

NKRA 6 - Carbon Neutral, Climate and Disaster Resilient Development Enhanced

Lead Agency - National Environment Commission (NEC)

Collaborating Agencies - Ministry of Agriculture and Forest, Ministry of Works and Human Settlement, National Center for Hydromet and Meterology, Ministry of Information and Communiations and Local Governments

AKRAs	Key Performance Indicators	Description	Unit	Baseline (Year)	Baseline	Target	Data Collection Methodology	Data Source	Data Collection Frequency	Responsible Agency
1. Enhanced management of natural resources for sustainable utilization of ecosystem goods and services	Forest capacity for carbon sink maintained	The indicator will measures the amount of carbon sequestered by Bhutan's forest (71%)	Metric Tons	2016	6.6	6.6	NFI	Carbon Stock assessment report	Mid term and terminal	MOAF
	Status of key aquatic diversity (micro invertebrates)	This indicator describes the status of key aquatic biodiversity (macroinvertebrates) to be maintained	Number	2017	411	411	Survey/Assessments	Survey Report	Mid term and terminal	MOAF
2. Sustainable and eco-friendly mass transport system enhanced	Zero or low emission vehicles uptake	Indciator measures the no. of electric/hybrid vehicles regisitered as a proportion of all vehicles in the country	Percentage	2016	0.01	0.05	Registration Records	RSTA	Annually	RSTA
	Vehicle emission standards and testing improved	The indicator will measure the % of vehicles tested for the emission as per the Vehicle Emission standards	Percentage	2016	70.2	100	Vehicle Emission Test Records	RSTA	Annually	RSTA
3. GHG emission from municiple waste reduced	Facilities to safely manage organic waste to reduce GHG emission implemented	Design and construction of compost plants and other alternative methods to manage organic waste. The KPI will measure the number of such project/program implemented	Number	2017	1	10	Administrative data	WSD/DES	Annually	DES/MoWHS
4. Industrial sector emissions minimized through cleaner production and low emission development practices.	Cleaner production technologies encouraged in manufacturing firms	Measures to encourage and support Industries to adopt cleaner production, resource efficiency technologies using climate support (define cleaner production)	Number		2005 CTEM Demonstration Projects	Demonstration projects carried out in ferro alloy, cement & food industries	Administrative data	DoI	Anually	DOI/DRE
	Areas of plantation to offset carbon emission from industries	This indicator will measure the areas brought under plantation to offset the carbon emission from the industries as a part of CSR	Acres	TBD	TBD	TBD	Administrative data	DoFPS	Annually	DOI/DOFPS
5. Promote clean renewable energy technologies through climate mechanisms	Other forms of alternative renewable energy promoted	The indicator measures the energy generation from other source of energy such as solar, wind, waste to energy projects in industrial estates/heat recovery	Kilowatt	TBD	TBD	TBD	Administrative data	DRE, MoEA	MTR and terminal	DRE, MoEA
6. Emissions reduced through demand side management of energy	Introduced conducive policy to improve the thermal performance of buildings.	This indicator measures development of important policy intervention tools like EE building Code & Green Building Standards.	Timeline	2018	Draft EE&C Policy-DRE	2022	Field survey and physical measurement	DRE report, and intermational publications	Biennial	DES, MoWHS
7. Enhanced climate smart and disaster resilient development	Area brought under micro efficient irrigation schemes	The indicator measures the total area of agricultural land brought under micro irrigation scheme through sprinkles, drip irrigation, small reserviors etc.	Acres	2016	N/A	2000	Field report	Agriculture statistics	Annually	MOAF
	Climate resilient technologies released and adopted	The indicator measures the number of RNR rechnologies released for adapting to climate variabilities (technologies include crop varieties, crop management practices, smart irrigation, soil fertility management, green livestock technologies)	Number	2016	24	48	Field data collection	Report	Annually	MOAF
	Area brought under sustainable land management	It measures the total land area within the country developed and managed through sustainable land management regimes and practices (eg Bio-engineering, wood stone bunding)	Acres	2016	7231	8231	Field data	Report	Annually	MOAF

	Area brought under improved pasture and winter fodder development	The indicator will measures the land area (both registered and SRF land leased) brought under improved pasture.	Acres	2016	18507	20357	Field data collection	Livestock census	Annually	MOAF
8. End-to-end operational National Framework for Climate Services (NFCS) enhanced	Enhance and dissemination of reliable weather & climate information services	Under this indicator one common operating platform for weather dissemination and five education and awareness for climate services will be carried out. Climate projection from Bhutan will be downscaled. Subseasonal products will be disseminated. Additional seasonal outlook for winter monsoon in addition to summer monsoon will be issued. NCHM will instal new 10 numbers of hydro-meteorological stations above 4000 m altitude in addition to 7 existing stations for reseach work on weather and cryospher and also for the water assessment studies.	Number	2017	15	41	Report	Report	Annual	NCHM
9. Obligations under Bilateral and Multilateral Environmental Agreements fulfilled	Timeline by which Assessment and reports on achievements of targets and obligations under MEAs adopted and reported	The indicator will measure the timeline for the adoption and submission of MEAs as an obligation for the country	Timeline	2018	NA	Submitted on or before deadline	Administrative data	Administrative data	Annual	NECS

2. Hydro-meteorological and cryosphere disasters assessed & reduced	Studies on risk associated with glacier and hydrological hazards conducted	This indicator measures the number of glacial lakes and associated glaciers and other hydrological hazards will be assessed for GLOF/flood risk	Number	2017	21	44	Review of Administrative data/Report	Administrative data/Technical Report	Annual	NCHM, MoEA
	Reliable and timely issuance of severe weather forecasts, warnings, advisories and briefing and archival and mapping of severe weather events	The indicator measures the number of forecast and services issued (currently METAR which will be increased with SIGMET & TAF).	Number	2017	1	4	Review of Administrative data/Report	Administrative data/Technical Report	Annual	NCHM, MoEA
3. Vulnerability to flooding reduced	Critical development areas assessed and managed for flood hazards and risks	This indicator measures the number of flood prone settlements assessed and construction measure put in place for flood hazards and risks	Number	2017	15	32	Review of Administrative data	Administrative data	Annual	Department of Engineering Services, MoWHS
4. Risk associated with geohazards assessed	Landslide inventory of Bhutan produced	The indicator measures the landslide inventory map of Bhutan generated using satellite imageries & field validation carried out for critical land slide and final map & report publicly available	Number	2017	0	1	Survey	Geological survey for field validation for critical landslides in all Dzongkhags	Track	Department of Geology and Mines, MoEA
	Risk associated with critical landslides assessed	This indicator measures the number of critical landslides that pose great risk to public infrastructures and communities are assessed, mitigation measures proposed and information disseminated to the concerned and relevant stakeholders	Number	2017	8	10	Survey	Large scale topographical survey and geological, engineering geological and geotechnical survey	Annual	Department of Geology and Mines, MoEA
	Seismic hazard assessed	Macro-seismic hazard map of Bhutan updated with new information generated from recent scientific studies as well as data from the national seismic network. Micro-seismic hazard zonation performed in priority areas (Micro-tremor survey, ground litho-information, building topology)	Number	2017	1	2	Review of the Administrative data	Administrative Data	Track	Department of Geology and Mines, MoEA