RAVI URBAN DEVELOPMENT AUTHORITY (RUDA)

Environmental Management and Implementation Manual

The vision is to combat climate change and to work for the resolution of Environmental issues, including floods, traffic congestion, Environmental pollution, water scarcity, urban sprawl. Ravi Riverfront City will provide the residents a space where they can live life to the fullest and embrace a multitude of opportunities, while keeping the city's rich culture and heritage alive to promote tourism.

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MESSAGE FROM AUTHORS

Our goal is to prioritize environmental considerations in the project management. This manual empowers the stakeholders with the skills necessary for the project conception, necessary approvals, project success, emphasizing sustainable development, effective coordination & compliance and stakeholder management.

This manual is not only adhering to the legal requirements of the region where RUDA works in, including all rules, regulations, national laws, international Protocols, guidelines and standards set by the Environment Protection Agency (EPA), but it Works for the development of environmental awareness in project execution & Environmental compliance and strive to create the awareness amongst all stakeholders.

Wishing continual improvement in sustainable development and success in all endeavors.

Best Regards;

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Executive Environment

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Position Title	**Name**	**Signature**	**Date**
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Ravi Urban Development Authority

(RUDA)

Environmental Management and Implementation Manual

Environment Directorate

Engineering Wing RUDA

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ENVIRONMENTAL MANAGEMENT AND IMPLEMENTATION MANUAL

Prepared By: Environment Directorate
Ravi Urban Development Authority
Government of the Punjab

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ANNEXURES

LIST OF ACRONYMS

CoE	Committee of Experts
DG	Director General (EPA)
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
EMP	Environmental Management Plan
EPD	Environmental Protection Department
ESEs	Environmental and Social Experts
FIDIC	International Federation of Consulting Engineers
HSE	Health Safety and Environment
IEE	Initial Environmental Examination
NBS	Nature Based Solutions
NDCs	Nationally Determined Contributions
NEQS	National Environmental Quality Standards
NGO	Non-Governmental Organization
NOC	No Objection Certificate
OHS	Occupational Health and Safety
O&M	Operation & Maintenance
PAPs	Project Affected Persons
PEPA	Pakistan Environmental Protection Act
PPEs	Personal Protective Equipment's
RUDA	Ravi Urban Development Authority
SSEMP	Site Specific Environmental Management Plan
SC	Supervisory Consultant
SDGs	Sustainable Development Goals
ToRs	Terms of Reference

1. Introduction:

The River Ravi Urban Development Project (RRUDP) was initiated with a vision to develop a waterfront having national as well as international importance promoting sustainable development. The major objective of this project is to rehabilitate and restore Lahore River Ravi, a trans-boundary river which is facing adverse pollution issues due to direct and indirect disposal of wastewater comprising municipal, industrial and other sources. Creating a living waterfront for the city and to create new sustainable urban centers for the city and the region is one of the objectives to enhance economic opportunities. The project is supposed to cover the areas of urban planning, wastewater treatment, river training, public infrastructure and utilities, land development, forestation while fulfilling codal formalities like formulation of Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) as per requirements of the projects to mitigate environmental impacts.

The world is in a state of climate emergency – “a code red for humanity” according to the UN Secretary-General. The concentration of Greenhouse Gas (GHG) emissions in the atmosphere is wreaking havoc across the world and threatening lives, economies, health and food. The world is far from securing a global temperature rise to below 2°C as promised in the Paris Agreement.

Climate change refers to long-term shifts in temperatures and weather patterns and are described in **Annexure-A**. These shifts may be natural, but since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels (like coal, oil and gas), which produces heat-trapping gases. Burning of fossil fuels generate GHG emissions that act like a blanket wrapped around the Earth, trapping the sun’s heat and raising temperatures. GHGs which are causing climate change include Carbon Dioxide (CO_2) and Methane (CH_4). These come from using gasoline for driving vehicles, burning of coal for heating purposes and from industrial processes. Clearing land and cutting down forests can also release Carbon Dioxide (CO_2). Agriculture, oil and gas operations are major sources of Methane emissions. Energy, industry, transport, buildings, agriculture and land use are among the main sectors causing GHGs.

The average temperature of the Earth’s surface is now about 1.1°C warmer than it was in the late 1800s (before the industrial revolution) and warmer than at any time in the last 100,000 years. The last decade (2011-2020) was the warmest on record, and each of the last four decades has been warmer than any previous decade since 1850.(IPCC (Intergovernmental Panel on Climate Change), 2023) The increase in global surface temperature by 1.1°C by the time period of 2011 to 2020 as compared to the temperature in 1850 to 1900 is shown below:

Environmental Management Plan (EMP) is a tool for the implementation of all the mitigation measures which are suggested to make the project environmentally sustainable. It provides an overall approach for managing and monitoring the environmental, ecological and socio-economic issues of the proposed Project, and describes the institutional framework and reporting mechanism to implement EMP for the proposed Project. This document provides institutional framework for the implementation of the mitigation measures and environmental monitoring plan for air

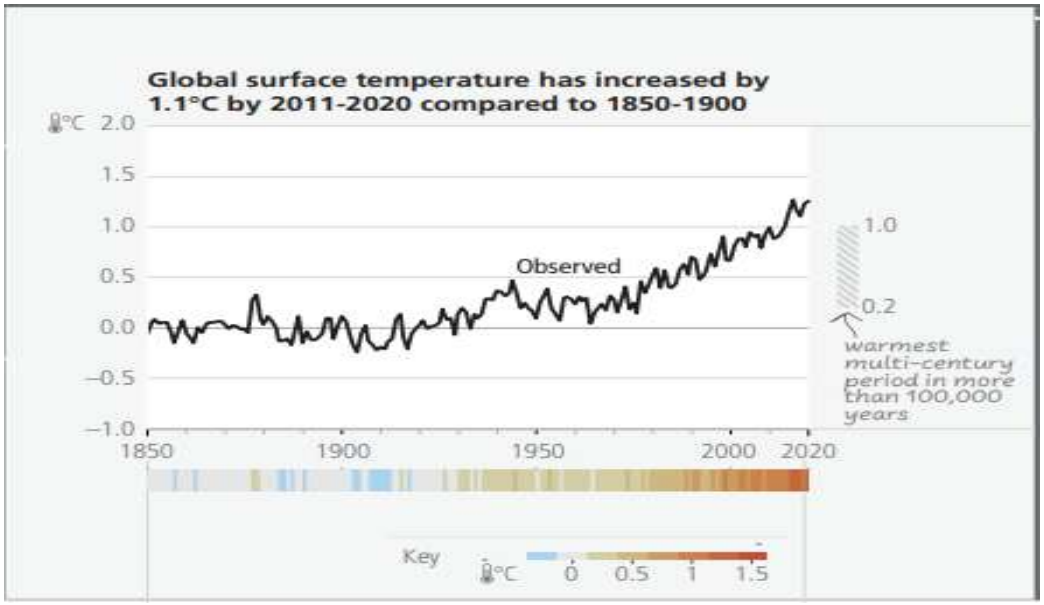


Figure-1 Increasing Trend of Global Temperature

quality, water quality, and noise pollution parameters during construction and operational phase, IEE/EIA Preparation and Review guidelines and Consultancy ToRs.

1.1. Environmental Policy Statement

The policy statement of Environmental Management Plan (EMP) of Ravi Urban Development Authority (RUDA) prioritizes environmental considerations in the project management. It not only adheres to the legal requirements of the region where RUDA works in, including all rules, regulations, national laws, international Protocols, guidelines and standards set by the Environment Protection Agency (EPA), but it strives to exceed the expectations of the stakeholders.

In line with the approach to environmental impact management, we have determined in the following main priority areas are:

- Adoption of Renewable Energy/Energy Management and Achieve Climate Protection Goals
- Water Management/ Wastewater Treatment

- Flood Management
- Forest Management
- Sustainable Development and Urban Planning
- Pandemic Management

The long-term goals of the policy are to ensure the long term viability of River Ravi Urban Development Project (RRUDP) by being proactive and innovative in protecting the environment.

Working towards these goals to attain:

- Developing River Ravi into the perennial fresh water body to revive and sustain ecosystem and high-quality waterfront development
- Channelization and Restructuring of River Ravi with establishment of Barrages
- Incorporation of integrated Flood Management System for the River
- Establishment of Wastewater Treatment Plants (WWTPs) for Existing City and RUDA city
- Development of blue-green infrastructure and a world class economic center to foster growth of surrounding region for the population of about 10 million people.
- Development of concept level design of smart cities composed of Information and Communication Technologies (ICT) and Internet of Things (IoT) for development and deployment of smart cities components in RRUDP to promote socio-economic development improve infrastructure & environment.
- Establishment of Industrial Zone with regularized industries including existing and planned industrial estate for new development of industries.
- Rehabilitation of Lakhodair landfill site and Construction of new engineered landfill site that will be used for scientific disposal of solid waste coming from Lahore city
- RUDA will contribute to Nationally Determined Contributions (NDCs) through its projects.
- Development with implementation of Sustainable Development Goals (SDGs)
- Act with awareness of future demands of natural resources and therefore work to reduce the environmental impact of our projects.

- Integrate environmental strategies, objectives, and goals into our project plans to maintain environmental sustainability as a key component of our projects.
- Control and ensure that our air emissions resulting from industrial estates and other activities remain within the limits specified by legislation.
- Work for the development of environmental awareness in our workplace and strive to create the same awareness amongst all stakeholders with the help of formed initiatives and joint ventures.

1.2. Vision

To combat climate change and to work for the resolution of environmental issues including floods, traffic congestion, environmental pollution, water scarcity and urban sprawl. Ravi Riverfront City will provide the residents a space where they can live life to the fullest and embrace a multitude of opportunities, while keeping the city's rich culture and heritage alive to promote tourism.

1.3. Mission

In accordance with the legal framework, Systemizing and implementing the policies, procedures and recommendations of EIA and IEE on RUDA projects.

To cater the Climatic condition of Lahore, RUDA will contribute to Nationally Determined Contributions (NDCs) through its projects.

To make a sustainable development of Ravi City, RUDA will implement the Sustainable Development Goals (SDGs)

To make a sustainable development of Ravi City, RUDA will implement the Sustainable Development Goals (SDGs)

Apply Continuous improvement practices in the HSE performances of all departments and implanting HSE driven Culture.

Working on LEED (Leadership in Energy and Environmental Design) Certification for healthy, highly efficient, and cost-saving green buildings, which offer environmental, social and governance benefits.

Ensuring emission reduction measures to minimize environmental impacts.

1.4. Need of EMP (Environmental Management Plan)

- An EMP is a guidance document used to plan, implement, measure and achieve compliance with the environmental protection and mitigation requirements.
- These compliance requirement include relevant legislation, project-specific approvals and other stakeholder requirements.
- Highlight the challenges of Environment of existing Lahore city under RUDA jurisdiction
- Establish guidelines and process for Environmental approval from EPA Punjab
- Establish Guidelines for Preparing IEE/EIA as per IEE/EIA Regulations 2022
- Establish Administrative arrangement for Reporting and Monitoring Methodology for implementing the EMP during construction and operational phase.
- Define scope of NDCs, SDGs and International Protocols/Agreements/Conventions with respect to RUDA project

1.5. Scope of Environmental Implementation Guidelines Manual

RUDA has developed this document to meet the Project requirements for the improvement in implementation of environmental standards and mitigation measures suggested in the IEE/EIA reports of proposed projects. This manual is established to identify the strategy of RUDA to reduce environmental impacts, improve implementation efficiency, comply with legislation and demonstrate the commitment to environmental protection. The purpose of this manual is to identify the need of Environmental Studies in compliance to PEPA Act, 1997, Amended 2017.

1.6. Objectives of Environmental Implementation Guidelines Manual

Define the role and responsibilities of the Project Proponent (RUDA), Supervisory Consultant(s), Contractor(s), and other key players

Ensure that all necessary corrective actions are carried out and monitored in time to counter any adverse environmental impact under a systematic monitoring approach

Provide a procedure for timely action in the face of unanticipated environmental situation and to follow the environmental guidelines and the laws

Define a monitoring mechanism, reporting frequency and identify monitoring parameters to ensure that all the mitigation measures are completely and effectively implemented

Design the training and capacity building plan for enhancing the capability of the Project Proponent (RUDA), Supervisory Consultants, Contractor(s), on environmental and social management

Identify the resources required to implement the EMP and outline the corresponding financing arrangements

Enlisting phases for environmental approval from conception of project to the EPA NOC.

2. Context of Guidelines for Preparing IEE/EIA

The guidelines will follow the regulations and guidelines which include:

- Punjab Environmental Protection Act 1997, amended 2017
- Policy and Procedure for filing, review and approval of environmental assessment, Review of IEE/EIA Regulations, 2022
- Guidelines for the preparation and review of Environmental Reports
- Guidelines for Public Participation
- Pakistan Environmental Legislation and the National Environmental Quality Standards (NEQS), 2000
- Punjab Environmental Legislation and the Environmental Quality Standards (PEQS), 2016

2.1. Scope

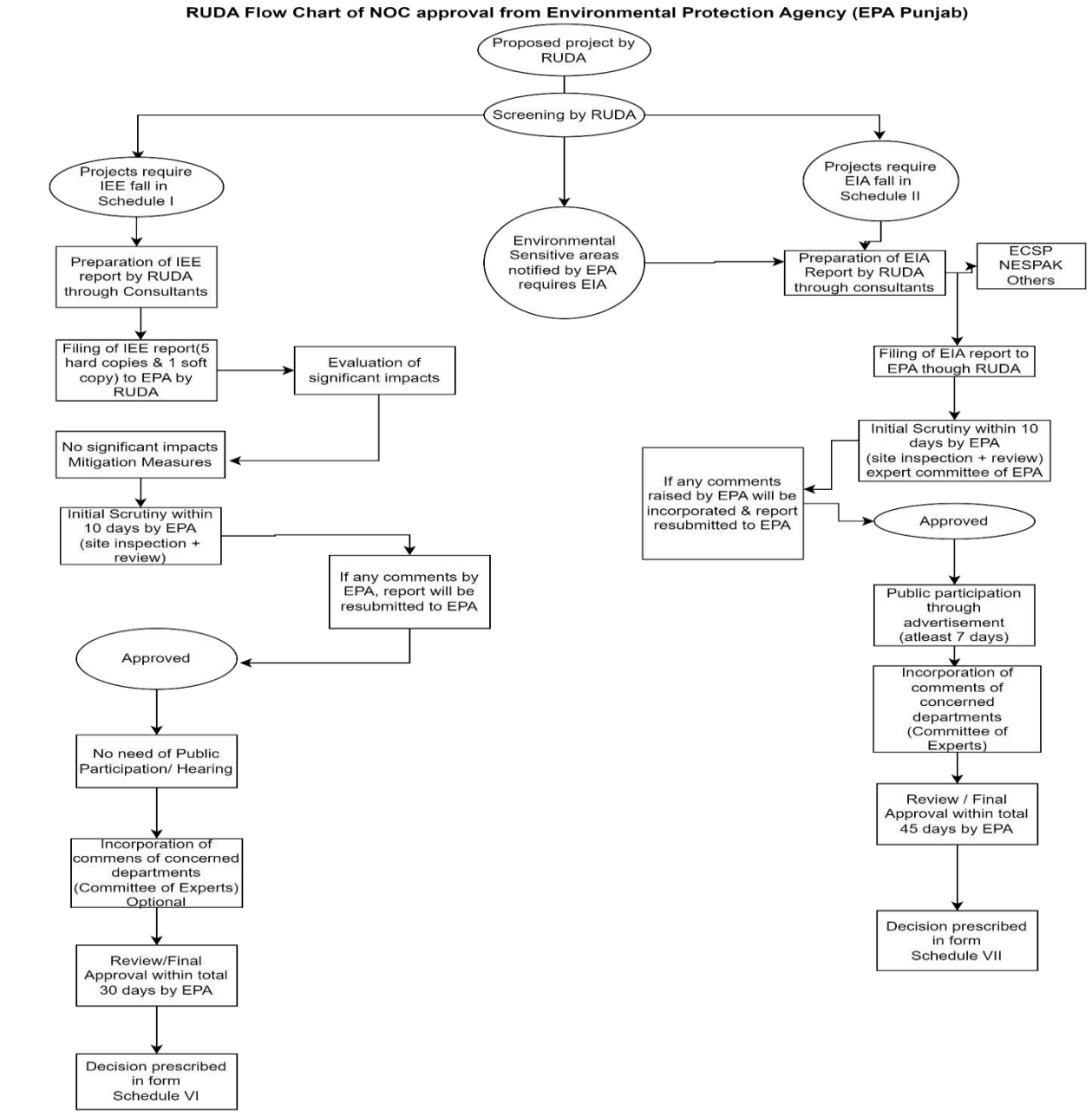
The scope of these guidelines is confined to the aspects of environmental report preparation and review which are of a general nature. Sector specific provisions will guide the preparation of the environmental reports as per criteria. The Public consultation is very important part of the environmental report. The Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIAs) will be prepared following the guidelines of EPA and all legal requirements.

Integrated Environmental Assessment

There is a growing awareness that the environmental impacts of a proposed project cannot be considered in isolation. When significant impacts are identified in a proposed project, a range of questions arise as to the best way to minimize the adverse effects—can the project objectives be achieved in a different way, should an alternative site be chosen, is the technology appropriate, and are prudent mitigating measures incorporated? These questions will be addressed in the environmental report keeping in view the Cost & Benefit analysis, evaluation of the impacts and environmental protection measures.

It is essential that there is close cooperation between those undertaking environmental assessment, and those undertaking the other aspects of pre-feasibility and feasibility studies.This cooperation must occur throughout the various stages of the project cycle, and not be confined to the mere bringing together of the various strands at the project approval stage.

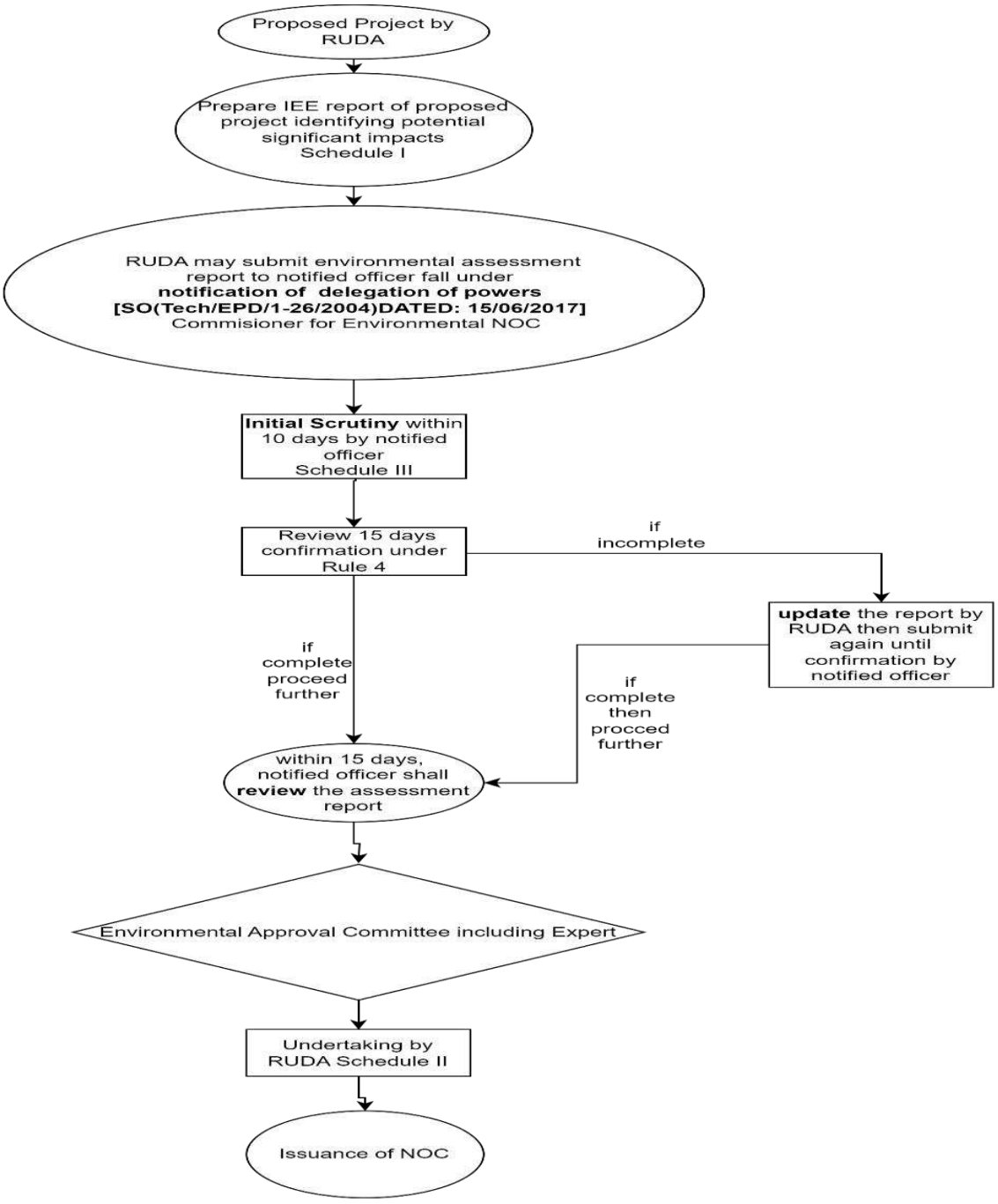
2.2. RUDA Flow Chart of Environmental Approval Process



RUDA Environmental Approval Process Flowchart for IEE/EIA under Review Guidelines 2022 IEE/EIA

2.2.1. RUDA Environmental Process Approval under Punjab Environmental Protection (Delegation of Powers for Environmental Approvals) Rules 2017

RUDA NOC Approval Flow Chart for IEE through Commissioner (Delegation of Powers by EPA, 2017)



2.3. RUDA Scope of Work

The overall scope of the project entails:

- Create a perennial water body by construction of a barrage/weir across the river at a suitable site with a sustainable pond level with appropriate depth
- Carryout out a water availability and water balance study to maintain the minimum pond level throughout the year particularly during low flow periods,
- Fixation of Pond Level for phase-1, so that backwater effect does not extend into Indian territory
- Update the design flood in the light of climate change impact assessment.
- Carry out flood management studies studies to safely pass 1000- year flood taking into account climate change impact
- Carry out numerical and physical model studies to establish maximum flood levels and
- flow velocities
- Carry out sediment studies to estimate sediment inflow, volume and measures to flush
- out sediment and reduce turbidity
- Development of Ravi riverfront urban center on both banks of the river, a 46 km long stretch having national as well as international importance sustainable development
- Developing River Ravi into the perennial fresh water body to revive and sustain ecosystem and high-quality waterfront development
- Channelization and Restructuring of River Ravi with establishment of Barrages
- Incorporation of integrated Flood Management System for the River
- Establishment of Wastewater Treatment Plants (WWTPs) for Existing City and RUDA city
- Development of green infrastructure and a world class economic center to foster growth of surrounding region for the population of about 10 million people.
- Development of concept level design of smart cities composed of Information and Communication Technologies (ICT) and Internet of Things (IoT) for development and deployment of smart cities components in RRUDP to promote socio-economic development improve infrastructure & environment.
- Establishment of Industrial Zone for the regularization of existing haphazard industries and planned industrial estate for new development of industries.
- Rehabilitation of Lakhodair landfill site

- Construction of new engineered landfill site that will be used for scientific disposal of solid waste coming from Lahore city
- RUDA will contribute to Nationally Determined Contributions (NDCs) through its projects and attached as ANNEXURE-C.
- Development with implementation of Sustaianble Development Goals (SDGs) and attached as ANNEXURE-E.

2.4. Enhanced credibility of Environmental Assessment

The projects should be evaluated with the potential environmental impacts and the strategies to compensate the environment will be helpful. The development should be with sustainability. Full publicinvolvement provides a counterbalance to bias, and some further measures will also assist in making the environmental assessment process transparent, accessible and accountable to the public. These measures include:

- A requirement for the proponent to register all consultants' names and their Terms of Reference (ToRs) with the Responsible Authority;
- The listing of all consultants, their expertise and responsibilities in the environmental report;
- Inclusion of the Terms of Reference (ToRs) in the environmental report;
- making all environmental reports available to the public;
- Inclusion of the conclusions and recommendations for the improvement of the implementation of the project

2.5. Commencement of Environmental Assessment

2.5.1. The Purpose of IEE

An IEE is required for projects in Schedule B of the "Policy and Procedures for the filing, review and approval of environmental assessments". *The Pakistan Environmental Protection Act 1997* gives the following definition Section 2 (xxiv): "**Initial Environmental Examination (IEE)** "means a preliminary environmental review of the reasonably foreseeable qualitative and quantitative impacts on the environment of a proposed project to determine whether it is likely to cause an adverse environmental effect for requiring preparation of an environmental impact assessment."

An IEE is a relatively simple document, which systematically considers all the likely

impactsarising from a proposal, identifies which impacts need further consideration, and for thoseimpacts provides mitigation measures which reduce the impacts to an acceptable level.

Where the EIA reveals more significant impacts, the Responsible Authority, in conjunctionwith the EPA, will determine the need for an EIA. In such circumstances, the Responsible Authority shall provide, in writing, the reasons why an EIA is required (e.g., the number and magnitude of impacts, the sensitivity of the proposed site, the level of community concern). The IEE will not usually require public advertisement and comments, but it remains a publicly accessible document, available to any person who wishes to inspect it at the offices of the Responsible Authority.

The IEE process is also to be followed for projects requiring EIA. Here, the IEE process of systematically considering all the likely impacts is used as a means of early identification of issues in order to prepare ToRs for the EIA. In such cases, the formal documentation of the IEE Report is not undertaken, but replaced by the EIA preparation andreporting.

2.5.2. The Purpose of EIA

Pakistan Environmental Protection Act 1997 gives the following definition of **Environmental Impact Assessment (EIA)** Section 2 (xi): "means an environmental study comprising collection of data, prediction of qualitative and quantitative impacts, comparison of alternatives, evaluation of preventive, mitigation and compensatory measures, formulation of environmental management, and training plans and monitoring arrangements, and framing of recommendations and such other components as may be prescribed".

It is important not only to cover the environmental issues known at the inception of the study,but also to allow the breadth and flexibility so that new issues can be identified and, if significant, be addressed. However, it is also important to frame the investigation so that timeand resources are concentrated in areas where potential impacts are likely to be found. The work must be focused on the issues which are critical to decisions about whether the project should proceed, and under what conditions.

2.5.3. Steps of Preparing IEE/EIA

At the earliest possible time, proponents should consult with the Responsible Department to confirm the categorization of the project, and to ensure that the proponent is aware of the procedures that apply. Proponents may have already engaged consultants at this time, and should be aware that the proper specification

of the consultant's task will only become clear as the work on the IEE and other scoping activity is undertaken. Proponents and their consultants will visit the site, meet with local people about their values and the proposal, collect available data and consult with other Departments and Agencies.

The degree of effort expended in these and subsequent steps needs to be matched to the likely impacts of the proposal, the scale of the development, the sensitivity of the site, and the level of concerns held by the community. The information provided on "Assessing Impacts", "Mitigation and Impact Management" and indeed all the other Sections, apply equally to projects subject to IEE or EIA.
Environmental assessment is most effective when even preliminary findings are made available early in the preparation process. At that time, alternatives which might be desirablefrom an environmental viewpoint can be considered realistically, and implementation and operating plans can be designed to respond to critical environmental issues in a cost- effective manner. Later on, making a major design change or selecting an alternative proposal—or deciding not to proceed at all with a project—becomes very expensive. Even more costly are delays in implementation of a project because of environmental issues which were not considered during design. Consequently, integration between environmental assessment and feasibility studies is essential. The environmental assessment team should provide for frequent coordination meetings with the feasibility study team to exchange information.

2.5.4. Format of the Environmental Report

The report should be prepared based on the following contents:

- Executive Summary
- Introduction
- Description of the Project
- Description of Environment
- Public Participation/Public Consultation
- Screening of Potential Environmental Impacts and mitigation measures
- Environmental monitoring program and institutional requirement
- Conclusions

2.5.5. Scoping

While the basis of determining the scope of an IEE or EIA in Pakistan derives from the Sectoral Guidelines, and the checklists of likely impacts and mitigation measures contained in the Sectoral Guidelines, proponents and reviewers are cautioned against adopting a mechanistic approach to the scoping process. No techniquecan replace the thoughtful consideration of the proposal, its siting, and the

physical and cultural environment in which it is proposed.

Scoping is a vital early step, which identifies the issues that are likely to be important duringthe environmental assessment, and eliminates those that are not. In this way, time and money are not wasted on unnecessary investigations. Scoping is a process of interaction between the interested public, government agencies and the proponent. Scoping refers tothe process of identifying, as early as possible:

- The appropriate boundaries of the environmental assessment;
- The important issues and concerns;
- The information necessary for decision-making; and
- The significant impacts and factors to be considered

2.5.6. Scoping can be used to

- Consider reasonable and practical alternatives
- Inform potentially affected people of the proposal and alternatives
- Identify the possible effects on the environment of the proposal and alternatives
- Understand the values held by individuals and groups about the quality of the environment that might be affected by the proposal and the alternatives
- evaluate the possible environmental effects and concerns expressed to determine whether, and how, to investigate them further;
- define the boundaries of any required further assessment in time, space and subject matter;
- determine the analytical methods and consultation procedures needed in any further assessment;
- organize, focus and communicate the potential impacts and concerns, to assist furtheranalysis and decision-making; and establish the (ToRs) to be used as the basis of the ongoing assessment.

2.5.7. A typical list of steps for scoping

- Prepare an outline of the scope, with title heads such as:
  - objectives and description of the proposal
  - the context and setting of the proposal
  - constraints
  - alternatives
  - issues
  - public involvement (in scope), and
  - timetable
- Further develop the outline of the scope through discussion with key stakeholders, assembling available information, and identifying information gaps.

- Make the outline and supporting information available to those whose views are to beobtained.
- Identify the issues of concern (cross-reference with check lists in Sectoral Guidelines).
- Evaluate the concerns from both a technical and subjective perspective, seeking to assign a priority to important issues.
- Amend the outline to incorporate the agreed suggestions.
- Develop a strategy for addressing and resolving each key issue, including information requirements and ToRs for further studies.
- Provide feedback on the comments have been incorporated and made part of the document.

2.5.8. Roles of stakeholders in the Scoping process

The proponent possesses most of the information about the proposal, and will have a strongly developed view about thefactors which will influence site selection and investment decisions. The scoping process willassist the proponent to recognize the perspective of others, to consider alternatives and issues of the concerned that are raised by those affected, and to make changes to the proposal which will both address the concerns raised and improve the proposal.

The Responsible Authority/Department has responsibility for providing guidelines, confirming the categorization of projects, and checking that the Environmental Report meets the statutory requirements. The Responsible Authority/Department will have experience in environmental assessment, and knowledge of local conditions and data availability.

Other Departments and Agencies will contribute knowledge about specific issues within their jurisdiction. This knowledge may include specific legislation and policy frameworks, standards, data collections, methodologies, local knowledge and experience. Quite often Sectoral agencies have the role of providing approvals, permits or leases, so knowledge of their requirements is essential.

Environmental practitioners and experts may act for the agencies involved, the proponent, or consultants bidding for the work, or they may belong to scientific, academic or professional bodies. The involvement and advice of these people can be of particular assistance in providing specialist knowledge.

Those affected by the proposal may have a major role in identifying issues and ensuring that local knowledge and values are understood. The views of those affected should be taken into account when choosing between alternatives, in deciding on the importance of issues, and in framing mitigation measures,

compensation provisions and management plans. Affected communities may need help in understanding the proposal, its alternatives, and likely effects, and in dealing with the proposal and articulating their concerns. They may need the provision of community liaison workers and financial resourcing to allow them to participate.

The wider community including those indirectly affected, and local, national and sometimes international NGOs and interest groups will also provide a source of useful information and values, which can assist the scoping process.

2.5.9. Option of alternatives

A rigorous approach to the option of alternatives is more commonly associated with proposals from the public sector, where the allocation of public funds and priorities is recognized as a legitimate public interest. Private sector proposals have not generally had the same attention paid to the matter of alternatives, since there has been the perception that the choice of project is a matter for the developer who is putting up the money. The considerations of alternatives will assume increasing importance, for both public and private sector projects, as Sectoral policies are established, along with the implementation of policies for sustainability, strategic and cumulative impacts. Alternatives are generated and examined to determine the best method of achieving project objectives, while minimizing environmental impacts. They can be grouped under such headings as:

- Demand alternatives (e.g., using energy more efficiently rather than building generation capacity);
- Activity alternatives (e.g., providing public transport rather than increasing road capacity);
- Locational alternatives, either for the entire proposal or for components (e.g., the location of a processing plant for a mine);
- Process alternatives (e.g., the re-use of process water in an industrial plant, waste- minimizing or energy efficient technology, different mining methods);
- Scheduling alternatives (where a number of measures might play a part in an overall program, but the order they are scheduled will contribute to the effectiveness of the end result); and
- Input alternatives (e.g., raw materials, energy sources–such as replacing high Sulphur oil with low Sulphur content oil).

The 'no build' alternative is often used as a base case against which to measure the relative performance of other alternatives. In this case, the relative impacts of the other alternatives are expressed as changes to the base case. If, overall, all the alternatives were judged to have unacceptable performance, the decision might be to adopt none of them, and stay with the status quo–the 'no build'. Alternatively, a base case might be taken forward in its own right for evaluation against defined objectives. Not all alternatives will be investigated in the same level of detail. It is

quite common to undertake a preliminary analysis of a wide set of alternatives to decide which ones should betaken forward for further consideration, and which are to be discarded. In many EIAs, the favored alternative will be the only one examined in detail. It is not uncommon, however, for two or three alternatives to be examined and reported at the same level of detail. List of RUDA projects is attached as ANNEXURE-B.

2.5.10. Components of Project

The components of the project will be derived from the PC-1 of the project.

2.5.11. Category of the Project

2.5.11.1. Schedule-I – List of Projects requiring an IEE
2.5.11.2. Schedule-II – List of Projects requiring an EIA Review of IEE and EIA Regulations 2022.pdf

Punjab_environmental_protection_(delegation_of_powers_forenvironmental_approvals)_rules_2017

2.5.12. Schedule-I – List of Projects for which Environmental Assessment submitted to notified Officer

PUNJAB_ENVIRONMENTAL_PROTECTION_(DELEGATION_OF_POWERS_FOR_ENVIRONMENTAL_APPROVALS)_RULES_2017.pdf

2.5.13. Location of Project

The RRUDP development project is located on River Ravi, in the district of Lahore and Sheikhupura, along the pristine banks line overlooking the exquisite rich landscape. The Project site is geographically located between 31° 45’ 93” N, 74° 25’ 25.14” E upstream and 31° 24’ 46.83” N, 74° 05’ 4.27” E downstream. The project site is accessible through all major Road network like GT Road, Ring Road Multan Road and Motorway (M-2 and Lahore-Sialkot Motorway).

In north:

Starting 5 Km downstream from Syphon to Pakhiyala Village towards Kala Shah Kaku Interchange and further towards M-2 Interchange

In West:

M-2 Interchange towards Lahore Sheikhupura Faisalabad Road (Near Javaid Nagar) which further extends towards Jaranwala Road (Near Langiyan da Thattha), then after, it travels along Jaranwala Road till Sharqpur City where Upper Chennab Canal falls in Ravi River.

In South:

Upper Chenab Canal falls in Ravi River and connects with Hudiara Drain at Sukh Chayn Garden Housing Scheme at Multan Road.

In East:

Area running along left side of Multan Road from Sukh Chayn Garden Housing Scheme to Thokar Niaz Baig M-2 Motorway Interchange which runs along till Babu Sabu Toll Plaza. From babu Sabu Toll Plaza Run area runs along left side of Bund Road till Saggia wala bridge at Lahore Ring Road (LRR-20) which further travels along it towards Quaid-e-Azam Interchange LRR and upto BRB.

2.5.14. Completion of Project

There will be timelines as per PC-1 for the completion of the projects. The projects will have three phases as follows:

- Design Phase
- Construction Phase
- Operational Phase

3. Environmental Impacts

3.1. Checklist

The checklist will be used as an indicator of evaluation of the environmental impacts.

Project Impact Matrix

Environmental Component / Project Component	Physical Environment					Ecological Environment							Socio Economic Environment																
	Soil (Erosion/Stability/ Contamination)	Air Quality	Noise Level	Surface & Ground Water Quality	Solid Waste Generation	Aquatic Ecosystem	Terrestrial Ecosystem	Endangered Species	Migratory birds	Beneficial Plants	Loss of trees	Loss of Crops/Orchards	Conflict over Resources	Mobility of Locals	Public Infrastructure	Accessibility	Housing Infrastructure	Cultural Properties (Mosque, Shrine, Graveyard	Community Stability	Tourism And Recreation	Grazing Area	Gender Issues	Cultural & Social Issues	Health& Safety	Aesthetic	Security Situation	Employment Opportunities
A. Planning & Design Phase	1	2	3	4	5	8	8	9	10	11	12	13	14	15	16	17	18	18	20	21	22	23	24	25	26	27	29		
Topographic Survey of Project																													
Geotechnical Investigation																													
Temporary Land Use																													
Land Requirement																													
B. Construction Phase																													
Site Clearance																													
Earthwork in Filling and Excavation																													
Establishment of Construction Camps & Workshop																													
Transportation & Storage of Construction Materials																													
Use of Construction Material and Heavy Machinery																													
Installation and operation of Batching and Asphalt Plants																													
Spoil Disposal																													
Structural & Civil Work																													
Drainage Work																													
Miscellaneous Work (Road Ancillaries, Traffic Signs and Signals etc.)																													
Pavement Work																													
Finishing and Comissioning																													
C. Operational Phase																													
Operation of Road																													
Inspection & Monitoring																													
Maintenance of Miscellaneous Work																													

Fig 3.1 checklist will be used as an indicator of evaluation of the environmental impacts

Positive Impact Score
0
2 to 4
5 to 8
9 to 12
>12

Impact Significance
Negligible
Low
Medium
High
Very High

Adverse Impact Score
0
2 to 4
5 to 8
9 to 12
>12

3.2. Consultant Selection

The consultant selection procedure as per Project requirement is as follows:

- Consultant Criteria
- Consultant Experience
- Consultant Qualification
- Certification of “Not Blacklisted” from any Government Organization

3.2.1. Bidding Process of Consultants

The consultant will be selected after finalization of the bidding process.

3.2.2. Responsibility of Consultant to get NOC from EPA

The consultant will be responsible to get NOC from EPA of the project under consideration.

3.2.3. Consultant Registration with EPA (Optional or subject to EPA, 2017 Regulations)

(REGULATIONS FOR REGISTRATION OF ENVIRONMENTAL CONSULTANTS) Draft Regulations for Registration of Environmental Consultants.pdf

3.3. Preparation of Environmental Study under EIA/IEE Regulations 2022

Environmental Study for each Project

Review of IEE/EIA Regulations 2022 Review of IEE and EIA Regulations 2022.pdf

3.4. Terms of Reference (ToRs) For IEE And EIA Study

The consultant will carry out an Environmental Impact Assessment (EIA) report which will comply with the local environmental laws and regulations. The study will examine the effects of the planned activities on existing environmental and social conditions in the areas which may be affected by the proposed project, and propose measures for mitigating and monitoring any potential negative impacts. The scope of work for EIA is as follow:

- Review of available documents and desktop studies.
- Prepare project description that includes project location, its components and subcomponents, project activities, location/size of camps, labor force, support facilities, operational interventions, project cost and implementation schedule.
- The EIA study should also include an analysis of alternatives that would examine different alternatives with the objectives of minimizing environmental and social impacts of the project.
- Data collection of existing baseline environmental conditions covering the Physical, Ecological and Socio-economic domains of Environment for the proposed project.
- Conducting instrumental environmental monitoring at site covering the ambient air and noise. It will also cover the water sampling and laboratory testing to establish the baseline conditions/profile.
- Evaluation of potential project impacts on environment, biological and social settings.
- Conducting, recording and reporting public consultations at different levels with the concerned Environmental Protection Department (EPD) Punjab and Client, relevant departments and Project Affected Persons (PAPs) and address their concerns with the necessary mitigation measures.
- Appropriate mitigation measures for adverse impacts on physical, ecological and socio-economic domains.

Environmental monitoring program and institutional requirement comprising:

  - Organizational structure and responsibilities
  - Mitigation Plan
  - Environmental Monitoring Plan
  - Communication and Documentation
  - Training and Staff
  - Others

- The Consultant will assist the client for filing the case to obtain Environmental Approval from Environmental Protection Department (EPD) Punjab. The cost incurred for acquiring the Environmental Approval and other perusal will be borne by the Client.
- The Consultant will submit the draft EIA report and the final report will be submitted after the incorporation of Client comments.

- Obtaining NOC from the EPD will be the solely responsibility of the Consultant.

3.5. Details of Technical Staff for Conducting IEE/EIA Study

Following key position of Consultant's will be required to conduct IEE/EIA studies for any proposed projects of RUDA

Table-3.5.1 Details of Technical Staff for Conducting IEE/EIA Study

Sr. No.	Positions	Quantity
1	Chief Engineer/ Team Leader	1
2	Principal Engineer	1
3	Senior Environmental Scientist	2/as per requirement
4	Senior Sociologist	1/as per requirement
5	Senior Ecologist	1/as per requirement
6	GIS Analyst	1/as per requirement

3.6. Payment Schedule

Table-3.6.1 Payment Schedule and Cost Breakup

Sr. No.	Payment Stages	Payment Release (%) of respective Component
1	Submission of Final Review Draft, after review from RUDA	20%
2	Submission of revised report after incorporating comments from EPD	20%
3	Submission of revised report after incorporating comments from Public Hearing	20%
4	Upon Securing NOC	40%

3.7. EPA Review Fee

The proponent will pay a non-refundable review fee to the Agency as per rates specified in Schedule-III at the time of submission of an Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA).

3.7.1. Schedule-III –IEE and EIA Review fee Review of IEE and EIA Regulations 2022.pdf

3.7.2. EPA One Window

The environmental study IEE/EIA will be submitted to EPA with review fee to one window EPA, Punjab.

3.8. EPA Review time

The Agency within ten working days of filing of Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA), will confirm that the Initial Environmental Examination (IEE) or Environmental Impact Assessment (EIA) is completed for the purpose of initiation of the review process.

Review of IEE/EIA Regulations 2022 Review of IEE and EIA Regulations 2022.pdf

3.8.1. EPA Joint Visit with RUDA

The visit will be planned as per jurisdiction of the project. The area falls under Lahore District will be visited by DD Lahore District EPA. The area falls under Sheikhupura District will be visited by DD Sheikhupura District EPA. Designated Person from RUDA Environment Directorate will accompany the project site visit. In case, where the project covers both Lahore and Sheikhupura, both offices will generate report before approval of the project.

3.8.2. EPA Site Inspection Report

The concerned district office of EPA will issue EPA Site Inspection Report in case, where the project falls in both districts, EPA will jointly visit the site or separately. The report will be issued accordingly.

3.8.3. EPA Comments on the Report

If there will be any comments, quarries, questions or any other information asked by EPA, will be addressed accordingly.

3.8.4. EPA Report Suitability for Site

EPA will issue and recommend Site Suitability Report.

3.9. Committee of Experts/Designated Expert

The formulated committee of EPA/Designated Expert with EPA will convene a meeting and there will be detailed presentation of the project under consideration for approval. The experts along with EPA members will recommend the project environmental approval. In case, there are some requirements of committee of experts regarding environmental data design or any other direction of Government of the Punjab, Government of Pakistan, High Court or the Supreme Court will be addressed.

3.9.1. Recommendation

The committee will formally recommend the project environmental approval.

3.9.2. Issuance of NOC

I. **DG EPA will issue NOC based on its jurisdiction.**

II. **Commissioner Lahore will issue NOC/Environmental approval as per Punjab_Environmental_Protection_(Delegation_of_Powers_for_Environmental_Approvals)_Rules_2017**

PUNJAB ENVIRONMENTAL PROTECTION (DELEGATION OF POWERS FOR ENVIRONMENTAL APPROVALS) RULES 2017.pdf

3.10. Public Hearing

The Public hearing will be conducted for the projects requiring EIA as per

- Schedule-II – List of Projects requiring an EIA Review of IEE and EIA Regulations 2022.pdf

The Public hearing will be conducted after publishing advertisements with date, venue and project name in well circulating national and local dailies. The Public hearing time after advertisement is seven days.

3.10.1. Replies to Public Comments

The public comments will be replied in writing to EPA as per law.

3.10.2. Committee of Experts (CoE)

The formulated committee of EPA will convene a meeting and there will be detailed presentation of the project under consideration for approval. The experts along with EPA

members will recommend the project environmental approval. In case, if there are found some requirements of Committee of Experts (CoE) regarding environmental data design or any other direction of Government of the Punjab, Government of Pakistan, High Court or the Supreme Court will be addressed.

3.10.2.1. Comments of Committee of Experts (CoE)

The Committee of Experts (CoE) may issue some comments on the project report to EPA which will be communicated through EPA within stipulated time.

3.10.2.2. Replies of RUDA to comments of committee of Experts (CoE)

The comments of Committee of Experts (CoE) will be addressed and submitted to EPA within stipulated time.

3.10.2.3. Recommendation from Committee of Experts

The Committee of Experts (CoE) will recommend the project after completion of above process or will issue recommendations for any required changes.

3.10.2.4. Issuance of NOC

Director General EPA will issue project NOC/Environmental approval with defined conditions to implement the project.

3.10.2.5. Review and Updating of Environmental Reports after expiry period of three years

The proponent will be responsible for review and updating of environmental approvals after expiry period of three years of NOC/environmental approval issued by EPA. (Section 16 of Review of IEE/EIA Regulations 2022) Review of IEE and EIA Regulations 2022.pdf

3.10.3. Cancellation of approval

Notwithstanding anything contained in these Regulations, if, at any time, on the basis of information or report received or inspection carried out, the Agency is of the opinion that the conditions of an approval have not been complied with, or that the information supplied by a proponent in the approved IEE or EIA is incorrect, it shall issue notice to the proponent to show cause, within two weeks of receipt thereof, why the approval should not be cancelled.

- If no reply is received or if the reply is considered unsatisfactory, the Agency may, after giving the proponent an opportunity of being heard:
- Require the proponent to take such measures and to comply with such

conditions within such period as it may specify, failing which the approval shall stand cancelled; or

- cancel the approval.
- On cancellation of the approval, the proponent shall cease construction or operation of the project forthwith.
- Action taken under this Regulation shall be without prejudice to any other action that may be taken against the proponent under the Act or rules or regulations orany other law for the time being in force.

3.11. Environmental Protection Implementation Plans

3.11.1. Inclusion of EMP Cost in the Bidding Documents

EMP cost will be included in the bidding documents and the contractor will comply all requirements and will be responsible for project NOC compliances.

3.11.2. Contract of award to the Contractor to commence the Project

EMP of the project will be included in the bidding documents and the contractor will accept the responsibility of environmental compliances when the project will be at commencement, construction stage as per contract agreement among the parties.

3.11.3. Preparation of Camp Management Plan

The contractor will submit camp management plan before construction activities to the Engineer for formal approval from the client as recommended by the Engineer. The plan will also include the layout plan of the camp.

3.11.4. Preparation of Site Specific EMP (SSEMP)

The contractor will prepare site specific EMP before construction activities and will submit to the Engineer for formal approval from the client as recommended by the Engineer.

3.11.5. Plans inclusion in EMP

The contractor will prepare all the plans as required in EIA and EMP of the project.

i. Health, Safety and Environment (HSE) Management Plan

The contractor will prepare Health, Safety and Environment (HSE) Management Plan for implementation at site.

ii. Emergency Preparedness and Response Plan

The contractor will prepare Emergency Preparedness and Response Plan for implementation at site.

iii. Site Restoration and Rehabilitation Plan

The contractor will prepare Site Restoration and Rehabilitation Plan for implementation at site.

iv. Disaster Management Plan

The contractor will prepare Disaster Management Plan for implementation at site.

v. Waste Management Plan

The contractor will prepare Waste Management Plan for implementation at site.

vi. Drinking Water Supply and Sanitation Plan

The contractor will prepare Drinking Water Supply and Sanitation Plan for implementation at site.

vii. Traffic Management Plan

The contractor will prepare Traffic Management Plan for implementation at site.

viii. Occupational Health and Safety Plan

The contractor will prepare Occupational Health and Safety Plan for implementation at site.

ix. Guidelines for COVID/Communicable Diseases, Dengue Prevention Plan and Others

The contractor will include national/provincial guidelines for COVID/Communicable Diseases, Dengue prevention action plan and others for implementation at site.

x. Change Management Plan

The contractor will prepare Change Management Plan as per requirement.

xi. Borrow Area Management Plan

The contractor will prepare Borrow Area Management Plan for implementation at site.

xii. Resources Conservation Plan

The contractor will prepare Resources Conservation Plan for implementation at site.

xiii. Archaeological 'Chance Find' Procedure

The contractor will prepare Archaeological 'Chance Find' Procedure and follow the procedure.

xiv. Tree Plantation/Reforestation/Afforestation Plan

The contractor will prepare Tree Plantation/Reforestation/Afforestation Plan for implementation at site.

xv. Heatwave Management Plan

The contractor will follow the Heatwave Management Plan and prepare site specific plan.

xvi. Smog Management

The contractor will prepare and follow Smog Management Plan.

3.11.6. Roles and Responsibilities of Stakeholders

A series of public consultations were required to get the feedback/concerns of the different category of stakeholders including provincial departments, district level departments, potential PAPs, local community and other general public residing in the Project area.

Consultation process included meetings with specific proposed project PAPs, community meetings/consultations and semi-structured interviews and one to one meeting/ interviews with the government, private and civil society institutions. During the consultation process, the stakeholders were briefed about the project objectives and scope. Their fears and suggestions were recorded.

Consultations were conducted at two levels:

- Institutions/Departments Level and
- Community level consultations.

3.11.6.1. Implementation of Environmental Management Plan (EMP)

3.11.6.1.1. Institutional Requirements

The institutional requirements for the Construction and Operation & Maintenance (O&M) phases of the every RUDA Project are provided in below sections.

3.11.6.1.2. Institutional Setup for Environmental Management Plan

The key players involved during construction phase of the proposed Project are the RUDA as employer/proponent, PEPA, the Supervisory Consultant (SC) and the Contractor. The roles and responsibilities of these organizations are outlined below.

The following staff will be involved in the implementation of EMP:

- RUDA/Proponent/Employer;
- SC's; and
- Contractor's Environmental Manager.

The employer/ proponent (RUDA) will make Contractor bond through contract documents to implement the IEE including EMP of RUDA Project and other terms and conditions of the Environmental Permit. The whole EMP of the project will be included as a clause of the contract documents. Construction camps will be established after necessary approvals and submission of Site-Specific EMPs to be developed in the light of the relevant agencies requirements, before commencement of construction works. The organizational setup for implementation of EMP during construction phase is provided in Figure-9.1

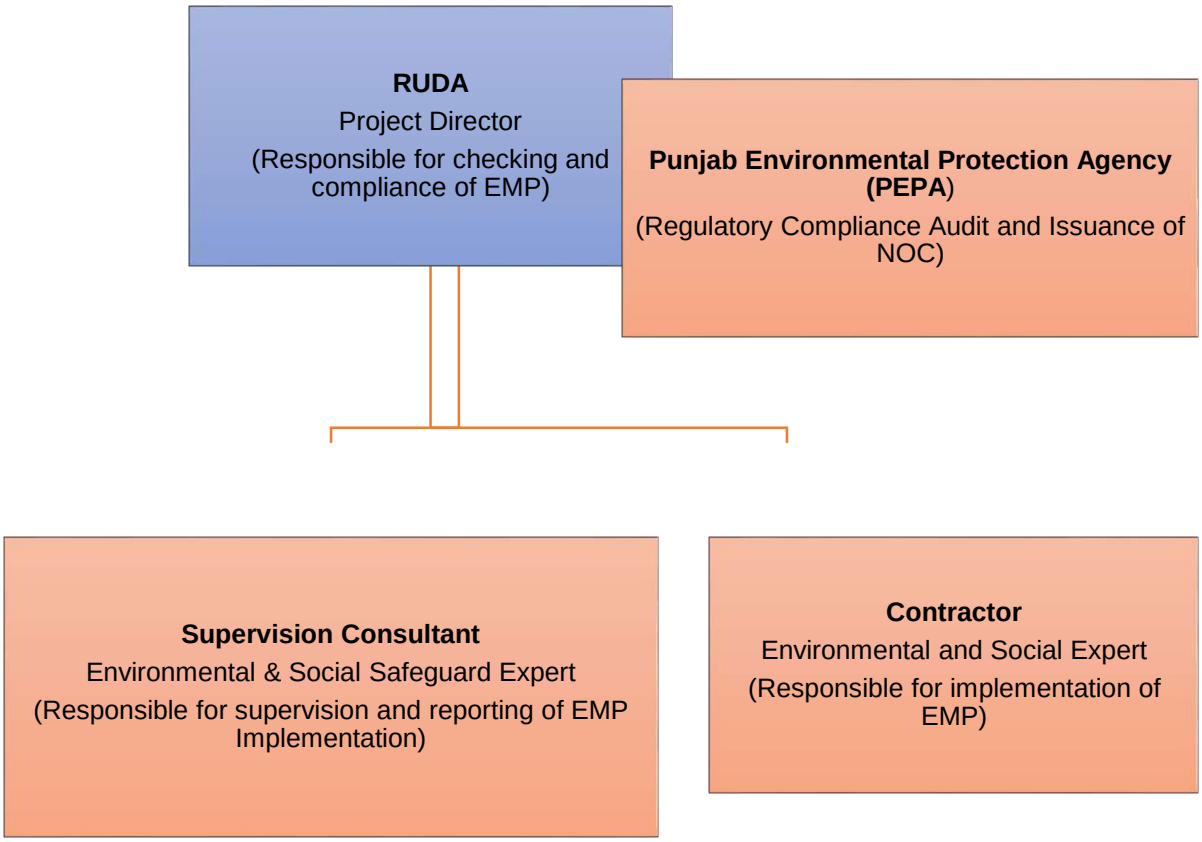


Fig-3.2 Institutional Setup for the Implementation of EMP at Construction Stage

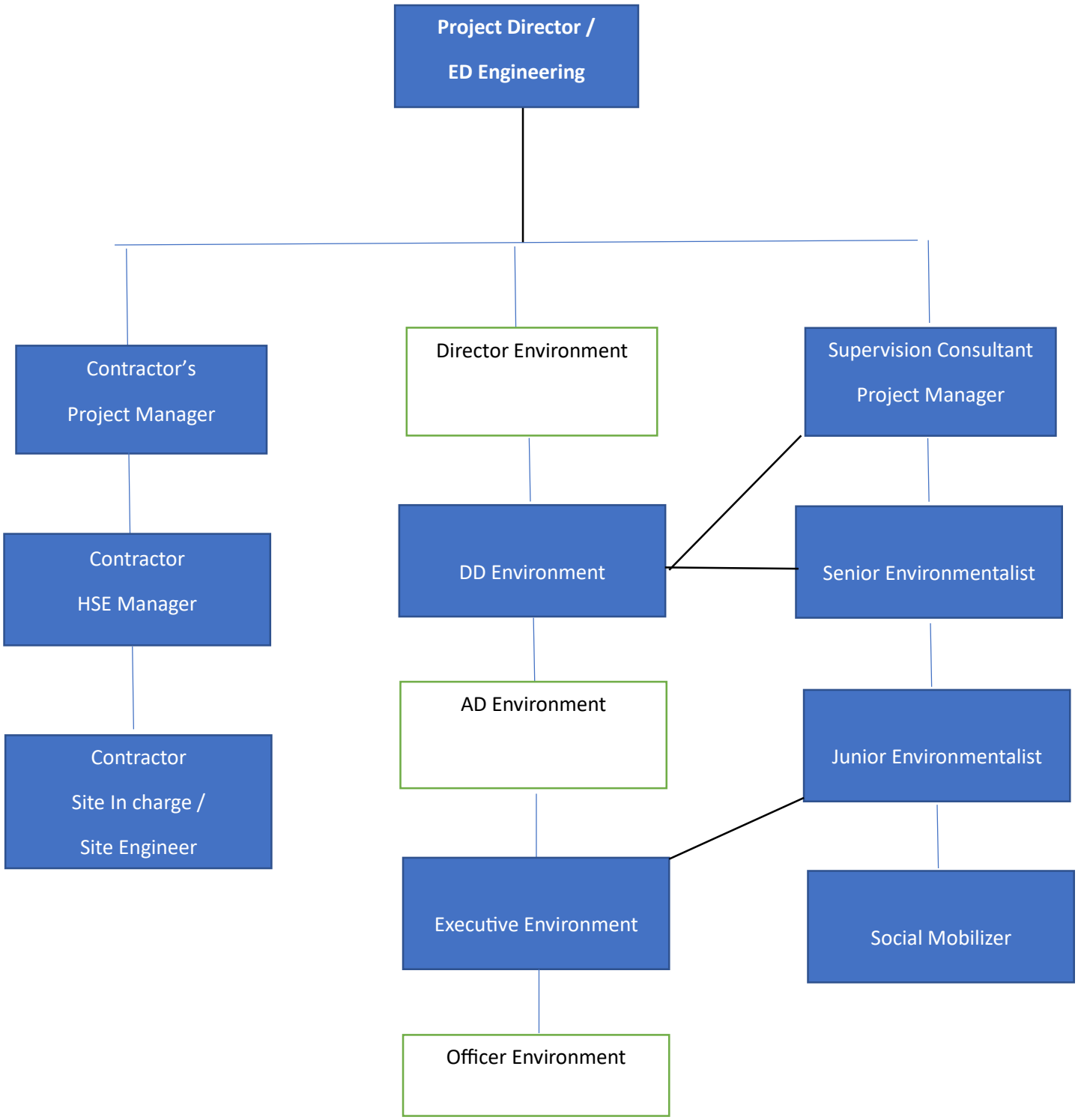


Fig-3.3 Communicational Setup for the Implementation of EMP During Construction and Operational Phase

3.12. Roles and Responsibilities for EMP Implementation during construction Phase

3.12.1. RUDA/ Employer Concerned Staff

The specific responsibilities are as follows:

- Setting up systems for environmental management;
- Ensuring that the Contractor(s) develop and carry out environmental implementation plans that are consistent with the project EMP;
- Liaising between the Project staff and the Supervisory Consultant's staff to monitor environmental and social compliance during construction phase;
- Ensuring that the required environmental and social training is provided to the concerned staff;
- Responsible for carrying out random site visits to the construction sites to review the environmental performance of the contractors;
- Monitoring the progress of environment and social related activities;
- Make sure that the contractor is implementing the additional measures, suggested by the Supervisory Consultant in monthly environmental monitoring reports;
- Assessment of the crops, orchards, valuation of property (if any), public utilities and negotiation with the affectees for fixation of compensation to be paid for temporary as well as permanent acquisition of the land;
- To estimate the crop compensation;
- Assist in checking genuine ownerships of the claimants, in consultation with the Revenue staff for prompt payment to the affectees;
- To ensure that the tenants get their rightful compensation as per prevailing law especially in case of loss of crops;
- To assist Contractor for obtaining necessary approvals from the concerned departments;
- Maintaining interface with the other lined departments/stakeholders; and
- Reporting to the EPA-Punjab on status of EMP implementation.

Responsibilities of RUDA/ Employer Concerned Staff

- Setting up systems for environmental management
- Ensuring that the Contractor(s) develop and carry out environmental implementation plans that are consistent with the EMP
- Ensuring that the required environmental and social training is provided to the concerned staff
- Liaising between the Project staff and the Supervisory Consultant's staff to monitor environmental and social compliance during construction phase
- Responsible for carrying out random site visits to the construction sites to review the environmental performance of the contractors
- Monitoring the progress of environment and social related activities
- Make sure that the contractor is implementing the additional measures, suggested by the Supervisory Consultant in monthly environmental monitoring reports
- Assessment of the crops, orchards, valuation of property, public utilities and negotiation with the affectees for fixation or compensation to be paid for temporary as well as permanent acquisition of the land

3.12.2. Supervision Consultant (SC)

A professional consulting firm will be hired by RUDA and responsible for Contract Administration and Construction Supervision. The firm will be fully empowered as the 'Engineer' in accordance with International Federation of Consulting Engineers (FIDIC) stipulations. The Consultant will administer the civil work's contracts, make engineering decisions, be responsible for quality assurance, provide general guidance and furnish timely responses to the Contractors in all matters relating to the civil works, and ensure that all clauses of the Contract Agreement including environmental and social clauses between the civil works Contractors' and RUDA are respected. The Project Engineer

will have a full-time field based environmental and social specialist to ensure the implementation of project EMP. Two separate experts, one for environment and one for social aspects, will be hired. The environmental and social specialist of SC will also develop training modules, conduct environmental and social trainings for the contractor's staff, and ensure social issues are properly addressed and mitigated during the project life.

Environmental and Social Experts (ESEs) of SC will oversee the performance of contractor to make sure that the contractor is carrying out the work in accordance with project EMP as mentioned in the contract documents. He will provide guidance to the contractor's ESE for implementing each of the activity as given in EMP. ESEs will be responsible for record keeping, providing instruction through the Resident Engineer (RE) for corrective actions and will ensure the compliance of various statutory and legislative requirements.
However, overall responsibilities of ESEs are as follows:

- To oversee the performance of the Contractor to make sure that the Contractor is complying with project EMP;
- Discussing various environmental and social issues and environmental mitigation, enhancement and monitoring actions with all concerned personnel's;
- Inspect, supervise and monitor all the construction and allied activities related to the project EMP for the project and oversee the performance of the Contractor to make sure that the Contractor is complying with project EMP;
- Visiting construction sites including incomplete construction work sites, where there is no contractor's activities, active construction work sites, completed areas of work sites as well as ancillary sites such as borrow areas, quarries, asphalt and crusher sites, hot mix plant sites, construction camps and work shop areas to ensure contractors compliance with project EMP stipulations and conditions of statutory bodies;
- Assisting contractor in all matters related to public contacts including public consultation pertaining to environmental and community issues;
- To organize periodic environmental training programs and workshops for the consultant's and contractor's staff;
- Periodic reporting as mentioned in project EMP; and
- Suggest any additional mitigation measures (if required).

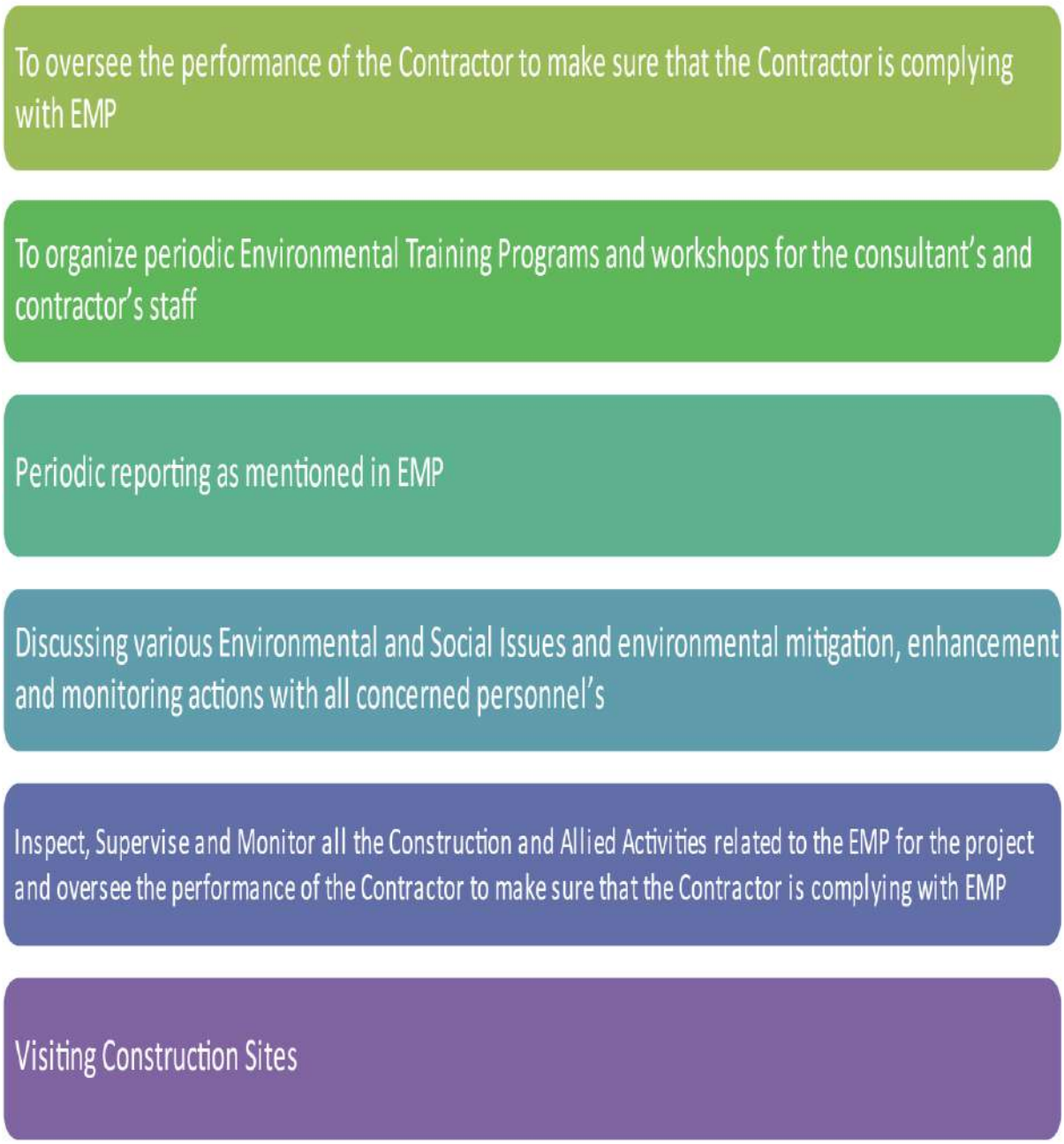


Figure 3.5 Responsibilities of Supervision Consultant

3.12.3. Responsibilities of Contractor

Site Environmental and Social Expert of contractor will carry out the implementation of the mitigation measures at construction site. Contractor will be bound through contract documents to appoint the Site Environmental and Social Expert with relevant educational background and experience. The responsibilities of ESE of Contractor are as follows:

- ESE of contractor will be responsible for Implementation of the mitigation measures at construction site;
- ESE of contractor will prepare Site Specific Environmental and Management Plan (SSEMP) including Evacuation Plan, HSE Management Plan, Material Transportation Plan, Traffic Management Plan, Emergency Response Plan, Monitoring Plan, and asphalt and batching plant area plans, and will submit all the plans to the SC.

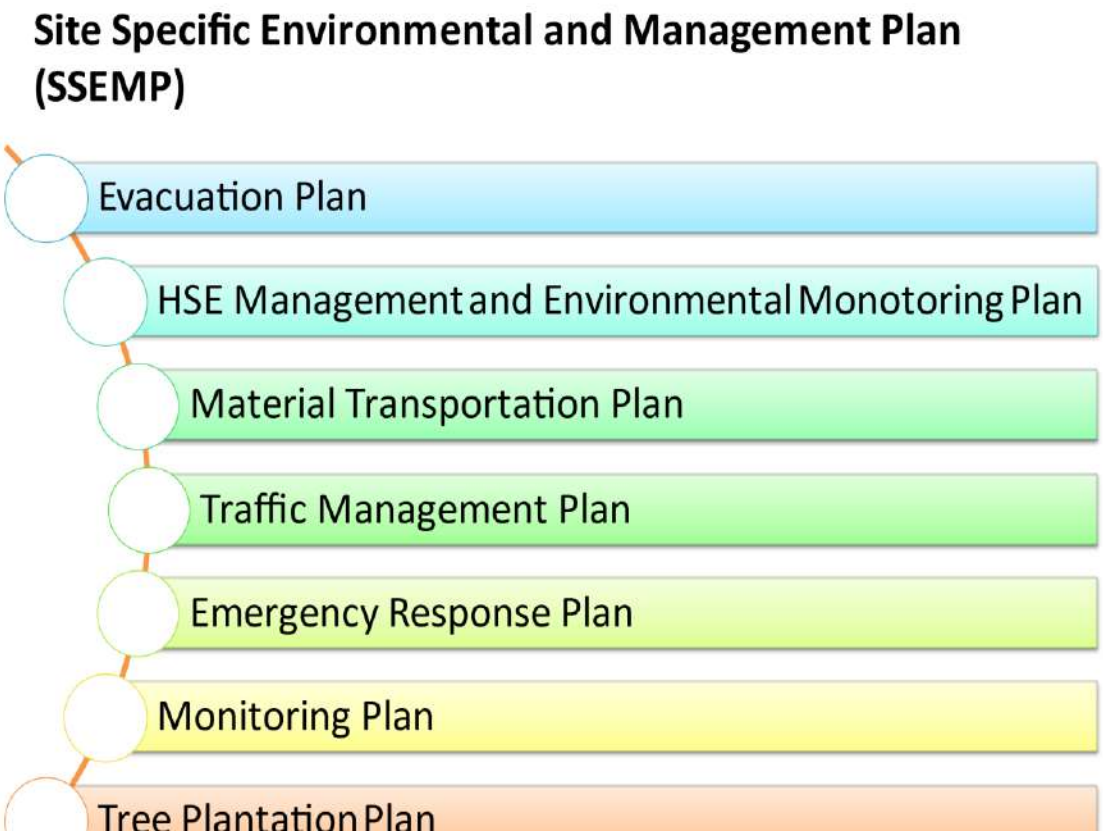


Fig. 3.6 Major Environmental Plans

- ESE of contractor will be responsible for the implementation of EMP and to take effective measures against corrective actions plan;
- ESE will prepare the monthly compliance and monitoring reports as per schedule and will submit it to the SC;
- Provision of proper Personal Protective Equipment's (PPEs) to the workers and train them for their proper use;
- ESE will conduct the environmental, health and safety trainings for the staff and labors; and
- The Contractor shall submit the Code of Conduct that will apply to all of the contractor's staff. The contractor shall submit an outline of how the Code of Conduct will be implemented. The aspects to be addressed include:

    - Ensure compliance with applicable environment, health and safety standards and procedures associated with risks of Project activities;
    - Ensure compliance with all acquired approvals, applicable to the proposed Project;
    - Ensure protection of local community (including vulnerable and disable assemblies), and the Contractor's staff, sub-contractors and daily wage workers;
    - Ensure employment of fulltime security guards, and necessary security measures and instruments (CCTV) at site;
    - Ensure provision of adequately stocked first aid kit at site for dealing with accidental injuries, and natural hazards;
    - Prohibit use of illegal items such as weapons, alcohol and drugs at site;
    - Ensure that Project property is protected against vandalism, theft, and noxious activity;
    - Ensure that positive attitude of respect and warmth is given to staff and community members;
    - Ensure good housekeeping practices shall be adopted at site;
    - Ensure that employment decisions are not made on the basis of personal characteristics unrelated to inherent job requirements, including race, gender, nationality, religion or belief, disability, age, sexual orientation, or ethnic, social and indigenous origin;
    - Ensure establishment and strictly enforcement of "No Sexual Harassment Policy";
    - Ensure provision of necessary sanitation requirements for site workers (both for men and women);
    - Ensure workers only use specified sanitary facilities provided by their employer and not in open areas;
    - Restriction on burning solid waste;

- Restriction on dumping solid and liquid waste into nearby water bodies;
- Prohibition for cutting trees, and clearing vegetative areas for construction camps, and for cooking purpose as a source of fuel; and
- Prohibition on illegal hunting of local fauna.

The Code of Conduct should be written in local and simple language (Urdu and English) and signed by each site staff to specify that they have received a copy of the code; code explained and clarified to them; acknowledged adherence to this Code of Conduct as a condition of employment; and understood that violations of the Code can result in serious consequences. A copy of the code shall be displayed at strategic location of the site, and mainly in the contractor's site office.

Fig. 3.6 Responsibilities of the Contractor

3.13. Punjab Environmental Protection Department (EPD)

Punjab Environmental Protection Agency (PEPA) under EPD Punjab, is the regulatory authority for issuance of NOC for every proposed Project by the proponent. As part of its mandate, protection of environment is their responsibility. Therefore, the agency will undertake an audit (as and when required) of the activities of the Project (both phases i.e., Construction and Operation) with respect to the protocols as defined in project EMP and in Environmental NOC. The specific responsibilities are as follows:

- Liaison with the Environmental Committee of RUDA on the proposed Project to ensure compliance of measures as given in the project EMP and in NOC issued by them for the construction activities of the Project;
- Environmental Audit of the activities being undertaken by the Environmental Committee of RUDA and all other relevant stakeholders as provided in the project EMP and NOC through random site visits and meetings.

3.14. Responsibilities for Environmental Testing and Reporting

The Construction Contractor (CC) will be responsible for Instrumental environmental monitoring and reporting throughout the construction phase under the supervision of Environmental Engineer of Supervision Consultant (SC); in coordination with Project Director, RUDA. During construction phase, environmental testing reports will be prepared on quarterly basis and one comprehensive report will be prepared at the end of the construction phase and will be submitted to each of the following authorities and institutions: (i) RUDA and (ii) EPA- Punjab.

During the first year of the project operation, concessionaire will be responsible to conduct environmental testing and monitoring along with its cost through a third party contractor and EPA-Punjab certified lab. The reports will be prepared biannually and one comprehensive report will be prepared annually and submitted to the EPA-Punjab. Contents of the final report will include results of environmental monitoring in comparison to the standards for the various parameters, location and sampling time along with recommendations for the future environmental testing and monitoring.

3.15. Training and Capacity Building

An environmental and social training and technical assistance (TA) program is to be carried out before the implementation of the proposed project as it strengthens the institutional capacity required to manage the environmental and social issues. Contractor's environmental awareness and appropriate knowledge of environmental protection is critical to the successful implementation of the EMMP because without

appropriate environmental awareness, knowledge, and skills required for the implementation of the mitigation measures, it would be difficult for the Contractor(s) workforce to implement effective environmental protection measures. RUDA will be responsible to engage TA consultant to conduct environmental and social training programs. The objective of the TA will be as follows:

- To help in establishment of appropriate systems;
- To train senior RUDA staff, Contractor and Sub-Contractor workers and Supervision Consultant employees, responsible for managing environment and social tasks and planning during construction and post construction phase; and
- Training courses on specialized areas such as air, water and noise pollution monitoring.

Table- 3.15.1 provides brief detail of the capacity building and training plan for the proposed project.

Table-3.15.1 Details of Capacity Building and Training Plan

Provided by	Contents	Trainees	Duration
TA Individuals, Consultants and Organizations specializing in Environmental Management and Monitoring	Short Seminars and Courses on: • Environmental laws and regulations; • Environmental Sustainability; and • Environmental Management and Monitoring Plan (EMMP)	Members of Environmental Committee, RUDA Staff and Contractor Workers	3 Days
TA Individuals, Consultants and Organizations specializing in Social Management and Monitoring, and Occupational Health and Safety	Short Seminars and Courses on: • Occupational Health and Safety Plan (OHS); • Basic First Aid; • Occupational and Community Health and Safety Management; • Labour Camp Management; • Traffic Management; • COVID-19 Protection and Control;	Members of Environmental Committee, RUDA Staff and Contractor Workers	3 Days

Provided by	Contents	Trainees	Duration
	• Use and Importance of Personal Protective Equipment's (PPEs); and • Fire Safety and Emergency Response Measures.		
TA Individuals, Consultants and Organizations specializing in Environmental and Social Management and Monitoring	Short Seminars and Courses on: • Environmental Management Plan (EMP); • Environment Health and Safety Management; • Occupational Health and Safety; • Basic First Aid; • Waste Management; • Fire Safety and Emergency Response Measures; • Electrical Safety; and • Use and Importance of Personal Protective Equipment's (PPEs)	Operation and Maintenance Staff of RUDA	3 Days

3.16. Communication & Documentation

Communication and documentation is an essential feature of EMP. The key features of such mechanism are:

3.16.1. Data Recording and Maintenance

All forms to be used for recording information during the environmental monitoring will follow a standard format which will correspond to the data base in to which all the gathered information will be placed. Check boxes will be used as much as possible to facilitate data entry. Tracking system will be developed for each form.

3.16.2. Database

The database may include the following information:

- Training programs;
- Staff deployment;

- Non-compliances;
- Corrective actions
- List of environmental data;

3.16.3. List of environmental data to be maintained

- Soil and land pollution;
- Disposal of waste;
- Water resources;
- Fuel oil and chemical spills;
- Vegetation record;
- Noise pollution;
- Air and dust pollution;
- Socio-economic data; and
- Ecological sensitivities.

3.17. Meetings and Reporting

Monthly meetings will be held at site during the construction phase. The purpose of these meetings will be to discuss the routine activities, non-compliances and their remedial measures. Various reports will also be produced at periodic time intervals, as provided in **Table-**3.17.1 along with information regarding persons responsible for report preparation and review process. Additionally, minutes of meeting will also be submitted as part of routine environmental reports.

Table-3.17.1 Meeting and Reporting Mechanism

Sr. No.	Report Category	Prepared by	Reviewed by
1	Monthly	Contractors' environmental staff	RUDA / SC
2	Quarterly	Contractors' environmental staff	RUDA / SC
3	Semi-Annual Environmental Monitoring Report (SAEMR)	Construction Supervision Consultant (CSC)	RUDA / SC
4	Annual Report	Contractors' environmental staff	RUDA / SC
5	Completion Report	Contractors' environmental staff	RUDA / SC

3.18. Social Complaint Register

The Contractor will maintain a register of complaints record from local communities and measures taken to mitigate these concerns.

3.19. Photographic Records

Contractors will maintain photographic records during the implementation of the proposed Project. As a minimum, the photographic records will include the site photographs, all the roads, camp sites and monitoring activities, etc.

3.20. Non-Compliance of the EMP

The implementation of the proposed EMP involves inputs from various functionaries. The Contractor will be primarily responsible for ensuring implementation of the mitigation measures proposed in the EMP, which will be part of the contract documents. The provision of the environmental mitigation cost will be made in the total cost of Project, for which the Contractor will be paid on the basis of monthly compliance reports. However, if the Contractor fails to comply with the implementation of EMP and submission of the monthly compliance reports, deductions will be made from the payments to the Contractor claimed under the heads of environmental components.

3.21. Review of Recorded Data

All the data and communication recorded and maintained by the Contractor will be periodically reviewed and checked by SC and RUDA and necessary action will be recommended to Contractor to improve the recording and documentation.

3.22. Management Plans

Various site-specific management plans will be prepared by Contractor as a part of EMP for the better management and implementation of EMP during all phases of the proposed Project. However, approval of these site-specific plans from RUDA should be sought before start of construction activities. These site-specific plans are listed below but not limited to these:

- Tree Plantation / Reforestation Plan;
- Health, Safety and Environment (HSE) Management Plan;
- Emergency Preparedness and Response Plan;
- Site Restoration and Rehabilitation Plan;
- Waste Management Plan;

- Disaster Management Plan;
- Drinking Water Supply and Sanitation Plan
- Traffic Management Plan;
- Change Management Plan
- Quarry Management Plan; and
- Resource Conservation Plan.

3.23. Public Disclosure

RUDA will disclose this IEE to all the stakeholders prior to the start of the construction. This report will be made available to the stakeholders at places as designated by the PEPA. In addition, executive summary of the Report will be translated into Urdu language and made available to the affected communities and locals. The copies will also be kept at construction site for ease in accessibility of the locals. This will ensure the locals to be aware of the Project impacts, its mitigation, responsible staff and mode of implementation. In addition, the executive summary will also be published on RUDA website.

ANNEXURE-A

Abstract of Review IEE/EIA Regulations 2022

4. Review of IEE/EIA Regulations 2022

In exercise of the powers referred by Section 33 of the Punjab Environmental Protection Act (PEPA), 1997 (XXXIV of 1997), the Environmental Protection Agency, Punjab, with the approval of the Federal Government, is pleased to make the following Regulations, namely IEE/EIA Review Regulations, 2022.

These regulations may be called the Punjab, Environmental Protection Agency Review of Initial Environmental Examination and Environmental Impact Assessment Regulations, 2022.

4.1. Projects requiring an IEE

A proponent of a project falling in any category listed in Schedule I shall file an IEE with the Provincial Agency, and the provisions of Section 12 shall apply to such project.

4.2. Projects requiring an EIA

A proponent of a project falling in any category listed in Schedule II shall file an EIA with the Provisional Agency, and the provisions of Section 12 shall apply to such project.

4.3. Projects not requiring an IEE or EIA

A proponent of a project not falling in any category listed in Schedules I and II shall not be required to file an IEE or EIA:

Provided that the proponent shall file –

- An EIA, if the project is likely to cause an adverse environmental effect;
- for projects not listed in Schedules I and II in respect of which the Provincial Agency has issued guidelines for construction and operation, an application for approval accompanied by an undertaking and an affidavit that the aforesaid guidelines shall be fully complied with.

Notwithstanding, anything contained in sub-Regulation (1), the EPA may direct the proponent of a project, whether or not listed in Schedule I or II, to file an IEE or EIA, for reasons to be recorded in such direction:

Provided that no such direction shall be issued without the recommendation in writing

of the Environmental Assessment Advisory Committee constituted under Regulations 22.

The provisions of Section 12 shall apply to a project in respect of which an IEE or EIA is filed under sub-Regulation (1) or (2).

4.4. Preparation of IEE and EIA

The Provincial Agency may issue guidelines for preparation of an IEE or an EIA, including guidelines of general applicability, and Sectoral guidelines indicating specific assessment requirements for planning, construction and operation of projects relating to particular sector.

Where guidelines have been issued under sub-Regulation (1), an IEE or EIA shall be prepared, to the extent practicable, in accordance therewith and the proponent shall justify in the IEE or EIA.

4.5. Review Fees

The proponent shall pay, at the time of submission of an IEE or EIA, a non-refundable Review Fee to the Provincial Agency, as per rates shown in Schedule III.

4.6. Filing of IEE and EIA

Every IEE and EIA shall be accompanied by –

- An application, in the form prescribed in Schedule IV; and
- Copy of receipt showing payment of the Review Fee or Bank Draft in favor of DG EPA Punjab

Five ring bound printed paper copies and one electronic copy (pdf or word format) of IEE or EIA shall be filed with the agency.

4.7. Preliminary scrutiny

Within 10 working days of filing of the IEE or EIA, the EPA shall –

- Confirm that the IEE or EIA is complete for purposes of initiation of the review process; or
- Require the proponent to submit such additional information as may be required or
- Return the IEE or EIA to the proponent for revision, clearly listing the points requiring further study and discussion.

In case the proponent fails to submit the required documents or conduct further study or discussion after three notices served to him by the agency, with a gap not

less than seven days, his application shall be closed and he shall be required to submit a fresh application for approval

In case of closure of application under sub-Regulation (2), the review fee shall remain valid for a period of six months from the date of closure of application

Nothing in Sub-Regulation (1) shall prohibit the Agency from requiring the proponent to submit the additional information at any stage during the review process.

4.8. Public participation

In the case of an EIA, the Agency shall, simultaneously with issue of confirmation of completeness under clause (a) of sub-Regulation (1) of Regulation 8, cause to be published in any English or Urdu nationalnewspaper and in a local newspaper of general circulation in the area affected by the project, a public notice mentioning the type of project, its exact location, the name and address of the proponent and the places at which the EIA of the project can, subject to the restrictions in sub-Section (3) of Section 12, be accessed.

- The notice issued under sub-Regulation (1) shall fix a date, time and place for public hearing of any comments on the project or its EIA.
- The date fixed under sub-Regulation (2) shall not be earlier than 30 days from the date of publication of the notice.
- The EPA-Punjab shall also ensure the circulation of the EIA to the concerned Government Agencies and solicit their comments thereon.
- All comments received by the Agency from the public or any Government Agency shall be collated, tabulated and duly considered by it before decision on the EIA.
- During the public hearing, the proponent shall provide sufficient details of the nature of the project, adverse environmental impacts of the project and the preventive, mitigatory or compensatory measures to be taken by the proponent to address such impacts.

4.9. Review

The Agency shall make every effort to carry out its review of the IEE within 30 days, and of the EIA within 45 days, of issuance of confirmation of completeness under Clause (a) of sub-Regulation of Regulation 9.

- In reviewing the IEE or EIA, the Federal Agency shall consult such Committee of Experts (CoE) as may be constituted for the purpose by the Director-General (DG), and may also solicit views of the Sectoral AdvisoryCommittee, if any, constituted by the Provincial Government under sub- Section (6) of Section 5 of

the Act.

- The DG may, where he considers it necessary, constitute a committee to inspect the site of the project and submit its report on such matters as may be specified.
- Depending upon the type of the project, the review of the IEE or EIA by the Agency may be based on quantitative and qualitative assessment of the documents and data furnished by the proponent, comments from the public and Government Agencies received under Regulation 09, and views of the committeesmentioned in sub-Regulations (2) and (3) above.
- Considered the life cycle of the project, best available technologies and any social impact of the project through its life cycle, assess any relevant measures of reduction, recycling or re-use that may be employed by the project proponent.

4.10. Approval

On completion of the review, the approval of the agency shall be communicated to the proponent in the form prescribed in Schedule-V in the case of an IEE, and in the form prescribed in Schedule-VI in case of an EIA.

4.11. Conditions of approval

Every approval of an IEE or EIA shall, in addition to such conditions as may be imposed by the Agency, be subject to the condition that the project shall be designed and constructed, and mitigatory and other measures adopted, strictly in accordance with the IEE/EIA, unless any variation thereto have been specified in the approval by the Agency.

- Where the Agency accords its approval subject to certain conditions, the proponent shall –
- Before commencing construction of the project, acknowledge acceptance of the stipulated conditions by executing an undertaking in the form prescribed in Schedule VII;
- before commencing operation of the project, obtain from the Federal Agency written confirmation that the conditions of approval, and the requirements in the IEE/EIA relating to design and construction, adoption of mitigatory and other measures and other relevant matters, have been duly complied with.

4.12. Confirmation of compliance

The request for confirmation of compliance under clause (b) of sub- Regulation (2) of Regulation 13 shall be accompanied by an Environmental Management Plan (EMP)

indicating the measures and procedures proposed to be taken to manage or

mitigate the environmental impacts for the life of the project, including provisions for monitoring, reporting and auditing.

- Where a request for confirmation of compliance is received from a proponent, the Agency may carry out such inspection of the site and plant and machinery and seek such additional information from the proponent as it may deem fit:

- Provided that every effort shall be made by the EPA to provide the requisite confirmation or otherwise within 15 days of receipt of the request, with complete information, from the proponent.

- The Federal Agency may, while issuing the requisite confirmation of compliance, impose such other conditions as the Environmental Management Plan, and the operation, maintenance and monitoring of the project as it may deem fit, and such conditions shall be deemed to be included in the conditions to which approval of the project is subject.

4.13. Deemed approval

The four-month period for communication of decision stipulated in sub-Section (4) of Section 12 shall commence from the date of filing of an IEE or EIA in respect of which confirmation of completeness is issued by the EPA under clause (a) of sub-Regulation (1) of Regulation 8.

4.14. Extension in review period

Where the Provincial Government in a particular case extends the four-month period for communication of approval prescribed in sub-Section (5) of Section 12 of the PEPA Act, it shall, in consultation with the Agency, indicate the various steps of the review process to be taken during the extended period, and the estimated time required for each step.

4.15. Validity period of approval

The approval accorded by Agency under Section 12 read with Regulation 11 shall be valid, for commencement of construction, for a period of three years from the date of issue.

- If construction is commenced during the initial three years validity period, the validity of the approval shall stand extended for a further period of three years from the date of issue.
- After issue of confirmation of compliance, the approval shall be valid for a period of three years from the date thereof.
- The proponent may apply to the Agency for extension in the validity periods

mentioned in sub-Regulations (1) and (2) which may be granted by the Federal Agency in its discretion for such period not exceeding three years at a time, ifthe conditions of the approval do not require significant change:

- Provided that the Agency may require the proponent to submit a fresh IEE or EIA, if in its opinion changes in location, design, construction and operation of theproject so warrant.

4.16. Entry and inspection

For purposes of verification of any matter relating to the review or to the conditions of approval of an IEE or EIA prior to, during or after commencement of construction or operation of a project, duly authorized staff of the Agency shallbe entitled to enter and inspect the project site, factory building and plant and equipment installed therein.

- The proponent shall ensure full cooperation of the project staff at site to facilitate the inspection, and shall provide such information as may be required by the Federal Agency for this purpose and pursuant thereto.

4.17. Monitoring

- After issuance of approval, the proponent shall submit a report to the Federal Agency on completion of construction of the project.
- After issue of confirmation of compliance, the proponent shall submit an annual report summarizing operational performance of the project, with reference to the conditions of approval and maintenance and mitigatory measures adopted by the project.
- To enable the Federal Agency to effectively monitor compliance with the conditions of approval, the proponent shall furnish such additional information as the Federal Agency may require.

4.18. Cancellation of approval

Notwithstanding anything contained in these Regulations, if, at any time, on the basis of information or report received or inspection carried out, the Agency is of the opinion that the conditions of an approval have not been complied with, or that the information supplied by a proponent in the approved IEE or EIA is incorrect, it shall issue notice to the proponent to show cause, within two weeks of receipt thereof,why the approval should not be cancelled.

- If no reply is received or if the reply is considered unsatisfactory, the Agency may, after giving the proponent an opportunity of being heard:
- Require the proponent to take such measures and to comply with such conditions within such period as it may specify, failing which the approval

shall stand cancelled; or

- cancel the approval.
- On cancellation of the approval, the proponent shall cease construction or operation of the project forthwith.
- Action taken under this Regulation shall be without prejudice to any other action that may be taken against the proponent under the Act or rules or regulations orany other law for the time being in force.

4.19. Registers of IEE and EIA projects

Separate Registers to be maintained by the EPA for IEE and EIA projects under sub-Section (7) of Section 12 shall be in the form prescribed in Schedule VIII.

5. Environmentally sensitive areas

- The Agency may, by notification in the official Gazette, designate an area to be an environmentally sensitive area.
- For the area to be declared as Environmentally sensitive, the district administration concerned or any other concerned Government Agency (Wildlife, Parks and Forest departments, etc.) shall forward the following in writing, to the agency
    - The specific area along with khasra and khewat Nos to be declared as environmentally sensitive area and
    - The reason for declaring as above
- The Agency may from time to time issue guidelines to assist proponents and other persons involved in the environmental assessment process to plan and prepare projects located in environmentally sensitive areas.
- Notwithstanding anything contained in regulation (3), (4) and (5) the proponent of the project situated in an environmentally sensitive area shall be required to file an EIA with the Agency
- Where guidelines have been issued under sub-regulation (3), the projects shall be planned and prepared, to the extent practicable, in accordance therewith and any departure therefrom justified in the EIA pertaining to the project.

6. Environmental Assessment Advisory Committee

For purposes of rendering advice on all aspects of environmental assessment, including guidelines, procedures and categorization of projects, the Director-General shall constitute an Environmental Assessment Advisory Committee comprising –

a)	Director EIA, EPA-Punjab	Chairman
b)	One representative of industries, commerce, investment and skill Development Department	Member
c)	One representative from chamber of commerce and industries	Member
d)	Deputy Director EIA, EPA-Punjab	Secretary

7. Other approvals

Issue of an approval under Section 12 read with Regulation 12 shall not absolve the proponent of the duty to obtain any other approval or consent that may be required under any law for the time being in force.

8. Schedule for Filing IEE /EIA

SCHEDULE I
(*See* Regulation 3)

8.1. List of projects requiring an IEE

A. Agriculture, Livestock and Fisheries

1. Controlled Poultry Forms, livestock, Hatchery, stud and fish farms with total cost more than Rs.10 million
2. Projects involving repacking, formulation or warehousing of agricultural products

B. Energy

1. Hydroelectric power generation from 1 MW to 50 MW
2. Transmission lines from 11 KV to 132 KV, and large distribution projects up to 132 KV
3. Oil and gas transmission systems
4. Renewable energy projects (Including wind and solar) greater than 05 MW up to 100 MW and biogas plant for commercial purposes.
5. Waste-to-energy generation projects

C. Manufacturing and processing

1. Apparel (Including garments and leather stitching units), cotton, spinning mills, woolen mills, weaving mills and manual carpet weaving units.
2. Food processing industries including, beverages, milk and dairy products, with total cost less than Rs.200 million
3. Synthetic resins, plastic and manmade fibers
4. Floor Mills, Rice Mills, edible oil, fats and vegetable ghee and feed mills
5. Rubber Products with total cost less than R.s 100 million
6. Chemical formulation units
7. Brick Kilins

D. Mining and mineral processing

1. Commercial extraction of sand, gravel, limestone, clay, sulphur and

other minerals not included in Schedule II with total cost less than Rs.500million

2. Exploration of coal, gold, copper, Sulphur and precious stone

3. Crushing, Grinding and Separation Process including stone crushers.

E. Transport

1. Federal or Provincial highways (except maintenance, rebuilding or reconstruction of existing metalled roads) with total cost less than Rs.50 million

2. Ports and harbor development for ships less than 500 gross tons

F. Water management, dams, irrigation and flood protection

1. Small dams and reservoirs

2. Irrigation and drainage projects

G. Water supply and treatment

Water supply schemes and treatment plants with total cost less than Rs.50 million

H. Waste disposal

Non-Hazardous Scrap Yard / warehouse

I. Urban development and tourism

1. Housing schemes less than 300 kanals, including land sub-division
2. Multistoried buildings, residential apartments, educational institutions, restaurants and hotel with height of more than 70 feet and area more than 2 kanals.
3. Medical and Universities and Research Institutes.
4. Hospital less than 50 bed
5. Urban Development Projects

J. Other projects

Any other project for which filing of an IEE is required by the Agency under sub-Regulation (2) of Regulation (5)

8.2. List of projects requiring an EIA

Schedule II

A. Energy

1. Hydroelectric power generation over 50 MW
2. Transmission lines more than 132 KV and grid stations
3. Nuclear power plants
4. Petroleum refineries
5. Oil and gas extraction projects including exploration, production, gathering systems, separation and storage

B. Manufacturing and processing

1. Cement plants
2. Chemicals manufacturing units, including pharmaceutical and cosmetics
3. Sugar mills and distilleries
4. Food processing industries including beverages, milk and dairy products, with total cost more than Rs.200 million
5. Paper and Paperboard, paper pulping, paint and dyes
6. Textile units comprising of dying and printing
7. Pesticides and Fertilizer manufacturing units.
8. Poultry waste processing units / rendering units
9. Tannery and Leather Units
10. Rubber Projects with total cost more than Rs. 100 million
11. Battery manufacturing and recycling plant
12. Ceramics and glass units
13. Electroplating and nickel/chrome plating including surgical units
14. Cutlery units
15. Slaughter house
16. Iron and steel rolling units
17. Steel furnaces
18. Smelting plants
19. Auto mobile manufacturing and assembling units
20. Resource recovery units

C. Mining and mineral processing

1. Mining and processing of coal, gold, copper, sulphur and precious stones
2. Mining and processing of major non-ferrous metals
3. Commercial extraction of sand using dredger

D. Transport

1. Airports
2. Highways, Motorways, expressway or major roads
3. Ports and harbor development for ships of 500 gross tons and above
4. Railway works
5. Flyover, underpass and bridge having total length of more than 500 meters

E. Water management, dams, irrigation and flood protection

1. Medium and large Dam and Reservoirs

F. Water supply, Sewerage System and treatment

Water supply schemes and treatment plants (excluding Reverse Osmosis, Ultrafiltration and such like) with total cost more than Rs.50 million
Wastewater channel / sewerage system schemes
Combined wastewater treatment plants with treatment capacity greater than 100 m^3/hr.

G. Waste Storage and Disposal

Landfill sites
Waste incinerators and autoclaves
Hazardous substance or waste storage warehouse

H. Urban development and tourism

Housing Schemes more than 300 Kanals
Large-Scale tourism development projects
Hospitals more than 50 beds
Hotels more than 50 rooms
Industrial Estates (Including export processing zones)

I. Environmentally Sensitive Areas

All projects situated in environmentally sensitive areas

J. Other projects

1. Any other project for which filing of an EIA is required by the provincials Agency under sub-Regulation (2) of Regulation 5.

8.3. IEE/EIA Review Fees

SCHEDULE III

Table-7.1 Schedule III IEE/EIA Review Fee

Total Project Cost	IEE	EIA
Upto Rs.5,000,000	NIL	NIL
Rs.5,000,001 to 10,000,000	Rs.10,000	Rs.15,000
Greater than Rs.10,000,000	Rs.15,000	Rs.30,000

8.4. Application Form

SCHEDULE IV

[*See* Regulation 8(2)(a)]

1.	Name and address ofproponent		Phone: Fax:	
2.	Consultant's Detail			
3.	Description of project			
4.	Location of project			
5.	Objectives of project			
6.	IEE/EIA attached?	IEE/EIA :	Yes/No	
7.	Have alternative sites been considered andreported in IEE/EIA?		Yes/No	
8.	Existing land use		Land requirement	
9.	Is basic site data available, or has itbeen measured?	(only tick yes if the data is reported in theIEE/EIA) Meteorology (includingrainfall) Ambient air quality Ambient water qualityGround water quality	<u>Available</u> Yes/No Yes/No Yes/No Yes/No	<u>Measured</u> Yes/No Yes/No Yes/No Yes/No
10.	Have estimates of thefollowing been reported?	 Water balance Solid waste disposal Liquid waste treatment	<u>Estimated</u> Yes/No Yes/No Yes/No	<u>Reported</u> Yes/No Yes/No Yes/No
11.	Source of power		Power Requirement	
12.	Labour force (number)	Construction: Operation:		

<u>Verification:</u> I do solemnly affirm and declare that the information given above and contained in the attached IEE/EIA is true and correct to the best of my knowledge and belief.

Date _____

Signature, name and ____ designation of proponent (with official stamp/seal)

8.5. Decision on IEE

SCHEDULE VI
[*See* Regulation 12]

1. Name and address of proponent _____

_____

2. Description of project _____

3. Location of project _____

4. Date of filing of IEE _____

5. After careful review of the IEE, the Federation Agency has decided –

(a) to accord its approval, subject to the following conditions:

_____
_____

or (b) that the proponent should submit an EIA of the project, for the followingreasons –

_____
_____

[Delete (a) or (b), whichever is applicable]

Dated _____

Tracking no.__

Director General EPA
(With official stamp/seal)

8.6. Decision on EIA

SCHEDULE VII

[*See* Regulation 12]

1. Name and address of proponent _____

   _____

2. Description of project _____

3. Location of project _____

4. Date of filing of EIA _____

5. After careful review of the EIA, and all comments thereon, the provincial Agencyhas decided –

   (a) to accord its approval, subject to the following conditions:

   _____
   _____

or (b) that the proponent should submit an EIA with the following modifications-

_____
_____

[Delete (a)/(b), whichever inapplicable]

Dated _

Tracking No._____

8.7. Undertaking

SCHEDULE VIII
[*See* Regulation 13(2)]

I, (full name and address) as proponent for (name, description and location of project) do hereby solemnly affirm and declare that I fully understand and accept the conditions contained in the approval accorded by the Federal Agency bearing tracking no. dated____, and undertake to design, construct and operate the project strictly in accordance with the said conditions and the IEE/EIA.

Date _____

Signature, name and ____
designation of proponent
(with official stamp/seal)

Witnesses
(Full names and addresses)

(1) _____

(2) _____

8.8. Form of Registers for IEE and EIA Projects

SCHEDULE IX
(*See* Regulation 21)

S. No.	Description	Relevant Provisions
1.	Tracking number	
2.	Category type (as per Schedules I and II)	
3.	Name of proponent	
4.	Name and designation of contact person	
5.	Description and Category of the project	
6.	Location of project	
7.	Project capital cost	
8.	Date of receipt of IEE/EIA	
9.	Approval granted (Yes/No)	
10.	Date of approval granted or refused	
11.	Date of extension of approval validity	
12.	Date of issue of confirmation of compliance	
13.	Date of cancellation, if applicable	

9. Details of EPA Approved Projects of RUDA

Table-10.1 Details of EPA Approved Projects of RUDA

Sr. No.	Project Name	Public Hearing	Description
1	IEE Report, CHAHARBAGH	N/A	NOC, ISSUED
2	IEE Report Access road zone-2	N/A	NOC, Issued through commissioner office-LHR.
3	IEE Report of Industrial Zone Phase-1	N/A	NOC issued by EPA Punjab, Lahore
4	IEE Report Access Road Zone -03 (Addendum)	N/A	NOC issued by EPA Punjab, Lahore
5	IEE Report of Industrial Roads from Turki Road to Access Road Zone-2	N/A	NOC, Issued
6	EIA Report Waste Water Treatment Plant (WWTP)	NOV30, 2021	
7	EIA Report-River Training and Channelization (Project-phase-1) 14 KM	NOV 18, 2021	
8	Strategic Development Plan Phase-i	February 20, 2021	NOC issued by EPA Punjab, Lahore

9.1. Details of ongoing cases of RUDA with EPA, Punjab

1. Development of Infrastructure in Industrial Zone Phase-2(2A&2B)
2. (Industrial Estates)
3. Parallel Road along Right Side River

4. Promenade
5. Parallel Road Along Left Side River Promenade
6. Access Road From Kalakhatai to Sapphire Bay
7. Chaharbagh trumpet

Many people think climate change mainly means warmer temperatures. But temperature rise is only the beginning of the story. Because the Earth is a system, where everything is connected, changes in one region can influence changes in the rest. The consequences of climate change now include, among others, intense droughts, water scarcity, severe fires, SMOG, rising sea levels, flooding, melting polar ice, earthquakes, urban flooding, catastrophic storms and declining biodiversity.

The world just had the hottest June 2023 on record, with unprecedented sea surface temperatures and record low Antarctic Sea ice extent. According to European Union's Copernicus Climate Change Service, June 2023 was just over 0.5°C above the 1991-2020 average, smashing the previous record of June 2019. The heat continues into July – traditionally the hottest month of the year.

The average global temperature in 2022 was about 1.15°C above the 1850-1900 average. The cooling influence of La Niña conditions over much of the past three years temporarily reined in the longer-term warming trend. But La Niña ended in March 2023 and an El Niño is forecasted to develop in the coming months. Typically, El Niño increases global temperatures in the year after it develops – in this case this would be 2024.

The annual mean global near-surface temperature for each year between 2023 and 2027 is predicted to be between 1.1°C and 1.8°C higher than the 1850-1900 average. This is used as a baseline because it was before the emission of greenhouse gases from human and industrial activities. The increased concentrations of GHGs in the atmosphere are shown with the figure below:

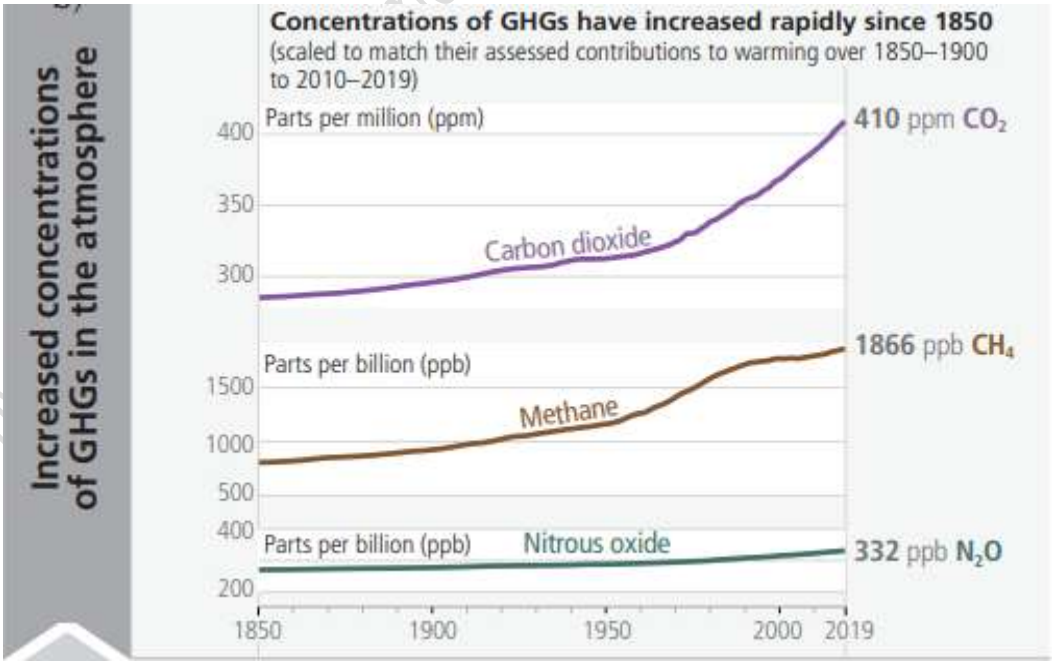


Figure A-1: Increase in GHGs

There is a 98% chance of at least one in the next five years beating the temperature record set in 2016, when there was an exceptionally strong El Niño. The chance of the five-year mean for 2023-2027 being higher than the last five years is also 98%.

Predicted precipitation patterns for the May to September 2023-2027 average, compared to the 1991-2020 average, suggest increased rainfall in the Sahel, northern Europe, Alaska and northern Siberia, and reduced rainfall for this season over the Amazon and parts of Australia.

It was wetter than average over most of southern Europe, western Iceland and north-western Russia, with heavy precipitation leading to floods. Extra-tropical wetter-than-average regions included western north America, regions of south-western Asia, Japan, South Africa, Brazil, Chile, New Zealand, and a large region of Australia; Japan and Pakistan were hit by typhoon Mawar and cyclone Biparjoy, respectively.((WMO), 2022)

The world's wealthiest 1 % emits more than twice the emissions of the poorest half combined. That is why developed nations must step up to make rapid and large-scale emission reduction and support developing countries as they build low-carbon economies and make adequate climate adaptation.

China is one of the top GHG emitters. It accounts for 27.79% of global emissions. In 2018, it emitted 13,739.79 million tonnes. It has had one of the biggest increases in GHG emissions — 250% since 1990.

United States of America ranks second in the list of GHG emitters. It accounts for 12.74% of global emissions. In 2018, it emitted 6,297.62 million tonnes. It is one of the countries with the highest per capita GHG emissions — 19.27 tonnes.

Pakistan accounts for 1.02% of global emissions. In 2018, it emitted 504.59 million tonnes (UNEP).

Pakistan is ranked 8th[1] in the list of countries most vulnerable to climate change over the last two decades in the period of 2000-2019 with 29 CRI (Climate Risk Index).(Eckstein, Künzel, & Schäfer, 2021)

The per capita GHG emissions of Pakistan are also at rise. In Pakistan, agriculture, forestry and land use sector is the largest source of GHG emissions, accounting for nearly 46% of these emissions, followed by the energy sector (45%), industrial processes (5%), emissions and waste (4%)[2]. Still the vulnerability, adaptation and resilience remain at the top priority in context of climate action in the country.

Pakistan regularly experiences some of the highest maximum temperatures in the world, with many regions experiencing temperatures of 38°C and above on an annual basis. When weather patterns converge to deliver prolonged periods of heat-wave, serious human health impacts can result. During the 2015 heat-wave in Pakistan over 65,000 people were hospitalized with heat stroke.(W. Bank, 2021)

The uneven distribution of GHG emissions in the different regions of world since 1850 is shown with help of figure below:

[1] *Global Climate Risk Index 2021 (Germanwatch)*
[2] *GHG Inventory of Pakistan 2018 and NCCP*

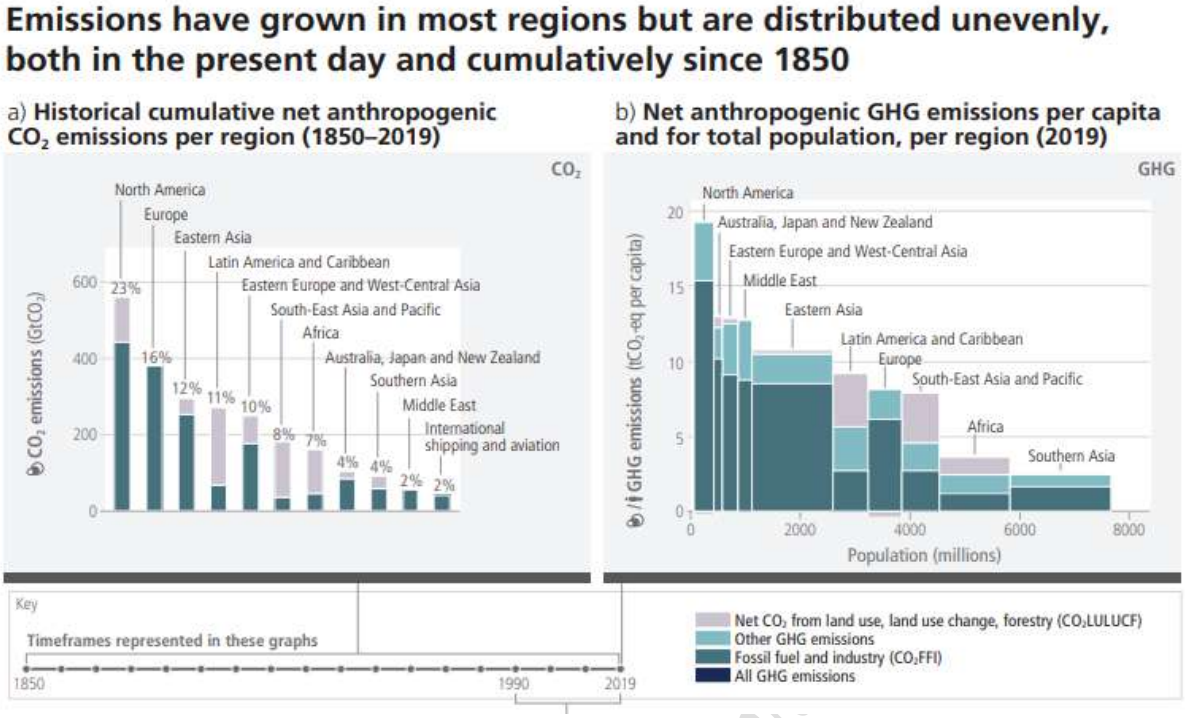


Fig A-2: Growing Trends of Emissions

Pakistan is affected by the climate change in the form of heat-waves, desertification, glacier melting, unprecedented rains, coastal urban flooding, and spread of vector-borne diseases such as **dengue** and an overall increase in the frequency and intensity of climate-induced natural disasters despite its meagre contribution to the Global Greenhouse Gas (GHG) emissions (0.8% as per GHG inventory, 2018). It leads to socio-economic and ecological losses. It is because Pakistan had experienced 173 extreme weather events and suffered an estimated loss of $3.8 billion due to climate change between 2000 and 2019.

The Monsoon Floods, 2022 have caused an estimated economic loss of $30 Billion, affecting 33 million people across the country[3].(Group, 2023)

Frequent and extreme weather patterns over a short period of time have become a yearly norm for many parts of the province, especially to its Southern region. The average temperatures in Punjab are expected to rise by a further 1°C - 3°C by 2060 with 2.4 – 2.5°C rise in northern and central Punjab. A change of more than 16% in average rainfall is projected in northeast of the province, further aggravating the urban flooding and subsequent loss and damages.(P.-C. C. K. P.-W. Bank, 2021) In 2023, Pakistan faced 123% more rains, mostly in Southern areas of Punjab due to weather shift.

In COP 27, urges developed country Parties to urgently and significantly scale up their provision of climate finance, technology transfer and capacity-building for adaptation so as to respond to the needs of developing country Parties as part of a global effort, including for the formulation and implementation of national adaptation plans and adaptation communications.

[3] *Pakistan Floods 2022- Post Disaster Needs Assessment (The World Bank)*

Highlights the role of the Least Developed Countries Fund and the Special Climate Change Fund in supporting actions by developing countries to address climate change, welcomes the pledges made to the two Funds and invites developed countries to further contribute to the two Funds.

Emphasizes the importance of protecting, conserving and restoring water and water related ecosystems, including river basins, aquifers and lakes, and urges Parties to further integrate water into adaptation efforts.

Expresses deep concern regarding the significant financial costs associated with loss and damage for developing countries, resulting in a growing debt burden and impairing the realization of the Sustainable Development Goals (SDGs). Global climate finance flows are small relative to the overall needs of developing countries, with such flows in 2019–2020 estimated to be USD 803 billion, 23 which is 31–32 % of the annual investment needed to keep the global temperature rise well below 2 °C or at 1.5 °C, and also below what would be expected in the light of the investment opportunities identified and the cost of failure to meet climate stabilization targets.

Urges developed country Parties to provide enhanced support, including through financial resources, technology transfer and capacity-building, to assist developing country Parties with respect to both mitigation and adaptation, in continuation of their existing obligations under the Convention, and encourages other Parties to provide or continue to provide such support voluntarily.

Climate Change imposes numerous challenges, and is becoming an existential threat globally. Pakistan's experience through Nature-based Solutions (NBS) in addressing the global challenges serves as a solution provider. Pakistan has surpassed mitigation contributions, and has taken climate change 'beyond Nationally Determined Contributions (NDCs), and took initiatives which contributed to reduction of 8.7% emissions between the time period of 2016-2018.

In view of the above, the central goal of the updated NDCs is to realize the vision of a sustainable, low carbon, and climate-resilient Pakistan. The Government of Pakistan (Government of Pakistan) aims to work towards the full implementation of NDC contributions considering the current circumstances, and realizing the importance of socio-economic conditions in designing climate action. Pakistan aims to advance the following specific objectives:

1. Improve NDC planning, policy, strategy, and legislation
2. Strengthen an enabling environment for NDC implementation
3. Accelerate the policy coherence and integration to achieve the United Nations' Sustainable Development Goals (SDGs) in the light of its Sustainable Development Report 2020 (SDR2020)
4. Enhance NDC measurement, reporting and verification, and transparency of climate action

The GoP will follow the GHG emissions trajectory of 1603 million tonnes of CO_2 equivalent (Mt CO_2e.) for 2030 as communicated in Pakistan's initial NDC submission in 2016. However, realizing reducing the GHG emissions under the Paris Agreement to limit the temperatures between 1.5 - 2°C, the GoP remains committed to reduce the

emissions to the maximum possible extent. The GoP has taken a series of transformative initiatives.(Government of Pakistan, 2021)

Ravi Urban Development Authority (RUDA) enacted to develop urban areas of the province into sustainable, livable and well-managed engines of economic growth. Urban development and its management are critically linked with sound, comprehensive and strategic metropolitan level long-term planning. Over the years, rapid urbanization has changed the socio-economic and physical characteristics of the cities. The physical growth of the cities has emerged in a very different way from the land uses proposed in master plans and other such documents. Lahore, the capital of the Punjab province, is rapidly urbanizing being a regional urban center of key commercial, financial, industrial and socio-cultural significance. Therefore, in view of the city's projected expansion and issues related to water in the Ravi River, Government of the Punjab has planned the Ravi Riverfront Urban Development on both banks of the river, a 46 km long stretch that is contiguous to Lahore district's northern and western boundaries. This will create a unique yet sustainable urban morphology and responsive skyline of Lahore.

RUDA aims at the fundamental tasks to protect environmental historical cultural elements of Lahore that have long been neglected. The project mainly revolves around River Ravi improvement, development of high-quality water front urban development for millions of people with sustainable, liveable & well-managed engines of growth. It aimed at adapting the sustainable city principles through integrated development, green infrastructure and developing a world class economic center to foster growth of surrounding region for the population of about 10 million people.

The River Training of the project will increase its capacity to 586,000 cusecs to deal with 1000 year flood return period. In addition to the water flow from Chenab River through link canals to enhance the Ravi River flow, river training and channelization measures are proposed, as follows, to augment the River Ravi water flow for the sustainable riverfront development.

RUDA Projects List (A Living List)

ANNEXURE-C

1. RTW Package-01 (Right 3Km)
2. Infrastructure at Chaharbagh Phase-1
3. Infrastructure Development at Industrial Zone Phase-1
4. Infrastructure Development at Industrial Zone 2A, 2B Phase-2
5. Forestation at Rakh Jhok
6. RTW Package-01A Upper Promenade (Right 3Km)
7. RTW Package-06 (Right 6.6Km)
8. Infrastructure at Chaharbagh Phase-2
9. Infrastructure at Chaharbagh Phase-3
10. RTW Package-02 (Left 3Km)
11. Access Road Sapphire Bay to Kala Khatai (6.4Km)
12. Access Road Topaz Block (11Km)
13. WWTP Mehmood Booti Phase-01
14. SWM –Landfill Site
15. Fruit & Vegetable Market
16. Turki Road (Connection) + Trunk
17. Jhok Forest & Botanical Garden
18. RTW Package-03 (Right Marginal Bund)
19. Power Infra Topaz
20. Crown – Golf Enclave
21. RUDA Offices
22. Chaharbagh Trumpet

23. Access Road Zone-02 (3.2km)
24. RTW Package-05 (Left 6.6Km)
25. RTW Package-07 (Left Retaining wall Beyond LSM – 4.7Km)
26. RTW Package-08 (Right Retaining wall Beyond LSM – 4.1Km)
27. RTW Package-04 (LMB)
28. RTW Package-09 (Barrage)
29. RTW Package-10 Excavation of River
30. RTW Package-11 Aesthetic Canal
31. Power Infra Sabzi Mandi

List of RUDA Projects (Living List)

RTW Package-01 (Right 3Km)	Infrastructure Development at Industrial Zone Ph-1	Infrastructure at Chaharbagh Ph-1	Forestation at Rakh Jhok
Infrastructure Development at Industrial Zone 2A, 2B Phase-2	RTW Package-06 (Right 6.6Km)	RTW Package-06 (Right 6.6Km)	RTW Package-01A Upper Promenade (Right 3Km)
Infrastructure at Chaharbagh Phase-2	Fruit & Vegetable Market	SWM –Landfill Site	WWTP Mehmood Booti Phase-01
Access Road Topaz Block (11Km)	Access Road Sapphire bay to Kala Khatai (6.4Km)	RTW Package-02 (Left 3Km)	Infrastructure at Chaharbagh Phase-3

List of NDCs by RUDA: **ANNEXURE-D**

1	**RENEWABLE ENERGY**	By 2030, RUDA will contribute 20% of renewable energy in Phase-1.
2	**TRANSPORTATION**	By 2030, all new BRT (Bus Rapid Transit) system will be Electric Vehicles (EVs) and charging stations will be installed. Walk ways will be made for pedestrians. RUDA transportation plan is attached in Annexure I.
3	**LAND-USE CHANGE & FORESTRY**	RUDA administrative boundaries have 9 reserve forests. RUDA intends to manage the forest land to optimally maintain it with special focus on promotion of biodiversity and afforestation through indigenous plant species. RUDA has taken initiative to increase the forest cover and 40 acres of forest land is planted during 2021-22 with indigenous species of the area (pilkhan, arjun, jamun, and neem etc) at Jhoke Reserve Forest. In addition, 158 acres of forest land is prepared/ levelled and will be planted during 2022-23 for sustainable development at local, regional, and national level, while also supporting a stable climate, cleaning the air pollution and securing sound water cycles.
4	**RECHARGE RIVER RAVI**	By 2030, the project envisages the reduction of flood risk and enhanced water recharge for the Ravi city, building resilience of 10 million people, as well as strengthening vulnerable ecosystems.
5	**URBAN PLANNING**	A comprehensive zoning plan is proposed for the area which will dictate the future development considering the need of residential, commercial, public, offices, mix use, civic amenities, industrial and green /open spaces in the new city. The proposed Ravi City population for Phase-1 is 4 Million approx. for which following city level public services i.e.,Health, Education, Recreational, Bus Terminal, the following city level services have been proposed. • 5 Public Universities • 5 Public hospitals (12000 Beds) • Farmers Market • City Level Parks • Sports Complex

		• Multi Modal Bus Terminal • Judicial Complex • Central Jail

List of Protocols/Agreements/Conventions for GHG Emissions and Climate Change

ANNEXURE-E

The list of Protocols/Agreements/Conventions for GHG emissions and climate change in which Pakistan is included as a signatory country is shown below:

Sr. No.	Protocols	Agenda of Protocol	Time (year)
1	Kyoto Protocol	Protocol operationalizes the United Nations Framework Convention on Climate Change (UNFCCC) by committing industrialized countries and economies in transition to limit and reduce greenhouse gases (GHG) emissions in accordance with agreed individual targets.	December 1997
2	Paris Agreement	The agreement aims to substantially reduce GHG emissions in an effort to limit the global temperature increase in this century to 2°C above preindustrial levels, while pursuing the means to limit the increase to 1.5°C.	December 2015
3	COP 27	At the Sharm el-Sheikh Climate Change Conference (**COP 27**), countries came together to take action towards achieving the world's collective climate goals.	November 2022
4	IPCC 2023	The IPCC finds that there is more than 50% chance that global temperature rise will reach or surpass 1.5°C between 2021 and 2040 across studied scenarios, and under a high-emissions pathway, specifically, the world may hit this threshold even sooner — between 2018 and 2037.	March 2023

Sustainable Development Goals (SDGs) ANNEXURE-F

Goal 1: End poverty in all its form everywhere
Goal 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
Goal 3: Ensure healthy lives and promote well-being for all at all ages
Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 6: Ensure availability and sustainable management of water and sanitation for all
Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all
Goal 8:Promote sustained, inclusive , and sustainable economic growth, full and productive employment and decent work for all
Goal 10: Reduce inequality within and among countries
Goal 11: human settlements inclusive, safe, resilient and sustainable
Goal 12: Ensure sustainable consumption and production patterns
Goal 13: Take Urgent Action to Combat Climate Change and its Impacts
Goal 14: sustainably use the oceans, seas and marine resources for sustainable development
Goal 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reserve land degradation and halt biodiversity loss
Goal 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

ANNEXURE-G

SALIENT FEATURES FOR TRANSPORTATION PLAN

Main features of this Plan are given below:

1. Optimized mobility pattern for people and goods instead of vehicles
2. Efficient and effective public transportation system to all areas of project to provide mobility and accessibility
3. Rapid Mass transit network to provide a viable alternative to private vehicles and to reduce road congestion
4. Dedicated pedestrian network to address year-round pedestrian needs
5. Effective and sustainable goods movement network
6. Integrated system of transportation that offers affordable choices for transport

ANNEXURE-H

A way forward for the developing countries

Protocols for Air Pollutants for European Countries

Sr. No.	Protocol Name	Topic of Protocol	Time (year)
1	EMEP Protocol	Programme for monitoring and evaluation of the long-range transmission of air pollution in Europe	1984
2	Helsinki Protocol	Protocol on the reduction of sulphur emissions or their trans-boundary fluxes	1985
3	Sofia Protocol	Control of emissions of nitrogen oxides (NO_x) or their trans-boundary fluxes	1988
4	1991 Protocol	Control of emissions of **VOCs** or their trans-boundary fluxes	1991
5	Oslo Protocol	Further reduction of sulphur emissions	1994
6	Aarhus Protocol	Protocol on heavy metals	1998
7	1998 Protocol	Protocol on persistent organic pollutants	1998
8	Gothenburg Protocol	Protocol to abate acidification, eutrophication and ground-level ozone	1999

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