



YEAR BOOK

2015-16

Government of Pakistan
Ministry of Climate Change
Islamabad

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Message from the Minister/ Advisor

Climate change is affecting almost all the sectors of our economy particularly water resources, energy, health, biodiversity, with a major impact on agricultural productivity. This is due to changes in temperature, its adverse effects on land and water resources and the rise in frequency intensity of natural hazards such as droughts and floods.

Ministry of Climate Change has formulated a comprehensive National Climate Change Policy (NCCP) – 2012 and also developed its framework for implementation. It is a fact that Pakistan’s contribution to global greenhouse gas (GHG) emissions is very small, its role as a responsible member of the global community in combating climate change has been highlighted by giving due importance to mitigation efforts in sectors such as energy, forestry, transport, industry, urban planning, agriculture and livestock.

In view of Pakistan’s high vulnerability to the adverse impact of climate change, the Ministry has adopted a comprehensive approach on the disaster risk reduction and management. We are working to change the energy mix on the basis of our meager resources to reduce carbon emissions without compromising the development pace.

The Year Book provides an overview of the performance of Ministry of Climate Change and I hope it will be a useful source of information for researchers, scholars and general readers for improvement of environment and sustainable development.

(MALIK AMIN ASLAM)

Minister/ Advisor on Climate Change



Foreword

In pursuance of Sub Rule (2) of Rule 25 of the Rules of Business 1973; the Ministry of Climate change has prepared and published 4th Year Book 2014-15 since its creation on 26th October, 2011. The book contains material about its functions, activities and achievements of the Ministry and its attached departments for the information of Cabinet and all Ministries.

After the 18th constitutional amendment, new direction and vision has been given by the Parliament in handling federal and provincial responsibilities. The Ministry of Climate Change upholds the constitutional mandate to meet obligations of the government to national and international community regarding climate change issues. The Ministry has the mandate for formulation of national policy, plans, strategies, and programmes with regard to disaster management including environmental protection, prevention of pollution, preservation of ecology, forestry, wildlife, biodiversity.

The Year Book 2015-16 is a comprehensive document which highlights efforts of the Ministry on addressing possible challenges of climate change. It is expected that this Year Book will provide all necessary information about the activities undertaken by the Ministry and its attached departments / autonomous bodies.

Any suggestion/observation for further improvement would be appreciated.

(HASSAN NASIR JAMY)

Secretary

CHAPTER – 1

INTRODUCTION

The Government of Pakistan in exercise of the powers conferred by Article 90 and 99 of the Constitution further amended Rules of Business 1973 and constituted the Ministry of Disaster Management notified vide Cabinet Divisions Notification No.4-14/2011-Min.1 dated 26th October 2011, to handle the functions retained at the federal level after the 18th Amendment. The new Ministry is envisaged to act as a reporting agency for international and national commitments, facilitator and coordinator to enable provinces to develop their capacities to effectively handle their responsibilities. The functions allocated to the then Ministry of National Disaster Management were as follows:

- i) Policy, legislation, plans, structure and programmes with regard to disaster management including environmental protection and preservation; and
- ii) Coordination, monitoring and implementation of environmental agreements with other countries, international agencies and forums

The Ministry of National Disaster Management was later on renamed as Ministry of Climate Change owing to the magnitude and recurrence of climate change related disasters, such as consecutive floods of 2010, 2011 and 2012 vide Cabinet Division's Memorandum No 4-14/2011-Min.I dated 18th April 2012. In terms of Rule 3 of the Rules of Business, 1973 Ministry of Climate Change was reorganized as Climate Change Division vide Cabinet Division's Memorandum No. 4-8/2013-Min-I dated 07.06.2013. It has been re-notified as Ministry of Climate Change on 08.01.2015.

Pakistan has been rated as one of the most climate vulnerable country, which will have recurrence of climate related disasters. The Ministry of Climate Change has been vested with the mandate to comprehensively address disaster management along with spearheading national climate change initiatives both in adaptation and mitigation. According to the mandate given, this Ministry is engaged in the following activities:

- a) To act as a focal federal institution in order to fulfill international obligations under various Multilateral Environmental Agreements (Conventions, Protocols, Treaties etc).
- b) To establish National Environmental Quality Standards
- c) To facilitate and harmonize environmental standards, laws, acts and policies at national level.
- d) To undertake surveys, assessments and maintain national environmental database. It is a mandatory requirement under PEPA'97 to produce State of Environment Report on annual basis; Surveys, assessments and monitoring have to be regularly undertaken to respond to the Multilateral Environmental Agreements (MEAs).
- e) Coordination and monitoring of the implementation of the environment and climate change agreements with other countries, international agencies and forums. Pakistan is party to number of regional and International environmental agreements, forums e.g. CBD, UNFCCC, UNCCD, Cartagena Protocol, Nagoya Protocol, CITES, CMS, IPBES, Ramsar Convention, Malé Declaration on Trans-boundary Air Pollution, SACEP, SAARC, UNEP, UN Habitat, UNICEF, UNCSD, GLOBE, etc.
- f) Development of national strategies and action-plans in order to meet international obligations. As an obligation under MDGs and SDGs Ministry of Climate Change is currently engaged in development of national strategies and action plans for implementation of National Environment Policy, National Sanitation Policy, National Drinking Water Policy and National Climate Change Policy. To this end the Division has revived National Environment Policy Implementation Coordination Committee and National Drinking Water and Sanitation Policies Implementation Coordination Committee, both the Committees comprise of all stakeholders including representatives from provinces / AJK / GB / FATA Governments / Administrations. The Ministry is

also in the process of finalizing National Sustainable Development Strategy for which provincial consultation workshops have already taken place.

- g) To deal with trans-boundary and regional environmental issues. Trans-boundary air pollution includes, Asian Brown Cloud (ABC), winter smog, health impact studies, water contamination and availability, climate change and glacial melt.
- h) Coordination between inter and intra-provincial governments in the context of climate change and global warming: e.g. water availability and contamination complaints from the lower riparian provinces, protection of forests in northern areas, development of interprovincial development projects of communication, energy pipelines and transmission lines etc.
- i) To promote research and technical cooperation, GCISC is working on climate change impact studies.
- j) To facilitate, organize, participate and represent Pakistan at regional and international fora: Being Designated National Authority (DNA) for number of MEAs, it is obligatory requirement for Ministry of Climate Change to attend meeting, Conference of Parties (COPs) and report country status.
- k) To liaise with international donors / agencies UN Agencies- UNDP, UNEP, UNESCAP, UN-Habitat, UNICEF, UNIDO; JICA, GEF, World Bank, Asian Development Bank etc.
- l) To deal with current and emerging International Environmental Funds, (GEF, Green Climate Fund, Adaptation Fund, Climate Investment Fund, REDD+, MLF, ABS, GSF, SWA NPRI etc) and act as focal point for One UN Joint Programme on Environment.
- m) To act as Secretariat to Pakistan Environment Protection Council (PEPC): PEPC is the apex body under the chairmanship of Prime Minister to give policy

direction for environmental compliance. Ministry of Climate Change is the secretariat of PEPC.

- n) Formulation of national policies, plans strategies and programmes with regard to ecology, forestry, wildlife, biodiversity, climate change and desertification. Coordination, monitoring and implementation of environmental agreements with other countries, international agencies and fora.
- o) Facilitating in inter-provincial coordination and national planning on forestry, wildlife, biodiversity, wetlands and sustainable land management. Screening and processing of federal projects of PSDP funding. Facilitation in Global Environment Facility (GEF) and other donor-assisted projects implemented by provinces and NGOs.
- p) Supervision of:
 - i) Zoological Survey of Pakistan (ZSP)
 - ii) Pakistan Environmental Protection Agency (Pak EPA) (with the jurisdiction to work in ICT to avoid any duplication)
 - iii) National Disaster Management Authority (NDMA)
 - iv) Global Change Impact Study Center (GCISC)
 - v) Pakistan Environmental Planning and Architectural Consultants (PEPAC)

CHAPTER – 2

ADMINISTRATION WING

Total strength of the Climate Change Division during the year under report is 173 employees (58 Officers and 115 staff members).

The Administration Wing is headed by a Joint Secretary who is also the spokesman of this Division. The responsibilities of the Administration Wing are as under:-

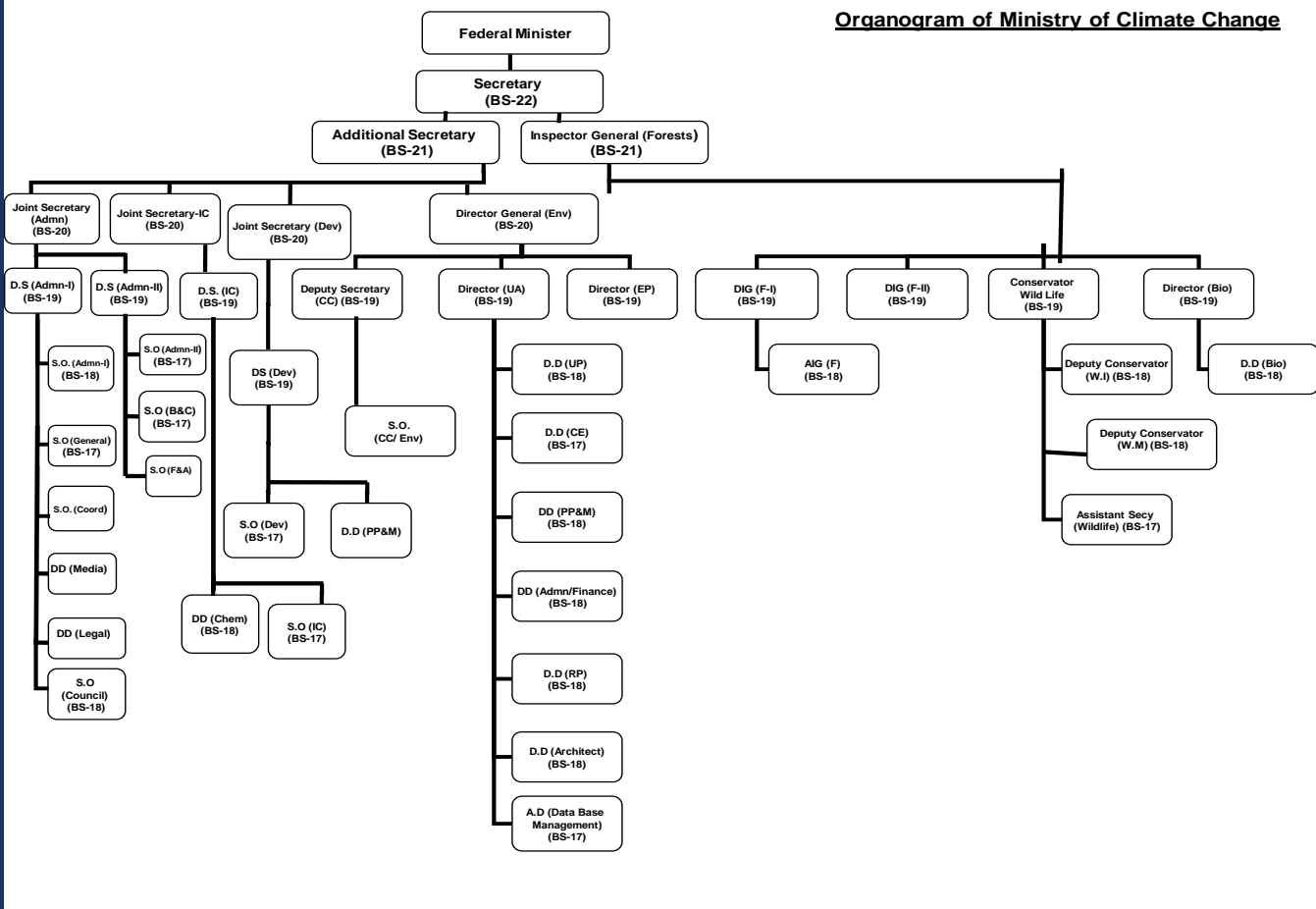
- a) Personnel Administration of the officers/ officials of the Division.
- b) Personnel administration of officers of the attached departments/ organizations/ projects.
- c) Budgetary (non-Development) and financial matters of the Division and its attached departments/ organizations.
- d) Matters relating to audit, Public Accounts Committee (PAC) and Department Accounts Committee (DAC)
- e) Implementation and follow up of Cabinet Decisions and President's / Prime Minister's Directives.
- f) Coordination between wings of this Division and with other Ministries / Divisions.
- g) Matters relating to National Assembly / Senate and Standing Committees.
- h) Matters relating to hiring of residential accommodation.
- i) Reimbursement of medical charges to the serving/retired officers.
- j) Maintenance of PER record of all employees of this Division and attached departments and maintenance of annual declaration of assets.
- k) Processing promotion, pay and pension cases of the officers / officials of the Ministry and its attached departments.
- l) Trainings, conferences, seminars and visits abroad.

m) Printing of Year Book.

ORGANIZATIONAL SETUP

In order to efficiently discharge its allotted functions, the Climate Change Division has been organized as indicated in organizational chart on the next page:

Organogram of Ministry of Climate Change



CHAPTER – 3

ENVIRONMENT WING

Government of Pakistan has taken number of steps to mitigate and adapt to the impacts of climate change in the country. These steps include measures in country and engagement with International process. Some of the major initiatives include:-

National Climate Change Policy Implementation Committee (NCCPIC)

In order to adopt a coherent strategy across all provinces to deal with climate change threats, National Climate Change Policy Implementation Committee has been constituted.

Provincial Implementation Committees on Climate Change

The Governments of Punjab, Sindh, AJK and Gilgit-Baltistan have notified Provincial Climate Change Implementation Committees for effective implementation of National Climate Change Policy and Framework for Implementation of National Climate Change Policy (2014-2030)

Development of Provincial Climate Change Action Plans

Provincial governments are developing their respective Provincial Climate Change Action Plans in consultation with stakeholders.

Signing and Ratification of Paris Agreement:

Ministry of Climate Change has completed the process of signing and ratification of Paris Agreement.

Ratification of Doha Amendment:

Ministry of Climate Change has initiated the process of ratification of Doha Amendment to the Kyoto Protocol.

Finalization and Submission of Pakistan's Intended Nationally Determined Contributions (INDCs):

Ministry of Climate Change has completed and submitted Pakistan's Intended Nationally Determined Contributions (Pak-INDCs) with mitigation and adaptation challenges that it faces and proposes actions that can assist in addressing these challenges through both domestic and international support.

Pak-INDC is rooted in the country's strategic plan 'Vision 2025'. It is aligned with the respective policies, plans and sectoral growth targets set by various ministries and other government entities. Pak-INDC presents the overall GHG emissions profile and future emission projections, by considering both the present and future socio-economic parameters, changes in the demographic dynamics and emerging energy needs. It also

describes mitigation and adaptation measures already being implemented in Pakistan and the challenges & difficulties being faced and those likely to be confronted in coming years.

Second National Communication (SNC)

Preparation of Pakistan's Second National Communication (SNC) is a three year study leading to stocktaking of all GHG emissions in Pakistan with options of mitigation and adaptation actions, policy measures etc. The National Steering Committee and Thematic Working Groups (TWGs) have already been constituted in 2016 and preparation of SNC has started.

Technology Needs Assessment (TNA)

TNA is a systematic approach for conducting technology needs assessments in order to identify, evaluate and prioritize technological means for both mitigation and adaptation. It also provides processes and methodologies for uncovering gaps in enabling frameworks and capacities and for formulating a national action plan to overcome them, as part of overall climate change strategies and plans such as NAMAs and NAPs. With the support of Climate Technology Centre and Network (CTCN), Ministry of Climate Change is carrying out Technology Needs Assessment (TNA) in Pakistan. The objective of this activity is to enable Pakistan to conduct TNA process and produce implementable Technology Action Plans (TAP) in line with current best practices.

Determining potential for carbon capture and storage in Pakistan:

Ministry of Climate Change with the support of Technical Assistance of Asian Development Bank is conducting a study to determine the potential for carbon capture and storage in Pakistan.

Preparation of National Adaptation Plan (NAP)

Pakistan's first National Adaptation Plan shall be developed. The work on NAP is expected to be started after confirmation of international funding. The Adaptation Plan will detail out and help in developing actions from the Framework for implementation of NCCP into bankable projects/programmes for Green Climate Fund (GCF) and other funding windows for adaptation.

State of Pakistan Cities Report 2016

Ministry of Climate Change in collaboration with UN-Habitat initiated ^{preparation} of State of Pakistan Cities Report. The Report will present a well-informed and action-oriented analysis on the state of urbanization in Pakistan. It will include quantitative and qualitative city-based data and conduct specific analyses of key

national, provincial and municipal urban development challenges on cities and towns in all provinces of Pakistan. The report is an important tool in formulating an urban agenda and policies and for shaping the national development agenda for the coming years.

Country Report for SACOSAN-VI:

Environment Wing developed country report for South Asian Conference on Sanitation held in Bangladesh in January, 2016.

6th Working Group Meeting on Environment

Ministry of Climate Change successfully conducted 6th Working Group Meeting of ECO countries on Environment on 1-2, June, 2016 in Islamabad.

Habitat III Conference and the National Report on Urban Development of Pakistan

Habitat-III is the United Nations Conference on Housing and Sustainable Urban Development that was held in Ecuador in October 2016. The objective of Habitat-III, the third conference in line with the bi-decennial cycle (1976, 1996 and 2016), was to secure renewed political commitment for sustainable urban development, assess accomplishments to date, address poverty and identify and address new and emerging urban challenges for the establishment of the 'New Urban Agenda', building on the Habitat Agenda of Istanbul in 1996.

In preparation for the Habitat III Conference, the Government of Pakistan, particularly the Ministry of Climate Change, with technical advisory support from UN-Habitat and funding support from OXFAM GB prepared National Report on Urban Development in Pakistan as an input to setting the global new urban agenda.

Solid Waste Management through Integrated Resource Recovery Center (IRRC)

UN-Habitat, in close collaboration with the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP) and the Ministry of Climate Change, has implemented a project on "Pro-poor and sustainable solid waste management in secondary cities and small towns". The project contributes to this goal by setting up an Integrated Resource Recovery Center (IRRC) in Sector G-15 of Islamabad enabling the city to turn waste into resources through composting, recycling and bio digestion, thereby diverting solid waste from landfills or open dump sites. In the medium term, it is envisaged that the model will be replicated to cities across the whole country. This project is carried out through a multi-stakeholder approach. The participation of the Ministry of Climate Change is instrumental in the successful implementation of this model, as well as in capitalizing from the climate benefit of setting-up decentralized solid waste management systems, through the IRRC, in Pakistan.

Climate Change Vulnerability Assessment of Islamabad

Ministry of Climate Change with UN Habitat, Capital Development Authority and ICT Administration assistance has undertaken a study “Climate Change Vulnerability Assessment of Islamabad” which was launched by Minister for Climate Change on World Environment Day (5th June, 2015). The study reveals that the city of Islamabad and its surrounding Capital territory is exposed to a host of factors accelerating climate change impacts such as erratic behavior and marked changes in the intensity, frequency and variability of temperature, precipitation, floods, droughts, cyclones etc. The extreme weather events recorded so far in Islamabad include highest maximum temperature of 46.6° C on 24th June 2005 and lowest at – 4.3° C on 25th December 1984. In 2001 heaviest rainfall of 621mm was recorded in 10 hours.

The main findings of the assessment reveal startling facts regarding erratic behavior and marked changes in the intensity, frequency and variability of temperature, precipitation, floods, droughts, cyclones etc. The study proposes a well thought out planning interventions to make Islamabad a climate resilient city. The study also makes recommendations of utilizing the present institutional arrangements for a well coordinated effective implementation of suggested plans in Islamabad.

2nd Pakistan Conference on Sanitation (PACOSAN-II)

Sanitation is one of the basic necessities of human life as it saves lives, resources and let human being live with dignity. Poor hygiene and sanitation not only harms the human health but also gives birth to multiple socio-economic and environmental concerns, including contamination of perennial water sources in the country. The disease burden leads to high child mortality and huge economic burden on people as well as on the government.

To build the momentum and accelerate the progress on sanitation and hygiene in the country, Pakistan Conference on Sanitation (PACOSAN) and Sanitation and Water for All (SWA) Regional Consultations were held in February, 2015 in collaboration with the key development partners working in the country. Pakistan government is committed to save its children from death, living with disability or not achieving their potential physical and mental growth to compete with other nations in the world. Pakistan Conference on sanitation (PACOSAN) draws upon the commitments made in South Asia’s flagship Inter-ministerial Conference on Sanitation (SACOSAN) which takes place in every two/three years with delegates from all eight countries of South Asia committing to further accelerate sanitation and hygiene behaviour change in South Asia.

CHAPTER – 4

DEVELOPMENT WING

Development Wing is responsible for coordination of development projects amongst different wings and attached departments of the Ministry of Climate Change as well as Planning machineries of the Federal and Provincial Governments.

The basic job of the Wing is appraisal / technical scrutiny of project proposals received from various wings, consider approval of projects by convening meetings of Departmental Development Working Party (DDWP), preparation of cash and work plans, matters relating to Central Development Working Party (CDWP) and ECNEC, preparation of working papers for such meetings, circulating decisions of these forums, carry out internal monitoring and evaluation of development schemes and reporting progress to both Planning and Finance Divisions.

During FY 2015-16, an amount of Rs. 39.752 million (LC) was allocated in respect of three (03) PSDP projects being implemented by various Wings and attached Departments. After surrender of funds, the revised / actual release comes to Rs.13.421million against which funds of Rs.12.421million were utilized. The details of projects with total allocation and releases for FY 2015-16 are given at Appendix-I.

Details of PSDP projects 2015-16

S. No.	Name of the Project	Total Cost Rs. (Million)	Allocation 2015-16 Rs. (Million)	Utilization Rs. (Million)
1.	Establishment of Geomatic Center for Climate Change and Sustainable Development	48.885	8.596	1.27
2.	Carbon Neutral Pakistan	313.960	7.752	0.00
3.	Sustainable Land Management Programme to Combat Desertification in Pakistan (Federal Share)	105.430	23.404	11.154

1. Establishment of Geomatic Center for Climate Change and Sustainable Development

The “Establishment of Geomatic Centre for Climate Change and Sustainable Development” project was approved by the DDWP in its meeting held on 29.1.2013 at a total cost of **Rs.48.885 million**. The project is

being implemented by Pak-EPA. Due to ban on recruitment imposed by the Federal Government, the project activities could not be started. However, after lifting of ban on recruitment, the project posts are being filled shortly. Afterwards, the project activities would be started in a befitting manner. The prime objectives of the project are as follows:

- Setting up of spatial referenced data collection. Processing and exchanging harmonized framework according to the needs of all users working in the area relevant to atmospheric sciences, irrigation agriculture forestry geology lakes marine resources and urban infrastructure for socio-economic development projects:
- Promote application for geographical information system (GIS), Spatial Reference System (SRS) and Global Positioning System (GPS) technologies in assessing existing situation of forest desertification soil climate environment pollution marine life coastal areas snow and glacier disasters hazards biodiversity water resources ecological zones:
- Facilitate better environmental planning in the country particularly for rational and scientific decision-making through assessment of environment impact of different human activities, making them compatible with the objectives of sustainable development.
- Provide guidance, avoiding duplication, and optimizing the use of national resources for the betterment of the environment.
- Make an inventory of current users of Geomatics (SRS, GIS and GPS) in the country
- Provide the environment related information to all the stakeholders.
- Assess environmental issues for better integrated land use plans.
- Develop data base to provide solutions to various disciplines, such as building reservoirs for water storage, arresting deforestation due to indiscriminate cutting of forests, guiding urbanization on useful cultivable land and bringing uncultivated land into production, which in turn would result in viable economic growth.
- Providing facilities for GIS data generations. Customizations, generation of maps, their publication and reporting.
- Enhance and upgrade institutional capacity PAK-EPA, ministry of Climate Change in the use of SRS, GIS and GPS for environmental monitoring and management.
- Collaborate with GIS and SRS department of partner universities / sectors institutions and research oriented projects.
- Maintain and update special and digital data base on land use / land cover and related themes and use it in conjunctions with existing database developer under the National Environmental Information Management System (NEIMS) Project of the Ministry of Climate Change.
- Support the Ministry of Climate Change and Planning Commission to generate predictive tools for environmental planning and management in combination with normal remote sensing and GIS tools.

- Facilitate the federal and provincial governments in disasters risk reduction through vulnerability mapping information clearing house mechanism and training to use latest available technologies for risk assessment from various forms of hazards.
- Facilitate disaster management authorities at federal provincial and local governments through case studies and compilation of best practice such as adaption strategies to climate hazards like droughts and floods.
- Provide a platform equipped with latest information / data digital and spatial library to national provincial and local government institutions for framing disasters managements framework and early warning mechanisms.

Benefits on completion of the project:

- A well-equipped Centre of geospatial technologies for environment monitoring in Pakistan.
- Generation of thematic maps for resources inventory and spatial analysis.
- Production of digital maps on different scales, generation of reports and printing.
- Annual release of State of Environment Report.

2. Sustainable Land Management Programme to Combat Desertification in Pakistan Phase-II:

The up-scaling phase of the SLMP-II is an umbrella programme. It facilitate the federal and provincial governments in implementation of the United Nations Convention to Combat Desertification (UNCCD), alignment of Pakistan’s National Action Programme (NAP) to 10-years strategic plan of the UNCCD, and promoting sustainable management of land resources to achieve the long-term goal of combating Desertification, Land Degradation and Drought (DLDD). Whereas, primary objective of the programme is “to promote sustainable management of land and natural resources in arid and semi-arid regions of Pakistan in order to restore degraded ecosystems and their essential services; reduce rural poverty and increase resilience to climate change”. The specific objectives of the programme are:-

1. Creating enabling environment at national, provincial, and local levels to support up-scaling of SLM practices;
2. Developing and implementing SLM Land Use Planning & Decision Support System; and
3. Up-scaling climate-resilient SLM activities across larger landscapes to combat land degradation and desertification.

The project is closely related to forestry, agriculture, water and climate change sectors and is built on successful interventions tested during the pilot phase of SLMP-I. The up-scaling phase will target the larger landscape of arid and semi-arid areas and marginal communities of 14 districts. The successful conclusion of this five (05) year programme will contribute to implementation of the UNCCD and promote synergies for the

implementation other Rio conventions like Convention on Biological Diversity (CBD) and United Nations Framework Convention on Climate Change (UNFCCC) and generate provide global and national benefits. It is being implemented in the following 14 districts of four provinces:-

1. Punjab: Chakwal, Bhakkar, Khushab, Layyah
2. Sindh: Tharparker, Umerkot, Sanghar
3. Khyber Pakhtunkhwa: D.I. Khan, Lakki Marwat
4. Balochistan: Pishin, Killa Saifullah, Mastung, Kech, Lasbella

FORESTRY WING



STATUS OF FORESTS

Beside other benefits, forests are crucial to ensure soil & water conservation and climate regulation. According to the last national assessment conducted in 2004, total area of forests in the country is 4.34 million ha (5.01%), out of which 3.44 million ha forests exist on state-owned lands and remaining on communal and private lands. Underlying causes of low forest cover of the country and high rate of deforestation include arid climate, fast increasing demands for timber, fuel wood, forest lands, and other forest products. Annual consumption of wood (timber and fuel wood) is estimated at 44 million cubic meters whereas annual growth of natural forests is 14.4 mm³, resulting in overexploitation of forest resources. Moreover, sole dependence of forest-owning local

communities on this resource for livelihood is reported as main cause of deforestation. After the 18th amendment in the Constitution and abolition of concurrent list, Federal PSDP grants to provinces for afforestation projects were stopped. Presently, significant programme of afforestation is operational at provincial levels. However on the direction of Prime Minister preparation of country wide Green Pakistan Program for Revival of Forestry and Wildlife Resources in Pakistan is under process.

Functions of Forestry Wing

After the implementation of 18th amendment, the functions of Forestry Wing according to the revised Rules of Business are as under:

1. National Policy, plans strategies and programmes with regard to ecology, forestry, wildlife, biodiversity, climate change and desertification.
2. Coordination, monitoring and implementation of environmental agreements with other countries, international agencies and fora.

ACTIVITIES RELATED TO NATIONAL PLANNING & COORDINATION

- Facilitating inter-provincial coordination and national planning on forestry, wildlife, biodiversity, wetlands and sustainable land management
- Inter-provincial / inter-ministerial tree planting planning, monitoring & reporting
- Defense Afforestation Committee (Chair Secretary Climate Change)
- Screening and processing of federal projects for PSDP funding
- National policy formulation for forestry, biodiversity, wetlands and wildlife
- Facilitation in Global Environment Facility (GEF) and other donor-assisted projects implemented by provinces and NGOs e.g. REDD+ Implementation in Pakistan
- Technical assistance, training & capacity building of provinces

ACTIVITIES RELATED TO INTERNATIONAL AGREEMENTS

Meeting international obligations of the following Conventions and Protocols:

Conventions/Protocol/Panel dealt by Forestry Wing

Convention & Protocol	Ratification Date	Parties
Convention on Biological Diversity (CBD)	1994	196
Convention on Conservation of Migratory Species of Wild Animals (Bonn Convention)	1987	119
Ramsar Convention on Wetlands	1976	169
CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora)	1976	182
UNCCD (United Nations Convention to Combat Desertification)	1997	195
REDD+ (Forestry components of UNFCCC)	1994	196
Nagoya Protocol on Access and Benefit Sharing	2016	72
IPBES (Intergovernmental Panel on Biodiversity and Ecosystem Services)	2013	112

- Liaison with UN-agencies, Asia-Pacific Forestry Commission, UN Forum on Forests and other regional fora
- Coordination with international NGOs in joint program implementation

ONGOING AND NEW INITIATIVES

Ministry of Climate Change is implementing following initiatives towards achievement of objectives of above Conventions and Protocol with the technical and financial support of GEF, UN agencies, World Bank, multilateral donors and NGOs including IUCN & WWF.

- Mangrove for the Future (MFF) regional programme in collaboration with IUCN-Pakistan
- GEF/UNDP funded 'Mountain and Markets' project
- Implementation of World Bank funded REDD+ Readiness Preparation Proposal (R-PP)
- Preparation of draft National Biodiversity Strategy & Action Plan (NBSAP)

Following projects on forestry related conventions are under implementation:

- Sustainable Land Management Project
- Sustainable Forest Management Project
- Mountain and Market Program

MEASURES TO INCREASE FOREST COVER

Seasonal Tree Planting Campaigns

In order to enhance tree cover in the country, seasonal tree planting campaigns are held each year. During the period two inter-provincial/inter-ministerial meetings to finalize the targets and strategies for the monsoon and spring tree planting campaigns were held under the chairmanship of Federal Minister & Secretary, Ministry of Climate Change. During the tree planting campaigns all the government departments, private sector organizations, defense organizations and NGOs were involved in planting activities. During 2015-16 inter-provincial meetings on the onset of monsoon 2015 and spring 2016 were held whereby achievement against target fixed for tree planting are as follows:

(Plants in Millions)

Season	Target	Achievement	Survival Rate
Monsoon 2015	40.2	32.49	72%
Spring 2016	152.97	207.98	76%

Mangroves for the Future (MFF)

Mangroves for the Future (MFF) initiative focus on the country worst affected by the tsunami. However, MFF also include other countries of the region that face similar issues, with an overall aim to promote an integrated ocean wide approach to coastal zone management. Pakistan joined MFF as a regular member in 2010. As a member Pakistan is entitled to receive support for institutional strengthening, capacity building and for implementation of small and large projects in coastal areas of Sindh and Balochistan. Under this initiative during 2015-16 four small grant projects costing upto US \$ 25,000 each have been completed and similar numbers of new projects were processed for approval.

REDD+ Readiness Preparation for Pakistan

Under the UN Framework Convention on Climate Change, a new mechanism Reducing Emissions from Deforestation and Forest Degradation (REDD+) has been adopted in Cancun (2010). Government of Pakistan, Ministry of Climate Change has constituted a National Steering Committee on REDD+ to guide and steer REDD+ in the country. Pakistan became a member of United Nations REDD+ programme (UN-REDD programme) in 2011 and World Bank's Forest Carbon Partnership facility (FCPF) in 2014. The UN-REDD and FCPF are financial mechanisms to support developing countries to undertake readiness activities to be eligible for result-based payments. In 2014, Pakistan won a grant of USD 3.8 m through competitive process during FCPF meeting of Participants Committee held in Switzerland. The FCPF grant for REDD+ readiness is being

utilized for the preparation of national REDD+ strategy, national forest monitoring system, and a system of social and environmental safeguards to implement REDD+. Progress made under REDD+ Readiness grant of FCPF during 2015-16 includes, 1) Hiring of National REDD+ Coordinator (NRC), National Forest Inventory expert, GIS/MRV expert, Procurement Specialist and Finance Manager; 2) Expression of Interests (EOIs) invited from international firms/individual consultants; and 3) Technical evaluation of proposals submitted by international consulting firms done.

The Paris Agreement was adopted at the United Nations Framework Convention on Climate Change (UNFCCC), 21st Conference of the Parties (COP21) in Paris on 12th December 2015. Carbon sinks and reservoirs are recognized both for mitigation & adaptation in a standalone Article 5. Forests are singled out in article 5.2 encouraging Parties to take action to implement and support, including through results-based payments. The text includes a strong long-term goal to reduce carbon emissions, provisions for developing countries to receive financing (Article 55) for their efforts to respond to climate change. Ministry of Climate Change is endeavoring to make the country REDD+ ready by 2018.

National Forest Policy 2015

Under the direction of the Prime Minister, the National Forest Policy was prepared in consultation with provinces and stakeholders, which *inter alia* includes forest protection. The Policy has been submitted to the Council of Common Interests (CCI) in April, 2016 for consideration and approval in its next meeting.

Green Pakistan Programme

The basic concept of Green Pakistan Programme was approved by the Prime Minister of Pakistan on 26.05.2016 and an allocation of Rs. 2 billion was made in the budget of 2016-17. The main objective of the project is to facilitate transition towards environmentally resilient Pakistan by main streaming notions of adaptation and mitigation through ecologically targeted initiatives covering afforestation, biodiversity conservation and enabling policy environment. The specific objectives of the project are as under:

A) Development of “Green Pakistan Programme” for war-footing plantation of indigenous and fast growing local tree species including flowering and fruit trees, adding an additional one hundred (100) million new plants over next five years to make the country green and aesthetically serene. The following areas will be given priority under this project;

- a) Road and canal side plantations
- b) Rehabilitation and re-stocking of historical plantations
- c) Restoration & improvement of scrub forests
- d) Increase in existing cover of mangrove forests
- e) Conservation and enhancement in Juniper and Chilghoza forests

- f) Watershed and soil conservation in hilly and river catchment areas (reserved as well as community forests)
- g) Rehabilitation of Guzara and protected forests
- h) Protection and augmentation of dry temperate forests
- i) Promotion of forestry through utilizing Corporate Social Responsibility Resources

B) Strengthening policy milieu for conservation and biodiversity.

C) Supporting communication measures and demand mobilization for an environmentally resilient Pakistan.

Given the fact that not only formal consent but also equal financial share of provincial governments was a pre-requisite to formulation and processing of an umbrella project for accessing the funds allocated for the programme in the Federal PSDP, the federal Minister for Climate Change wrote anticipatory letters to the Chief Ministers of the provinces, Governor Khyber Pakhtunkhwa (for the FATA) & Prime Minister AJK on 08.06.2016 to request preparation of PC-Is and provision of equal financial share for the programme. Besides that Secretary Climate Change sensitized Provincial P&D Departments on 20.06.2016 to ensure funding for the programme. An interprovincial coordination consultative meeting was chaired by the Federal Minister Climate Change on 29.06.2016 to expedite the response from the provincial governments. After appropriate feedback from provinces and federating units an umbrella PC-I will be developed and processed for the approval of CDWP and ECNEC accordingly.

Revision of National Biodiversity Strategy and Action Plan (NBSAP)

First Biodiversity Action Plan of Pakistan was approved by the Pakistan Environment Protection Council in the year 2000 as a principal instrument for implementing the provisions of CBD at the national level (Article 6). After a global review of Biodiversity in 2010 it was revealed that biodiversity was continuing to be lost and ecosystems were degrading and undermining human well-being. Against this background, CoP-10 held in Aichi-Nagoya, Japan, in October 2010, adopted the Strategic Plan for Biodiversity 2011-2020 with five strategic objectives and 20 “Aichi Biodiversity Targets” (ABT). The parties further agreed to translate this overarching international framework into revised and updated national biodiversity strategies and action plans.

For this purpose, an agreement with IUCN Pakistan was signed to take up the assignment of revision of the National Biodiversity Strategy and Action Plan (NBSAP). The NBSAP revision process that was conducted through a GEF Trust Fund project entitled "Support to Pakistan for the Revision of the NBSAP and Development of Fifth National Report to the CBD". The National Biodiversity Strategy and Action Plan (NBSAP) intended to implement the ABTs in Pakistan. All the stakeholders were consulted during the process of the NBSAP revision.

In order to create greater ownership of the NBSAP at sub-national levels, consultative meetings with stakeholders were organized in provincial and regional capital at Karachi, Quetta, Lahore, Peshawar, Muzaffarabad, and Gilgit respectively. In addition, meetings were also held with policy makers and planners in the provinces and regions. The provinces and other federating units were provided technical support to prepare their own Provincial Biodiversity Strategy and Action Plans (PBSAPs). The NBSAP Team provided technical support to the provinces to prepare sub-national strategies and actions plans. The NBSAP is a sum total of provincial and regional biodiversity strategies and action plans plus some national level actions. The draft NBSAP was widely shared with all the stakeholders and finally presented at a national meeting in Islamabad on November 5, 2015. The representatives of all provinces and governments of Azad Jammu and Kashmir and Gilgit-Baltistan unconditionally endorsed the NBSAP. It was lately submitted to the Prime Minister Office for approval.

Nagoya Protocol on Access to Genetic Resources and the Fair Equitable Sharing of Benefit arising from their Utilization (ABS)

The Nagoya Protocol on Access to Generic Resources and Fair and Equitable Sharing of Benefits arising from their utilization (ABS) to the Convention on Biological Diversity is a supplementary agreement to the CBD. The Nagoya Protocol on ABS was adopted on 29 October 2010 in Nagoya, Japan and entered into force on 12 October 2014, 90 days after the deposit of the fiftieth instrument of ratification. Its objective is the fair and equitable sharing of benefits arising from the utilization of genetic resources, thereby contributing to the conservation and sustainable use of biodiversity. The Nagoya Protocol will create greater legal certainty and transparency for both providers and users of genetic resources by:

- Establishing more predictable conditions for access to genetic resources.
- Helping to ensure benefit-sharing when genetic resources leave the country providing the genetic resources

The Government of Pakistan is firmly committed to take necessary steps in fulfilling its obligations on the issue. Pakistan has acceded the Nagoya Protocol on ABS and now became party since February 21, 2016.

Capacity Building on Access to Genetic Resources and Fair and Equitable Sharing of Benefits arising from their utilization (ABS)

Directorate of Biodiversity, Ministry of Climate Change in consultation with the provinces and regions drafted Pakistan Access to Genetic Resources and Benefit-Sharing Act, 2012 with the technical support of International Union for the Conservation of Nature Pakistan (IUCN-P). Biodiversity Directorate, Ministry of Climate Change requested the GIZ Biodiversity Khyber Pakhtunkhawa Project to arrange a national awareness workshop on Access and Benefit Sharing (ABS) to raise awareness and train the participants from Pakistan. GIZ Biodiversity Khyber Pakhtunkhawa Project (GIZ-BKP) generously honored the request and arranged the international

trainers from the ABS Capacity Development Initiative under the Multi Donors Initiative Implemented by GIZ. Biodiversity Directorate, Ministry of Climate Change and GIZ-BKP arranged three days implementation workshop on Access to genetic resources and fair and equitable sharing of the benefits arising from their use (ABS) and the Nagoya Protocol (NP) to build the capacity at national and sub-national level in Islamabad from 18-20 May 2016.

Directorate also shared the ABS Act finally with relevant stakeholders and waiting for their comments. ABS act will be submitted to the Cabinet for approval after incorporating comments of the stakeholders.

Import and Export of Wildlife

Pakistan is a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) since 1976. It is an intergovernmental treaty to ensure that wild fauna and flora in international trade are not exploited unsustainably. The Convention establishes an international legal framework together with common procedural mechanisms for the strictest control of international commercial trade in species threatened with extinction. Import and export of wildlife is being dealt by Ministry of Climate Change in accordance with CITES and provisions of Trade Policy Order. During 2015-2016 an amount of Rs. 11.211 Million was deposited in the Government Exchequer as import / export fee. The coordination with Provincial Wildlife Departments was continued to regulate the trade in accordance with the policy.

Community-based Trophy Hunting Programme

Community-based Trophy Hunting of ungulates; Markhor (*Capra falconeri*), urial (*Ovis vignei*) blue sheep (*Pseudois schaeferi*), himalayan ibex (*Capra sibirica*), Sindh ibex (*Capra aegagrus*) is being successfully implemented in Pakistan and is world recognized. The local communities get 80% shares of the revenue generated, which is used for community based conservation activities and socio-economic uplift. 20% of the revenue goes to respective provincial / territorial governments as administrative fee. In return the communities protect wildlife with a sense of ownership. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has allocated annual quota of 12 markhor (CITES-Appendix-I species) for Pakistan.

Trophy hunting quota is allocated at Federal level by Ministry of Climate Change in consultation with stakeholders at the meeting of CITES Management Authority. Subsequently, the allocated quota is distributed by the provincial / territorial governments amongst the approved communities. The allocated quota is marketed at international level through outfitters. During the hunting season (November to March), the hunters, accompanied by the representatives of local communities and provincial departments, hunt the over-matured males of respective species and then approach the provincial / territorial department for NOC to taking their trophies to the country of their choice. Based upon the provincial / territorial recommendation, the Ministry of Climate Change allows the export of hunted trophies, in accordance with the provisions of CITES.

Capacity Building of Wildlife Law Enforcement Agencies

During 2015-2016, a series of capacity building workshops were organized jointly by WWF-Pakistan and Ministry of Climate Change in Lahore, Islamabad and Karachi. The workshops aimed at building capacity of line agencies in controlling illegal wildlife trafficking. Officials from Pakistan Customs, provincial Wildlife Departments, Civil Aviation Authority, Police, Marine Fisheries Department, Pakistan Coast Guards, Pakistan Maritime Security Agency and other relevant organizations attended the workshops.

CHAPTER – 6

INTERNATIONAL COOPERATION (IC) WING

International Cooperation (IC) Wing was created in April 2005 with the following objectives:

- To streamline and improve coordination with international environmental agencies on environmental issues
- To represent Pakistan at international fora with respect to the signed Conventions and Protocols
- To facilitate compliance with international obligations
- To attract international support for improvement of environment in Pakistan.

2. The performance/achievements of IC Wing from 1st January, 2016 to 31st March, 2017 are as under:

International Cooperation Section:

- i. Signing of Cooperation Agreement between the Government of Republic of Turkey and the Government of Islamic Republic of Pakistan in the field of Forestry.
- ii. Signing of Memorandum of Understanding between the Government of Republic of Turkey and the Government of Islamic Republic of Pakistan on Cooperation in the field of Environment.
- iii. In order to gain the status of Generalized System of Preferences (GSP) Plus Scheme, the compliance reports on Conventions/Protocols related to Ministry of Climate Change were submitted to Ministry of Commerce as and when required. Several meetings of Treaty Implementation Cell (TIC) were also attended by IC Wing.
- iv. The Cabinet approved a summary on signing of “MOU on Cooperation for Environmental Protection with Government of Republic of Korea”. IC Section took up the matter with concerned quarters and furnished progress reports on monthly basis.
- v. The Cabinet approved a summary to start negotiations with Yemen on “MoU on Cooperation in the Domain of Environmental Protection and Preservation of Natural Resources”. Matter held up due to security situation in Yemen.
- vi. IC Section identified areas of cooperation to be included in the agenda of Pak-France annual bilateral consultations for enhancing cooperation with France on Climate Change.
- vii. IC Section prepared brief/talking points for inclusion in agenda of 10th Round of Bilateral Political Consultation with Republic of Korea held on November 30th, 2016 in Seoul.
- viii. IC Section furnished its views/comments as well as identified areas of cooperation for inclusion in the document of Swiss Development Cooperation.
- ix. IC Section extended coordination to hold meetings of Joint Economic Commissions with various countries and furnished comprehensive proposals for enhancing cooperation in the field of Environment and Climate Change related issues.

- x. IC Section dealt with the administrative matters of PEPAC and submitted a summary to Prime Minister regarding formulation of Board of Directors, PEPAC in consultation with PEPAC Authorities/Management.
- xi. Provided input on matters pertaining to internal administration of Ministry specially related to formulation of revised recruitment rules of Ministry of Climate Change.
- xii. Coordination for meetings of Joint Ministerial Commissions (JMCs) in collaboration with EAD, and provided its input.
- xiii. Communicated updated management plan of Lal Suhanra Biosphere reserve to UNESCO.
- xiv. IC Section Coordinated to convene 4th National Man and Biosphere (MAB) Committee Meeting on 02-02-2017 at Ministry of Climate Change. This was the first MAB Committee Meeting convened by the Ministry of Climate Change, upon transfer of MAB program to this Ministry from Ministry of Science and Technology.

(Chemical Section)

1. Communicated National Report of Basel Convention for the year 2015 through electronic reporting system to the Secretariat.
2. Contributed to the process for amendment of MoU between Central Coordination Agency-Pak (M/o Defence) and Central Coordination Agency-US (US Embassy in Pakistan) regarding transit movement of hazardous waste.
3. Secured **Membership of implementation and compliance committee** of Basel Convention after successful lobbying.
4. Processed all matters regarding import of waste/scrap under Basel Convention with coordination of provincial environment protection departments.
5. Prepared and submitted a project titled “Environmentally safe recycling and disposal of electronic waste in Pakistan” for GEF funding.
6. Prepared and submitted a project titled “Reducing releases of POPs, POP candidates and other Chemicals of Concern (CoCs) in the Textiles Sector” for GEF funding.
7. Organized national inception and training workshop for updating inventory of initial and new Persistent Organic Pollutants (POPs) in Pakistan, **16-18 February, 2016** at Islamabad under the project titled “Review and Update of the National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (POPs) in Pakistan”
8. Completed a successful project titled “Environmentally sound management of waste from ship dismantling in Pakistan. The main activities conducted under this project are given as under:-
 - i. National inception workshop of national stakeholders on **17th August, 2015** at Islamabad.
 - ii. First meeting of Project Steering Committee on **18th August, 2015** at Islamabad.
 - iii. Hiring of senior and junior consultants in **September 2015**
 - iv. Follow up meetings with stakeholders on **15th October, 2015** at Karachi
 - v. Site Visit of the Secretary, Ministry of Climate Change along with Chairman, BDA, Chairman PSBA, representatives of EPA, Balochistan to Gaddnai Ship breaking Yard on **16th October, 2015**

- vi. Follow up meetings with the consultants of BDA and PSBA from **3-4 December 2015**.
 - vii. Second Meeting of Project Steering Committee on **11th April, 2016** at PC Hotel, Karachi
 - viii. Hazardous Waste Assessment Workshop, **12-13 June, 2016** at PC Hotel, Bhurban
 - ix. Donors Roundtable Meeting on **14th December, 2016** at Marriott Hotel, Islamabad
9. Transmitted national report of Stockholm Convention through electronic system.
 10. Pakistan secured membership of **DDT Expert Group** of Stockholm Convention.
 11. Pakistan selected as **Vice Chairman of POPs Review Committee** of Stockholm Convention.
 12. Processed annual mandatory contributions to Basel, Rotterdam and Stockholm Conventions.
 13. Pakistan secured **Membership of Executive Board** of special programme on institutional strengthening.
 14. Submitted parawise comments on legal cases of IC wing.
 15. Provided input reply to Senate and National Assembly questions.
 16. Participated in all meetings in Ministry of Foreign Affairs regarding setting of SAARC Energy and Environment Centre.
 17. Provided input on matters pertaining to internal administration of Ministry specially related to promotion cases of CCD.
 18. Regular reporting to Cabinet Division on decisions taken by the Cabinet.
 19. Imposed restriction on the import of mercury and mercury compounds in Import Policy Order, 2016
 20. Negotiated further procedures for Minamata Convention at 07th meeting of Intergovernmental Negotiating Committee (INC).
 21. Signed Small Scale Funding Agreement with UNEP for a project titled “Development of Minamata Initial Assessment (MIA) in Pakistan” on **03-02-2016**.

National Ozone Unit:-

22. National Ozone Unit (NOU) performed following activities.
 - i. Convened seminars on ozone friendly appliances, their benefits for consumers, manufacturers and concerned stakeholders on 1st and 2nd January, 2016, at Lahore and Karachi. The objective of the seminars were to analyze HCFCs consumption data and its sector / sub-sector distribution, Adaptation of alternate technology to HCFCs, stance of

industries principals on alternates, HCFCs overarching strategy for the period 2016-2040, phasing out proposed strategies 2016-2021, beneficiary's responsibility, working arrangements between beneficiary, implementing agencies and National Ozone Unit and safety measures.

- ii. Small Scale Funding Agreement (SSFA) was signed between United Nations Environment Programme and Ministry of Climate Change, National Ozone Unit regarding Survey of Ozone Depleting Substances (ODSs) alternatives survey in Pakistan at the cost of US\$ 130,000/- on 08-01-2016.
- iii. National Ozone Unit, MoCC participated in 23rd HVACR Expo held at Karachi from 3-5 March, 2016 and displayed a stall of NOU. The representative of NOU interacted with manufacturers, importers of ODSs and briefed general public regarding ozone friendly appliances and ongoing HCFC phasing out policies for developing countries like Pakistan.
- iv. Meeting with Directorate General, Training and Research (DGTR) was held on March 4, 2016 regarding organizing training for 90 Customs Officers, coast guards and police officers at Karachi, Lahore and Islamabad.
- v. Collected and analyzed import data of HCFCs from FBR /PRAL / Importers and on the basis of this analysis, country report and Article 7 Data report was prepared and submitted well in time to the secretariat of Montreal Protocol.
- vi. Advertisement for inviting quota requests for publication in leading National Newspapers. Applications received for the quota were minutely examined in a transparent way. Quota for 2016 was formulated and approved accordingly. The quota was disseminated among relevant stakeholders i.e. Federal Board of Revenue, Ministry of Commerce and HCFCs importer.
- vii. To check the compliance, import data of ODSs for the year 2015 was collected every month from relevant sources i.e. FBR and importers. Data provided by the FBR and importers was examined minutely and the details were submitted to the NPD. On the basis of analysis, the quota deduction and allocation was made for each importer.
- viii. Conducted Training programs for Customs, Coastguards and Police Officers on management of Ozone Depleting Substances at Directorate General of Training and Research, Karachi. During April,2016. Eighty-two (82) Customs, four (04) coastguards and fifty-nine (59) police officers were trained at Lahore, Karachi, and Islamabad through training programs.

- ix. National Ozone Unit, MoCC invited different Universities on 10th May, 2016 to submit research proposals on the issues related to Ozone Layer and Ozone Depleting Substances. Four Research Proposals from University of Karachi, International Islamic University, Islamabad, Quaid-e-Azam University, Islamabad and Collage of Earth and Environmental Science, Punjab University Lahore have been received and are under consideration to award the research work. A committee comprising representatives from Ministry of Climate Change, National Ozone Unit and UNDP members was constituted to evaluate / review the research proposal. The committee recommended research proposal namely; *“Spatial-temporal modeling of stratosphere ozone over Pakistan and studying its relation with climate datasets”* as submitted by Professor Dr. Sajid Rashid Ahmad, Principal, College of Earth and Environmental Sciences, Punjab University, Lahore.
- x. Special Service Agreement (SSFA) was signed between NOU and Punjab University at cost of Rs. 400000/- (Four Lac Only) to conduct research on “Spatial-temporal modeling of stratosphere ozone over Pakistan and studying its relation with climate datasets”. The research work has been completed.
- xi. In order to phase out the ODSs from industries, National Ozone Unit (NOU) along with relevant implementing agencies i.e. UNEP and UNIDO has developed HPMP Stage-II document. The remaining industries to be converted to ozone friendly technology were identified for phasing out and accordingly funding request to MLFS was submitted for Stage II implementation of HPMP.
- xii. The Executive Committee of the Multilateral Fund for the Implementation of Montreal Protocol, at its 76th meeting held in Montreal, Canada from 9-13 May, 2016 has approved, in principle, stage II of the HPMP for Pakistan for the period 2016 to 2020 to reduce HCFC consumption by 50 percent of its baseline, at a total funding level US \$5,679,476.
- xiii. Pakistan participated in 37th OWEG from 4-8 April, 2016. At OEWG 37, delegates had an update on the Technology and Economic Assessment Panel (TEAP) on alternatives to ozone depleting substances (ODS). The meeting also discussed the work of the Hydrofluorocarbon (HFC) Management Contact Group and the mandate outlined in the Dubai Pathway on HFCs. The Ministry highlighted the issues and challenges being faced by Pakistan regarding the HFCs amendments under Montreal Protocol.

- xiv. Held meeting with Pakistan Heating Ventilation Air Condition & Refrigeration (HVACR) importers and traders association on the issues of HS codes for import of HCFCs in Pakistan on 09th May, 2016.
- xv. Organized 1st Refrigeration Air Conditioning (RAC) association meeting to promote code of good practices on 8th June, 2016 at Lahore. HCFC technicians and members associated with Pakistan HVACR importer and traders association attended the meeting and they were informed about the international good practices adopted in RAC sector.
- xvi. Held meeting with Secretary (Tariff-I), FBR on 28th June, 2016. Issues related to collection of Ozone Depleting Substances alternative data from 2011 to 2015 were discussed and list of ODS alternatives along with HS codes related to ODS alternatives were provided to FBR.
- xvii. National Ozone Unit, Ministry of Climate Change in collaboration with United Nations Environment Programme organized a workshop on “National Survey on Ozone Depleting Substances Alternatives “on July 11, 2016 at Lahore. The workshop intended to collect and analyze data on use of Ozone Depleting Substances (ODS) alternatives in Pakistan including Hydrofluorocarbons (HFCs), HFCs Blends, Hydrocarbons (HCs), Hydrofluoroolefins (HFOs), Hydrofluoroethers (HFEs) and other ODS alternatives used in various sectors including Aerosols, Solvents, Fire-fighting etc. It is to mention that survey focused on all types of imports, exports, industrial usage, servicing sector, Motor Vehicle Air Conditioning sector etc.
- xviii. Held meeting regarding existing and international standards in RAC sector with Director General, Pakistan Standards & Quality Control Authority (PSQCA) on 14th July, 2016 at PSQCA headquarters Karachi. The meeting focused on adopting international safety standards relating to handling flammable natural refrigerants.
- xix. Held meeting on management of ODS and import issues related to ODS and their alternatives with Director General, Pakistan Standards & Quality Control Authority (PSQCA) on 14th July, 2016 at PSQCA headquarters Karachi. The meeting focused on adopting international safety standards relating to handling flammable natural refrigerants.
- xx. Meeting with representatives of Pakistan HVACR importers and traders association was held on 14th July, 2016 at Karachi. The meeting discussed the importers issues on WeBOC implementation of HCFC quota and also discussed the importers issues on HCFC and natural refrigerants import. Importers were informed on use of safe handling for natural refrigerants.

- xxi. National Ozone Unit, Ministry of Climate Change in collaboration with United Nations Environment Programme organized a workshop on “National Survey on Ozone Depleting Substances Alternatives” on July 15, 2016 at Karachi. The workshop intended to collect and analyze the data on use of Ozone Depleting Substances (ODS) alternatives in Pakistan including Hydrofluorocarbons (HFCs), HFCs Blends, Hydrocarbons (HCs), Hydrofluoroolefins (HFOs), Hydrofluoroethers (HFEs) and other ODS alternatives used in various sectors including Aerosols, Solvents, Fire-fighting etc. It is to mention that survey focused all types of imports, exports, industrial usage, servicing sector, Motor Vehicle Air Conditioning sector etc.
- xxii. Pakistan participated in resumed 38th OWEG and 28th Meeting of Parties to Montreal Protocol from 8-16 October, 2016 at Kigali, Rwanda. The proposed North American amendment proposal for phasing down HFCs under Montreal Protocol was passed at this meeting and named as Kigali amendment. Pakistan successfully negotiated the terms of the amendment to its benefit.
- xxiii. Held meeting with National Vocational and Technical Training Commission (NAVTTTC) on 24th October, 2016 at NAVTTTC office Islamabad. Issues and modalities related to training of 400 refrigeration technicians and training of master trainer under HPMP plan were discussed during the meeting. It was decided that through MOU both departments will collaborate for training 400 technicians and 20-30 master trainers all over Pakistan.
- xxiv. Organized 2nd Refrigeration Air Conditioning (RAC) association meeting to promote code of good practices on 16th November, 2016 at Karachi. HCFC technicians and members associated with Pakistan HVACR importer and traders association attended the meeting and they were informed about the international good practices adopted in RAC sector.
- xxv. Held meeting with National Vocational and Technical Training Commission (NAVTTTC) on 30th November, 2016 at NAVTTTC office Islamabad. Issues related to finalizing MOU and financial disbursement were discussed during the meeting. Both the departments collaboratively redrafted the MOU as per mutual understanding.
- xxvi. National Ozone Unit, Ministry of Climate Change in collaboration with Pakistan Standards & Quality Control Authority, Ministry of Science & Technology organized a workshop on “Existing & International Standards in Refrigeration & Air Conditioning Sector” on December 09, 2016 at Karachi.
- xxvii. Site inspection visit to GlaxoSmithKlien (GSK), Pakistan was carried out on 16th December, 2016 at GSK project site Karachi.

- xxviii. Signed agreement with NAVTTC for training of 400 refrigeration technicians and 20-30 master trainers on management of ozone depleting substances and adoption of international good practices in RAC sector on 28 December, 2016.
 - xxix. Got approved the funding of US\$ 287318/- for phase -IX (April 2017-March 2019) by the Ozone Secretariat at its 7th Ex. Com meeting after reviewing the satisfactory performance of the Montreal Protocol Project, Ministry of Climate Change.
 - xxx. Distributed quota of controlled ODS among industries and importers
 - xxxi. Initiated WeBOC system successfully with the collaboration of Customs for control of ODS at ports.
 - xxxii. Conducted a study on sustainable cooling with World Bank.
22. Lobbied successfully for securing the position of **President of Implementation and Compliance Committee** of Montreal Protocol.

CHAPTER – 7

ATTACHED DEPARTMENTS AND AUTONOMOUS BODIES

9.1 NATIONAL DISASTER MANAGEMENT AUTHORITY (NDMA)

Performance Report – 2016

1. **General.** Pakistan is a disaster prone Country. It is considered to be amongst top ten most vulnerable countries of the World affected by Global Climate Change phenomenon. The Year 2016, though did not experience a major natural disaster yet was outlined by recurrence of extreme weather events in the form of Pre-Pre-Monsoon Heavy Rains, above normal Monsoon 2016 and current pattern of bumbling weather conditions with no Winter Rains even after start of the month of January 2017. The prevailing weather conditions are likely to impinge upon depleting water resources thereby leading to drought like conditions in vulnerable areas of the Country during next few months, if the situation persists. Deviation from regular weather pattern, hazards like PIA Air Crash accident and need to keep pace with the preparedness activities during the preceding year, posed distinctive challenges to the disaster management structure of the Country demanding innovative and unconventional approach for adoption to which the response has remained par excellence. Details are covered in subsequent part of the document.

2. **Aim.** To compile achievements of NDMA during the Year 2016.

Disasters Managed

Timeframe	Type of Disaster	Provinces Affected
March – May 2016	Winter Heavy Rains	Punjab, KP, GB and AJ&K
March – April 2016	Blockade of KKH	KP, GB
June – July 2016	Monsoon 2016	KP, Baluchistan and AJ&K
7 December 2016	PIA Air Crash ATR - 661	KP

4. **Damages / Losses.** Summary of major losses / damages is as under, however province wise details are at Annex A:-

Disaster	Damages / Losses			Remarks
	Deaths	Injured	Houses Damaged	
Pre-Monsoon Rains	271	279	2929	-
Monsoon 2016	153	113	1452	-
PIA Air Crash	47	-	-	-

Overseas Relief Assistance Rendered

Timeframe	Type of Disaster	Country
January – March 2016	Earthquake	Gorno Badakhshan, Tajikistan
May – June 2016	Floods	Sri Lanka

6. **Details of Relief Assistance**

- a. **In Country Relief Assistance.** Details at Annex B.
- b. **Overseas Relief Assistance.** Details at Annex C.

Key NDMA Activities

7. **Preparedness**

- a. **National Post-Monsoon Review Conference – 2015.** In order to compile lessons learnt, good practices established, bottle necks identified and valuable experience gained during Floods 2015 and share it with all stakeholders for future preparations, National Post-Monsoon Review Conference 2015 was organized on **22 January 2016 at Islamabad.**
- b. **Pre-Pre-Monsoon 2016 Preparedness.** NDMA issued Pre-Pre-Monsoon Instructions to all relevant stakeholders on **18 March 2016.**
- c. **Industrial Hazards Simulation Exercise.** Industrial Hazards Simulation Exercise was conducted on **29 March 2016 at Dherki** in which all relevant stakeholders participated. Missing links observed in response mechanism against industrial disasters were compiled and shared with all concerned in the form of Post Exercise Report.
- d. **National Pre-Monsoon Preparedness Conference – 2016.** Pre-Monsoon Conference is generally conducted during the month of July every year. Owing to PMD’s forecast for early Monsoon, complete process of Monsoon preparations was started early. On culmination of provincial / regional consultative process, National Pre-Monsoon Preparedness Conference 2016 was held on **9 June 2016** at Islamabad. The forum facilitated compilation of provincial / regional plans and input to build a well-coordinated National response for impending Monsoon Season.
- e. **National Monsoon Contingency Response Directive 2016.** To lay down response guidelines for all stakeholders at Federal and Provincial level, ensure sound disaster management against possible floods and configure a coherent response against visualized contingencies of Monsoon 2016, National Monsoon Response Directive 2016 was issued to all stakeholders on **15 June 2016.**
- f. **Procurement of Heavy Earth Moving Machinery for GB.** On pursuance of NDMA, Prime Minister of Pakistan had very kindly consented 30% share by Federal Government to purchase heavy earth moving machinery for GB. Federal share of **Rs. 218,996,000** has been released to Government of Gilgit-Baltistan and the process for procurement of machinery is likely to be

- completed within next three months. The capability will not only enable Government of Gilgit-Baltistan to ensure road communication within the region but also along main artery of KKH linking the region with Pakistan.
- g. **Completion of Sukkur HRF Site.** NDMA and PDMA Sindh in close collaboration with WFP have completed construction of Sukkur Humanitarian Response Facility on **18 May 2016**. This will facilitate relief operations of NDMA and PDMA Sindh in Upper Sindh as well as Naseerabad Division of Baluchistan.
- h. **Resolution of Frequency Interference Issue of Lai Nullah.** NDMA successfully resolved a long outstanding issue between Frequency Allocation Board (FAB), Ministry of Interior and Pakistan Meteorological Department (PMD). The initiative restructured capability of PMD to predict **possibility of flooding in Lai Nullah** during Monsoon 2016.
- i. **High Level Consultative Meetings with Provinces – Monsoon Preparedness.** In order to sensitize all provinces / regions to expedite Monsoon preparations as well as bridge identified gaps, Chairman NDMA organized high level consultative meeting with all PDMA and respective Chief Secretaries as under:-
- (1) PDMA Sindh and Chief Secretary Sindh on 17 June 2010 at Karachi.
 - (2) PDMA KP, FDMA and Chief Secretary KP on 22 June 2016 at Peshawar.
 - (3) SDMA and Chief Secretary AJ&K on 24 June 2016 at Muzaffarabad.
 - (4) PDMA Punjab and Chief Secretary Punjab on 1 July 2016 at Lahore.
- j. **Indian Ocean Wave 16 (IOWave 16) Exercise.** To refresh procedures, SOPs, and online data sharing of National Seismic Monitoring & Early Warning Centre (NSMC) with Seismic Monitoring Centre of India, Indonesia and Australia, the exercise was conducted at Karachi on **8th September 2016**. It was organized by UNESCO and OXFAM during which an earthquake of 9.0 Magnitude was simulated at Makran Trench South of Pakistan and Iran at 1100 hours. On generation of earthquake, it was assumed that Tsunami waves travelled across the whole Indian Ocean Basin while hitting Gwadar and Ormara in Pakistan leading to practical evacuation at Gwadar Coast by OXFAM in coordination with NDMA, PDMA and local Government.
- k. **Coordination Mechanism with PAEC.** To enhance coordination linkages with Pakistan Atomic Energy Commission (PAEC) with respect to DRR and response to any nuclear power reactor accident at KANUPP and CHASHNUPP, NDMA organized a meeting at Islamabad on **8th September 2016**. Grey areas between existing coordination mechanism of NDMA, PDMA Punjab & Sindh, concerned DDMA and PAEC were identified for corrective measures in future. Need for a futuristic course of action hinging upon capacity building for disaster management was emphasized.

- l. **Revision of National Disaster Response Plan (NDRP).** Process for revision of National Disaster Management Response Plan 2010 was initiated to align it with present disaster environments while including latest experiences and organizational changes in Government Departments.
- m. **Coordination with Management of Tarbela Dam.** In order to enhance coordination mechanism with management of major water reservoirs of the Country and ensure prudent operation of dams during floods, a team comprising NDMA Officials visited Tarbela Dam on **18th August 2016.**
- n. **Provision of Dedicated Aviation Assets to NDMA.** First meeting of the Committee was held in NDMA on 26 October 2016. All members of the Committee attended the meeting.
- o. **Policy Development / Guidelines**
 - (1) **NDMA Guidelines for Vulnerable Groups**
 - (a) **Action Plan Implementation Framework on National Policy Guidelines on Vulnerable Groups in Disasters.** GCC developed an implementation framework on National Policy Guidelines for vulnerable groups in disasters to reduce risks and vulnerabilities particularly those of the poor and marginalized groups in the country.
 - (b) Checklist for Rescue and Relief Workers on Vulnerable Groups in Disasters.
 - (c) **Final draft of Pakistan School Safety Framework.** A final Draft of Pakistan School Safety Framework (PSSF) was developed after a series of Consultative meetings with Government and private sector stakeholders and it also reviewed by international consultants.
 - (d) **Training Manual on SOP for Separated, Unaccompanied and Missing Children in Disaster.** This training manual has been designed for Government, NGOs and any other relevant staff to introduce the key components of a child protection response in a humanitarian situation in Pakistan. It provides practical tools and templates to develop an understanding of the issues faced by children in emergencies and hopes to strengthen awareness of decision makers and programme implementers alike.
 - (e) **Draft Gender Based Violence (GBV) Guidelines / SOPs.** Guidelines / SOPs has been drafted to prevent mitigate and response in humanitarian settings.
 - (f) Draft report on integrating Gender Based Violence (GBV) prevention interventions in Pakistan School Safety Framework (PSSF).

- (g) **Policy Guidelines Implementation Matrix.** The Implementation Framework broadly offers standardized measures that are required to maintain the consistency in the application of Policy Guidelines.
- (2) **NDMA Guidelines on Stocking / Maintenance for Supply of Relief & Rescue Items.** In order to ensure standardized policy for stocking / maintenance of relief items, NDMA Guidelines on Stocking / Maintenance for Supply of Relief & Rescue Items were finalized / published.
- (3) **NDMA Guidelines for Minimum Ex-Gratia Compensation.** NDMA Guidelines for Minimum Ex-Gratia Assistance to the Persons Affected by Natural and Man-Made Disasters have been approved by the Prime Minister of Pakistan.
- (4) **Guidelines on Management of Dead in Emergencies.** Policy document on Management of Dead in Emergencies was initiated in collaboration with ICRC.
- (5) **Sindh Drought Needs Assessment (SDNA) Report.** Approval was accorded to Sindh Drought Needs Assessment (SDNA) Report prepared by FAO in consultation with NDMA. Launching Ceremony for “Sindh Drought Needs Assessment (SDNA) Report” was held at Karachi on **25 August 2016** which was attended by NDMA officials.
- (6) **Stocking Policy of NDMA.** To ensure sound planning, efficient procurement and prompt response during disasters, NDMA has formulated “Stocking Policy of NDMA”.
- p. **Knowledge Management / Research Development**
- (1) Study conducted on Needs and Concerns of Vulnerable Groups during disaster.
- (2) Atlas on Disaggregated Data of Vulnerable Groups in most vulnerable districts of Country.
- (3) Gender Mapping (Best practices in gender mainstreaming).
- q. **Creation of Reserve Stocks of Rescue Equipment:** To retain flexibility and enhance response capacity of Pak Army, NDMA created Central Reserve North and South as under:-
- (1) 25 x Fiber Glass Boats, 25 x OBMs and 750 x Life Saving Jackets were handed over to Pak Army for storage at **Rawalpindi.**
- (2) 25 x Fiber Glass Boats, 25 x OBMs and 750 x Life Saving Jackets were handed over to Pak Army for storage at **Khanewal.**
- r. **Turnover of NDMA Stores at Kashmore:** NDMA stores comprising 9,837 x tents were turned over at Kashmore Ammo Depot and 4,800 ragged tent covers were also replaced.
- s. **Procurement of Relief Stores.** NDMA procured / stacked 2,000 tents each at Islamabad and Jalozai while 1,000 tents at RGDO Karachi.
- t. **Repair / Maintenance Work at Relief Goods Dispatch Organization (RGDO) Karachi.** In October 2015, RGDO Warehouse Karachi was taken over from ERC which required

maintenance / repair work. Maintenance work like waterproofing of roofs, removal of partitions, ceiling and plumber work in the warehouse was completed while electric work is in process.

- u. **Taking Over of Relief Stores from ERRA.** Following stocks were taken over from ERRA:-

Ser	Items	Quantity
(1)	Sleeping Bag	4000
(2)	Kerosene Oil Heater	1300
(3)	Blanket	570
(4)	Generator 2.4 KVA	200
(5)	Gas Burner White	33
(6)	Container (20 Ft)	08

- v. **Finalization of Annual Reports.** NDMA finalized, published and issued Annual Reports for the year 2014 & 2015 to relevant stakeholders.
- w. **Enhancement of Storage Capacity.** World Food Programme (WFP) donated 5 x Rub Halls for enhancement of NDMA storage capacity which were installed at H-11 Islamabad.
- x. **MoU between NDMA and Pak Army For Warehouses.** NDMA and Pak Army finalized MoU covering period from 1 July 2015 to 30 June 2018 for provision of space at following storage facilities of Pak Army:-
- (1) CMT&SD Golra.
 - (2) COD Lahore.
 - (3) COD Karachi.
 - (4) Ammo Depot Kashmore.
 - (5) Ordinance Depot Quetta.

8. **Disaster Response Activities**

- a. **Blockade of Karakorum Highway (KKH).** Due to heavy Monsoon rains, KKH was blocked from 3 – 15 April 2016. NDMA not only coordinated timely clearance of about 159 x Landslides and opening of the road in assistance with NHA, FWO, Pak Army, KP and GB Governments but also coordinated following:-
- (1) 23 x Sorties of C-130 with PAF from Islamabad to Gilgit.
 - (2) 102 Tons of relief items and 16 x Tons of Wheat was transported to GB.

- (3) 1 x MI-17 was provided to PAF from Pak Army for supply of relief to Nultar Valley and evacuation of ailing women from the remote valley to Gilgit which only had air link to access.
- (4) Chairman NDMA visited GB along with relief goods on 13 April 2016.
- b. **Search and Rescue Operation in Karimabad.** 10 x students of Karimabad village in District Chitral came under a snow avalanche on **20 March 2016**. On request of PDMA KP, **NDMA transported CDA USAR Team through helicopter** to the site for early recovery of dead bodies. Dead bodies of seven students were recovered as a result of this search and rescue operation while remaining three bodies were recovered on melting of snow.
- c. **Monitoring of Monsoon Season 2016**
- (1) **Activation of National Emergency Operation Centre (NEOC).** To monitor flood situation and configure correct / timely response at required place, NDMA activated NEOC from **15 June to 15 September 2016**.
- (2) **Timely Evacuation during Flash Floods.** Owing to awareness drive through a series of preparedness activities before start of Monsoon Season 2016, considerable population of following districts was evacuated by local administration before devastation by flash floods without any human losses:-
- (a) Harmosh Valley, GB on 15 July 2016.
- (b) Village Gamba, Tehsil Aliabad, District Skardu, GB on 2 September 2016.
- (3) **Timely Clearance of Landslides.** Due to continuous monitoring, timely coordination and a well-integrated response by NDMA, NHA, Pak Army, FWO and concerned Provincial / District Administration, frequent landslides along following important National arteries were cleared in time:-
- (a) Gilgit – Skardu (S-1) Road.
- (b) Karakoram Highway (KKH).
- (c) Nowshera – Chitral (N-45) Road.
- (d) Khawazakhela – Besham (N-90) Road.
- (e) Chakdara – Kalam (N-95) Road.
- (f) Kohala – Muzaffarabad (S-2) Road.
- (g) Abbottabad – Nathiagali Road.
- (h) Murree – Kohala Road.
- (i) Rawalpindi – Sudhnoti Road.
- d. **Search and Rescue Operation at OGRE-II.** Two USA mountaineers; Mr. Kyle Dempster and Mr. Scott Adamson were reported missing during their Expedition OGRE-II in District Shigar, GB from **20 August 2016**. Heli Search and Rescue operation by Pak Army was launched in the area

but missing mountaineers could not be found. NDMA monitored the operation in coordination with district administration Shigar and kept relevant stakeholders updated.

- e. **Relief Assistance to Displaced People along LOC.** On 22 November 2016, NDMA handed over 2000 winterized tents to the State Disaster Management Authority (SDMA). These tents were provided on the request of SDMA to cater the needs of the people displaced by the unprovoked firing of Indian occupied forces from across the Line of Control.
- f. **Tajikistan Earthquake 2016.** Gorno-Badakhshan region of Tajikistan was hit by 7.2 Magnitude Earthquake on 7 December 2015. The earthquake affected considerable population of Tajikistan. On directives of PM's Office, NDMA conducted a unique relief operation of its kind which was comprised of 40 days. Starting from **9 February to 18 March 2016**, NDMA despatched relief assistance (**Details at Annex C**) covering 39 x Trucks in 7 x Convoys by road through Sher Bandar, Afghanistan to Tajikistan.
- g. **Sri Lanka Floods 2016.** In May 2016, torrential rains resulted in floods and landslides across Sri Lanka. By 25th May 2016, the death toll was above 100 while same number of people were missing. During this critical time, on directives of PM's Office, NDMA coordinated despatch of relief assistance (**Details at Annex C**) through 3 x C-130 Sorties from Karachi to Colombo from **24 – 28 May 2016**.

9. **Disaster Risk Reduction (DRR)**

- a. **Status Review Report on DRM.** Status Review Report on DRM containing updates on Sendai Framework for DRR 2015 – 2030 implementation in the Country was submitted to UNISDR on 10 November 2016.
- b. **Hosting of SAARC Environment & Energy Centre (SEEC) Centre in Pakistan.** During 37th Council of SAARC Minister's Conference hosted in Nepal in March 2016, it was decided to split SAARC Environment & Disaster Management Centre into SAARC Disaster Management Centre (SDMC) to be hosted by India and its Environment Component be merged with existing SAARC Energy Centre in Pakistan. NDMA played an instrumental role in bringing Environment Component in Pakistan.
- c. **Geological Surveys.** Continuous seismic activities were reported in District Ghanche, Gilgit, Skardu and Ghizer by GBDMA, village Boson Rai, Tehsil Garm Chasma, District Chitral and Village Puna, District Abbottabad by PDMA KP in January 2016. NDMA released Rs 921,920 for conduct of geological surveys in reported areas by Geological Survey of Pakistan (GSP) in February 2016. **Surveys of Abbottabad and Chitral districts have been completed** while in GB, surveys are presently under process.
- d. **First Meeting of NDMP Implementation Steering Committee.** First Meeting of NDMP Steering Committee was convened by NDMA from 7-8 January 2016. The meeting was attended

by all members which monitored and evaluated the implementation of NDMP 2012-2022 and provided Strategic Policy Guidelines in the realm of Disaster Management.

e. **Multi Hazards Vulnerability Risk Assessment (MHVRA) Projects**

- (1) Completed in five districts of Sindh (Thatta, Badin, Tando Allah Yar, Tando Muhammad Khan and Mirpur Khas) in collaboration with WFP. The final Risk Atlases are in the process of publication.
- (2) Completed in five districts of Punjab (Rahim Yar Khan, Khanewal, Bahawalpur, Multan & Jhang) through NDMA's Project Management Unit with the funding of WFP.
- (3) Planned for Ghotki and Kashmore Districts in collaboration with WFP & DFID.

f. **NDMP Steering Committee Meetings for Multi Hazards Vulnerability Risk Assessment (MHVRA)**

To review the progress of Multi Hazards Vulnerability Risk Assessment (MHVRA) interventions in the Country related to five districts of Punjab carried out by Project Management Unit (PMU) of NDMA, National Disaster Management Plan (NDMP) Steering Committee Meetings were convened on **9th September & 19th December 2016**. The Meeting was attended by representatives of Ministry of Finance, Ministry of Planning Development & Reforms, EAD, PMD, SUPARCO, GSP, FFC, Survey of Pakistan, Roots Pakistan, PDMA KP, SDMA, FDMA and Earthquake Engineering Centre UET Peshawar. During the Meeting, progress on different interventions was shared with the participants. NDMA presented the outcome of MHVRA study carried out in 5 x selected districts of Punjab (Multan, R.Yar.Khan, Jhang, Khushab and Bahawalpur). The Steering Committee approved the said study, MHVRA execution policy and guidelines for all such interventions in future. This is the first study of its kind.

g. **Project Review Meeting**. In order to get an overview on the progress of various projects approved in the AWP 2016, a Project Review Board Meeting was held with UNDP on 8 August 2016. This meeting allowed NDMA to carryout mid-course corrections to certain projects being undertaken.

h. **World Humanitarian Summit (WHS) Consultative Dialogue**. As a precursor to the First World Humanitarian Summit planned by United Nations in Turkey, a consultative Dialogue was held by NDMA in collaboration in the form of a Round Table in Pakistan to crystallize the thought process and get a wider view of all the relevant stakeholders.

i. **Finalization of Report on Institutional Assessment on the Integration of Disaster Risk Reduction in the Agriculture Sector of Pakistan with Food and Agriculture Organization (FAO)**. NDMA in consultation with FAO has finalized Report cited above. This study will facilitate Government in redefining priorities and initiating interventions commensurating with dictates of mainstreaming DRR into Agriculture Sector in line with NDMP interventions.

- j. **Input on INGOs Registration in Realm of Disaster Management.** In order to identify and facilitate registration of INGOs working in the realm of Disaster Management, NDMA held various meetings with all INGOs and provided requisite input / response to Ministry of Interior.
- k. **Signing of AWP and LOA with UNDP and WFP for the Year 2016.** NDMA signed Letter of Agreement with UNDP and WFP for year 2016 for institutional Capacity Building of all stakeholders at Federal and Provincial level and undertake / implement CBDRM Programs in the most vulnerable districts of the Country.
- l. **Successful Signing of DFID Funded Program “Building Disaster Resilient Programme”.** NDMA finalized and signed the Building Disaster Resilient Programme and took part in the inception mission also. The project will be implemented in four districts i.e Muzaffargarh and Rajanpur in Punjab, Ghotki and Kashmore in Sindh. The intended outcomes would be to assist village communities in preparing for disasters through early warning, risk information, community level response mechanisms and improved linkages with Disaster Management Authorities, enhance Government capacity at National, Provincial and District levels to manage disasters in a better way.
- m. **Preparation of PC-1s.** Following four PC-1s were submitted for funding from PSDP FY 2016/17, however, none was approved by P&D Division owing to shortage of funds:-
- (1) Multi Hazard Vulnerability & Risk Assessment (MHVRA) projects in four selected districts with estimated cost of 59.58 Million.
 - (2) Protection and mainstreaming of vulnerable children, women, elderly and disabled in disaster management with estimated cost of 58.04 Million.
 - (3) National disaster spatial data infrastructure (NDSDI) with estimated cost of 59.86 Million.
 - (4) Implementation of human resource development plan (HRDP), on disaster management for capacity building of government and other stakeholders with estimated cost of 34.07 Million.
- n. **Fire Safety Provisions.** The Building Codes of Pakistan were formulated in 1986 and further modified in 2007 with inclusion of seismic provisions but the codes did not have the provision for Life and Fire Safety (Fire preventions, life safety in relation to fire and fire protection of building and structures). NDMA took the initiative and signed a MoU with Pakistan Engineering Council (PEC) for development and inclusion of Fire and Life Safety Provisions in the existing Building Codes of Pakistan. The document on Life and Fire Safety Provisions has been formulated and approved and awaiting SRO printing. A launching ceremony is planned in last week of February 2017.

- o. **Building Codes – Penalty Provisions.** The implementation / enforcement of Building Codes of Pakistan had always been an issue of concern owing to absence of any effective legislation / Framework. Sequel to 26th October 2015 Earthquake, the House of Senate of Pakistan referred the matter to Senate Standing Committee on Law, Justice and Human Rights. NDMA was tasked as lead agency for holding consultations with all Federal and Provincial stakeholders. A framework has been developed with support of Ministry of Housing & Works, Capital Development Authority and PEC. This Framework is presently under scrutiny for legislative process.
- p. **MoU between NDMA and UNICEF.** NDMA signed a MoU with UNICEF on enhanced capacity and delivery of services of NDMA to reduce disaster risks for children and to ensure their well-being and protection in disaster preparedness, response and recovery on 15 November 2015.
- q. **MoU between NDMA and UN Women.** NDMA signed a MoU with UN Women on “Implementation of the project on Gender and Child Cell NDMA” on 21 June 2015.
- r. **MoU between NDMA and British Council.** NDMA signed a MoU with British Council to develop cooperation and collaboration for Education in Emergencies and Disasters through mutual collaborative activities on 1 February 2016.

10. **Regional and International Collaboration**

- a. **Participation in SAARC Ministerial Conference.** Chairman NDMA participated in SAARC Ministerial Conference at Nepal from 15 – 18 March 2016 regarding establishment of SAARC Environmental and Energy Centre in Pakistan.
- b. **Expert Group Meeting for ECO Regional Framework for DRR.** Chairman NDMA alongwith Director Implementation of NDMA attended Expert Group Meeting of ECO held in Tehran from 26 - 28 October 2016. The Meeting provided a platform for experts / officials from ECO members states to share their views on a regional framework to reduce risk of disasters and building resilience through regional cooperation and strengthen regional mechanism for implementation of SFDRR. Later on, ECO framework was shared with Pakistan on which important input was provided to ECO.
- c. **Participation in World Humanitarian Summit (WHS).** NDMA participated in WHS Istanbul from 21 – 25 May 2016. Besides other dignitaries, NDMA’s stall of “**Disaster Resilient Pakistan**” was also visited by UN Secretary General Mr. Ban Ki Moon and Minister SAFRON Lieutenant General (Retired) Abdul Qadir Baloch. During the Summit, a Side Event in the form of a Seminar with the theme of “**Reaching People in Need; Pakistan’s Experience**”, an Exhibition Fair and Marketplace was also organized which led to recognition of Pakistan’s

resilience and substantial contributions to the humanitarian cause in the face of recurring disasters.

- d. **Conduct of 13th RCC Meeting.** NDMA, Government of Pakistan in collaboration with Asian Disaster Preparedness Center (ADPC), Bangkok hosted in Islamabad from **17-19 October 2016**, the 13th Meeting of the Regional Consultative Committee (RCC) on Disaster Management on the theme “Operationalizing Global Frameworks for Risk-Resilient Development in Asia”. The 16 delegates of 13 countries (Afghanistan, Bhutan, China, Indonesia, Maldives, Mongolia, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, Turkey and Vietnam) attended the Meeting and shared their tangible recommendations / proposals for the operationalization of global frameworks especially the Sendai Framework for Disaster Risk Reduction (SFDRR). The 13th RCC meeting concluded with a self-explanatory Islamabad Statement which proposed a solid regional input of RCC countries for Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) 2016.
- e. **Participation in COP 22.** Chairman NDMA alongwith PM GCC attended COP 22 held at Marrakech, Morocco from 7 – 18 November 2016. NDMA is the focal organization for Loss & Damage. In COP 22, NDMA also followed the negotiations on Gender & Climate Change. Post Conference Report has been submitted to MoCC.
- f. **5th RTG Meeting of DM-CBM.** Pakistan and Kazakhstan are co-lead of Disaster Management Confidence Building Measure under Heart of Asia-Istanbul Process. Chairman, NDMA represented Pakistan in the 5th RTG Meeting on 9th December 2016 in Kazakhstan. Participating countries of HoA including Pakistan, Kazakhstan, Afghanistan, China and Iran attended the Meeting. Representatives of supporting country Japan and Egypt and supporting organizations including AKDN, EU, UNDP, UNISDR, CESDRR and JICA also attended the Meeting. During the Meeting, Chairman NDMA suggested that a Trust Fund to be established in which token amount is shared by all participating countries to meaningfully take forward the Implementation Plan. It was decided that the proposal may be made by Pakistan and forwarded to all participating countries and taken up in next RTG Meeting. During the Meeting, it was decided to hold 6th RTG Meeting in Islamabad, Pakistan.
- g. Pak – China Memorandum of Understanding (MoU) on disaster management is agreed in principal, however, MoU is under process.
- h. Memorandum of Understanding (MoU) for cooperation in disaster management with Government of Azerbaijan was initiated in July 2016.
- i. The Draft MoU of Cuba has been finalized and Summary initiated for approval of Cabinet for signing of MoU.
- j. SAARC Rapid Response Agreement was ratified by all members states in September 2016.

- k. Technical collaboration with ICIMOD, Secure World Foundation, NASA and other agencies for using space technologies like Digital Elevation Modeling (DEM) for flood monitoring.
- l. Participation in workshop on “Digital Communications” was organized by ICRC at Islamabad.
- m. Comments on Indian proposal for new SDMC have been shared with India through MoFA.
- n. Letters issued to Ministry of Commerce & Finance on recommended finding of the reports on Disaster Risk Insurance Framework.

11. **Capacity Building**

- a. **Programme for Enhancement of Emergency Response-IV**. In Country Planning Meeting (CPM) for PEER Stage-IV was organized in NDMA on **27 January 2016** in which National Society for Earthquake Technology (NSET), Nepal, Regional Advisor US Aid and other in Country stakeholders participated. Modalities for conduct of PEER Stage-IV with the aim of enhancing capacities of key responders were finalized during the meeting. The training was conducted from October to January 2017 by NIDM, PRCS, NHEPRN and Emergency Services Academy, Lahore. Details are:-

Ser	Course	Date	Trained Strength
(1)	Hospital Preparedness for Emergencies (HOPE)	17 – 27 October 2016	42
(2)	Community Action for Disaster Response (CADRE)	14 – 23 October 2016	54
(3)	Medical First Responders (MFR)	19 – 31 December 2016	24
(4)	Collapsed Structure Search & Rescue (CSSR)	4 – 12 January 2017	18

- b. **Pakistan School Safety Framework (PSSF)**. The PSSF was developed after a series of National level consultative meetings with Government and private sector stakeholders and it was also reviewed by international consultants. Framework is being pretested through a pilot programme in selected 68 Schools so as to evaluate implementation of the Framework and identify the gaps before its scaling up across Pakistan. The Pilot Programme comprises four phases as under:-

- (1) **First Phase**. A core group of 30 lead trainers were trained at Lahore as Master School Trainers & Quality Supervisors.
- (2) **Second Phase**. The lead trainers were responsible for training of three school teachers and one head teacher from each of the nominated 68 schools on PSSF from 22 November to 10 December 2016 in across the Country. Same training on PSSF will also

be given to officers of district education department, building department, fire department and police to carryout evaluation of schools to ascertain School Safety Standards.

(3) **Third Phase**. The trained teachers will go back to their schools to develop respective school safety plan, raise School Safety Organisations, undertake self-assessment of the School Safety Standards in accordance with PSSF and prepare school community for response against disasters.

(4) **Fourth Phase**. The final phase of the Pilot Programme towards the end of January 2017 will be conducted through trained district evaluator alongwith representatives of NDMA and PDMAs. During evaluation, the schools will share their self-assessment of safety standards and their school safety plans. The Evaluation Team will ascertain School Safety Standards as per the PSSF as a 2nd Party Evaluation at the end of the project. Third party evaluation will be done to finalize the draft PSSF. Its implementation will set the stage for scaling up of the programme.

- c. Consultative workshops with the representatives of key ministries / Departments and NGOs in KP, Sind & Baluchistan on “GCC Implementation Matrix”.
- d. Trainings of PDMAs & DDMA’s on “Child Protection in Emergencies” & “SOPs on Separated, Unaccompanied & Missing Children in Disasters “.
- e. With the support of Asian Disaster Preparedness Center (ADPC), trainings of PDMAs, DDMA’s and representatives of key ministries / departments in KP, Punjab, Sindh and Baluchistan on “Child Centered Disaster Risk Assessment & School Safety Guidelines”.
- f. Conduct of 3 x National Consultative Workshops on “School Safety Guidelines”
- g. Conducted “Needs Assessment” in disaster hits areas of Malakand Division .i.e. Swat, Upper & Lower Dir.
- h. **Inland Training (NIDM)**. 860 x Officials were trained in 20 x Inland Capacity Building Courses as per details at **Annex D**.
- i. **Foreign Training**. 24 x Officials of NDMA attended foreign training as per details at **Annex E**.

12. **Relief and Rehabilitation**

- a. **Compensation to Landslides Affected People**. On Directive of Prime Minister of Pakistan, NDMA paid compensation to the population affected by torrential rains in following areas:-
 - (1) 849 x Persons of **Kotli Sattian** Landslide - Rs 216.35 M.
 - (2) 113 x Persons of **Danna** Landslide, Muzaffarabad – Rs 56.5 M.
- b. **Distribution of Flour to Ursoon Flash Flood Victims**. NDMA distributed 30 Ton flour to the affected people of Ursoon flash flood in District Chitral.

- c. **Rehabilitation Projects in District Chitral.** On the Directive of Prime Minister's Office, a Team comprising officials from NDMA, NHA, PDMA KP, C&W Department and District Administration visited District Chitral from **28 November to 1st December 2016** to prioritize rehabilitation of damaged Jeepable bridges and link roads. The report has been shared with Prime Minister's Office for further disposal.

13. **Visits**

- a. **Chairman NDMA's Visit to Gilgit.** In order to review rehabilitation activities of October 2015 Earthquake, Chairman NDMA visited Gilgit on **13 April 2016**.
- b. **Chairman NDMA's Visit to Ursoon District Chitral.** In the backdrop of devastation of flash flood of 2 July 2016 in Ursoon Village, Tehsil Droash, District Chitral, Chairman NDMA alongwith DG PDMA KP visited affected people on **8 July 2016**.

14. **Advocacy and Awareness**

- a. A National Media Consultative Dialogue was organized at Islamabad on 9th January 2016 in which eminent media anchors, print media persons, politicians and representatives from Civil Society participated. The end result was a joint statement of agreement for disaster reporting.
- b. In order to sensitize general public about heat wave and floods, Public Service Messages of NDMA were aired during Monsoon 2016 at PTV, Radio Pakistan and some Commercial Channels.
- c. In order to sensitize local media community on National disaster management system and role of various stakeholders of society especially media, three media workshops for capacity building of NDMA beat reporters were conducted at Karachi, Lahore and Islamabad in May and June 2016.
- d. 59 x Press Releases were published in 397 newspapers.
- e. Two quarterly Public Service Messages regarding flood awareness were published on 14 June and 30 June 2016 respectively in local and regional newspapers.
- f. Six TV and Radio Programmes were recorded on heat wave, flood, earthquake, drought, fire safety and vulnerable groups in disasters. Two programmes of heat wave and floods were aired on PTV News in June / July 2016 while remaining programmes were aired on weekly basis during July / August 2016.
- g. Public Service Messages TVCs were prepared on earthquake, flood (Urban & Flash Flooding), heat wave, landslides & fire safety.
- h. 2 x NDMA Documentaries on "Disaster Resilient Pakistan" and Vulnerable Groups" were developed. NDMA Documentary with the theme "**Towards a Disaster Resilient Pakistan**" was also aired at the World Humanitarian Summit held in May 2016 at Istanbul.
- i. NDMA also took initiative to collaborate with Radio Pakistan to broadcast NDMA recorded programmes on general awareness raising on weekly basis from July to August 2016.

- j. Supplements about NDMA achievements during three years of present Government was printed in special edition of Pakistan Observer on 11 July 2016.
- k. Regular awareness advertisement as part of pre, during and post disaster Media Campaigns were also published.

15. **National Disaster Awareness Day 2016**. To observe Disaster Awareness Day at National / Regional level on 8th October 2016 while keeping in mind solemnity of Muharram ul Haram, activities were confined to disaster awareness drive only and all types of pump and show were avoided. The Day was observed at Provincial / Regional level too while at National level following activities were organized:-

- a. Awareness drive through city branding of twin cities of Islamabad and Rawalpindi.
- b. Conduct of Cyclathan in Islamabad.
- c. Flag March by CDA USAR Team in Islamabad.

Annex-A

To NDMA Performance Report 2016 dated 17 January 2017

PRE – MONSOON HEAVY RAINS 2016 (MARCH 2016 – MAY 2016)

DAMAGES / LOSSES

Province	Deaths				Injured				Houses Damaged		
	M	F	C	Total	M	F	C	Total	P	F	Total
Punjab	3	2	5	10	1	5	12	18	6	4	10
Balochistan	12	7	-	19	11	9	-	20	49	1	50
KP	62	30	65	157	66	42	46	154	701	339	1040
AJ&K	4	10	11	25	5	4	10	19	866	451	1,317
GB	8	7	7	22	10	5	9	24	248	203	451
FATA	38	-	-	38*	44	-	-	44	57	4	61
G. Total	127	56	88	271	137	65	77	279	1,927	1,002	2,929

*7 casualties due to Orakzai Coal Mine Accident on 10 March 2016

MONSOON SEASON – 2016 (JULY 2016 – SEPTEMBER 2016)

DAMAGES / LOSSES

Province	Deaths				Injured				Houses Damaged		
	M	F	C	Total	M	F	C	Total	P	F	Total
Punjab	12	2	15	29	-	-	-	-	220	63	283
KP	24	16	29	69	28	30	29	87	413	204	617
Balochistan	14	-	4	18	13	8	2	23	357	150	507
AJ&K	2	4	-	6	2	-	-	2	2	-	2
GB	1	1	1	3	-	-	1	1	28	14	42
FATA	2	9	16	27	-	-	-	-	-	-	-
Islamabad	-	1	-	1	-	-	-	-	1	-	1
G. Total	55	33	65	153	43	38	32	113	1,021	431	1,452

Key. M,F,C and T denotes Male, Female, Children and Total respectively.

dated 17 January 2017

RELIEF ASSISTANCE DURING PRE MONSOON RAINS – 2016

Items	KP		Baluchistan		AJ&K		FATA		GB						Grand Total
	PDMA	NDMA	PDMA	NDMA	PDMA	NDMA	PDMA	NDMA	GBDMA	PDMA Punjab	PDMA Baluchistan	NDMA	Utility Stores	Total GB	
Tents	1,600	-	409	-	-	270	-	60	8	1,000	-	550	-	1558	3,89
Milk Powder (Tons)	-	-	-	-	-	-	-	-	-	-	-	0.48	1.03	1.51	1.5
Flour (Tons)	-	-	-	-	-	1	-	-	-	-	-	16	-	16	17
Mix Ration (Tons)	10	-	35.5	-	-	-	-	-	7.9	100	-	-	-	107.9	153
Tarpaulin	-	-	4	-	-	270	-	-	688	-	-	-	-	688	96
Blankets	1,800	-	610	-	-	400	-	-	-	-	-	5350	-	5350	8,10
Plastic Mats	1,200	-	606	-	-	270	-	-	112	-	-	-	-	112	2,18
Kitchen Sets	-	-	-	-	-	-	-	-	25	-	-	-	-	25	25
Dall (Tons)	-	-	-	-	-	-	-	-	-	-	2.5	-	-	2.5	2.5
Rice (Tons)	-	-	-	-	-	0.5	-	-	-	-	2.5	-	-	2.5	3
Sugar (Tons)	-	-	-	-	-	0.2	-	-	-	-	1.5	-	-	1.5	1.7

RELIEF ASSISTANCE DURING MONSOON 2016

Items	Khyber Pakhtunkhwa				Balochistan		Punjab		GB		Total
	PDMA / DDMA	NDMA	PDMA Sindh	PDMA Punjab	PDMA	NDMA	PDMA	NDMA	GBDMA	NDMA	
Tents	1,031	-	100	300	1,150	-	-	-	15	-	2,596
Food Items (Tons)	4.95	30 (Flour)	-	10	48.2	-	50	-	0.45	-	143.6 Tons
Blankets / Quilts	766	-	200	1,000	250	-	-	-	16	-	2,232
Plastic Mats	700	-	-	300	1,000	-	-	-	10	-	2,010
Kitchen Sets	100	-	-	-	-	-	-	-	-	-	100
Mosquito Nets	-	-	-	-	650	-	-	-	-	-	650
Cotton Mattresses	100	-	-	-	-	-	-	-	-	-	100
Dewatering Pumps	-	-	-	-	-	-	25	-	-	-	25
Fodder (Packs)	-	-	-	-	-	-	5,000	-	-	-	5,000
Oil Stove	-	-	-	-	-	-	-	-	15	-	15
Water Cooler	-	-	-	-	-	-	-	-	15	-	15

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OVERSEAS RELIEF ASSISTANCE

Country	Disaster	Period	Assistance	
			Items	Quantity
Gorno Badakhshan Autonomous (GBAO) Tajikistan	Earthquake	January – March 2016	Tents	2100
			Winterized Kit for Tents	2100
			Blankets	12500
			Wheat	1280 MT
Sri Lanka	Flood	May-June 2016	Tents	730
			Tarpaulins	650
			Plastic Mats	500
			Aqua Tabs	120,000
			Generators	40
			Rain Shoes	500 Pairs
			Mosquito Repellent	1000 Bottles
			Rain Coats	1000

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INLAND TRAINING

Ser	Course	Dates	Participants
1.	Fundamentals of DRM	11 – 15 January 2016	79
2.	CCDRA & CSS (Lahore)	25 – 30 January 2016	35
3.	CCDRA & CSS (Quetta)	8 – 13 February 2016	39
4.	CCDRA & CSS (Karachi)	15 – 20 February 2016	31
5.	GOERE (Peshawar Division)	7 - 11 March 2016	33
6.	Role of Radio in DM	15 - 16 March 2016	60
7.	CCDRA & CSS (Peshawar)	28 March – 2 April 2016	34
8.	GOERE (D.G Khan Division)	11 - 15 April 2016	41
9.	GOERE (Naseerabad Division)	18 - 22 April 2016	37
10.	GOERE (Gilgit & Diamer-Astore Divisions)	16 - 18 May 2016	40
11.	GOERE (Muzaffarabad Division)	25 - 27 May 2016	48
12.	DRM	1 - 5 August 2016	40
13.	Community Preparedness for Reproductive Health and Gender (TOT)	19 - 21 September 2016	23
14.	GOERE (Sukkur Division)	27 - 29 September 2016	38
15.	GOERE(Mirpur Division)	17 - 19 October 2016	48
16.	Role of Media in DRM	21October 2016	58
17.	GOERE(Malakand Division)	26 - 28 October 2016	58
18.	GOERE(Skardu Division)	14 - 16 November 2016	38
19.	Role of Media in DRM	18 November 2016	44
20.	GOERE (Hazara Division)	14 – 16 December 2016	36
Total			860

NDMA Performance Report 2016 17th January 2017**FOREIGN TRAINING / VISITS**

Ser	Name	Dated		Appointment	Purpose	Duration	Country
		From	To				
1.	Major General Asghar Nawaz	25-2-16	26-2-16	Chairman	Invitation to the Asian Conference on Disaster Reduction 2016, ACDR 2016, Phuket, Thailand	2 days	Thailand
		15-3-16	18-3-16		SAARC Inter Summit SEDME Issue	3 days	Nepal
		20-5-16	24-5-16		World Humanitarian Summit	5 days	Turkey
		22-8-16	26-8-16		Senior Crisis Management Seminar from 22-26 August 2016 in Washington, DC	5 days	Washington, DC
		26-10-16	28-10-16		Experts Group Meeting (EGM) for ECO Regional Framework for Disaster Risk Reduction	03 Days	Tehran
		7/11/2016	18-11-16		22nd Session of Conference of the Parties to the United Nations Framework Convention on Climate Change	12 Days	Marrakech
		8/12/2016	9/12/2016		5th RTG - HOA in Kazakhstan	02 Days	Kazakhstan
2.	Mr Ahmed Kamal	20-5-16	24-5-16	Member (DRR)	World Humanitarian Summit	5 days	Turkey
		20-6-16	22-6-16		Invitation to the Second Meeting of the Advisory Working Group (20th Jun, 2016) and ISDR Asia Partnership (IAP) Meeting (21-22 June 2016), Bangkok, Thailand.	3 days	Thailand
		5 Sep 16	6 Sep 16		The 4th Forum of the Standing Committee on Finance (SCF) of the UNFCCC at the ADB Headquarters	2 days	Manila, Philippines
		03-11-16	10-11-16		12th International Session for Asia and Middle East of the Institute of Higher Studies of National Defence (France)	08 Days	Paris, France
		16-1-17	17-1-17		2 nd Workshop to Strengthen Scientific Advisory Capacities for Disaster Risk Reduction	02 Days	Taipei, Taiwan
3.	Brig Mukhtar Ahmed	10/10/2016	14-10-16	Member (Ops)	Work-shop on Natural Disaster Management under Disaster Management Confidence Building Measure (DM-	05 Days	Beijing, China

Ser	Name	Dated		Appointment	Purpose	Duration	Country
		From	To				
					CBM)		
4.	Mrs Raheela Saad	30-6-16	1/7/2016	Member (A&F)	ALNAP Coordination Meeting in London (UK)	2 days	London (UK)
		06-10-16	14-10-16		IDI-ASOSAI 3i Cooperative Audit Programme on Audit of Disaster Management: Request for Resource Person to Attend Audit Review Meeting	09 Days	Jakarta, Indonesia
		28-11-16	30-11-16		South Asia Peer Learning Regional Consultation on Disaster Preparedness for an Effective Response for Gender Equality and Women's Empowerment	03 Days	Kathmandu, Nepal
5.	Lt Col Khuda Bukhsh	13-3-16	14-3-16	Dir (Response)	Invitation for Crises and Emergency Management Conference (CEMC) 2016	2 days	Abu Dhabi, UAE
		3/5/2016	6/5/2016		Mid Term Review Meeting and Decision Makers Awareness Building on Nuclear and ISOTOPIC Techniques Involved in Post-Flood Management	4 Days	Vienna, Austria
6.	Mr. Waqar Ud Din Siddique, Director (P&IC)	14-11-16	18-11-16	Dir (P&IC)	3rd Session of the Open-Ended Inter-Government Expert Working Group on Terminology and Indicators Relating to Disaster Risk Reduction	05 Days	Geneva, Switzerland
7.	Mr Muhammad Zafar Iqbal	18-9-16	24-9-16	Dir (R&R)	Training Course on "Rapid Humanitarian Logistics Management" 18-24	7 days	Malaysia
		17-10-2016	22-10-2016		Training Course on Disaster Risk and Loss Assessment	06 days	Beijing, China
8.	Hafiz Shakeel Ahmed Qureshi	18-10-16	19-10-16	Dir (Admin)	1 st South Asia Regional Conference on the Management of the Dead: Policy Development and Implementation – Invitation for Pakistani Representatives	02 Days	Sri Lanka
9.	Safwan Ullah Khan	10/10/2016	14-10-16	Director (Finance)	Work-shop on Natural Disaster Management under Disaster Management Confidence Building Measure (DM-CBM)	05 Days	Beijing, China

Ser	Name	Dated		Appointment	Purpose	Duration	Country
		From	To				
10.	Lt Col (R) Raza Iqbal	20-5-16	24-5-16	Dir (Impl)	World Humanitarian Summit	5 days	Turkey
		26-10-16	28-10-16		Experts Group Meeting (EGM) for ECO Regional Framework for Disaster Risk Reduction	03 Days	Tehran
11.	Maj Tahir Islam	20-5-16	24-5-16	DD (Coord)	World Humanitarian Summit	5 days	Turkey
12.	Maj Amjad Ali	16-11-16	18-11-16	DD (Coord)	2nd Korea International Safety and Security Expo	03 days	Korea
13.	Maj Imran Rafique	30-3-16	19-4-16	DD (Response-I)	Training Course on Emergency Search and Rescue for Developing Countries in China from 30 Mar 16 to 19 Apr 16 (1-3 SLOTS)	20 Days	China
		20-5-16	24-5-16		World Humanitarian Summit	5 days	Turkey
14.	Lt Cdr Eusaf Viqar	26-4-2016	29-4-2016	DD (Response-II)	Post Disaster Needs Assessment Workshop for SAARC Countries Colombo, Sri Lanka, 26-29 April 2016	4 days	Colombo, Sri Lanka
15.	Mr. Muhammad Razi	26-4-2016	29-4-2016	DD (R&R)	Post Disaster Needs Assessment Workshop for SAARC Countries Colombo, Sri Lanka, 26-29 April 2016	4 days	Colombo, Sri Lanka
16.	Maj Azeem Zafar	20-5-16	24-5-16	SO to Chairman	World Humanitarian Summit	5 days	Turkey
17.	Syed Ayub Ali Shah	8/3/2016	9/3/2016	DD ICT	Workshop on Knowledge and Policy Gaps in Disaster Risk Reduction and Development Planning 8-9 March 2016, Bangkok	2 days	Bangkok, Thailand
		30-5-16	1/6/2016		Induction Capacity Workshop of Seismic Hazard and Risk Analysis	2 days	Tehran
		17-10-16	22/10/2016		Training Course on Disaster Risk and Loss Assessment	06 days	Beijing, China
		19-9-16	23-9-16		SRTM-2 Data and Disaster Resilience	05 Days	Nepal
18.	Mrs. Affaf Fiaz Rasul Malik	20-5-16	24-5-16	DD (Policy)	World Humanitarian Summit	5 days	Turkey
		28-11-16	30-11-16		South Asia Peer Learning Regional Consultation on Disaster Preparedness for an Effective Response for Gender Equality and Women's Empowerment	03 Days	Kathmandu, Nepal
19.	Mr. Tahir-ur-Din,	9/5/2016	13-5-16	AD (DRR)	International Workshop-Cum-Training Programme on "Disaster Risk Reduction and Climate Change Adaption" at	5 days	Kabwe, Zambia

Ser	Name	Dated		Appointment	Purpose	Duration	Country
		From	To				
					Mulungushi University, Kabwe, Zambia from 9-13 May 16		
20.	Ms. Amna Shuja	10/9/2016	26-9-16	AD (R&R)	UNESCO Chair Programme on Cultural Heritage and Risk Management, International Training Course (ITC) on Disaster Risk Management of Cultural Heritage 2016, 11th Year Ritsumeikan University	17 days	Kyoto, Kobe, Sasayama, Japan
21.	Mr. Abid Shahzad	30-3-16	19-4-16	PS to Chairman	Training Course on Emergency Search and Rescue for Developing Countries in China starting from 30 Mar 16 to 19 Apr 16 (1-3 SLOTS)	20 Days	China
22.	Mr. Liaqat Ali	26-9-16	30-9-16	DDO	SAARC Training Programme on Flood Management	5 days	India
23.	Mrs Tania Humayoun	20-5-16	24-5-16	PM GCC	World Humanitarian Summit	5 days	Turkey
		28-11-16	30-11-16		South Asia Peer Learning Regional Consultation on Disaster Preparedness for an Effective Response for Gender Equality and Women's Empowerment	03 Days	Kathmando, Nepal
		7/11/2016	18-11-16		22nd Session of Conference of the Parties to the United Nations Framework Convention on Climate Change	12 Days	Marrakech
24.	Ms Reema Zubari	20-5-16	24-5-16	Media	World Humanitarian Summit	5 days	Turkey

9.2 ZOOLOGICAL SURVEY OF PAKISTAN (ZSP)

Zoological Survey of Pakistan (ZSP) is mandated to monitor and document status, distribution and population dynamics of wildlife species across Pakistan. Besides these objectives, ZSP is also involved in maintaining zoological collections from different parts of the country, imparting education and raising awareness among masses for better conservation of wildlife and their habitats.

The specific objectives of Zoological Survey of Pakistan are as follows:

- To obtain information on distribution, population dynamics and status of animal life in the country.
- To set up and maintain standard zoological collections for references.
- To undertake research on the ecology and biology of wildlife populations in Pakistan.
- To advise Government on all zoological matters, including conservation, management and trade in wildlife.
- To impart training and create public awareness about wildlife conservation.

During the Financial Year 2015-16, ZSP has carried out following research and survey activities.

1. Baseline Surveys of Protected Areas

Machiara National Park, Azad Jammu & Kashmir (MNP)

The present investigation revealed that as many as 34 mammalian species and subspecies were recorded in Machiara National Park. They are represented in 31 genera, 16 families and 7 orders. Carnivores contributed to much of the mammalian diversity with 12 species (35.2%), followed by Rodents with 10 species (29.4%). Each of the Insectivores, Chiropterans and Lagomorphs was represented by 2 species (5.8%).

The Park is home to endangered mammals including snow leopard, epitomizing the character and concerns of the mountain environment. The Himalayan ibex, common leopard, Himalayan black bear, musk deer, goral, monkeys, flying squirrels and wild cats constitute the wildlife diversity of the area. The eco-region is also important as bird migration route. Flocks of subcontinent's migratory avifauna fly over this area from the north-east of the Himalayan barrier.

Current study may act as a cornerstone for future management of the National Park. The study also suggests to carry out comprehensive surveys to explore the vertebrate (mammals, birds and reptile) fauna of the Park in future.

Most of the species in this area are hunted for game and bush meat. However, introduction of more sustainable programmes such as trophy hunting and community-based conservation programmes will help better manage the wildlife resources of the park. Human intrusion in the habitats of many species has caused catastrophic effects on animal ecology and population dispersal. Species such as the Himalayan musk deer (*Moschus chrysogaster*) and the Himalayan goral (*Naemorhedus goral*) have rigorously declined in the Park. These animals, once commonly found in their former ranges, have now almost disappeared from the wild following the rapid growth of human settlements previously occupied by these wild mammals.

2. Studies on Endangered Animals

2.1: Status and Habitat Use of Blue Bull in Punjab

Blue Bull or *nilgai* belongs to the family Bovidae, which includes most of the domesticated animals around the world. Blue Bull was abundant and widespread in north-eastern Punjab i.e. areas of Districts Bahawalpur, Bahawalnagar, Kasur, Lahore, Sialkot and Gujranwala. In Sindh Province, it occurs in areas of Nagarparker, District Tharparkar.

Current preliminary survey reveals that the original habitat of the animal has greatly been reduced and altered in farmlands for agriculture. The animal has lost the suited habitat and is forced to survive in the captivity. Few isolated pockets in District Bahawalnagar, Bahawalpur and Kasur have small fragmented populations struggling for subsistence in places where once it occurred frequently. The species has now been declared as Endangered. The study is continued to explore the factors causing deterioration of species and habitats.

2.2: Punjab Urial, (*Ovis vignei punjabiensis*) in Salt Range, Punjab

Punjab Urial is the prime mammalian species, endemic to Pakistan and declared as Endangered globally, occurring in the scrub forests of Salt Range Punjab, Pakistan. The study carried out on the status and population dynamics reveals that the estimated population of Punjab urial at the core area (60 km²) of Chumbi Surla Wildlife Sanctuary was calculated as 135 numbers distributing at the rate of 2.3 individuals per km². The growth rate was documented extremely low because of intensive

pressure on the Sanctuary. Livestock is serious competitor of urial for food due to overlapping niches, which have generally been overgrazed, much beyond the carrying capacity levels. Thus the urial has been forced to occupy marginal habitat patches in the face of this competition.

Habitat of the Punjab urial is declining in area because of agriculture, urbanization, roads and other human developments. Lambs are captured at birth to keep as pets. They are a status symbol though their capturing is illegal. In addition, competition and transmission of diseases from livestock are major threats to their existence.

2.3: The Woolly Flying Squirrel (*Eupetaurus cinerius*) in Northern Pakistan

The Woolly Flying Squirrel (*Eupetaurus cinerius*) is one of the world's least known mammals. It is the largest squirrel in the world, has a unique tooth structure, and lives in high mountain cliff caves. It is extremely rare, appears to live in fragmented habitats within a very limited area, and may be endemic to Northern Pakistan, a region under heavy and increasing pressure from deforestation and overgrazing.

The present study carried out during 2015-16, reveals that the animal was located at two sites of Sai Valley and Jutal Valley in the District Gilgit, Gilgit-Baltistan. A nest of animal was found during our visit of Jutal Valley on 18 May 2015 in a rock cliff cave at about 3250m elevation (36- 02- 37.7N, 074- 20 33.2E). Examination of nest area suggests that the current habitat is quite different from those described by earlier studies. Around the cave, soil deposits were patchy and had some grasses. The main species of grass *Ephedra gerardiana* and Juniper trees (*Juniperus macropoda*) were scattered. Blue Pine (*Pinus wallichiana*), Chilghoza Pine (*Pinus gerardiana*), Himalayan Silver Fir and Himalayan Spruce (*Picea smithiana*) were absent around the habitat of the species.

This multi-year study plan will focus on collecting data on the range, distribution, ecology, and behavior of this unique mammal. The purpose of this study will be to generate a conservation management approach that will not only protect the woolly flying Squirrel but will also help to halt the destruction of its critically endangered habitat.

2.4: Impact of Fur Trade on populations of Fur-bearing Animals (Canidae) in Southern Punjab

During a study carried out in Cholistan, Southern Punjab it was found that the populations of canidae family have been critically declining assuming that the species of this group are widely

distributed in the country. The subspecies, Golden Jackal '*Canis aureus*' has become extremely rare throughout the Indus plains and it survives mainly in extensive desert regions such as Cholistan (Punjab). The Indian wolf and the red fox are also rarely found because of their extensive exploitation and retaliation killing. Keeping in view the essential ecological roles these species perform, the public should be educated and refrained from killing them.

2.5: Study of Marbled Teal (*Marmaronetta angustirostris*)

The Marbled Teal (*Marmaronetta angustirostris*) has suffered a long term decline and now considered one of the globally threatened water bird species. The estimated global population of the species is around 5000 individuals. The species has been reported to breed at few isolated remote wetlands of Sindh, Balochistan and Punjab. It can be observed at different wetlands of Pakistan during non breeding period or in migratory season i.e. January.

The objective of study was to assess the population size, breeding behavior, habitat suitability and potential threats to species and its habitat. This study also suggests measures for conservation and management of species in Sindh especially in Deh Akro wetland Complex, District Shaheed Benazirabad. Deh Akro wetland complex and adjacent areas are regarded as one of the most important wintering and breeding ground of Marbled Teal.

During the survey, it was observed that the species breeds at different wetlands of Deh-Akro wetland complex. This species was previously reported from Nara and Chotiari Dam reservoirs but was not observed during the current surveys. According to locals the species visited the wetlands a few years ago in good numbers but has not been observed for last few years.

3: Annual Mid-Winter Waterfowl Census

The mid-winter waterfowl census is a coordinated international scheme for the collection and dissemination of knowledge on wetland birds and their habitat. This activity is conducted globally since 1970's and had been coordinated by International Waterfowl Research Bureau and Asian Wetlands Bureau, results of which are being published since 1987. Presently an internationally renowned body known as Wetlands International is coordinating these activities throughout the world. This organization is direly working on waterfowl census since 2007.

The main objective of these surveys is to monitor waterfowl population annually and also study the trends of their population at various wetlands during migratory season i.e. winter (non-breeding). In addition, it generates report on prevailing condition of wetlands, create awareness and interest

among local communities about migratory water birds and wetlands, thereby promoting their conservation.

During the year 2015-16 survey, the wetlands such as Chashma, Jinnah Barrages, Namal, Ucchali, Khabbeki, Jhalar and Kalarkahar lakes were surveyed in Punjab while, Keenjhar, Haleji, Hudero, Manchar, Dirgh, Lunggh and Hammal Lakes of Sindh and Kabul River, Khanpur and Tarbella Dams of Khyber Pakhtunkhwa were also surveyed.

4. Publications

The department is regularly publishing scientific Journal “Records Zoological Survey of Pakistan” along with Brochures and Charts. During 2015-16 following journals, reports and brochures were published.

1. Records Zoological Survey of Pakistan Vol.23
2. Records Zoological Survey of Pakistan Vol.24 (in pipeline)

9.3 GLOBAL CHANGE IMPACT STUDIES CENTRE (GCISC) (A Body Corporate under Ministry of Climate Change)

a) Climate Change: Background and Current Status:

Climate change is one of the defining challenges of today. Scientific evidence proclaims with certainty that climate system is warming as is evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, rising global mean sea level and frequent occurrence of climatic extremes and that the humans are responsible for this change. Pakistan due to its geographic location and poor resource base is amongst the countries which are most vulnerable to the vagaries of climate. According to the independent international assessments, e.g., German Watch, Pakistan is ranked as the 7th most vulnerable country to climate change, based on its analysis of last twenty years' data. The back to back floods since 2010, worst drought at country level during 1999-2003, the recent drought in Tharparker and Cholistan, the intense heat wave in Karachi in July 2015, severe wind storm in Islamabad in June 2016, increased cyclonic activity and increased incidences of landslides in Northern Pakistan bear a testimony to the havocs of climate change.

b) GCISC History

Global Change Impact Studies Centre (GCISC) was established as a dedicated research Centre on Climate Change in April 2002 and remained under different Ministries / Organizations as PSDP Project of Planning Commission. Consequently, GCISC was granted the status of a regular national entity by passage of "GCISC Act 2013" by the Parliament and after consent by the President of Pakistan on 22 March 2013 notified vide Gazette of Pakistan on 26 March 2013 as Act No. XVII of 2013. In accordance with the Act, the Centre is a body corporate with the powers and functions as given in the Act. GCISC is functioning under Ministry of Climate Change, Government of Pakistan as its research arm. The Prime Minister of Pakistan approved the constitution of the Board of Governors (BoG) of Global Change Impact Studies Centre on November 06, 2013.

c) GCISC Mission Statement

To undertake scientific investigations of the phenomenon of climate change at regional and sub-regional levels and study its impact on various sectors of socio-economic development in order to prepare the country to meet threats to its water resources, agriculture, ecology, energy, health, bio-diversity etc.

d) Main Functions of GCISC

- **Research:** on climate change profiles of Pakistan, CC impact assessment in different socio-economic sectors and identification of appropriate adaptation/mitigation strategies.
- **Capacity building:** of young scientists of GCISC and the relevant national research organizations in climate change research.
- **Dissemination of research findings:** to scientific community, planners, policymakers and raising public awareness of climate change concerns.

e) Research Sections in GCISC:

As per mandate, the Centre is actively pursuing its Research Activities in the areas of climatology, Water Resources and Agriculture through use of simulation modeling techniques.

- *Climatology & Environment* (Climate System Modeling, GHG Mitigation)
- *Water Resources & Glaciology* (Glaciology, Watershed Modeling)
- *Agriculture, Forestry & Land Use* (Crop Simulation Modeling, Forestry, Land Use)

f) Ongoing Research Activities of GCISC:

I. Climatology Section

- Assessment of past climate changes in various parts of Pakistan using statistical analysis techniques;
- Projection of future climate changes in Pakistan based on: (a) Ensemble of projections using the outputs of various Global Circulation Models (GCMs) (b) Statistical and dynamical downscaling using regional climate models (RCMs).
- Development of indicators and indices for extreme climate events in the South-Asia region; Development of methodological tools for projecting future frequency & intensity patterns of extreme events;
- Development of seasonal, inter-annual and decadal climate predictability systems; Predictability of Asian Summer Monsoon rains.
- Updating of GHG Inventory of Pakistan using latest IPCC guidelines.
- Analysis of alternative Energy Sector Strategies for Pakistan in relation to GHG and other pollutant emissions using Pakistan's Integrated Energy Planning Model and IIASA's GAINS-Asia Model.

II. Water Resources Section

- Quantitative assessment of past temporal changes in the dimensions of HKH glaciers using advanced Remote Sensing (RS) and GIS techniques;
- Monitoring of snow cover and glacier behavior in the HKH region; using RS/GIS techniques;
- Assessment of the impacts of projected climate change on water flows in the main rivers of Pakistan using different Watershed Simulation Models;
- Study of the impacts of climate change, in particular of sea level rise, on the coastal areas of Pakistan;
- Adaptation measures to cope with (a) the flood and drought situations, (b) the intrusion of sea water in the coastal areas of Pakistan.

III. Agriculture Section

- Assessment of the impacts of projected climate change on productivity of various agricultural crops in different climatic zones of the country using crop growth simulation models;
- Study of climate change impacts on land degradation and deforestation;
- Study of insect-pest infestation dynamics in the wake of climate change;
- Food security in the wake of climate change and reduced availability of irrigation water;
- Assessment of climate change impacts on Livestock;
- Adaptation measures to counter negative impacts of climate change on Agriculture, Livestock and Forestry.

g) Achievements and Progress of GCISC:

Publications:

International / National Papers: 7

1. Amir. M, Muhammad Arif Gohar and Muhammad Nasim (2015) Distribution and Indexation of Plant Available nutrients of Soils in the District Bahawalpur, Pakistan.

Journal of Biology, Agriculture and Healthcare. ISSN 2224-3208 (Paper) ISSN 2225-093X (Online) Vol.5, No.21, 23-30.

2. Aamer, M. and Aftab Khan (2015) Evaluation of Ground Water Quality for Irrigation Purpose of the Areas of District Bahawalnagar, Pakistan. Journal of Natural Sciences Research www.iiste.org ISSN 2224-3186 (Paper) ISSN 2225-0921 (Online) Vol.5, No.19, 23-26.
3. Adnan, M., N. Rehman, S. Ali, S. Mehmood, K.A. Mir, A.A. Khan and B. Khalid (2015) Prediction of Pakistan Summer Rainfall from Global SST and SLP. International Journal of Weather, Manuscript ID: WEA-16-0039 (Accepted)
4. Aamer, M., Aftab Khan and Sobia Khan (2015) Assessment and Characterization of Irrigation Quality of Ground Water in Bahawalpur District, Pakistan. Developing Country Studies www.iiste.org ISSN 2224-607X (Paper) ISSN 2225-0565 (Online) Vol.5, No.20,39-42.
5. Kamran, A., M. A. Goheer, K. Saifullah and S. Amir. 2016. Pak-India Cooperation for harnessing benefits of Transboundary water in Indus basin. A policy brief prepared under Cohort-18 on transboundary Water cooperation and published by LEAD-Pakistan.
6. Kashif Majeed Salik, Muhammad Zia-ur-Rahman Hashmi, Waheed-ul-Zafar Zahdi and Sadia Ishfaq (2016). Book Chapter in: Pathways to Sustainable Development, Edition: 2016, Chapter: Ecological Assessment of the Indus Delta in Pakistan: A Desktop Analysis of Environmental Flow Requirements, Publisher: Sang-e-Meel Publications, Editors: Imrana Niazi, Sarah S. Aneel, Uzma T. Haroon, pp.133-150.
7. Kashif Majeed Salik, Muhammad Zia-ur-Rahman Hashmi, Sadia Ishfaq, Waheed-ul-Zafar Zahdi, 'Environmental flow requirements and impacts of climate change-induced river flow changes on ecology of the Indus Delta, Pakistan', Regional Studies in Marine Science, Volume 7, September 2016, Pages 185-195, ISSN 2352-4855, <http://dx.doi.org/10.1016/j.rsma.2016.06.008>.

Research Reports: 6

1. Qurat ul Ain Ahmad, Muhammad Zia ur Rahman Hashmi, Muhammad Arif Goheer (2015). Technical Report of APN Project “Runoff Scenarios and Water Based Adaptation Strategies in South Asia” (ARCP2013-20NMY-Shrestha) submitted to APN.
2. Dr. Qamar uz Zaman Chaudhry, Dr. Ghulam Rasul, Mr. Ahmad Kamal, Mr. Munir Ahmad Mangrio, Mr. Shahbaz Mahmood, “Severe Heat wave over Southern parts of Pakistan

focusing Karachi in June 2015”, launched by honorable Minister for Climate Change, Govt. of Pakistan – 2015.

3. Muhammad Adnan, Nadia Rehman, Javeria Ashraf, M. Munir Sheikh and Arshad M. Khan, (2015), “Seasonal Predictability of Monsoon Rains in Pakistan”, GCISC RR-18 (Interim), Islamabad, Pakistan.
4. Kaleem Anwar Mir, Muhammad Ijaz, (2016) “Greenhouse Gas Emission Inventory of Pakistan for the Year 2011-2012”.
5. Goheer, M.A., (2016) One of the Lead Authors for: GEO6 Asia Pacific Regional Assessment. Chapter on Land.
6. Hashmi MZ, (2016) One of the Lead Authors for: GEO6 Asia Pacific Regional Assessment. Chapter on Freshwater.

Presentation in Workshops/ Seminars/ Conferences/ Symposia and Invited Lectures etc.

International: 17

1. Muhammad Amjad (2015), A contribution paper entitled “Energy Situation in Pakistan” for the “2015 Wind Power Generation for Developing Countries” from 14 August – 8 October 2015, Lanzhou, organized by the government of People’s Republic of China.
2. Muhammad Arif Goheer delivered a Lecture on Climate Change Threats to Agriculture in Pakistan: Impacts and Adaptation Prospects in a Seminar on Climate Change: Issues, Challenges and opportunities for Landless farmers and Peasants of Sind organized by Sindh Agriculture University Tandojam and International Labor Organization, Sep 09, 2015.
3. Zia -ur-rahman Hashmi presented on International Glacier Lake Outburst Flood (GLOF) Conference: "GLOFs-Learning and Way Forward" held on 14th to 15th October 2015 at Marriott hotel, Islamabad
4. Muhammad Arif Goheer presented on Ensuring Food Security under Climate Change: A Simulation Modeling Perspective, in APN Regional Inception Workshop under APN Project “Climate Smart Agriculture through Sustainable Water Use Management: Exploring New Approaches and Devising Strategies for Climate Change Adaptation in South Asia” 10-12 November 2015, Hotel Best Western Islamabad.
5. Muhammad Arif Goheer moderated session on “Developing Common Research Framework for Project Studies” in Regional Inception Workshop under APN Project “Climate Smart Agriculture through Sustainable Water Use Management: Exploring New Approaches and Devising Strategies for Climate Change Adaptation in South Asia” 10-12 November 2015, Hotel Best Western Islamabad.

6. Muhammad Arif Goheer moderated session on “Research Problems/ Limitations and Way Forward” in Regional Inception Workshop under APN Project “Climate Smart Agriculture through Sustainable Water Use Management: Exploring New Approaches and Devising Strategies for Climate Change Adaptation in South Asia” 10-12 November 2015, Hotel Best Western Islamabad.
7. N. Rehman and M. Adnan “Seasonal Prediction of Summer Rains over Monsoon Region of Pakistan” in the Advanced School and Workshop on Sub-seasonal to Seasonal (S2S) Prediction and Application to Drought Prediction, 23 November–04 December 2015, ICTP, Trieste, Italy.
8. Nadia Rehman, Case Study-Forecast Analysis of Heat Wave Event of Southern Pakistan by Using ECMWF-S2S Data Portal, Advanced School and Workshop on Sub-seasonal to Seasonal (S2S) Prediction and Application to Drought Prediction, 23 November–04 December 2015, ICTP, Trieste, Italy.
9. Zafar, Q (2015) Downscaling of Regional Climate Data derived from Statistical Downscaling Techniques over Pakistan, Busan, South Korea, Dec12, 2015.
10. Shaukat Ali, Shahbaz Mehmood and Muhammad Arif Goheer. 2016. Presented a Poster on “CORDEX data application for mountainous regions” Stockhom, Sweden at 17th-20th May 2016.
11. Shahbaz Mehmood, Nadia Rehman, Dr. Shaukat Ali, “Climate Change: Projecting the Future Climate for Impact Assessment Studies”, Regional inception workshop under APN project “Climate smart agriculture through sustainable water use management: Exploring new approaches and devising strategies for climate change adaptation in South Asia” (Ref: CAF2014-RR12-NMY-Shaheen), 10-12 November, 2015, Islamabad, Pakistan.
12. Shaukat Ali, Shahbaz Mehmood, Nadia Rehman, “Twenty first century climatic and hydrological changes over North Pakistan”, Regional inception workshop under APN project “Climate smart agriculture through sustainable water use management: Exploring new approaches and devising strategies for climate change adaptation in South Asia” (Ref: CAF2014-RR12-NMY-Shaheen), 10-12 November, 2015, Islamabad, Pakistan.
13. Zia-ur-Rahman Hashmi delivered a presentation on” Climate Change Threat to Pakistan’s Water Resources and Impact modeling needs” at Regional inception workshop under APN project “Climate smart agriculture through sustainable water use management: Exploring new approaches and devising strategies for climate change adaptation in South Asia” (Ref: CAF2014-RR12-NMY-Shaheen), 10-12 November, 2015, Islamabad, Pakistan.

14. "APN Project overview and progress" presented by Nuzba Shaheen at Regional Training Workshop "Use of Statistical downscaling and AquaCrop Simulation Modeling Tools for Climate Change Impact Studies" under APN Project (CAF2015-RR12-NMY-Shaheen), 30-04 June 2016, Kandy, Sri Lanka.
15. Nuzba shaheen presented on "Generation of Weather Data using Stochastic Weather Generator for Upper Indus Basin of Pakistan" presented at APCC Training program, December 11, 2015 Busan, Korea
16. Nuzba Shaheen presented on "Project Plan and Research Framework" presented at Regional Inception Workshop under APN Project (CAF2015-RR12-NMY-Shaheen), 11 November, 2015, Islamabad, Pakistan.
17. Nuzba Shaheen presented Project Overview "Climate Smart Agriculture through sustainable water use management" presented at Regional Inception workshop under APN Project (CAF2015-RR12-NMY-Shaheen), 10 November, 2015, Islamabad, Pakistan.

National: 23

1. Muhammad Arif Goheer delivered a Talk on "UNFCCC Guidelines for Preparing National Communications", Inception Workshop of 2nd National Communication (SNC), May 11, 2016, Islamabad, Pakistan
2. Muhammad Arif Goheer delivered a presentation to Honorable Ministry of Climate Change on Negotiating Text, November 17, 2015.
3. Muhammad Arif Goheer delivered a talk on "Overview of INDC's submitted to UNFCCC and Pakistan's stance" to the Secretary, Ministry of Climate Change on 07 Oct. 2015
4. Muhammad Arif Goheer presented on Climate Change and Agriculture: Context and Challenges in 3-day Workshop on Climate Risk Management jointly organized by National Institute of Disaster Management and Global Change Impact Studies Centre (GCISC), 27-29 October 2015, Islamabad.
5. Muhammad Arif Goheer delivered a talk on Impact of Climate Change on Agriculture and Food Security during Dr. Tariq Banuri Visit to GCISC on January 1st, 2016
6. Zia -ur-Rahman Hashmi delivered a talk on impact of climate change on water resources of Pakistan during Dr. Tariq Banuri Visit to GCISC on January 1st, 2016
7. Shahbaz Mehmood delivered a talk on Recent Climate Changes in Pakistan during Dr. Tariq Banuri Visit to GCISC on January 1st, 2016.

8. Muhammad Ijaz delivered a presentation on "Responses to Climate Change: Adaptation and Mitigation" December, 2015, NCRD, Islamabad.
9. Muhammad Ijaz delivered a presentation on "Greenhouse Gas (GHG) Emission Inventory of Pakistan for the Year 2011-12", 28 August, 2015, FAO, Islamabad.
10. Zia-ur-Rahman Hashmi delivered a presentation in NIDM Training on Climate Change Management, 27-29 October 2015 at NIDM premises, Islamabad
11. Zia-ur-Rahman Hashmi delivered a presentation in NCRD Training Course on 'Climate Change: Implications and Adaptations', 17 Dec, 2015
12. Shahbaz Mehmood, Invited Lecture; "Science of Climate Change; an Overview" Training Course on Climate Change: Implications & Adaptations 14 – 18 December 2015, NCRD, Islamabad.
13. Muhammad Arif Goheer and Muhammad Mohsin Iqbal. Presentation on "From Sustainable production to sustainable consumption: Climate change challenges to Food Security in Pakistan" on World Environment Day-2015 on the theme of "Seven Billion Dreams. One Planet. Consume with Care", 6th June, 2015, organized by Pakistan Engineering Congress at Lahore.
14. Shahbaz Mehmood, Invited Lecture; "Pakistan's Major CC - Related Concerns & Vulnerabilities" Training Course on Climate Change: Implications & Adaptations 14 – 18 December 2015, NCRD, Islamabad.
15. Shahbaz Mehmood, Invited Lecture; "Science of Climate Change; Simulating the future" NIDM Training on Climate Change Management 27 – 29 October 2015, Islamabad
16. Kaleem Anwar Mir, Muhammad Ijaz: "Greenhouse Gas Emission Inventory of Pakistan for the Year 2011-2012", 25 August 2015, FAO, Islamabad.
17. Shaukat Ali, Delivered a seminar at COMSATs Islamabad on April 12, 2016 titled "Future Earth and CORDEX applications for Asia".
18. Shaukat Ali delivered a presentation at Conference on Challenges in Water Security to meet the growing Food requirement organized by AASSA (Association of Academies and Societies of Sciences in Asia and PAS (Pakistan Academy of Sciences)
19. Shaukat Ali delivered a seminar at GCISC, NCP Complex, near Quaid-e-Azam University campus, Shahdara road, Islamabad February 15, 2016 with titled "Introduction and Research Activities of Regional Climate Modeling in Asia".
20. Syed Mehmood Nasir delivered a presentation on Forests and snow leopards at COP-21 and Paris Agreement in Training Workshop for Journalists Series Post CoP21, Fourth

Workshop on “What does Paris Agreement mean for Pakistan” organized by Heinrich Boll Foundation on 22 December 2016 in Islamabad.

21. Muhammad Arif Goheer delivered a talk on Paris Agreement and aspects of Adaptation and Agriculture in Training Workshop for Journalists Series Post CoP21, Fourth Workshop on “What does Paris Agreement mean for Pakistan” organized by Heinrich Boll Foundation on 22 December 2016 in Islamabad.
22. Syed Mehmood Nasir delivered a presentation on “Wetlands Management” in 4th Learning Session on “Hydro-Diplomacy and Negotiation for Shared Waters” under Cohort-18 of the Transboundary Water Management held in Islamabad from 24th to 28th Aug 2015.
23. Muhammad Arif Goheer delivered a presentation on ‘Negotiations and Agreements between Ganges River Basin Riparian’s in 4th Learning Session on “Hydro-Diplomacy and Negotiation for Shared Waters” under Cohort-18 of the Transboundary Water Management held in Islamabad from 24th to 28th Aug 2015.

Participation in International/ National Workshops/ Seminars/ Conferences/ Symposia etc.

International : 16

National : 61

Books, Monographs and published proceedings of important Conferences and Workshops

- i). Qurat ul Ain Ahmad, Muhammad Zia-ur-Rahman Hashmi, Muhammad Arif Goheer (2015). Proceedings of the Regional Training Workshop on “The Application of University of British Columbia (UBC) Watershed Model for Hydrological Studies”. APN Project “Runoff Scenarios and Water Based Adaptation Strategies in South Asia” (ARCP2013-20NMY-Shrestha).
- ii). Nuzba Shaheen and Muhammad Arif Goheer (2016). Proceedings of the Regional Inception Workshop organized under APN Project on “Climate Smart Agriculture through sustainable water use management” (CAF2015-RR12-NMY-Shaheen), 10-12 November, 2015, Islamabad, Pakistan.

Organization of Scientific Activities by GCISC

- i). Organized a 3-day Workshop on Climate Risk Management in collaboration with National Institute of Disaster Management and Global Change Impact Studies Centre (GCISC), 27-29 October 2015, Islamabad
- ii). Regional Inception Workshop under APN Project on “Climate Smart Agriculture through sustainable water use management” presented at Regional Inception workshop under APN Project (CAF2015-RR12-NMY-Shaheen), 10 November, 2015, Islamabad, Pakistan.
- iii). Organized lecture of Prof. Dr. Tariq Banuri, Eminent Educationist and Scientist, Utah University, USA at GCISC on 01 January 2016.
- iv). Organized Regional training workshop “Use of Statistical downscaling and Aqua Crop Simulation Modeling Tools for Climate Change Impact Studies under APN Project (CAF2015-RR12-NMY-Shaheen)” 30- 04 June 2016, Kandy, Sri Lanka.

Contributions to Research Projects

- a. UNEP Project on Preparation of Intended Nationally Determined Contributions (INDC) to the 2015 Agreement under the United Nations Framework Convention on Climate Change (GFL-5070-2724-4F36-2207)
- b. APN Project on Climate Smart Agriculture through Sustainable Water Use Management: Exploring New Approaches and Devising Strategies for Climate Change Adaptation in South Asia.
- c. APN Project on “Assessing Spatio-temporal Vulnerabilities of NPP (Net Primary Productivity) and NEP (Net Ecosystems Productivity) of Grassland Ecosystems in response to Climate Change
- d. APN project on “Runoff Scenarios and Water Based Adaptation Strategies in South Asia” (ARCP2013-20NMY-Shrestha).

Mass Awareness / Media Appearance

- i. Muhammad Arif Goheer appeared in Radio Pakistan Live Programme “Raabta” from 1005 to 1100 hrs on April 13, 2016.
- ii. Muhammad Arif Goheer appeared in a Radio Pakistan programme on “Mahool Zindgi Hai” from 1515 to 1600 hrs on April 18, 2016.

Contributions to International/ National Efforts (IPCC, GEO & Other Reports)

1. GCISC scientists are contributing to Pakistan’s Second National Communication (SNC) to be submitted to UNFCCC.
2. Five GCISC Scientists contributed to various chapters of UNEP Global Environment Outlook (GEO-6) Asia and Pacific Component.
3. One Scientist (Mr. Muhammad Arif Goheer) participated in COP-21 to United Nations Framework Convention on Climate Change, Paris, France as Government of Pakistan Delegate from 30 November to 12 December 2015
4. One Scientist (Mr. Muhammad Amjad) participated as Fellow in LEAD –Pakistan Fellowship Programme on ‘Urban Resilience and Sustainable Cities’
5. One Scientist (Dr. Shaukat Ali) participated in Young Scientist Summer Program of APEC Climate Centre in Busan Korea for a period of three months.

h) Others

General Administrative/ Technical Functioning

- Observations raised and amendments proposed by Establishment Division in the Draft GCISC Employees Service Rules were addressed and revised draft resubmitted.
- Different Government / Private buildings in Islamabad were visited and cases were prepared in this regard to house GCISC Offices and Laboratories on rental basis in a suitable building. GCISC succeeded in its efforts and was able to arrange accommodation at 6th floor of Emigration Tower, G-8/1, Islamabad.

- Advertisement for the various posts for Recruitment of Technical / Administrative Staff including key posts i.e. Head of the Organization (Executive Director, GCISC) and Heads of Technical Sections were published after completion of all codal formalities of Establishment Division. The recruitment activities are in process.
- Procurement of IT Equipment, after completion of all codal formalities bids were opened, awarded contracts to successful bidders and equipment received / inspected and installed.
- Provision of Scientific assistance to Ministry of Climate Change and other Government Departments regarding Climate Change assessment impacts.
- Various in-house seminars and trainings events were successfully organized and the capacity of the scientists was built.
- Replies to Ministry of Climate Change on National Assembly/Senate's Starred / Un-starred Questions and Motions and response to other queries and concerns raised by MOCC and other institutions.

Pakistan Environmental Protection Agency has been created under Pakistan Environmental Protection Act 1997 and is mandated for the protection, conservation, rehabilitation and improvement of environment, prevention and control of pollution, promotion of sustainable development and for matters connected therewith and incidental thereto. Pakistan is continuously facing the challenge of achieving environmentally sustainable development. This has become difficult to achieve in the backdrop of domestic and international pressure compounded with internal law and order situation. While remaining mindful of the challenges of environmental compliance primarily in areas of municipal and industrial pollution Pak-EPA has strived to bring improvement. After 18th constitutional amendment the subject of environment have been devolved to the provinces. Pak-EPA is looking after the matters of environmental pollution in Islamabad Capital Territory (ICT).

The following major activities have been undertaken by different directorates of Pak-EPA.

1. Directorate of Lab/NEQS

- Surprise visits to hospitals and private health facilities have been conducted to assess the status of compliance of Hospital Waste Management Rules 2005 by their managements and working of incinerators where installed.
- Environmental Monitoring Team conducted site visits to nine (09) housing/building projects and prepared reports for review process of consideration of grant of environmental approvals of IEE/EIA reports.
- Guidance and supervision was provided to a number of students for carrying out research and analysis to assess various environmental issues. Five students of Fatima Jinnah University were engaged to study the water quality of 32 filtration plants installed by CDA. Bahria University students were involved to sample and analyze waste water quality of different nullahs/streams in Islamabad. Students from International Islamic University were assisted in collection and analysis of 68 nos. samples of bore water alongside nullah lei, sectors I/9, I/10 and commercial areas of the city.
- Facility assessment visits of two Environmental Laboratories were conducted to process their cases of certification.

- Central Laboratory for Environmental Analysis and Networking (CLEAN) is being operationalised.

2. Directorate of Legal/Enforcement

- 15 Environmental Protection Orders (EPO) issued to different polluters including CDA, ICT, Developers and industrial units under section 16 (2) of Pakistan Environmental Protection Act, 1997.
- 48 legal notices issued to the offenders / polluters /violators of Pakistan Environmental Protection Act, 1997.
- Personal Hearing of the polluters / violators conducted in 45 cases.
- 05 Environmental cases filed in the Environmental Protection Tribunal (EPT), Islamabad.
- First Appeal against Order (FAO) filed in the High Courts against order of the Environmental Protection Tribunal (EPT).
- M/S Metro Cash & Carry, Islamabad and M/S Fortune Lakeview Residencia, Islamabad have been penalized through EPT by Pak-EPA equivalent to Rs. 250,000/-.
- Warning issued to PIMS through EPT for non-compliance of Hospital Waste Management Rules and non installation of incinerator.
- 05 draft legislation of other organizations and were reviewed by Pak-EPA.
- Drafts of Motor Vehicle Rules and Hazardous Substances prepared and placed on the website of Pak-EPA.

3. Directorate of Environmental Impact Assessment (EIA/IEE).

- **During the period 2015-16, seven (07) Initial Environmental Examination (IEE) Reports have been received for review at this Agency, two (02) have been granted environmental approval and, five (05) cases are under process.**
- During the same period, ten (10) EIA Reports have been received in the Agency, three (03) have been granted environmental approval and, seven (07) cases are under process.
- **A total of 216 nos. PC-Is have been reviewed from environmental point of view and comments furnished to the Ministry of Climate Change, Islamabad.**
- **Seven (07) Monitoring visits have been carried out.**

- Seven (07) Public Hearings have been conducted for EIA approval process.

4. Establishment of Geomatic Centre for Climate Change and Sustainable Project

- Operationalizing of Geomatic Centre and establishment of well-equipped center of geo spatial technologies for environmental monitoring in Pakistan.
- Hiring of employees in project after proper test and interview.
- Operationalize GIS/RS Lab or Geo spatial technologies for environment monitoring in Pakistan.
- Performed tasks related to GIS, mapping, Environmental monitoring, and satellite data collection, establishment of inventories and mapping of hazards.
- Updating of different maps of land use and cover.
- Draft Annual State of Environment Report for year 2015-2016 has been completed.
- National Biosafety Center in Pakistan Environmental Protection Agency (Pak-EPA) has been operationalized and biosafety permits are being processed.

9.5 PAKISTAN ENVIRONMENTAL PLANNING AND ARCHITECTURAL CONSULTANTS (PEPAC)

Pakistan Environmental Planning and Architectural Consultant Limited (PEPAC) were incorporated in 1974 to provide town planning and architectural consultancy services for projects initiated by the Government, Semi Government and autonomous bodies. The company is managed by a Board comprising 16 Directors including the Chairman, all nominated by the Government. The authorized capital of the company is Rs.2.50 million, divided into 250,000 share of Rs.10 each). The paid up capital of the company, which is wholly owned by the Federal Government is Rs.1.10 million.

The main objectives of the PEPAC are:-

- To develop a public sector pool of professional expertise charged with the responsibility to conceive, plan and realize a comprehensive and well– balanced development of the physical environment relating to different categories of regional planning, land use planning and urban and rural planning etc.
- To create an organization in the public sector for carrying out Research Activities in the field of environment planning and in all Development of Architectural Designing.
- To develop adequate trained manpower in all field of Professional Activities i.e. Development Planning, Regional Planning Development Economics, Landscaping and Landscape Architecture, Environmental Planning, Engineering and Industrial Design, Ecological Sciences, Natural Sciences, Quality Surveying, and Management Science. The idea is that a coordinated, inter–related and multi-disciplinary manpower resources pool is generated and kept well supplied.

Activities / Achievements

Projects in Hand during the Financial Year 2015 – 2016

ARCHITECTURAL & ENGINEERING PROJECTS

Sr.#	PROJECT'S NAME
1.	Construction of Commerce College near GPI at Karrak Client: C&W KPK
2.	Reconstruction of Tehsil Level Govt. Complex in Kabal District Swat. Client: C&W KPK
3.	Establishment of Sports Stadium at Swabi Client: C&W KPK
4.	Construction of Dormitories for Support Staff at Khyber Pakhtunkhwa House Islamabad. Client: C&W KPK
5.	Establishment of Government Degree College at Khanpur, District Haripur. Client: C&W KPK
6.	District Headquarter Hospital at Tarlai, Islamabad. Client:- PWD, Government of Pakistan
7.	Construction of Judicial Complex, Haripur Client: C&W KPK
8.	Designing of Secretariat Mosque at Islamabad 9. Client: CDA & Planning Commission Islamabad

10.	Construction of FATA House, Islamabad. Client: Chief Engineer, Works & Services Department, FATA Peshawar
11.	Establishment of Gilgit-Baltistan Council Secretariat at Islamabad Client:- Govt. of Gilgit Baltistan
12.	Establishment of 100 Cardiac Hospital at Gilgit Client:- Department of Health Services, Govt. of Gilgit-Baltistan, Gilgit Brief Report
13.	Study of Slums in Urban Areas of Khyber Pakhtunkhwa (Abbottabad, Mansehra, Mardan, Nowshera and D.I. Khan) Client:- Urban Policy Unit, Govt. of Khyber Pakhtunkhwa, Peshawar
14.	Establishment of 100 bedded Cardiac Centre at Quetta, Balochistan. Client: C&W Punjab
15.	Construction of Public Park at Topi District Swabi. Client: C&W KPK
16.	Construction of Govt. Degree College at Pezu. District Lakki Marwat. Client: C&W KPK
17.	Master Plan and allied services of Sector-P DHA Islamabad/Rawalpindi (Phase-II) Client:
18.	Feasibility Study for Identification of Potential Areas for Promotion of Tourism in Punjab (TDCP Lahore) Client: TDCP
19.	Up-gradation of Shaheed Israrullah Khan Gandapur Memorial Hospital to Cat-D at Kulachi. Client: C&W KPK

20.	Govt. Degree College Allai Battagram Client: C&W KPK
21.	Govt. Officers Residence at Race Course Garden and Old Pavilion at Qayyum Stadium Peshawar. Client: C&W KPK
22.	Population Welfare Department & Provincial Revenue Academy at District Peshawar. Client: C&W KPK
23.	Design Consultancy Services for School Construction and Rehabilitation Program (SCRIP) HAMQADAM, Islamabad. Client:
24.	Khyber Institute of Child Health and Children Hospital at Hayatabad, Peshawar. Client:- Government of KPK
25.	Construction Supervision of University of Swat Client: - University of Swat
26.	Establishment of Govt. Boys Degree College, Mingora–Swat Client:- Communication & Works Division, KPK
27.	Establishment of Workers Welfare Complex at District Kasur (3000 Residential Units, Community Centre, Hospital and School) Client:- Punjab Workers Welfare Board
28.	Strengthening of King Edward Medical University, Lahore Client:- King Edward Medical University, Government of Punjab

29.	Pre-Feasibility/Feasibility report for the establishment of Medical College and 300 Bedded Hospital at Gilgit Baltistan Client:- Directorate of Health Service, Government of Gilgit- Baltistan
30.	Urban Related Laws Assessment and Institutional Strengthening. Client:- Urban Policy Unit, Govt. of Khyber Pakhtunkhwa, Peshawar
31.	IDB Projects Client: Islamic Development Bank.
32.	Education Employees Foundation PESHAWAR Client: Education Department KPK

ABBREVIATIONS

(NCCP)	National Climate Change Policy
(GHG)	Global Greenhouse Gas
(MEAs)	Multilateral Environmental Agreements
(UNFCCC)	United Nations Framework Convention on Climate change
(SACEP)	South Asian Cooperation for Environmental Programme
(SAARC)	South Asian Association of Regional Conference
(UNEP)	United Nations Environment Programme
(UNICEF)	United Nations International Children Emergency Fund
(UNCSD)	United Nations Commission on Sustainable Development
(GLOBE)	Global Learning and Observations to Benefit the Environment
(MDGs)	Millennium Development Goals
(SDGs)	Sustainable Development Goals
(ABC)	Asian Brown Cloud
(SAARC)	South Asian Association of Regional Conference
(SACOSAN)	South Asian Conference on Sanitation
(GCISC)	Global Change Impact Studies Centre
(DNA)	Designated National Authority
(COPs)	Conference of Parties
(UNDP)	United Nations Development Programme
(UNESCAP)	United Nations Economic and Social Commission for Asia and the Pacific
(UNIDO)	United Nations Industrial Development Organization
(JICA)	Japan International Cooperation Agency
(GEF)	Global Environment Facility
(NPRI)	National Pollutant Release Inventory
(PEPC)	Pakistan Environment Protection Council
(ZSP)	Zoological Survey of Pakistan
(Pak EPA)	Pakistan Environmental Protection Agency
(NDMA)	National Disaster Management Authority
(PEPAC)	Pakistan Environmental Planning and Architectural Consultants
(PAC)	Public Accounts Committee
(DAC)	Department Accounts Committee

(PER)	Performance Evaluation Report
(IC)	International Cooperation
(JMC)	Joint Ministerial Commission
(MOU)	Memorandum of Understanding
(ANDMA)	Afghanistan National Disaster Management Authority
(POPs)	Persistent Organic Pollutants
(ODS)	Ozone Depleting Substances
(CFCs)	Chlorofluorocarbons
(CTC)	Carbon Tetra Chloride
(HCFC)	Hydrochlorofluorocarbon
(MLFS)	Multilateral Fund Secretariat
(HPMP)	Hydro chlorofluorocarbon Phase out Management Plan
(FBR)	Federal Board of Revenue
(ROAP)	Regional Office for Asia and the Pacific
(iPIC)	informal Prior Informed Consent
(DDWP)	Departmental Development Working Party
(CDWP)	Central Development Working Party
(GEF)	Global Environment Facility
(CBD)	Convention on Biological Diversity
(UNFCCC)	United Nations Framework Convention on Climate Change
(UNCCD)	UN Convention to Combat Desertification
(UNDP)	United Nations Development Program
(UNEP)	United Nations Environment Program
(FAO)	Food and Agriculture Organization
(IADB)	Inter-American Development Bank
(UNIDO)	United Nations Industrial Development Organization
(ADB)	Asian Development Bank
(AfDB)	African Development Bank
(EBRD)	European Bank for Reconstruction and Development
(IFAD)	International Fund for Agricultural Development
(NTFP)	non-timber forest products
(CBEs)	community biodiversity enterprises
(MACP)	Mountain Areas Conservancy Project
(PEECH)	Promotion of Energy Efficient Cooking, Heating and Housing Technologies

(CFU)	Climate Finance Unit– Pakistan
(GLOF)	Glacial Lake Outburst Floods
(PMD)	Pakistan Meteorological Department
(AF)	Adaptation Fund
(EWS)	Early Warning System
(CCA)	Climate Change Adaptation
(NCCPIC)	National Climate Change Policy Implementation Committee
(SNC)	Second National Communication
(TWGs)	Thematic Working Groups
(TNA)	Technology Needs Assessment
(CTCN)	Climate Technology Centre and Network
(TNA)	Technology Needs Assessment
(TAP)	Technology Action Plans
(NAMA)	Nationally Appropriate Mitigation Action
(NCCP)	National Climate Change Policy
(GCF)	Green Climate Fund
(PACOSAN-II)	<i>2nd Pakistan Conference on Sanitation</i>
(SACOSAN)	South Asia’s flagship Inter-Ministerial Conference on Sanitation
(OXFAM)	Oxford Committee for Famine Relief
(IIRC)	Integrated Resource Recovery Center
(UN-ESCAP)	United Nations Economic and Social Commission for Asia and the Pacific
(IRRC)	Integrated Resource Recovery Center
(CDM)	Clean Development Mechanism
(KP)	Kyoto Protocol
(CERs)	Certified Emissions Reductions
(BEP)	best environmental practices
(BAT)	best available techniques
(INDCs)	Intended Nationally Determined Contributions
(ODA)	Overseas Development Assistance
(REDD)	Forestry components of UNFCCC
(IUCN)	International Union for Conservation of Nature
(WWF)	World Wildlife Fund

(MFF)	Mangroves for the Future
(REDD+)	Reducing Emissions from Deforestation and forest Degradation
(FCPF)	Forest Carbon Partnership Facility
(CCI)	Council of Common Interests
(CITES)	Convention on International Trade in Endangered Species of Wild Fauna and Flora
(GSLEP)	Global Snow leopard Ecosystem Protection Programme
(BAP)	Biodiversity Action Plan
(IEE)	Initial Environmental Examination
(CEF)	Clean Environment Fund
(SUPARCO)	Pakistan Space & Upper atmosphere Research Commission
(GIS)	Geographic Information Systems
(SRS)	Supplemental Restraint System
(GPS)	Global Positioning System
(NEMs)	Nuclear Emergency Management
(ECMWF)	European Center for Medium Range Weather Forecasting
(RCC)	Regional Consultative Committee on Disaster Management
(SDMC)	SAARC Disaster Management Center
(SEDMC)	SAARC Environment & Disaster Management Center
(OIC)	Organization of Islamic Countries
(HFA)	Hyogo Framework for Action
(MHVRA)	Selective Multi Hazard Vulnerability Risk Assessments
(AWS)	Installation of Automatic Weather Stations
(DRM)	Disaster Risk Management
(CBDRM)	Capacity Building Disaster Risk Management
(RS)	Remote Sensing
(SACAM)	South and Central Asia MAB Network
(MNP)	Machiara National Park, Azad Jammu & Kashmir

