



GENERIC CRITERIA FOR CLIMATE PERFORMANCE AUDIT



OFFICE OF THE COMPTROLLER AND AUDITOR GENERAL
OF BANGLADESH

GENERIC CRITERIA FOR CLIMATE PERFORMANCE AUDIT



Issued by authority of the Comptroller
and Auditor General of Bangladesh

PREFACE

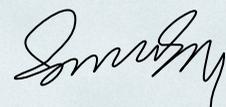
Climate change has become a critical developmental issue for Bangladesh. To address the adverse effects of climate change, Bangladesh has joined hands with global community by signing many protocols and agreements at the international level. At the national level, the Government of Bangladesh has enacted laws, framed rules and drawn out strategy and action plan to meet its commitment towards strengthening climate resilience. It has been channeling public resources to implement different projects to lessen the negative impact of climate change. As the Supreme Audit Institution of the country, it is incumbent upon the Office of the Comptroller and Auditor General (OCAG) of Bangladesh to assess how efficiently and effectively the resources mobilised are being utilised. The Office should, therefore, conduct audit to ensure that investment in these projects achieve the best value for money. It should also assess as to how the government is responding to the climate change issues to reduce the vulnerabilities of the communities at large.

Availability of suitable audit criteria is very crucial for evaluating performance of government's actions against climate change. To provide the OCAG auditors with climate responsive assessment tools, a set of generic criteria has been developed by the Office with the technical assistance from Inclusive Budgeting and Financing for Climate Resilience (IBFCR) Project of Finance Division supported by UNDP. While developing these criteria, the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2009 together with relevant INTOSAI standards and guidelines have been faithfully consulted. In addition, consultation with key stakeholders was carried out before finalising the criteria.

The generic criteria should be applied in conjunction with the Audit Code, Government Auditing Standards, Performance Audit Manual issued under the authority of the Comptroller and Auditor General of Bangladesh and relevant INTOSAI Guidelines. All procedures and techniques set out in these documents, as far as they relate to climate performance audit, should be followed with due diligence.

The present compilation of generic criteria derives its authority from Article 128 of the Constitution of the People's Republic of Bangladesh and the Comptroller and Auditor General (Additional Functions) Act, 1974. This will be updated periodically to accommodate new developments in the field of climate performance audit. Any suggestion for improvement is most welcome.

Dhaka
25 April, 2018



Masud Ahmed
Comptroller and Auditor
General of Bangladesh

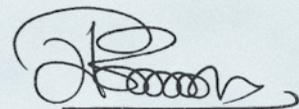
ACKNOWLEDGEMENTS

The Office of the Comptroller and Auditor General of Bangladesh (OCAG) would like to acknowledge with gratitude the contributions made by a number of individuals and organisations to the production of this important document, Generic Criteria for Climate Performance Audit, for the guidance of our auditors. We like to place on record our sincere thanks and gratitude to the Finance Division, Ministry of Finance for extending all-out support to OCAG in introducing climate dimension in its performance audit protocol through its ongoing IBFCR Project. Our deepest thanks to Mr. Masud Ahmed, Comptroller and Auditor General of Bangladesh who took keen interest in this initiative and provided guidance to the task of preparing this document. Our special thanks to Mr. Mohammad Muslim Chowdhury, Secretary, Finance Division who provided active support to make the undertaking a success. We are thankful to Mr. Abdur Rouf Talukder, Additional Secretary, Finance Division and National Project Director, IBFCR Project for providing technical support through the project team for preparing this document.

Mr. Mohammad Zakir Hossain, Deputy Comptroller and Auditor General (Accounts and Reports) and his colleagues Mr. A K M Hasibur Rahman, Additional Deputy Comptroller and Auditor General (Parliament), Mr. Md. Arifur Rahman, Assistant Comptroller and Auditor General (Audit) and Mr. Md. Firoz Khan, Assistant Comptroller and Auditor General (Report) extended their all-out cooperation during the conceptualization and development phase of the document and provided valuable inputs for its improvement. We offer our sincere thanks to all of them. We gratefully recall the contributions made by the stakeholders during the consultation phase. The valuable inputs provided by the participants in the validation workshop jointly organised by the OCAG and IBFCR Project are also gratefully acknowledged. Certainly, their inputs enriched the contents of the document. We appreciate very much the role played by the Directorate of Foreign Aided Project Audit and Directorate of Civil Audit for spearheading the pioneering task of conducting climate performance audit despite there had been several constraints.

Finally, we would like to put on record our deep appreciation for UNDP, DFID, GIZ, and SIDA for their valuable support to the agenda of introducing climate performance audit in the domain of government audit as part of the process of evaluating the effectiveness of climate investment

Dhaka
25 April, 2018



Mohammed Iqbal Hossain
Deputy Comptroller and
Auditor General (Senior)

TABLE OF CONTENTS

Acronyms	ix
1. Introduction	1
2. Understanding Audit Criteria	3
3. Characteristics of Climate Performance Audit Criteria	5
4. Sources of Climate Performance Audit Criteria	7
5. Generic Audit Criteria for Climate Performance Audit	9
References	25

ACRONYMS

BARI	Bangladesh Agricultural Research Institute
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BRCS	Bangladesh Red Crescent Society
BIDS	Bangladesh Institute of Development Studies
BRAC	Building Resources Across Community
BRRRI	Bangladesh Rice Research Institute
CBO	Community Based Organisation
CDA	Chittagong Development Authority
CDM	Clean Development Mechanism
CDMP	Comprehensive Disaster Management Programme
CEGIS	Centre for Environmental and Geographic Information Service
CFL	Compact Florescent Lamp
CIP-EFCC	Country Investment Plant for Environment, Forestry and Climate Change
COP	Conference of Parties of UNFCCC
CPP	Cyclone Preparedness Programme
DCC	Dhaka City Corporation
DEM	Digital Elevation Model
DMB	Disaster Management Bureau
DoE	Department of Environment
DoF	Department of Forests
DPHE	Department of Public Health Engineering
DPP	Development Project Proforma
FFWC	Flood Forecasting and Warning Centre
GBM	Ganges-Brahmaputra-Megna
GCM	General Circulation Model
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
IPCC	Intergovernmental Panel on Climate Change

IWFM	Institute of Water and Flood Management
IWM	Institute of Water Modelling
KDA	Khulna Development Authority
LDC	Least Developed Country
LGED	Local Government Engineering Department
LGRD&C	Local Government Rural Development and Cooperatives
MDG	Millennium Development Goals
NAMA	Nationally Appropriate Mitigation Actions
NAPA	National Adaptation Programme of Action
NARS	National Agriculture Research System
NDMC	National Disaster Management Council
NGO	Non-Governmental Organisation
RADAR	Radio Detection and Ranging
RAJUK	Rajdhani Unnayan Kartipakkha
RDA	Rajshahi Development Authority
REDD	Reducing Emissions from Deforestation and Forest Degradation
REHAB	Real Estate and Housing Association of Bangladesh
RRI	River Research Institute
SLR	Sea Level Rise
SPARRO	Space Research and Remote Sensing Organisation
TAPP	Technical Assistance Project Proforma
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
WASA	Water Supply and Sewerage Authority
WARPO	Water Resources Planning Organisation

1

INTRODUCTION

Audit criteria are the benchmarks used to evaluate the subject matter under audit. An auditor has to develop audit criteria whether it is Compliance Audit or Financial Audit or Performance Audit. They are intended to give the auditors proper direction to the assessment. Without criteria, it is not possible to complete the audit work and take audit to a logical conclusion. The quality of audit work depends, to a large extent, on the correct selection of audit criteria. For performance audit, the selection of audit criteria is generally relatively open and formulated by the auditor. In audits covering complex subjects, it is not always possible and desirable to set the criteria in advance; instead they will be defined and developed as the audit work progresses.

Developing audit criteria depends on auditors' knowledge and understanding about the audit topic. A broad and generic understanding about criteria may help the auditors to develop audit criteria for specific project or programme to be audited. The purpose of this document is to help SAI auditors to develop generic audit criteria for climate performance audit. It encompasses the following:

1. Understanding audit criteria
2. Characteristics of climate performance audit criteria
3. Sources of climate performance audit criteria
4. Generic audit criteria for climate performance audit.

2

UNDERSTANDING AUDIT CRITERIA

Audit criteria are standards of performance against which the economy, efficiency and effectiveness of project, programmes or activities can be measured. Audit criteria reflect normative (ideal) model for the subject matter under study. Performance is examined against suitable criteria. Audit criteria represent best or good practice. Criteria stand for what should be. When criteria are compared with ground reality, audit finding emerges. Meeting or exceeding the criteria indicates best practice; but a failure to meet them would indicate that there is scope for improvement.

Based on audit criteria, audit procedures can be built for the collection of audit evidence. Audit criteria provide a basis for examining the evidence, formulating audit findings and arriving at conclusions on the audit objectives. They also provide a basis for discussions within the audit team and with SAI higher authority and in communication with the auditees.

The audit question, the audit approach and the audit objectives determine the relevance and the type of suitable criteria. Stakeholder's confidence in the findings and conclusions of a climate performance audit greatly depends on the criteria.

The audit criteria should be developed objectively. It requires rational consideration and sound judgment from SAI auditors and audit team.

The audit team should:

- have a general understanding of the area to be audited, and be familiar with relevant legal and other documents as well as recent studies and audits in the area;
- have good knowledge of the motives and the legal basis of the government programme or activity to be audited and the goals and objectives set by the government;
- have a reasonable understanding of the expectations of the stakeholder;
- have appropriate professional knowledge and skills to assess the criteria.

Climate performance audit criteria can be national if there is a climate change policy/law or can be international, especially, if the country had signed and ratified UN Convention on climate change.

3

CHARACTERISTICS OF CLIMATE PERFORMANCE AUDIT CRITERIA

Climate performance audit criteria should possess the following characteristics:

- **Relevance:** Audit criteria should be relevant. They should contribute to conclusions that assist decision making by intended users and to conclusions that answer on the audit questions.
- **Reliability:** Criteria should be reliable. It should result in consistent conclusion when used by another auditor in the similar circumstances.
- **Objectivity:** Criteria should be objective. It should be free from any bias.
- **Understandability:** Criteria should be clearly stated. It should not be subject to ambiguity and different interpretations.
- **Completeness:** It implies that all significant criteria should be developed for assessing performance. Criteria should be sufficient for the audit and do not omit relevant factors.

Goals set by the organisations, may sometimes, be vague and conflicting. To address such issues, the auditors need to explain the goals to make them more operational, measurable and audit friendly. One possibility available to SAI auditor is to consult the experts and stakeholders in the field to answer questions as to how the goals be interpreted and measured. In the case of conflicting, vague and long- term goals, the auditor should narrow the scope somewhat and look for short-term perspectives and direct criteria.

4

SOURCES OF CLIMATE PERFORMANCE AUDIT CRITERIA

Audit criteria can be qualitative or quantitative and may be general or specific. Diverse sources can be used to identify audit criteria, including regulations, standards, sound principles and best practices. They can be developed from the controls, results, commitments and targets, performance measurement frameworks and policies and procedures adopted by the organisation itself or imposed by the legislation.

When organisations do not have reliable or sufficient standards for measuring performance, required criteria may be sourced from the regulations, law, standards developed by professional bodies. Sometimes the audit criteria are not defined directly by laws or other authoritative documents, or they need to be developed and refined by the auditor throughout the course of the audit work.

In developing audit criteria, input can be taken from the auditee. The criteria should be discussed with the auditee, but it is ultimately the responsibility of auditors to select workable criteria.

Audit criteria can be obtained from the following generic sources:

- Climate change related laws and regulations governing the operation of the audited organisation;
- Decisions made by the legislature or the executive;
- References to historical comparisons or comparison with best practice;
- Professional standards, experiences and values;
- Key performance indicators set by the entity or the government;
- Independent expert advice and know-how;
- New or established specific knowledge and other reliable information;
- Criteria used previously in similar audits or by other SAIs;
- Organisations, inside or outside the country, carrying out similar activities or having similar programmes;

- Performance standards or previous inquiries by the legislature;
- General management and subject-matter literature.

These sources can be broadly classified as ‘authoritative’ sources and ‘non-authoritative’ sources. Under authoritative sources fall laws, documented policies and goals, generally accepted standards etc and under non-authoritative sources come academic literature, indicators or measures used by similar organisations engaged in similar functions.

For climate performance audits, criteria can be obtained from the following specific sources:

- Project document particularly the DPP or TAPP
- Bangladesh Environment Conservation Act, 1995
- Bangladesh Climate Change Strategy and Action Plan (BCCSAP), 2009
- Bangladesh Climate Change Trust (BCCT), 2009
- Bangladesh Climate Change Trust Fund (BCCTF), 2010
- Climate Change Trust Act, 2010
- The Perspective Plan (2010-2021)
- Delta Plan 2100
- Haor Master Plan, 2012
- The 7th Five-year Plan (2016-2020)
- Country Investment Plan for Environment, Forestry and Climate Change (2016-2021)
- Nationally Determined Contributions (NDC), 2016
- The United Nations Framework Convention on Climate Change (UNFCCC), 1992
- The Kyoto Protocol, 1997
- Marrakesh Accords, 2001
- Bali Action Plan, 2007
- The Copenhagen Accord, 2009
- Paris Agreement, 2015

5

GENERIC AUDIT CRITERIA FOR CLIMATE PERFORMANCE AUDIT

Suitable criteria are required for reasonably consistent measurement or evaluation of an underlying subject matter within the context of professional judgment. Without the frame of reference provided by appropriate criteria, any conclusion is open to individual interpretation and misunderstanding. Suitable criteria are context-sensitive, that is, relevant to the engagement circumstances. Even for the same underlying subject matter there can be different criteria, which will yield a different measurement or evaluation. Further, criteria may be suitable for a particular set of engagement circumstances, but may not be suitable for a different set of engagement circumstances. In fact, there are no such kind of audit criteria that can be used universally for all climate performance audits. They will vary from one audit to another depending on the subject matter of the audit and the audit objectives and the laws, rules, regulations, statutes, policies and principles that govern the subject matter. Moreover, if in any way, a generic list of audit criteria can be developed, that cannot be an exhaustive one. However, the following set of criteria can be used for conducting performance audit of Government's response of climate change. The criteria listed below can be used to carry out performance audit relating to a particular issue area. These criteria have been prepared mainly for evaluating Ministry/Division level activities to achieve Government's overall objectives of addressing the adverse effects of climate change. Therefore, the auditors should be careful enough, while developing audit criteria, that the audit objectives shown in the table are aligned with the objectives set forth in the relevant policy and strategy documents for the Ministry/Division.

Subject Matter 1 : Food Security, Social Protection and Health

Audit Objectives	Audit Criteria
<p>1) To examine whether Ministry of Agriculture and other NARS organisations have built institutional capacity of research centres and expertise of researchers to develop climate resilient cultivars of food and other crops.</p>	a) Local improved cultivars have been collected and preserved.
	b) Research has been undertaken to develop climate resilient varieties of rice, wheat and other food and non-food crops including vegetables.
	c) Field trials and disseminations of the climate resilient local improved cultivars and the newly developed varieties to farmers have been done.
	d) The capacity of NARS institutes, scientists and technicians have been strengthened through logistic support, education and training.
<p>2) To examine whether Ministry of Agriculture and NARS have taken steps to develop climate resilient cropping systems appropriate to different agro-climate regions and sub- regions.</p>	a) Agro-economic zones vulnerable to climate change have been identified.
	b) Climate resilient cropping patterns suited to different regions of the country have been developed.
	c) Field level trials of climate resilient cropping patterns and associated water management systems have been undertaken.
	d) Organised seed production and supply system have been developed.
	e) Production technologies (mulching, water management, polytunnels, raised beds etc.) have been developed for crop production in the vulnerable areas.
	f) Early warning and weather forecasting for crop production against diseases, insects, drought, flood storms, tidal surges have been developed.

<p>3) To assess if Ministries of Agriculture and Water Resources have taken steps for adaptation against drought, salinity, submergence, and heat.</p>	<p>a) GIS maps of areas vulnerable to drought, flood and salinity have been prepared.</p>
<p>4) To determine whether Ministry of Fisheries and Livestock has taken measures for adaptation in the fisheries sector.</p>	<p>b) Adaptive measures in drought, saline, submergence and hot and cold prone areas by appropriate cultivars, cropping patterns and land and water management practices have been developed and tested.</p>
<p>5) To assess whether Ministry of Fisheries and Livestock has taken steps for adaptation in livestock sector.</p>	<p>c) Effective dissemination to farmers has been resorted to.</p>
<p>4) To determine whether Ministry of Fisheries and Livestock has taken measures for adaptation in the fisheries sector.</p>	<p>a) Potential threats of climate change to fish spawning and growth of fish have been assessed.</p>
<p>4) To determine whether Ministry of Fisheries and Livestock has taken measures for adaptation in the fisheries sector.</p>	<p>b) Adaptive measures to ensure fish spawning and growth of fish have been developed.</p>
<p>4) To determine whether Ministry of Fisheries and Livestock has taken measures for adaptation in the fisheries sector.</p>	<p>c) Potential impacts of climate change on the shrimp sector have been assessed.</p>
<p>4) To determine whether Ministry of Fisheries and Livestock has taken measures for adaptation in the fisheries sector.</p>	<p>d) Appropriate adaptive measures against climate change and cultural practices on the shrimp sector have been developed.</p>
<p>4) To determine whether Ministry of Fisheries and Livestock has taken measures for adaptation in the fisheries sector.</p>	<p>e) Potential impacts of climate change on the migration of fish and Hilsa fish have been assessed.</p>
<p>4) To determine whether Ministry of Fisheries and Livestock has taken measures for adaptation in the fisheries sector.</p>	<p>f) Appropriate adaptive measures against migration of fish and Hilsa fish have been developed.</p>
<p>5) To assess whether Ministry of Fisheries and Livestock has taken steps for adaptation in livestock sector.</p>	<p>a) Potential threats to the poultry and livestock sectors have been assessed.</p>
<p>5) To assess whether Ministry of Fisheries and Livestock has taken steps for adaptation in livestock sector.</p>	<p>b) Adaptive measures to threats in the poultry and livestock sectors have been developed and disseminated among farmers.</p>
<p>5) To assess whether Ministry of Fisheries and Livestock has taken steps for adaptation in livestock sector.</p>	<p>c) Veterinary services system including animal health measures in light of the likely increase in disease prevalence has been strengthened.</p>

<p>6) To examine whether Ministry of Health and Family Welfare has taken appropriate measures to address the impacts of climate change on disease patterns and the social and economic costs of disease.</p>	<p>a) Research on the impact of climate change on health (including the incidence of malaria and dengue, diarrhoeal diseases, heatstroke) has been undertaken.</p> <p>b) Research on the cost to society of increased mortality, morbidity and consequent fall in productivity due to climate change has been undertaken.</p> <p>c) Adaptive strategies against outbreaks of malaria, dengue and other vector borne diseases have been developed.</p> <p>d) Adaptive strategies against diarrhoeal and other diseases, which may increase due to climate change, have been developed.</p> <p>e) Investment has been made in preventive and curative measures and facilities.</p>
<p>7) To ascertain whether measures have been adopted by the Ministry of LGRD&C to ensure adequate water supplies and improved sanitation.</p>	<p>a) Monitoring of changes in water quality and quantity available for drinking due to climate change has been ensured.</p> <p>b) Forecasting system of future changes in water quality and quantity available for drinking due to climate change has been established.</p> <p>c) Investment has been made for additional water supply and sanitation facilities.</p>
<p>8) To assess whether actions have been taken by relevant line Ministries for livelihood protection in ecologically fragile areas.</p>	<p>a) Comprehensive and participatory planning and investment for climate resilience against erosion in income, employment and human health in coastal, char, hilly and wetland regions have been undertaken.</p>
<p>9) To examine whether measures have been adopted by relevant line Ministries to ensure equitable and sustainable development of vulnerable socio-economic groups including women and children.</p>	<p>a) Comprehensive and participatory planning and investment have been undertaken to protect the livelihoods of groups who has been severely impacted by climate change</p> <p>b) Comprehensive study has been undertaken on the impact of climate change on women and children.</p>

Subject Matter 2: Comprehensive Disaster Management	
Audit Objectives	Audit Criteria
1) To ascertain whether the Ministry of Water Resources has improved flood forecasting and early warning systems and strengthened dissemination mechanism.	a) Hydro-meteorological data network have been reviewed.
	b) Telemetric stations have been set up.
	c) Improvement in dissemination of warnings has been affected by (i) combining river stage and DEM information, and (ii) making 10 days forecast.
	d) Awareness building programme has been undertaken at community level on warnings produced and released by FFWC.
2) To examine if Ministry of Disaster Management and Relief, Bangladesh Red Crescent Society (BRCS), NGOs and CBOs working in the coastal areas have improved cyclone and storm warnings system and dissemination.	a) Present cyclone and storm surge warning system has been reviewed and improved.
	b) Improvement in cyclone and storm surge warning has been disseminated to local communities through awareness campaigns.
3) To determine whether Ministry of Disaster Management and Relief, BRCS, NGOs, and CBOs working in the coastal areas have ensured community based disaster preparedness and improved resilience.	a) Awareness raising programmes have been implemented for local communities about impacts of climate change.
	b) Training programmes have been implemented for local communities on shelter management, search and rescue and health issues related disaster management.
4) To assess if Ministry of Finance and other line ministries, the insurance sector, and the NGOs have ensured risk management against loss of income and property.	a) An effective insurance scheme has been devised for losses in property due to climate change impact.
	b) An effective insurance system has been developed for loss of income to person, household and enterprises.
	c) The insurance systems have been piloted before implementation.

Subject Matter 3: Infrastructure	
Audit Objectives	Audit Criteria
1) To examine whether Ministry of Water Resources has ensured continued flood protection.	a) Condition of all existing flood embankments has been assessed and GIS maps have been prepared.
	b) Repair and rehabilitation of existing embankments have been completed.
2) To assess if Ministry of Disaster Management and Relief has ensured that existing cyclone shelters are safe and functional.	a) Survey and GIS based maps showing the location of all cyclone shelters on the coastal belt of Bangladesh have been completed.
	b) Database describing the location, present status and repair needs of existing cyclone shelters have been developed.
	c) Plan for repair and where necessary, redesign of cyclone shelters, including their approach roads has been prepared.
	c) Repair and reconstruction of cyclone shelters and approach roads have been completed.
3) To examine whether Ministry of Water Resources has ensured repair and maintenance of existing polders and dykes.	a) Survey of the condition of coastal polders has been completed.
	b) GIS maps with present coverage of areas protected by the existing polders have been prepared.
	c) Plan, design and immediate repairs of existing dykes have been completed taking into account future sea level rises and storm surges.
	d) Reconstruction and repair of polders / embankments to design height have been completed.

<p>4) To ascertain whether Ministry of Local Government, Rural Development and Cooperative has taken measures to prevent congestion and water logging that may result from heavy downpour in urban areas.</p>	<p>a) The drainage capacity of selected cities and towns has been assessed.</p> <p>b) Investigation into structural and non-structural causes of water logging within the cities and their immediate surroundings using hydro-dynamic models has been undertaken.</p> <p>c) Design and investment for improvements in the drainage capacity of the cities and towns has been made.</p> <p>d) Effective coordination with LGED, Dhaka WASA, and Chittagong WASA has been established.</p>
<p>5) To ascertain whether Ministry of Water Resources and Ministry of Disaster Management and Relief have taken adequate steps for adaptation against floods and making flood prone areas more resilient.</p>	<p>a) Hydrological modelling of the Brahmaputra-Ganges-Meghna basin against future climate changes scenario has been completed to estimate future flood levels and risk in Bangladesh.</p> <p>b) A flood vulnerability map based on future projected climate parameters have been developed.</p> <p>c) Flood management infrastructure in light of likely future flood levels has been planned, designed and constructed.</p> <p>d) Flood plain zoning corresponding to various levels of vulnerability has been completed.</p> <p>e) Long term improvement of flood forecasting and warning system has been established.</p> <p>f) A telemetric network and weather and hydrological RADARs have been installed.</p> <p>g) Digital Elevation Models (DEM) have been installed.</p> <p>h) Non-structural flood proofing measures have been planned and implemented.</p>

<p>6) To determine whether Ministry of Water Resources, Ministry of Environment, Forest and Climate Change, Ministry of Disaster Management and Relief have made arrangements for adaptation against future cyclones and storm- surges.</p>	<p>a) Analysis of meteorological data to improve prediction of changes in the pattern of cyclone events has been completed.</p>
<p>7) To assess whether Ministry of Water Resources has planned, designed and completed river training works to control river bank erosion.</p>	<p>b) A plan has been prepared to upgrade existing coastal polders and appurtenant structures in the coastal region.</p>
<p>8) To ascertain whether Ministry of Water Resources, Bangladesh Water Development Board, Ministry of Local Government, Rural Development and Cooperatives, Ministry of Disaster Management and Relief have revived the rivers and khals of Bangladesh.</p>	<p>c) Planning and designing have been completed to construct new polders in the coastal belts and islands.</p>
<p></p>	<p>d) Coastal green belts have been planned and developed as a measure against storm surge.</p>
<p></p>	<p>e) Repair, maintenance, and construction of cyclone shelters for protection against storm surge have been completed.</p>
<p></p>	<p>a) GIS maps have been prepared showing erosion prone areas.</p>
<p></p>	<p>b) Monitoring mechanisms to control river erosion have been identified.</p>
<p></p>	<p>c) Physical and hydro-dynamic modelling have been completed.</p>
<p></p>	<p>d) River training programmes and projects have been designed.</p>
<p></p>	<p>e) River training programmes and projects have been executed.</p>
<p></p>	<p>a) Preparation of a GIS based River Resuscitation Master Plan on the Thana Development Plan has been done.</p>
<p></p>	<p>b) Priority geographic areas have been identified.</p>
<p></p>	<p>c) Resuscitation through dredging and de-siltation plan in a phased manner has been executed.</p>
<p></p>	<p>d) Participatory operation and management plan has been developed.</p>

Subject Matter 4 : Research and Knowledge Management

Audit Objectives	Audit Criteria
<p>1) To examine whether Ministry of Environment, Forest and Climate Change and other research organisations have developed institutional and human capacity on climate change.</p>	<p>a) A centre and/or network for research on climate change and climate change impact and their management has been established.</p> <p>b) A virtual technology bank has been established.</p> <p>c) A dynamic web portal has been developed.</p> <p>d) Training programmes for high and mid-level officials of the government, NGOs and private organisations/associations have been developed.</p> <p>e) Training programmes have been delivered in collaboration with research centers and universities.</p>
<p>2) To ascertain whether Bangladesh Meteorological Department, Universities, Research Organisations, FFWC have developed climate change modelling at national and sub-national levels.</p>	<p>a) Capacity for construction of General Circulation Models (GCM) with small grids has been built.</p> <p>b) Appropriate GCM models with small grids to obtain regional variations in weather have been built.</p> <p>c) Capacity has been built to operate and update GCMs.</p> <p>d) Additional field data for effective use of the calibrated models to predict future climate change has been collected.</p> <p>e) Regional climate change models have been linked up to generate better boundary conditions.</p>
<p>3) To ascertain whether Ministry of Defense, Ministry of Shipping, Ministry of Agriculture, Ministry of Industry and Ministry of Power, Energy and Mineral Recourses have been monitoring and developing models to predict sea level rise and its impacts.</p>	<p>a) Data collection network stations have been set up to monitor sea level rises and salinity along with other appropriate hydro-meteorological data.</p> <p>b) Measures have been taken for modelling the inundation and salinity impacts of SLR by specific time lines.</p> <p>c) Measures have been taken for modelling and predicting the socio-economic and health impacts of SLR.</p> <p>d) Industrial relocation has been planned taking into account private and social costs.</p>

<p>4) To assess whether Ministry of Environment, Forest and Climate Change, Ministry of Agriculture, Ministry of Health and Family Welfare, Ministry of Fisheries and Livestock have clear understanding of ecosystem dynamics and their implications for biodiversity changes and adaptation strategies.</p>	<p>a) A well-designed monitoring system has been set up to evaluate changes in ecosystem and biodiversity, covering all important and sensitive ecosystems.</p> <p>b) Participatory monitoring system has been developed by involving local trained people such as school teachers, communities and academic researchers.</p> <p>c) Changes in ecosystem and biodiversity has been reported.</p> <p>d) Implications of ecosystem changes, including those for the livelihood of local people has been assessed.</p> <p>e) Adaptive measures to ecosystem changes, including those for the livelihood of local people have been recommended.</p>
<p>5) To examine whether Ministry of Finance, Ministry of Women and Children Affairs, Ministry of Social Welfare, Ministry of Chittagong Hill Tracts Affairs, Universities and Research Organisations have identified likely macroeconomic and sectoral impacts of climate change and planned for adaptation and mitigation strategies.</p>	<p>a) The impact of climate change on the macroeconomy of Bangladesh including impacts on growth, employment, trade patterns, inflation, and balance of trade has been evaluated.</p> <p>b) Sectoral economic impacts of climate change for major sectors such as agriculture, industry, services, health, transport and financial sectors have been evaluated.</p> <p>c) Impacts of climate change on poverty and on people living in vulnerable areas such as chars, coastal plain and islands, low-lying floodplains and upland areas have been evaluated.</p> <p>d) Assessment of climate change and its impact on out-migration has been completed.</p>
<p>6) To determine that Ministry of Environment, Forest and Climate Change, Ministry of Home Affairs, Ministry of Local Government, Rural Development and Cooperatives ensured capacity building for the rehabilitation of people migrated due to climate change.</p>	<p>a) A monitoring mechanism of internal and external migration has been developed.</p> <p>b) A protocol to provide adequate support for settlement and rehabilitation of migrated people has been developed.</p> <p>c) Education and training to facilitate their re-settlement in new environment has been provided to migrated people.</p>

7) To ascertain if Ministry of Civil Aviation and Tourism, Ministry of Environment, Forest and Climate Change have made arrangements for adaptation to climate change in tourism sector.	a) Probable impact of climate change on all types of tourism in Bangladesh has been assessed.
	b) A climate change response programme for Bangladesh has been prepared.
	c) Priority recommendations have been implemented.

Subject Matter 5 : Mitigation and Low Carbon Development

Audit Objectives	Audit Criteria
1) To assess whether Ministry of Power, Energy and Mineral Resources, Ministry of Industries, Ministry of Agriculture, Ministry of Communications, Ministry of Finance, Universities and Research Organisations have taken steps to ensure an energy secure and low-carbon development of the economy.	a) Study has been conducted on the future energy needs of the country.
	b) Finds out the least cost energy supply path that satisfies future energy demands based on the desired growth path of the economy.
	c) Energy efficiency in power production, transmission and distribution has been raised through appropriate investments.
	d) Energy efficiency in agricultural and industrial processes has been raised through appropriate policies and investment.
	e) Energy efficiency in domestic and commercial/ service sectors has been raised through appropriate policies and investments.
	f) Energy efficiency in transport sector has been raised through appropriate policies and investments.
2) To examine whether Ministry of Power, Energy and Mineral Resource has adopted appropriate measures to enhance energy security and ensure low- emission development.	a) Sufficient investment in gas exploration has been made.
	b) Investment has been made in reservoir management.

<p>3) To assess whether Ministry of Power, Energy and Mineral Resources has taken proper steps for maximizing coal output and managing coal fired power stations in a carbon-neutral way.</p>	<p>a) Coal mining methods have been reviewed.</p> <p>b) Feasibility study has been undertaken to assess the technical, economic, social and environmental feasibility of coal mining for power generation (including factors such as how to capture coal bed methane).</p> <p>c) Based on feasibility study, investment in coal mining and coal-fired power generation plant has been made.</p>
<p>4) To determine whether Ministry of Power, Energy and Mineral Resources and Ministry of Environment, Forest and Climate Change have ensured lower GHG emission and energy security.</p>	<p>a) Sufficient investments have been made to scale up solar power programmes for maximizing the use of renewable energy.</p> <p>b) Research has been conducted and investment has been made to harness wind energy, particularly in coastal areas.</p> <p>c) Feasibility studies have been conducted for tidal and wave energy.</p> <p>d) Study has been conducted to address the techno-economic, social and institutional constraints to adoption of improved biomass stoves and other technologies.</p>
<p>5) To ascertain whether Ministry of Agriculture, NARS, and Agricultural Extension Services have made arrangements to raise productivity of agricultural land and lower emissions of methane.</p>	<p>a) Support has been provided to research and on-firm trials of water and fertilizer management technology.</p> <p>b) Support has been provided to agricultural extension service to popularize water and fertilizer management techniques for rice production.</p> <p>c) Awareness has been created among the farmers about nitrogenous fertilizer use in the rice field.</p>
<p>6) To assess whether Ministry of Local Government, Rural Development and Cooperatives has ensured livable cities while lowering GHG (methane) emissions.</p>	<p>a) Urban waste dumps have been designed to capture methane in all major urban areas.</p> <p>b) CDM is in operation to set up small power plants by capturing the produced methane from waste dumps.</p>

<p>7) To examine whether Ministry of Environment, Forest and Climate Change has ensured adequate and sustainable sinks for GHGs.</p>	<p>a) Supports have been provided to existing and new coastal afforestation programmes taking into account the future rise in salinity levels due to rise in the sea level.</p>
	<p>b) An extensive wetland afforestation programme has been developed to protect settlements against erosion.</p>
	<p>c) The scope for carbon credits under REDD has been studied and investment in reforestation of degraded reserve forests has been explored.</p>
	<p>d) Support has been provided to existing and new homestead and social forestry programmes.</p>
	<p>e) Research as to the suitability of various tree species for their carbon- locking properties for designing various forestry programmes keeping in mind other environmental and socio-economic functions of forestry has been conducted.</p>
<p>8) To determine if Ministry of Power, Energy and Mineral Resources, Ministry of Environment, Forest and Climate Change have made arrangements for rapid expansion of energy saving devices e.g. Compact Florescent Lamps (CFL).</p>	<p>a) A rapid assessment of potential of CFL in Bangladesh has been made.</p>
	<p>b) Project has been designed for obtaining CDM benefits.</p>
	<p>c) Expansion of CFL has been facilitated with support from Carbon Credit Fund.</p>
<p>9) To ascertain whether Ministry of Housing and Public Works, Rajuk, CDA, KDA, RDA, DCC, REHAB have made arrangements to put in place effective technological and adaptation options in built environment to improve energy and water efficiency.</p>	<p>a) Necessary adaptation of existing buildings and additional accommodation in under construction building for collection and storage of rain water has been effected.</p>
	<p>b) Installation of solar thermal power or small wind mill at the rooftop or nearby all buildings and infrastructures has been completed.</p>
	<p>c) Building code has been revised for inclusion of energy saving devices in all infrastructures.</p>
	<p>d) Provision for planning of construction works in energy efficient methods has been made.</p>

10) To examine whether Ministry of Power, Energy and Mineral Resources has stepped in to improve energy use efficiency in transport sector and benefit from CDM process.	a) Low cost public transport modes such as rapid transit have been promoted.
	b) The use of fossil fuel has been reduced by improving the efficiency of energy usage.
	c) Arrangements have been made for substitution of biofuels, fossil fuels as appropriate.

Subject Matter 6 : Capacity Building and Institutional Strengthening

Audit Objectives	Audit Criteria
1) To ascertain whether Ministry of Environment, Forest and Climate Change, and Cabinet Division have integrated climate change issues into development policies and actions.	a) A consultation paper has been prepared on the National Climate Change Policy integrating climate change issues into development planning and sectoral policies.
	b) In consultation with relevant stakeholders, climate change concerns have been incorporated in all sectoral policies and strategies through appropriate revisions.
	c) The National Climate Change Policy has been published.
2) To examine if all relevant Ministries, Planning Commission have made arrangements for mainstreaming climate change in national, sectoral and spatial development programmes.	a) The capacity of climate change Focal Points in ministries and agencies has been built to incorporate climate change consideration in all planning process.
	b) Design and planning parameters for project design for selected years has been agreed.
	c) The project proforma has been modified in an appropriate way.

3) To ascertain whether all relevant sectoral Ministries, Agencies, Private Sector NGOs, Universities and Research Organisations have strengthened human resource capacity.	a) Training on policy, programme and project formulation and implementation has been given to government officials.
	b) Training on accessing international and national carbon and climate change funds has been provided to key staff of government, private sector organisations and NGOs.
	c) The human resource capacity within and outside government for climate change negotiations has been enhanced.
	d) The skill of researchers for conducting research on climate change has been strengthened.
4) To determine if Ministry of Women and Children Affairs, Planning Commission, Ministry of Environment, Forest and Climate Change have strengthened gender consideration in climate change management.	a) Criteria and approach for inclusion of gender consideration in all climate response activities has been developed.
	b) The capacity of gender focal point in all ministries and agencies has been built to incorporate gender issues in all climate response activities.
5) To assess if all relevant sectoral agencies, NGOs have developed strong organisations to effectively respond to climate change	a) Mechanisms for inter-ministerial and inter-institutional coordination at various levels of government have been set up.
	b) Funds have been established for managing new adaptation and planned mitigation.
	b) Organisational reform and strengthening of key government and other agencies have been streamlined.
6) To ascertain whether Ministry of Environment, Forest and Climate Change, Ministry of Information, Press Institute of Bangladesh have raised public awareness across the country by mainstreaming climate change issues in the media.	a) Capacity has been built and print and electronic journalists have been trained.
	b) Exposure visits to climate change hot spots have been undertaken and global negotiations are being tracked.
	c) State of Climate Change Reports, Earth Files, Features, Photo-Features are regularly followed up.
	d) Media networking has been established.

Note: While conducting climate performance audit, the auditors will make a use of generic criteria. They are also required to develop project/programmeme specific criteria to accomplish the audit work efficiently and effectively.

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