



REVISED STATE ACTION PLAN ON CLIMATE CHANGE, HARYANA



**DEPARTMENT OF ENVIRONMENT
AND CLIMATE CHANGE,
HARYANA**

Abbreviations

IPCC	Intergovernmental Panel on Climate Change
ADB	Asian Development Bank
AR	Assessment Report
ASHA	Accredited Social Health Activists
ATMA	Agricultural Technology Management Agency
BAU	Business-as-Usual Scenario
BCM	Billion Cubic Meter
CAGR	Compound Annual Growth Rate
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
CH ₄	Methane
CHCs	Community Health Centre
CO ₂	Carbon dioxide
CSR	Corporate Social Responsibility
CSS	Centrally Sponsored Scheme
DFID	Department for International Development
DST	Department of Science and Technology
ETP	Effluent Treatment Plant
FMD	Foot and Mouth Disease
GCF	Green Climate Fund
GEF	Global Environment Facility
GHG	Greenhouse Gases
GIM	Green India Mission
GiZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GRIHA	Green Rating for Integrated Habitat Assessment
GSDP	Gross State Domestic Product
ICDS	Integrated Child Development Services
IHHL	Individual Household Latrine
IMD	India Meteorological Department
IMR	Infant Mortality Rate
INDC	Intended Nationally Determined Contribution
INM	National Horticulture Mission
IPM	Integrated Pest Management
ISFR	India State of Forest Report
JJM	Jal Jeevan Mission
JNNSM	Jawaharlal Nehru National Solar Mission
JSY	Janani Surasksha Yojana
M&E	Monitoring and Evaluation
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MoEF&CC	Ministry of Environment Forest and Climate Change
MSW	Municipal Solid Waste
MW	Mega Watt
N ₂ O	Nitrous Oxide
NAPCC	National Action Plan on Climate Change
NFSM	National Food Security Mission
NHM	National Horticulture Mission
NHM	National Health Mission
NIE	National Institute of Engineering
NMSA	National Mission for Sustainable Agriculture
NRHM	National Rural Health Mission
NRM	Natural Resource Management
NTFP	Non-Timber Forest Produce
NUHM	National Urban Health Mission
PHCs	Public Health Centre
PHE	Public Health Engineering
PMAY	Pradhan Mantri Awas Yojana

PMKSY	Pradhan Mantri Krishi Sinchayee Yojana
PM-KUSUM	Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan Yojana
R&D	Research and Development
RAS	Recirculating Aquaculture System
RCC	Reinforced Cement Concrete
RCM	Regional Climate Model
RCP	Representative Concentration Pathway
RKVY	Rashtriya Krishi Vikas Yojana
SAPCC	State Action Plan on Climate Change
SBM	Swachh Bharat Mission
SC	Scheduled Caste
SDC	Swiss Development Corporation
SDGs	Sustainable Development Goals
SMAF	Sub- Mission of Agroforestry
SMAM	Sub-Mission of Agricultural Mechanization
SOC	Soil Organic Carbon
SPV	Solar Photovoltaic
ST	Scheduled Tribe
T&D	Transmission and Distribution
TB	Tuberculosis
UNDP	United Nation Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations International Children's Emergency Fund
WDC	Watershed Development Component
WG	Working Group

Table of Contents

EXECUTIVE SUMMARY	i
Chapter 1: Introduction	1
1.1 Background.....	1
1.1.1 National and State-level Climate Policy and Planning	1
1.1.2 National-level Climate Policy and Planning Frameworks	2
1.1.3 Updated Nationally Determined Contributions (NDCs).....	4
1.1.4 National-level Climate Policy and Planning Frameworks in Haryana.....	5
1.1.5 Integration with the District Environmental Plans (DEPs) of Haryana State	5
1.2 Objectives	6
1.3 Approach and Methodology.....	6
Chapter 2: State Profile.....	8
2.1 Location, Demography, Economy	8
2.1.1 Location, Geography and Size	8
2.1.2 Demographic Profile.....	8
2.1.3 Economic Profile.....	11
2.2 Natural Resources: Availability Of Land, Water, Energy, Forestry And Biodiversity Resources ...	11
2.3 Agriculture And Livestock.....	12
2.4 Energy Profile Including Primary Energy Supply, Energy Demand And Electricity Installed Capacity	13
2.5 State Development Issues And Priorities.....	13
2.6 Sectoral Highlights.....	15
2.6.1 Agriculture and Allied	15
2.6.2 Forest.....	15
2.6.3 Water.....	16
2.6.5 Solar Mission & Non-Conventional Energy and Energy Efficiency	17
2.6.7 Sustainable Habitat	17
2.7 Contribution To NDC In Terms Of Key Indicators	18
2.8 Performance Of The State Under SDGs	18
2.9 Sectoral Schemes and their SDGs and NDCs Linkages	22
2.10 Performance of the State under Key NDC Areas: Adaptation Strategy	24
2.10.1 Poverty and Food Security.....	24
2.10.2 Sustainable Agriculture (NMSA).....	25
2.10.3 Enhancement of Carbon Sink and Green India Mission	28
2.10.4 Water Resources and Water Use Efficiency	29
2.10.5 Drinking Water and Sanitation	31
2.10.6 MGNREGA and Climate Benefits.....	32
2.10.7 Health Outcomes.....	34
2.10.8 Strategic Knowledge for Climate Change.....	36
2.11 Performance of the State under Key NDC Areas: Mitigation Strategy	37
2.11.1 Sustainable Habitat	37
2.11.2 Energy Efficiency and Solar Mission	37
CHAPTER 3: Climate Profile.....	39
3.1 Indian scenario	39
3.2 Climate Profile of Haryana: Past and ongoing climate trend.....	39
3.2.1 Rainfall Trend	39
3.2.2 Temperature Trend.....	40
3.3 Climate Change scenarios Representative Concentration Pathways (RCPs).....	40
3.4 Climate Projections & Analysis.....	41
3.4.1 Temperature	42

3.4.2 Rainfall.....	42
Overall Implication for the state	42
Chapter 4: Climate Change Risk and Vulnerability Assessment.....	43
4.1 Vulnerability	43
4.2 Methodology.....	43
4.3 Vulnerability as per the latest DST Report	44
4.4 Integrated Risk and Vulnerability assessment	45
4.5 Sectoral Vulnerability and Impacts.....	49
4.6 Focus Areas as per the Impact	51
4.7 Disaster Risk, Loss and Damage in Haryana.....	51
Chapter 5: Mitigation Focussed Sectors	53
ENERGY EFFICIENCY AND SOLAR MISSION.....	54
Sectoral Overview.....	54
Impact of Climate Change in the Sector	60
Key Issues and Challenges.....	61
Progress Mapping (in last 5 years).....	62
Physical Progress	62
Gap/Barrier analysis.....	74
Sector Planning	75
National/ State-Level Targets and Linkages	75
Description of Strategies/Activities	76
Key Priorities Synopsis: Implementation Arrangement and Budget	82
SUSTAINABLE HABITAT	84
Sectoral Overview.....	84
Impacts of Climate Change in the Sector.....	84
Key Issues and Challenges.....	85
Progress Mapping (in last 5 years).....	86
Physical Progress	86
Gap/Barrier analysis.....	87
Sector Planning	87
National/State-Level Targets and Linkages	87
Description of Strategies/Activities	88
Key Priorities Synopsis: Implementation Arrangement and Budget	90
Chapter 6: Adaptation Focussed Sectors.....	91
SUSTAINABLE AGRICULTURE MISSION	92
Sectoral Overview.....	92
Impacts of Climate Change in the Sector.....	93
Key Issues and Challenges.....	94
Progress Mapping (in last 5 years).....	95
Physical Progress	95
Gap/Barrier analysis.....	113
Sector Planning	113
National/State-Level Targets and Linkages	113
Description of Strategies/Activities	114
Key Priorities Synopsis: Implementation Arrangement and Budget	118
FOREST AND BIODIVERSITY	120
Sectoral Overview.....	120
Impacts of Climate Change in the Sector.....	122
Key Issues and Challenges.....	122
Progress Mapping (in last 5 years).....	124
Physical Progress	124