoring of Wachey glacier and glacial lakes in Pho Chhu Sub basin - 2 Activities</p> <p>Measurement of glacier ice thickness on Gangju La - 1 activity</p> <p>*note*: Target of 30 for FY2 is inclusive target achieved in previous FY(4) & baseline of 21, However in FY 2019-20 NCHM have targeted 5 activities to be completed as mentioned above.</p>	<p>Technical/Scientific Report</p>	<p>Annually</p>	<p>CSD, NCHM</p>
<p>The critical hydro-met/GLOF</p>	<p>This will SI measures the following works/activities:</p>	<p>Physical Progress</p>	<p>Annually</p>	<p>HOID, NCHM</p>

<p>infrastructures & network enhanced & maintained</p>	<p>1. Renovation of Cable way station at Tingtibi & Sed. Lab at Doyagang 2. construction the one fully-fledged Site offices at Lamozingkha 3. The boundary fencing and water supply work at newly constructed Central regional office in Bumthang and URC land at Punakha, Dagana & Tang, Bumthang 4. Renovation works of the site offices at Damphu, Tserang, Sherichu, Mongar & Chamkhar Bumthang. 5. Maintenance and rehabilitation works of hydro-met stations and infrastructures</p> <p>*note*: Target of 226 FY2 inclusive target achieved in previous FY & baseline of 221, However in FY 2019-20 NCHM have targeted 5 activities to be completed as mentioned above.</p>		
<p>Flood forecast, GLOF/Flood warning/advisories issued.</p>	<p>This indicator measures the number of activities carried out as follows: a. Issue Flood/GLOF Early warning during a flooding event in the places where there is GLOF EWS installed and operational of forecasting systems</p>	<p>Report/Data Record</p>	<p>Annually HWRSD, NCHM</p>
<p>Mean annual flow of main river basins generated</p>	<p>This indicator will be assessed based on the following report generated and published : 1. Setting up of hydrological modelling and generation of river flow/flood information for dissemination for the sub-basins of Amo Chhu, 2. Develop the river flow forecasting system</p>	<p>Technical Report</p>	<p>Annually HWRSD, NCHM</p>

<p>Monitoring and Transmission of hydro-met data to HQ</p>	<p>for Amo Chhu, and issue for 3 days lead time flow forecasting 3. Hydrological Data Processing and Database Management of Hydrological data collection from the National Hydrological Observation networks</p>			
<p>This indicator will measure the timely monitoring, data observation, collection by Site staff at field station and timely transmission of monthly field data to Head Quarter for data processing and archival in National Database; Ground verification and monitoring of extreme hydromet events as redundancy to automatic warning</p>		<p>Data Record</p>	<p>Monthly</p>	<p>HOID</p>

Section 5: Requirements from other Ministries, Agencies & Dzongkhags

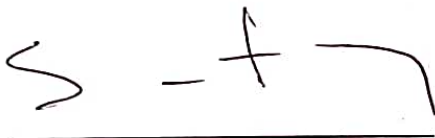
Organisation Name	Relevant Success Indicator	Requirement from the Organisation	Justification for the Requirement	Requirement detail	Impact (If Not Met)
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Whereas,

I, the Director, commit to the Chairman, the Government and the people of Bhutan to deliver the results described in this Annual Performance Agreement.

I, the Chairman, commit to the Director, NCHM, on behalf of the Government and the people of Bhutan, to provide the necessary fund and resources for delivery of the results described in this Annual Performance Agreement.

SIGNED:



(Sonam P. Wangdi)

**Chairman,
Governing Board,
National Center for
Hydrology & Meteorology**

Date

3. 1. 20



(Karma Dupchu)

**Director,
National Center for
Hydrology and Meteorology**

Date