

Draft

Environmental & Social Management Plan

for

Rehabilitation and Revitalisation of Small and Medium Enterprises in the
Affected Areas of KP & FATA

March 2012

**Small and Medium Enterprise Development Authority
Khyber Pakhtunkhwa**

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Acronyms

ERKF:	Economic Revitalization of Khyber Pakhtunkhwa and FATA.
ESSAF:	Environmental and Social Screening Assessment Framework
MDTF:	Multi Donor Trust Fund
SME:	Small & Medium Enterprise
ESMP:	Environmental and Social Management Plan
KP:	Khyber Pakhtunkhwa
FATA:	Federally Administered Tribal Areas
SMEDA:	Small & Medium Enterprise Development Authority
PU:	Project Unit
CFC:	Common Facility Centre
EA:	Environmental Assessment
RP:	Resettlement Plan
WB:	World Bank
PEPA:	Pakistan Environmental Protection Act
IEE:	Initial Environmental Examination
EIA:	Environmental Impact Assessment
NEQS:	National Environmental Quality Standard
OP:	Operational Policy
ECOP:	Environmental Code of Practice
E&SA:	Environmental and Social Impact Assessment
ESFP:	Environmental and Social Focal Person
EPA:	Environmental Protection Agency
M&E:	Monitoring and Evaluation.
BOQ:	Bill of Quantities
GRMC:	Grant Review and Monitoring Committee
PSC:	Project Steering Committee
PMU:	Project Management Unit
GA:	Grant Agreement
GTC:	Grant Technical Committee
GHP:	Good Housekeeping Practice
VOC:	Volatile Organic Emission
TPV:	Third Party Validation
BOD:	Biological Oxygen Demand
COD:	Chemical Oxygen Demand

Executive Summary:

The Economic Revitalization of Khyber Pakhtunkhwa and Federally Administered Tribal Areas (ERKF) project include the rehabilitation & up gradation of Small and Medium Enterprises (SMEs) in the crisis affected areas of Khyber Pakhtunkhwa and FATA. The project includes reconstruction of basic infrastructure, and acquiring/repairing machinery and equipment, up-gradation of SMEs for improving business productivity and efficiency. The rehabilitation and reconstruction of different SMEs projects can potentially have some negative social and environmental impacts. An Environmental and Social Management Plan (ESMP) has been prepared, which identifies the appropriate mitigation measures to be adopted, describes the legal and safeguards requirement and documentation, defines the roles and responsibilities of staff for monitoring requirements and specifies the capacity building needs for effective implementation of the ESMP.

Initially total 31 sectors have been identified for SMEs rehabilitation and development. These sectors were screened for potential social and environmental impacts through a generic assessment checklist. Sectors which are not likely to have any significant social and environmental impacts have been classified as "Green Sector". SMEs included in the Green Sector are excluded from further social and environmental impacts assessment process. While some 20 sectors are likely to have significantly negative social and environmental impacts and have been classified as "Brown Sector". SMEs included in Brown Sector are subject to detail impact assessment process through customized sector-specific environmental and social impact assessment.

The ESMP has proposed mitigation plan to cater for various types of negative social and environmental impacts likely to appear during different the rehabilitation and reconstruction and operation phases. The plan has also suggested the procedure and organizational & reporting system for its implementation and also given recommendation for capacity building and training of relevant staff for effective implementation of ESMP. The total cost of ESMP has been estimate as PKR 7.915 Million, which will in mitigation of the likely social and environmental impacts during execution of the ERKF project.

A. Introduction.

A Multi-Donor Trust Fund (MDTF) has been established in Pakistan to assist the Govt of Pakistan in the reconstruction and livelihood restoration in the conflict-affected areas of Khyber Pakhtunkhwa (KP) and the Federally Administered Tribal Areas (FATA). MDTF will finance projects intended to: (i) promote enhanced, sustainable and accountable delivery of basic services; (ii) support livelihoods and community-based development of basic infrastructure and services; (iii) help communities to access assets and market opportunities and create the basis for viable income generating activities; and (iv) support peace building activities and promote rapid crisis recovery in KP, FATA and (v) strengthening, (re)building and/or maintaining government institutions in order to improve governance, the overall institutional performance and state effectiveness.

B. Brief Description of Project:

The Economic Revitalization of Khyber Pakhtunkhwa and Federally Administered Tribal Areas (ERKF) is one of the projects which is financed by the World Bank through MDTF. The project is designed to revitalize the private sector in the crisis-affected regions of KP and FATA through direct support for the rehabilitation & up gradation of Small and Medium Enterprises (SMEs), attracting investments from the Diaspora, and institutional capacity building including regulatory reform. The Project comprises three components: (i) SME development, (ii) investment mobilization and (iii) capacity building to Foster Investment and Reforms and project implementation support.

Under the SMEs Development the project will provide direct support to the crisis affected SMEs through matching grants program that will be managed and administered by the Project Unit (PU) established by SMEDA. Grant support will be provided to eligible SMEs for use as working capital, for reconstruction of basic infrastructure, and acquiring/repairing machinery and equipment, up-gradation of SMEs for improving business productivity and efficiency, technological innovation, product development, adopting new packaging/labeling requirements, establishing common facility centers (CFCs). Funds may be used for both capital investment and working capital.

SME Development is the largest component of the project providing support to local SMEs to accelerate economic recovery in KP and FATA. Small and Medium Enterprises from a broader categories of Manufacturing, Trading, Services and Mining are covered under the scope of this project. There is no

pre-allocation of funds for neither any sector nor the type and location of SMEs have been pre-defined. The entire funds will be disbursed through a demand driven approach and the final list of sectors and SMEs will be identified by SMEDA during the project implementation phase. However, in the initial stage, SMEDA has identified the following sectors and clusters which will be targeted under the project

- | | |
|--|--|
| 1. Mining and Mineral Processing | 17. Wood & Furniture Products |
| 2. Honey Making | 18. Fishing Huts |
| 3. Textile/Silk clusters | 19. Gemstones sector |
| 4. Agro-Food processing | 20. Light Engineering Workshops |
| 5. Foot wear / leather shoes making | 21. Handicrafts Centers |
| 6. Carpet Weaving and Manufacturing | 22. Barber shops/Parlor |
| 7. Boutiques/Garments/Embroidery/Tailors | 23. Stationary shops |
| 8. Pharmaceutical | 24. Hospitals and Laboratories |
| 9. Manufacturing Units | 25. Flour Mills |
| 10. Petrol pumps & CNG Stations | 26. Hotels, Restaurants/ Wedding halls |
| 11. Schools and Educational Institutions | 27. Fish/Poultry Farming |
| 12. Dates Processing | 28. General Trading and Warehouses |
| 13. Livestock/Cattle Farming (Only FATA) | 29. Printing & Packaging |
| 14. Repairing Workshops | 30. Cable Operators |
| 15. Transport & Bus Terminals | 31. Micro-hyder power stations |
| 16. IT and Computers | |

C. Environmental and Social Screening & Assessment Framework (ESSAF):

The construction activities and operation of some of the SMEs to be supported under the project may potentially cause negative environmental and/or social impacts on the surrounding population and to cater for the environment and social impacts of those subprojects an Environmental and Social Screening and Assessment Framework (ESSAF) has been developed. The ESSAF provides guidance and mechanism to manage the potential environmental and social impacts of the subprojects. To ensure the effective application of the World Bank's safeguard policies and the national regulatory requirements, ESSAF provides following mechanism to adopt in the selection and design of projects/subprojects:

a) Environmental category 'A' projects are not expected under the MDTF. However, if any do occur, Environment Assessments (EAs) for the project will be carried out during implementation, instead of before appraisal (the EAs will need to be carried out and cleared by the Bank *before* initiating the category 'A' projects).

b) Environmental category 'B' project, an ESMP will be prepared during implementation, instead of before appraisal, however the ESMP will need to be prepared and cleared by the Bank *before* initiating the works under the project. For any project that consists of several distinct subprojects, ESMPs can be prepared for individual subprojects or their clusters.

c) No major resettlement issues are expected in the recovery and reconstruction operations to be financed under the MDTF. However, If any resettlement impacts are expected to occur, Resettlement Plans (RPs) for specific projects will be prepared and approved *before* initiating the specific projects.

d) Considering the nature and magnitude of environmental and social impacts from relatively limited scale and quantum of the proposed activities, the operations under the MDTF are likely to be classified as category 'B'. The requirement to carry out an Environmental Assessment (EA) as part of project preparation may not be required but, for projects with potential adverse impacts, an appropriate level of environmental and social assessment will be carried out during the project implementation.

D. Environmental and Social Management Plan and its Objectives:

This ESMP provide a mechanism for the assessment of potential negative environmental and social impacts of typical SMEs, suggest mitigation measures and define the roles and responsibilities of various stakeholders for ensuring smooth implementation and monitoring of the subproject operations.

The primary objective of this ESMP is to provide an implementation mechanism to address the environmental and social impacts arising from the economic revitalization and up gradation of SMEs in the crisis affected areas of Khyber Pakhtunkhwa and FATA, integrate environmental and social mitigation measures in the subprojects operation to reduce its adverse impacts, if any, under the ERKF grant agreement with the World Bank.

The secondary objectives of the ESMP are to comply with WB Operational Policy for environmental and social safeguards as well as the National Environmental Laws and Regulations.

E. Legal and Policy Overview:

a) Pakistan Environmental Safeguards Legislation.

The Pakistan Environmental Protection Act (PEPA), 1997 is the key legislation empowering the government to frame regulations for the protection of the environment. Section 12 of the PEPA, 1997 provide basis for environmental assessment and management of impacts for various categories of projects. Detailed rules, regulations and guidelines for environmental safeguards requirement framed under section 12 of Pakistan Environmental Protection Act are outlined below:

- Pakistan Environmental Protection Agency Review of IEE/EIA Regulations 2000.
- National Environmental Quality Standards of Pakistan.
- General Guidelines for IEE/EIA Preparation, Review and Approval Process.

According to the IEE/EIA Regulations 2000, environmental assessment requirement of projects have been categorized into the following:

1. Projects included in Schedule-I of the regulations 2000 require initial environmental examination (IEE).
2. Projects included in Schedule-II of the regulations 2000 require detail environmental impact assessment (EIA).
3. Projects not listed in Schedule-I or II but in respect of which the Federal Agency has issued specific guidelines for IEE or EIA respectively shall submit report accordingly.

b) World Bank Operational Policy Framework

According to the World Bank Operational Policy (WB 4.01) loans and grants investments are subject to categorization to determine the environmental assessment requirements of projects funded by the WB.

World Bank OP 4.01 - Environmental Assessment. This operational policy (OP) requires Environmental Assessment to be conducted of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable with an objective to improve decision making process. According to OP 4.01 the Bank classifies the proposed project into one of four categories, depending on the type, location, sensitivity, and scale of potential environmental impacts.

Category A: A proposed project is classified as Category A if it is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area

broader than the sites or facilities subject to physical works. Category A projects requires full scale Environmental Assessment (EA) with and “without project situation”, and recommends measures needed to prevent, minimize, mitigate, or compensate for adverse impacts.

Category B: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas are less adverse than those of Category A projects. MDTF projects are classified as category ‘B’ project and prior to appraisal, the implementing agencies will agree to apply the following minimum standards during implementation: (i) inclusion of standard environmental codes of practice (ECOP) in the bid documents of all projects; (ii) conducting EA acceptable to the Bank *before* initiating any environmental category ‘A’ projects/ subprojects; (iii) preparing ESMP acceptable to the Bank *before* initiating any environmental

Category C: A proposed project is classified as Category C if it is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.

Category FI: A proposed project is classified as Category FI if it involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

This Environmental and Social Management Plan has been prepared in response to the World Bank Operational Policy 4.01 considering the nature and magnitude of potential environmental and social impacts arising from ERKF project operations.

World Bank OP 4.12 - Involuntary Resettlement. The project/subprojects funded under the grant agreement are not likely to involve any resettlement or land acquisition as these are existing SMEs. However, in some cases where expansion and up-gradation work is involved, involuntary resettlement will only be known during project implementation, when site-specific plans are available. Therefore projects will be screened for applicability of the resettlement policy and any projects involving involuntary resettlement or land acquisition will only be approved after preparation of a resettlement plan acceptable to the Bank.

World Bank OP/BP 4.10 - Indigenous Peoples. There are no known indigenous peoples living in the affected areas and ethnicity is in any case only one of many factors determining vulnerability in the present situation. In this perspective, a social assessment with focus on potential vulnerability groups is considered and adequate measures incorporated in the ESMP.

World Bank OP 11.03 - Cultural Property. The economic revitalization of small businesses under the ERKF project may not pose any risks of damaging cultural properties, assuming that they are already there and will not include large-scale excavations, movement of earth or demolition. However, each subproject reviewed for their potential impact on cultural property and adequate mitigation measures included in ESMP.

World Bank OP 4.04 - Natural Habitats/OP 4.36 - Forestry. The subprojects under the ERKF are unlikely to directly affect the natural habitats, forest resources, declared forest reserves, wildlife reserves, national parks, and sanctuaries. However, the reconstruction activities may indirectly increase pressure on natural resources, such as timber. Hence, this aspect has also been covered in the environmental and social assessment of the individual subproject.

Other WB Operational Policies. Other OPs - including OP 4.09 (Pest Management), OP 4.37 (Safety of Dams), OP 7.50 (Projects in International Waters), and OP 7.60 (Projects Disputed Areas) – are not relevant for the proposed SMEs development under the ERKF project and hence not triggered.

F. Screening of SMEs for Environmental and Social impacts:

Initially SMEDA identified 31 sectors and clusters which will be targeted under the ERKF project. An assessment of those 31 sectors was conducted for potential environmental and social impacts using a generic E&SA Checklist (Refer to Annexure-1). Based on the observation from field visit to some of the SMEs and literature review, all the 31 sectors have been scrutinized for negative environmental and social impacts on the surrounding environment and risk categorization of all SMEs sector was done on the basis of following criteria:

a) Green Sector: SME sectors marked as “None” or “Low” in the E&SA Checklist has been clubbed as “green sectors”. SMEs in green sector have either none, and or very negligible environmental and social impact on the surrounding environment. Hence no further investigation, and or mitigation measures are required to be taken for the rehabilitation of these SMEs. List of SMEs included in “Green Sector” are given below:

1. Honey Making

7. Gemstones Trading

- | | |
|---------------------------------|--------------------------------|
| 2. Footwear/Shoes making | 8. Handicrafts Centre |
| 3. Boutiques/Embroidery/tailors | 9. Barber shops/Parlours |
| 4. Stationary Shops | 10. General Trading/Warehouses |
| 5. Repair Workshops | 11. Cable Operators |
| 6. IT and Computers Labs | |

b) Brown Sector: SME Sectors ranked as “Medium” and “High” in the E&SA Checklist has been clubbed together as “brown sector”. SMEs included in the brown sector are likely to cause significant negative environmental, and or social impacts on the surrounding population and hence detail site specific environmental and social impacts assessment and mitigation measures are required to be taken at the time of implementation. List of SMEs included in the “Brown Sector” are given below:

- | | |
|-----------------------------------|--------------------------------------|
| 1. Mining and Mineral Processing. | 11. Wood and Furniture Products |
| 2. Textile/Silk Processing. | 12. Fishing Huts |
| 3. Agro-Food Processing | 13. Light Engineering Workshops |
| 4. Carpet weaving/manufacturing | 14. Pharmaceutical |
| 5. Hospitals and laboratories | 15. Manufacturing Units |
| 6. Flour Mills. | 16. Petrol and CNG Stations |
| 7. Hotels & Restaurants/W.Hall | 17. Schools & educational facilities |
| 8. Fish/Poultry Farming | 18. Dates Processing |
| 9. Livestock’s/Cattle Farming | 19. Printing and Packaging |
| 10. Transport and Bus Terminals | 20. Micro-Hydel Power Stations |

c) Sector Specific E&SA Checklist:

For the Environmental and Social Assessment of SMEs included in “Brown Sectors” a sector-specific environmental and social assessment checklist has been developed and possible mitigation measures proposed (Refer to Annexure-II). The Environmental and Social Focal Persons (ESFP) will use this sector-specific E&SA Checklist to assess the environmental and social impacts of the SMEs while processing the grant application. However, the list in brown sector is not exhaustive and some more SMEs are likely to be added when the implementation is started. For this purpose the services of a short term environmental consultant shall be required by SMEDA to develop customized sector specific E&SA Checklist for any new SME sector identified during project implementation. Also the environment and social impacts assessment and recommendation of mitigation measures is a very technical in

nature and the ESFPs will requires frequent technical input from an environmental experts in the assessment and monitoring process. Therefore, it is proposed PU-SMEDA should hire the services of professional environment expert on 4 man days in a month to assist the ESFPs in the impact assessment and monitoring the implementation of mitigation measures.

d) Categorization of Subprojects (Brown Sector)

The ERKF project document (P/77) the criteria for the type of assessment to be conducted for individual subprojects is given in the Table-1. Keeping in view the maximum grant size of Rs. 2.5 million under ERKF project with matching capital investment of Rs. 2.5 million, the total cost of subproject will not exceed Rs. 5.0 million for rehabilitation subproject and Rs. 10 million for cluster development program. Hence more or less all the subproject cost under ERKF fall in the Category B for which ESMP is required according to the WB OP 4.01.

Table-1: Categorization on the basis of Cost (Refer to ERKF Project Document)

Type of subprojects	Category-A, (require EA).	Category-B (require ESMP)	Subprojects require screening
Infrastructure (such as water supply, sanitation, solid waste management, access roads, drainage, and street lighting)	Cost: Rs 25 million or above	Cost: less than Rs. 25 million, but more than 1 million	Cost: Up to Rs. 1 million
Roads	Cost: Rs 50 million or above	Cost: less than Rs. 50 million, but more than Rs. 2 million	Cost: up to Rs. 2 million
Schools and health care facilities	Cost: Rs. 50 million or above	Cost: less than Rs. 50 million, but more than Rs. 2 million	Cost: up to Rs. 2 million

As the ERKF project will provide matching grants only to those SMEs which have been existed for at least one year with no grants for newly established businesses. However, grants offered to a group of SMEs for a cluster development program may be allowed for establishing a new venture. However, the SMEs participating in the cluster development program cannot be new and will have to meet the standard criterion of existing for at least one year. Therefore, most of the subprojects are expected to be old (already existing) and Section 12 of the PEPA, 1997 and Regulations-2000, do not apply on these subproject. Therefore, Initial Environmental Examination or Environmental Impact Assessment is not required for clearance from EPA. However, these subprojects shall comply with the National Environmental Quality Standards of Pakistan. The implementation of ESMP during project execution

will ensure to comply with the National Environmental Quality Standards (NEQS) of Pakistan to fulfill the legal requirements of Pakistan Environmental Protection Act, 1997 and related Statutory Regulations.

In cluster development component the formation of joint venture may in some cases lead to the establishment of new entities with new processes and products, in that case the subproject will be subjected to Schedule I and II of the EIA/IEE Regulations-2000 (Refer to Annexure-IV).

G. Project Management and Implementation Process.

a) Project Management Organization:

1. Project Steering Committee (PSC):

The ERKF project will be implemented under the overall strategic management and supervision of Project Steering Committee (PSC) headed by Additional Chief Secretary of KP and FATA. The PSC has representation from all relevant stakeholders including Government Departments, SMEDA and KP and Tribal Chambers Associations.

2. Project Management Units (PMUs)

For the implementation of project activities a Project Management Unit has been established in KP and FATA Secretariat under the management supervision of dedicated Project Director. PMU will be adequately staffed with professionals and technical specialists including M&E, Procurement, Financial Management and Environmental and Social Safeguards focal persons. Environment and Social Safeguards Focal Persons (ESFP) based in PMU, KP and PMU, FATA will be responsible for the implementation and monitoring of ESMP for all subprojects activities in KP and FATA areas.

3. Project Unit (PU)-SMEDA:

The Government of Khyber Pakhtunkhwa and FATA have assigned the implementation of SME Development component to SMEDA to assess and analyze the SMEs while processing grant applications. A Grant Review and Monitoring Committee (GRMC) have been constituted for this purpose which will review and approve grant applications for subprojects. SMEDA has already established a Project Unit (PU) with a fulltime Project Manager assisted by a network of five (5) Field Officers in KP and three (3) Field Officers in FATA areas.

b) ESMP Implementation:

In order to integrate the ESMP implementation within the subproject activities a detailed mechanism/process flow (Refer to Annexure-III) has been prepared in consultation with SMEDA. Main activities and steps involved in the ESMP implementation mechanism are described below:

1. Submission of Grant Application by SMEs

The project management unit (PU) will launch a call for expression of interest in the national and local news papers and liaison with Chambers/Associations guiding the affected SMEs to submission applications. A complete guide package along with application form will be made available across the KP and FATA for interested SMEs.

2. Preliminary Scrutiny of Grant Application:

The PU will initially review all grant applications of interested SMEs and determine their eligibility criteria (Refer to Page/10 of the Operational Manual, ERKF, September 16, 2011) and all the relevant documentation required for processing of grant applications.

3. Screening Process of Subprojects.

The PU will check and screen all eligible grant applications against the green and brown sector list for environment and social assessment. SMEs included in the green sector will be processed without environmental and social assessment for the grant consideration to Grant Technical Committee (GTC) and finally referred to the GRMC for approval. SMEs included in the brown sector will be referred to Environmental and Social Focal Person (ESFP) for detail assessment of environmental and social aspects using Sector-Specific E&SA Checklist (Refer to Annex-II) and mitigation measures to comply with WB OP 4.01 and Section 12 of PEPA, 1997 and related Regulations-2000/NEQS.

4. Environmental and Social Impacts Assessment Process:

The ESFP based in PU-SMEDA will be responsible to ensure environmental and social impact assessment of all grant applications falls in the brown sector. The ESFP will conduct site visit of the subproject (SME) and assess the environmental and social impacts of the subproject using the sector specific E&SA Checklist for the relevant sector and recommend possible mitigation options listed in the E&SA Checklist, and or any additional site specific mitigation measures required for the protection and preservation of environment as well as social aspects of the subproject. The ESFPs will be allowed to customize and amend the listed mitigation options and select ones best suitable to the site specific environment to ensure compliance with relevant laws and regulations. For this purpose trainings will be provided to the ESFPs and Field Officer to enhance their knowledge and understanding of environment and rules/regulations.

5. Categorization of Subprojects in Brown Sector:

During the site verification and impacts assessment process the ESFPs will ensure to check the scope of construction and expansion work proposed in the grant application particularly in the Cluster Development component. If the proposed subproject involve establishment of new entities and SMEs which did not exist before the crisis, and or affected by flood, the subproject will be subjected to categorization according to the Schedule I and II of the EIA/IEE Regulations-2000 (Refer to Annex-IV) for IEE and or EIA requirement and approval in respect thereof from the Environmental Protection Agency and World Bank.

6. Interaction with Client and Submission of Undertaking:

The ESFP will share the E&SA Checklist with client and inform him/her about the proposed and or recommended mitigation measures to be implemented by the client/owner of the subproject during implementation process. Upon agreement the client/owner of the subproject will signed an undertaking provided in the last section of E&SA Checklist to become eligible for grant application.

7. Decision by Grant Review and Monitoring Committee (GRMC):

The E&SA Checklist and recommended mitigation measures will be made part of the grant proposal by PU submitted for approval authority (GRMC) for consideration, and or Grant Agreement (GA) to be signed between PU and the client/owner. The GA will bind the client/SME to implement the recommended mitigation measures for environment and social impacts of subproject. In order to avoid delay caused due to site specific environmental and social assessment process (point raised by SMEDA during meeting held on 28/2/2012) the GRMC can conditionally approve the grant requests subject to its clearance by the ESFP for environmental and social impact assessment and provision of the undertaking by client/SME before signing the GA.

8. Grant Disbursement and Implementation by PMU:

Grant will be disbursed to the client/SME in tranches as per policy through the respective PMU of KP and FATA. First tranche of grant will be released after GA and further tranches of grant will be released after satisfactory performance report of the Field Coordinator.

9. Monitoring and Evaluation:

The monitoring and progress review of ESMP implementation of subprojects will be carried out regularly by the relevant staff (ESFPs).

H. General ESMP Guidelines:

Major environmental and social impacts associated with each subproject are given in the mitigation plan. Site-specific environmental issues will be identified and addressed in the assessment process and additional mitigation plan, if required, will be proposed by the ESFP during execution of subproject. For the common environmental and social issues associated with most of the subproject, guidelines have been developed which will be followed by the SMEs during subproject construction and operation stages. These guidelines are:-

a) Disposal of demolition wastes

Existing building structures (walls, foundations, ground cement slabs etc.) should be carefully demolished and the debris should be sorted, removed and disposed off in designated areas. Use of blasting should be avoided for demolition of building. In case unavoidable minimum dose of explosive shall be used authorized by local authority with all due precautions (early warning to community, vacation of site, closing of nearby routes) exercised.

b) Water Conservation and Sustainable Use.

Water conservation practices must be adopted to use minimum quantity of water for cooling, heating and washing operations in order to reduce liquid effluents from subproject operation. Efforts shall be made to recycle used water, where applicable, for cooling and washing and or heating operations. Conduct regular inspection and maintenance of all water systems to ensure leaks are prevented or fixed immediately.

c) Waste Minimization and Recycling.

Efforts shall be made to reduce wastes production in the subproject operation through adopting waste recycling and reuse practices. Where possible reuse or recycle paper, glass bottles, aluminum, plastic bottles, etc. Purchase bulk-packaged supplies such as cleaning supplies and buy products with the least amount of packaging materials and or reusable packaging.

d) Tree Plantation and Landscaping:

Plantation in open spaces should be made a permanent feature in all subproject operations across KP and FATA. Sufficient space should be provided in and around the compound walls, where applicable, for tree plantation and landscaping. Landscaping and re-vegetation should be carried out to match the natural topography and enhance environmental aesthetics and natural beauty.

e) Occupational Health and Safety.

A well defined occupational health and safety plan shall be design to ensure the health and safety of workers. Preventive measures should be adopted to cope with accidental spills and or fire. Protective safety equipments specific to the working environment of each subproject shall be provided to the workers. Fire fighting equipments shall be installed in identified places. First aid box should be provided for treatment of accidental injuries caused to workers during the work.

f) Child Labor.

Child labor shall not be allowed in subproject operations. The guidelines set forth by ILO Written Convention (C.138) on child labor shall be followed while employing workers. Child labor is the employment of children at regular and sustained labor that harms them or exploits them in some way physically, mentally, and morally or by blocking access to education. It is obligatory for all countries to set a minimum age for employment according to the rules of ILO written in Convention C.138. The stipulated age for employment should not be below the age for finishing compulsory schooling that is not below 15 years. Developing countries are allowed to set the minimum age at 14 years in accordance with socio-economic circumstances. C.138 has also made provisions for flexibility for certain countries, setting minimum age of 12 and 13 for their children's, but only for partaking in light work – only those activities which do not damage their health and development or interfere with their education.

g) Livelihood and Employment Policy.

Preference shall be given to local peoples for employment on skilled and unskilled jobs to enhance their livelihood. Equal opportunities of employment should be given to women's where possible. A proper employment policy shall be prepared and implemented in the subprojects.

h) Gender Issues.

All efforts shall be made to provide equal opportunities to male and females for jobs based on their suitability. Women shall be providing proper working environment such as separate wash room and space for prayer. Care should be taken to provide them working environment according to the local culture and traditions where peoples respect women for earning their livelihood.

I. Environmental and Social Mitigation and Monitoring Plan:

The Environmental Mitigation and Monitoring Plan given in Table-2 describes the main environmental and social impacts and suggests possible mitigations measures to be implemented in the subproject

operation to reduce potentially significant adverse environmental and social impacts to the minimum acceptable levels. The plans also include the role & responsibilities of monitoring for implementation of mitigation measures.

J. Capacity Building and Training Plan;

Capacity building and training of the staff associated with implementation of the ESMP play important role towards achieving its objectives. The ERKF project staff including the Field Officers and Environmental and Social Focal Persons does not have the required capacity to carry out environmental and social impact assessment and monitor the technical aspects of implementing the ESMP. Specific training on the ESMP components and mitigation measures is required to enhance their capacities to deliver their responsibilities in an organized manner.

Two different levels of capacity building trainings are proposed to enhance the awareness and understanding of project management staff.

1. Three-Days Professional Capacity Building Training of Field Officers and ESFPs on the ESMP and use of environmental and social assessment checklist and selection of mitigation measures. There are total 14 to 15 project staff including 8 Field Officers, 3 Environment and Social Focal Persons, 3 M&E Officers and Project Managers requires specific training on the assessment of environment and social impacts and ESMP implementation and monitoring
2. One-Day awareness and sensitization training on environment and social aspects and relevant legislations for higher management staff (15-20) including Project Directors, Project Managers and other key professional experts from Project Unit, SMEDA, Project Management Units, KP and FATA and other stakeholders .

With an estimated number of 15 participants in training, the cost will be as follows:

No of training days	No of participants per training	costs per session per head per day	Cost per session per head per 3 days	Total cost for 15 participants for 3 days	Cost of 02 resource person per day for 3 days training	Total No of Trainings	Total (Rupees in millions)
03	15	6000	15,000	225,000	120,000	02	0.690
01	15	6000	-	75,000	40,000	03	0.345
Total Estimated Costs of Trainings						05	1.035

K. Monitoring and Reporting Arrangements.

Effective implementation and follow up of the “**Environmental and Social Mitigation and Monitoring Plan**” requires clear institutional and reporting system at all levels. The roles of various persons(s) and institutions must be clear to avoid any ambiguity and role overlaps. For the ESMP two types of monitoring will be carried to achieve the objectives.

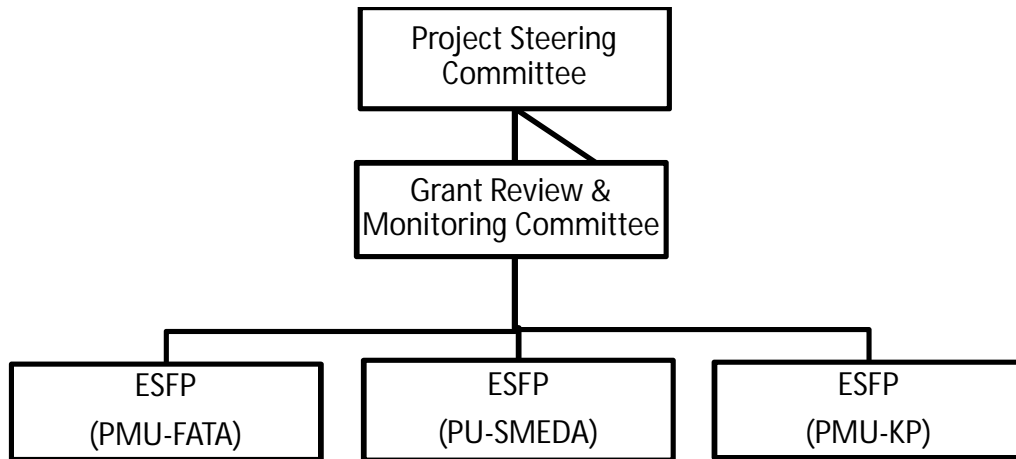
1. Internal Monitoring by Project Staff:

The Project Steering Committee (PSC) is overall responsible for implementation and supervision of ERKF project in KP and FATA. A Grant Review and Monitoring Committee (GRMC) have been constituted to review and approve all grant application and monitor the implementation and utilization of grant for subproject operations.

The Environmental and Social Focal Persons based in PMUs and SMEDA will be responsible for monitoring of the activities related to ESMP implementation. Non compliance of ESMP recommendations will be reported to PMU and PU. The capacity of relevant staff (FOs/ESFPs) will be strengthened through trainings. The following institutional and reporting arrangements will be followed for ESMP implementation of the subprojects.

a. Monitoring by SMEDA..

The Environment and social Focal Person in Project Unit (PU) based in SMEDA will be overall responsible to monitor the ESMP at the macro level assisted by ESFPs in PMUs and Field Officers in KP and FATA with the monitoring and evaluation of subprojects at micro level in the field. The ESFP based in PU-SMEDA will report to GRMC through Project Manager and Provincial Chief SMEDA and with liaison and coordination with the World Bank on ESMP related issues.



b. Monitoring by PMUs.

The ESFPs based in PMU, KP and FATA will be responsible to carry out monitoring of ESMP implementation in their respective domain and submit reports to their respective Project Director’s in KP and FATA Secretariat. The ESFPs will coordinate and liaison with ESFP – SMEDA through their respective PDs. The Field Officers in KP and FATA will also provide feedback to the ESFPs in PMUs.

2. External Monitoring / Third Party Validation.

Third Party Validation (TPV) will be required on annual basis to evaluate the quality of overall ESMP implementation, and to ensure that the mitigation measures are implemented as per Plan and in case of any deviation, corrective actions are taken where necessary. For TPV, Environmental Consultants having relevant expertise and previous experience will be engaged.

3. Reporting Requirements

The ESFP based in PU-SMEDA will be the focal person for reporting to the World Bank regarding the ESMP implementation of SME Development component of ERKF project. The ESFPs based in PMU, KP and FATA will be responsible for monitoring and reporting to the PSC, GRMC and World Bank through their respective Project Directors. The frequency of reporting for ESMP implementation will be following:

- i. Monthly Progress Reporting by ESFPs to their respective Project Directors.
- j. Quarterly Reporting by ESFP-SMEDA to PSC/GRMC and the World Bank.
- k. Annual Reporting by TPV Consultant to the World Bank..

L. ESMP Cost:

The estimated cost of ESMP include the capacity building training of staff, payments to the resource persons, external monitoring/Third Party Validation (TPV), hiring of environment expert services on short term basis to assist the ESFPs in the impact assessment and monitoring. The cost of mitigation measures to be implemented by client will be included in the subproject costs. The cost estimated for ESMP implementation and monitoring is **PKR 7.915** million. Brief description of various component cost is given in Table-2:

Table-2: Detail Cost Estimates of ESMP Implementation

S. No	Description of Activity	Details	Approx. Cost (Millions)
1	Capacity Building	Training of project staff	1.035
2	Hiring of environment expert to assist in assessment and monitoring	04 days per month inclusive of field visits for 01 year	0.960
3	Monitoring and Analysis	Total 40 water samples test for NEQS compliance	0.200
4	Third Party Validation	Hiring of Independent Monitoring Consultants	05.00
5	Mitigation Costs	Built in BOQ/Bidding Document of Subproject	0.00
6	Total (PKR in Millions)		7.195
7	Contingency	Add 10%	0.720
8	Grand Total		7.915

The ESMP cost will be met from the Technical Assistance Component of ERKF of the World Bank.

TABLE-2: ENVIRONMENTAL AND SOCIAL MITIGATION AND MONITORING PLAN

S #	Type of Impacts	Mitigation Plan		Monitoring Plan	
		Mitigation Action	Responsibility	Monitoring Action	Responsibility
1. Mining and Mineral Processing					
1	Impact on agriculture land	i. Subproject will not be located within residential and on productive agricultural land.	Owner	Project site shall be verified for non agri-land	Field Officer
2	Impact on schools, hospitals, clinics etc	i. Subproject will not be located within 500 m of any community, educational institution or health facility or any other sensitive receptor.	Owner	Verification of site through visit	Field Officer
3	Open discharge of liquid effluents.	i. Proper drainage system will be provided for liquid effluents.	Owner	Drainage system is monitored	ESFP
4	Residual Sludge Disposal	i. The residual sludge will be collected, stored in safe place and transported to a designated waste disposal site.	Unit Supervisor	Sludge collection and disposal system is monitored.	ESFP
5	Wastewater Disposal	i. Wastewater from the processing and washing operation will be treated in sedimentation tanks. ii. Used oils and lubricant from vehicles and machinery will be collected and stored in closed container. iii. Wash water will be recycled to reduce liquid effluents.	Unit Supervisor	Sedimentation tanks, storage area and water recycling system be monitored.	ESFP
6	Air Pollution Dust Emissions	i. Dust containment enclosures will be provided on cutting and crushing points. ii. Regular sprinkling of water on crusher's inlet and outlet points will be done. iii. Proper tuning and testing of vehicles exhausts moving to and out of subproject will be ensured.	Unit Supervisor	Dust emission will be monitored.	ESFP/TPV
7	Noise Pollution	i. Noise walls and noise barriers will be installed to reduce noise pollution. ii. Evening and late night operations of machinery and traffic will be avoided	Unit Supervisor	Noise levels are checked.	ESFP
8	Impact on Wildlife Habitat	i. Subproject will not be located near the wildlife sanctuaries. ii. Staff and vehicles movement to the wildlife area will not be allowed during resting and breeding times.	Owner	Geographical location of site is verified	Field Officer

13	Impact on cultural and or historical site	i. Subproject will not be located within 1000 m of graveyard, shrine, mosque, archeological site or any other site of cultural importance.	Owner	Location of cultural site from subproject is verified.	Field Officer
14	Occupational Health Impacts	ii. Occupational health and safety measures will be defined and implemented. iii. Workers will be provided with protective equipments, gloves, boots and ear muffles. iv. First aid box will be provided for emergency health care.	Unit Supervisor	Provision of safety equipments is verified.	ESFP
2. Carpet Weaving and Manufacturing					
1	Impact on residential population	i. Subproject will not be located within 500 m of any residential and or urban centre. ii. Subproject site will be enclosed through high rise walls if located in residential and or urban areas.	Owner	Location and high rise walls is verified	Field Officer
2	Solid wastes disposal	i. The residual solid waste will be segregated and municipal wastes handed over to municipal authorities on weekly basis. ii. Contaminated wastes will be sent to incineration facility. iii. Controlled use of chemicals for dyeing and washing.	Unit Supervisor	Solid waste disposals methods are monitored.	ESFP
3	Liquid effluents discharge	i. Liquid effluent will be treated properly before being discharged into sewer. ii. Protective measures will be adopted to avoid spills of chemicals into wastewater. iii. Liquid effluent will not be discharged into a river, stream or any water body	Unit Supervisor	Wastewater treatment system and monitoring is carried out	ESFP
4	Dust pollution	i. Suction pumps will be installed in designated point for dust and wool collection. ii. Proper ventilation will be provided in the working area. iii. Dust protection masks will be provided to the worker.	Owner	Dust emissions are monitored and dust masks for worker is verified.	ESFP
5	Odor and bad smell	i. Chemicals will be stored in closed containers. ii. Air fresheners will be provided to workers. iii. Proper ventilation in the work place	Unit Supervisor	Chemical storage area and ventilation is verified.	ESFP
8	Gender	i. Female workers will be provided separate toilets facilities and a room for prayers. ii. No discrimination will be made in salaries to the females. iii. Proper working environment according to the local culture and traditions will be provided to women workers.	Owner	Provision of separate facilities for female is verified.	ESFP
3. Flour Mills					
1	Impact residential population	i. Subproject will not be located within 500 m of any community, educational institution or health facility or any	Owner	Geographical location of project is verified.	Field Officer

		other sensitive receptor			
2	Impact on agriculture	i. Subproject will not be located in the residential area, and on any productive agricultural land.	Owner	Site inspection for land use verification	ESFP
3	Liquid effluent discharge	i. Wastewater treatment system (sedimentation or coagulation) will be designed and constructed to protect the water bodies from pollution.	Owner	Sedimentation and waste water monitoring is carried out	ESFP
4	Chemical Contamination	i. The chemicals will be stored as per the manufacturer's instructions. ii. Only approved chemicals and processes will be employed for the preservation and fumigation of the stored grain.	Unit Supervisor	Chemical storage facility and processes shall be checked and verified	ESFP
5	Dust and Air Pollution	i. Dust containment enclosures will be provided. ii. Use of high efficiency filters in packaging area is recommended. iii. Proper tuning & testing of vehicles exhausts moving to and out of subproject will be ensured.	Owner	Dust monitoring is carried out.	ESFP
6	Noise Pollution	i. Grinding machines that meet the criterion for noise levels in the workplace shall be installed. ii. Use of pressure horns will not be allowed. iii. Evening and late night operations of machinery and traffic will be avoided	Owner	Noise level is monitored.	ESFP
7	Wildlife Habitat	i. Subproject will not be located near wildlife sanctuaries. ii. Hunting of birds will not be allowed in the surroundings of subproject area.	Owner	Project location and wildlife habitat is monitored.	ESFP
8	Impact on cultural heritage	v. Subproject will not be located within 1000 m radius of graveyard, shrine, mosque, archeological site or any other site of cultural importance.	Owner	Geographical location to be checked	Field Officer
9	Human health	i. All contaminated grain unfit for consumption will be disposed off and will not be used for food. ii. Occupational health and safety measures will be defined and implemented.	Unit Supervisor	Contaminated grain stocks disposal is monitored.	ESFP
4. Poultry and Fish Farms					
1	Soil erosion.	i. Subproject will not be located on steep slope land. ii. Compaction of ponds embankments will be carried out and retaining walls constructed.	Owner	Project location is verified	Field Officer
2	Impact on agriculture	i. Subproject will be not on productive agri land. ii. Excavated materials if any will not be disposed off in	Owner	Project site land use is verified.	Field Officer

		agriculture fields.			
3	Solid wastes disposal	<ul style="list-style-type: none"> i. Contaminated litter will be disposed off properly in designated safe areas. ii. Excavated earth will be disposed off in designated site, and or used for filling and surfacing of barren land. 	Unit Supervisor	Waste disposal and disposal site is monitored.	ESFP
4	Waste water discharge	<ul style="list-style-type: none"> i. All waste from poultry farm will be stored in a covered area such that it is not exposed to rain or run-off ii. For large uncovered areas in poultry farm that is likely to contain organic waste, a trap will be constructed for suspended particles. iii. Fish cages will be constructed away from water pond. iv. Aeration and settling pond with recycling system will be constructed to reduce high BOD. 	Unit Supervisor	Settling ponds and recycling system be verified and waste water monitored for suspended solids	ESFP
5	Bad smell and odor	<ul style="list-style-type: none"> i. Contaminated rice husk from poultry farm will be replaced frequently ii. Poultry farm will be located at least 500 m away from the human settlements. iii. Antifoulants will be used to reduce bad odor from fish cages. 	Unit Supervisor	Distance of poultry farms from residential area is verified	ESFP
6	Biodiversity impacts	<ul style="list-style-type: none"> i. Biological filtration of water discharge from fish farm will be ensured. ii. Natural floating aquatic plants such as duckweed will be used for removal of harmful substances. 	Unit Supervisor	Fish meat checked for harmful substances	ESFP
5. Hotels and Restaurants Facilities					
1	Soil erosion	<ul style="list-style-type: none"> i. Exposed soil will be re-vegetated quickly. ii. Steep slope cutting of land will be avoided iii. Low embankments will be protected from erosion. 	Owner	Soil erosion is monitored.	ESFP
2	Solid Wastes disposal	<ul style="list-style-type: none"> i. Debris will not be buried in the foundation base and will be disposed off in safe locations. ii. Municipal garbage will be continuously collected and disposed at a designated area iii. Hazardous wastes will be incinerated. 	Manger	Garbage disposal system and disposal site is monitored.	ESFP
3	Waste water discharges.	<ul style="list-style-type: none"> i. Appropriate size septic tank and soaking pit will be constructed, and or upgraded for disposal of wastewater. ii. Septic tank will not be located within 50 m of any water body. Storm drains are periodically cleared to maintain storm water flow 	Owner	Septic tank and wastewater monitoring is carried out.	ESFP
4	Noise pollution	<ul style="list-style-type: none"> i. Generator will be installed in an isolated room with noise walls and proper chimney. ii. Late night operation of generator will not be allowed. 	Owner	Noise levels is monitored	ESFP

5	Wildlife habitat	i. Subproject will not be located near wildlife sanctuaries. Hunting of birds will not be allowed in the surroundings of subproject area.	Owner	Project site is verified for wildlife sanctuaries.	ESFP
6	Cultural disturbance	i. The customers/tourists will be provided information regarding the local culture and traditions.	Manager	Customer interviewed about the local culture.	ESFP
6. Wood and Furniture Products					
1	Impact on residential population	i. Subproject will not be located inside residential population.	Owner	Project location is verified	Field Officer
2	Liquid Effluents	i. Closed drainage system for sewerage water will be constructed or rehabilitated to avoid chemical contamination. ii. Chemicals will not be stored in rain or flood prone storage sites, and or adjacent to water intake points or groundwater resources.	Owner	Drainage system and chemical storage is monitored.	ESFP
3	Chemicals pollution	i. Solvents and coating on the wood surface will be sprayed through a high velocity spray system. ii. Concrete pads will be used for wood treatment in designated area to ensure collection of drippage.	Unit Supervisor	Spray system and concrete pad is verified	ESFP
4	Air and dust pollution	i. Waterborne coating materials will be used to reduce air emissions. ii. Wood cutting will be done in an isolated area with proper curtains to control sawdust emissions.	Unit Supervisor	Air emission and dust is monitored.	ESFP
5	Noise pollution	i. Saw machine will be installed in an isolated shed with noise walls and noise barriers. ii. Late night operations will not be allowed.	Owner	Noise level monitoring is conducted.	ESFP
7. Petroleum and CNG Filling Stations					
1	Impact on residential population	i. Petroleum and CNG stations shall not be located inside the residential area. ii. Petroleum and CNG stations shall not be located in close proximity of the hospitals, schools, mosques, and parks.	Owner	Geographical location of project site is verified	Field Officer
2	Soil pollution	i. Underground fuel storage tanks will be constructed or rehabilitated to the modern specifications. ii. Drip pans will be used during fuelling to avoid spillage iii. Waste oil, oily rags and oily sludge from the separators to be disposed off in accordance with approved procedures	Owner + Unit Supervisor	Soil contamination is monitored.	ESFP
3	Liquid Effluents Discharge	i. Oil water separator and treatment systems will be installed or rehabilitated. ii. All groundwater extraction will be completely enclosed to prevent hydrocarbon contamination into the aquifer.	Unit Supervisor	Waste water is monitored for oil & grease.	ESFP/TPV

		iii.	Water from washing area will be treatment before discharge to sewer			
4	Air pollution	i.	Ensure the pipe and couplings for the fuel transfer are secured and tight.	Filling Operators	Air emissions monitoring is carried out.	ESFP
		ii.	Properly trained staff will be employed for fuelling vehicles.			
5	Noise pollution	i.	Compressor & generator room will be completely isolated with noise walls and noise barrier.	Client/owner	Noise level is monitored.	ESFP/TPV
6	Accidental fire,	i.	Fire fighting equipments will be installed.	Owner + Unit Supervisor	Installation of fire equipments is verified	ESFP
		ii.	Occupational health & safety plan will be prepared and implemented.			
		iii.	Staff will be properly trained on OHS guideline.			
8. Agro Food Processing						
1	Impact on residential population.	i.	Subproject will not be located in residential area.	Owner	Project site is verified	Field Officer
		ii.	Subproject will be located in approved commercial, and or industrial zone			
2	Wastewater discharge	i.	Chemicals will be stored in sealed container.	Owner	Waste water is monitored for NEQS	ESFP/TPV
		ii.	Waste water treatment facility will be upgraded. Minimum use of water will be done to reduce waste water discharge.			
3	Solid wastes disposal	i.	Solid wastes will be segregated and disposed off in designated landfill site.	Unit Supervisor	Waste disposal practice and landfill site is monitored.	ESFP
		ii.	Inorganic wastes such as plastic, paper and wires etc will be separated and recycled. Hazardous wastes will be sent to incineration facilities.			
4	Air pollution	i.	Air pollution control facility will be upgraded or installed.	Client/Owner	Air emissions are monitored.	ESFP/TPV
5	Odor and bad smell	i.	Proper ventilation will be provided.	Unit Supervisor	Bad smell is checked.	ESFP
		ii.	Fumigation and air refreshing will carried out.			
9. Textile/Silk Processing Industries						
1	Impact on residential population	i.	Subproject will not be located in urban, and or residential area.	Owner	Siting be verified	Field Officer-PU
2	Liquid effluent discharge	i.	Liquid effluent/wastewater treatment facility constructed or upgraded to comply with NEQS standards before discharge to the stream, rivers.	Owner + Unit Supervisor	Wastewater monitoring carried out	ESFP/TPV
		ii.	Water conservation practices will be employed to reduce liquid effluents.			

3	Solid wastes disposal	<ul style="list-style-type: none"> i. Solid wastes will be disposed off in designated landfill site. ii. Hazardous wastes will be sent to incineration. iii. Waste minimization practices will be implemented. 	Owner + Unit Supervisor	Solid waste disposal and landfill site is monitored.	ESFP
4	Air pollution	<ul style="list-style-type: none"> i. Chemicals will be stored in air tight vessels/tanks. ii. Air pollution control facility will be upgraded. 	Owner + Unit Supervisor	Air emission is monitored.	ESFP/TPV
5	Noise and odor	<ul style="list-style-type: none"> i. Noise walls and noise control barriers will be provided. ii. Proper exhaust and ventilation facility will be provided in the building. 	Owner	Noise level is monitored.	ESFP/TPV
10. Transport and Bus Terminals					
1	Impact on residential population	<ul style="list-style-type: none"> i. Subproject will not be located inside residential area, and or adjacent to the hospital and schools. 	Owner	Geographical location is verified	Field Officer
2	Air and dust pollution	<ul style="list-style-type: none"> i. Driveways and parking lots will be paved and concreted in the bus terminal.. ii. Vehicles in the parking lot will not be allowed running. Vehicles emissions testing will be carried out regularly to comply with EPA standards. iii. A proper traffic management plan for incoming and outgoing vehicles will be prepared and implemented. 	Owner + Terminal Supervisor	Air and dust emission are monitored.	ESFP/TPV
3	Noise pollution	<ul style="list-style-type: none"> i. Use of pressure horns will not be allowed. ii. Vehicles will be checked for noise levels from the Vehicle Emission Testing Stations (VETS). 	Terminal Supervisor	VETS certification of vehicles for noise level compliance is verified.	ESFP
4	Waste water discharge	<ul style="list-style-type: none"> i. Wastewater and storm water disposal system will be provided or upgraded. ii. Effluent discharge from the repair terminal will not be allowed to mix with municipal sewerage. iii. Oily water will be directed to oil water handling system. iv. No service station and refueling will be allowed inside the premises of the terminal 	Terminal Supervisor	Wastewater monitoring is carried out.	ESFP/TPV
5	Solid wastes disposal.	<ul style="list-style-type: none"> i. Solid waste collection and disposal system will be implemented and municipal wastes will be disposed off in designated landfill site. ii. Oils and fuel spill control contingency plan will be prepared. 	Terminal supervisor	Solid waste disposal and landfill site is monitored.	ESFP
11. Light Engineering Workshop					
1	Impact on residential population	<ul style="list-style-type: none"> i. Subproject will not be located inside residential area, and or adjacent to hospital and schools. 	Owner	Geographical location of project is verified.	Field Officer

2	Air pollution	<ul style="list-style-type: none"> i. Welding metals will be properly cleaned and dried before welding to reduce smoke and fumes.. ii. Welding will be carried out in welding room. Open air welding will be avoided. 	Workshop Foreman	Smokes and fumes from welding works are monitored.	ESFP
3	Noise pollution	<ul style="list-style-type: none"> i. All mechanical and metal cutting work will be done in separate room with noise walls and noise barriers installed. 	Workshop Foreman	Noise levels are monitored.	ESFP/TPV
4	Liquid effluent discharge	<ul style="list-style-type: none"> i. Effluent discharge from the washing and repair terminal will not be allowed to mix with municipal sewerage. ii. Oily water will be directed to oil water handling system. 	Workshop Foreman	Wastewater is monitored for NEQS.	ESFP/TPV
5	Solid waste disposal	<ul style="list-style-type: none"> i. Lubricant and degreasing solvents will be stored in sealed container. ii. Degreasing of metals will be carried out in a designated area with concreted flooring. iii. Municipal wastes will be handed over municipal authorities. 	Workshop Foreman	Waste disposal practices are monitored.	ESFP
12. Printing and Packaging					
1	Land use.	<ul style="list-style-type: none"> i. Subproject will not be located in urban, and or residential area. 	Owner	Location of project is verified.	Field Officer
2	Air pollution	<ul style="list-style-type: none"> i. Cooler/condenser systems, and or carbon absorption method will be applied to control VOC emissions. ii. Bulk storage of chemicals with air tight windows and doors. 	Unit Supervisor	VOC emissions are monitored.	ESFP/TPV
3	Noise pollution	<ul style="list-style-type: none"> i. Noise from printing machinery will be controlled by proper lubrication and maintenance. 	Foreman	Noise levels are checked in factory.	ESFP/TPV
4	Wastewater disposal	<ul style="list-style-type: none"> i. Sewage will be disposed off in septic tanks. Wastewater from the process will be treated prior to discharge into the environment. ii. Water will be recycled for washing to reduce effluents. 	Unit Supervisor	Waste water monitoring is carried out.	ESFP
5	Solid wastes disposal	<ul style="list-style-type: none"> i. Segregation of solid waste will be carried out and unused glue will be collected for disposal to an authorized landfill site. ii. Other solid waste including paper and tin bottles will be recycled. iii. Fuel will be stored in a secured area. 	Unit Supervisor	Waste disposal practice is monitored.	ESFP
13. Micro-Hydel Power Stations					
1	Impact on agriculture	<ul style="list-style-type: none"> i. Subproject will not be located on productive agriculture land. 	Owner	Project location is verified.	Field Officer

		ii. Excavated and spoil material, if any, will be disposed off at designated safe sites.			
2	Air and Dust Emissions	i. Regular sprinkling of water will be carried out on access track used by vehicles and speed limit will be kept minimum to control dust. ii. Proper tuning of vehicles will be ensured.	Unit Supervisor	Dust emission is monitored.	ESFP
3	Noise Pollution	i. Noise walls and noise barriers will be provided on the site. Machinery and equipments will be properly lubricated to reduce noise.	Unit Supervisor	Noise level is monitored.	ESFP/TPV
4	Wastewater disposal	i. Appropriate design of septic tank will be provided.. Water conservation practices will be adopted to reduce wastewater discharge	Owner	Waste water is monitored.	ESFP/TPV
5	Solid waste disposal	i. Municipal solid waste will be disposed off in designated landfill site, and or handed over to municipal authorities.	Unit Supervisor	Waste disposal and landfill site are monitored.	ESFP
6	Wildlife habitat	i. Subproject will not be located in the close proximity of wildlife sanctuaries, and or protected areas.	Owner	Surrounding of project site is monitored for wildlife presence.	ESFP
14. Schools and Educational Facilities					
1	Land Use	i. Residential plot will not be converted to school and or other educational institution.	Owner	Project site verified.	Field Officer
2	Dust Pollution	i. Exposed soil in play ground will be landscaped and vegetated. ii. Class rooms will be located away from the side road. iii. Special signboard will be provided to caution the road traffic for observance of speed limit in school premises.	School Management	Sign boards and landscaping is checked.	ESFP
3	Noise from vehicles	i. Vehicles will not be allowed to use horns in the school premises. ii. The school premises will be declared silence zone with proper signboard installed.	School Management	Silence zone is verified through inspection	ESFP
4	Water Pollution	i. Appropriate size of septic tank will be provided for sewerage wastewater disposal. ii. Wash water from laboratory will be collected in separate tank and treated before discharge	School Management	Wastewater is monitored.	ESFP
5	Solid wastes disposal	i. Municipal solid waste will be continuously collected and disposed off in designated landfill site, and or handed over to municipal authorities.	School Management	Waste disposal practice is monitored.	ESFP
15. Pharmaceutical Formulation and Packaging					

1	Land Use	<ul style="list-style-type: none"> i. Subproject will not be located in urban, and or residential area. ii. Subproject must be located in approved industrial zone. 	Owner	Geographical location of project site is verified	Field Officer
2	VOC emissions	<ul style="list-style-type: none"> i. Use dedicated vent condensers and return condensate to the source. ii. Control bulk storage air emissions with air tight windows and doors. 	Factory Manager	VOC emissions are monitored.	ESFP/TPV
3	Wastewater disposal	<ul style="list-style-type: none"> i. Wastewater treatment system will be upgraded to an appropriate size and design. ii. Dry cleaning methods will be adopted to reduce wastewater effluent. iii. Water will be recycled for washing. 	Factory Management	Wastewater monitoring is carried out	ESFP/TPV
4	Solid waste disposal	<ul style="list-style-type: none"> i. Proper segregation of solid waste will be carried out. Municipal solid waste will be collected and disposed off in designated landfill site. ii. Hazardous wastes will be incinerated. 	Factory Management	Waste disposal practices are monitored.	ESFP
6	Gender	<ul style="list-style-type: none"> i. Female workers will be provided separate rest room with toilets and prayer facilities. ii. No discrimination will be made in wages. iii. Equal opportunity of employment will be provided for male and females according to suitability for jobs. 	Factory Management	Facilities provided for females are verified.	ESFP
16. Dates Processing Units					
1	Impacts on residential area	<ul style="list-style-type: none"> i. Subproject will not be located in residential population. 	Owner	Site of project is verified	Field officer
2	Dust pollution	<ul style="list-style-type: none"> i. Access roads will be compacted and regular sprinkling of water will be ensured to reduce dust emission in subproject area. 	Owner	Dust emissions are monitored	ESFP
3	Water pollution	<ul style="list-style-type: none"> i. Wash water will be filtered and recycled to reduce the wastewater discharge load. ii. Wastewater will be treated in properly designed sedimentation and septic tank. 	Unit Supervisor	Waste water is monitored for NEQS	ESFP/TPV
4	Solid waste disposal	<ul style="list-style-type: none"> i. Municipal solid waste will be collected and disposed off in designated landfill site. ii. Fumigation will be carried out in closed room. iii. Safe storage of preservatives and chemicals will be ensured. 		Waste disposal practice is monitored	ESFP
17. Hospital and Laboratories					
1	Project location.	<ul style="list-style-type: none"> i. Please propose here site specific mitigation measures, if any. 	Owner	Site inspection be conducted.	Filed Officer

2	Air emissions from incineration	i. Proper design of incineration is installed or upgraded with scrubbers for emission control.	Owner	Air emissions are monitored.	ESFP/TPV
3	Waste pollution	i. Pathology/Autopsy Section Washings must be autoclaved before release into the main sewers. ii. Infectious Lab washings must be disinfected with Hypochlorite before discharge into the main sewers. iii. Body fluids and excreta of patients suffering from infectious diseases can be discharged to the sewerage systems after disinfection. with Carbolic Acid.	Owner	Waste water is monitored for NEQS compliance.	ESFP/TPV
4	Infectious wastes disposal	i. Proper segregation of solid waste will be carried out. Municipal solid waste will be collected and disposed off in designated landfill site. ii. Infectious wastes and hazardous wastes will be sent to incineration. iii. Sharps, including used needles, scalpel blades and other solid articles, will be broken and scrapped.	Owner	Wastes disposal practice is monitored.	ESFP
18. Livestock's Development					
1	Impact on residential, and or urban areas	i. Subproject will not be located in residential or urban areas.	Owner	Geographical location of project is verified.	Field Officer
2	Solid wastes disposal.	i. Veterinary medicine and antibiotics will be stored in safe places to avoid contamination. ii. Used bottles and syringes will be sent to incineration facility. iii. Animal manure will be composed and used as fertilizers.	Unit Supervisor	Wastes disposal methods are monitored.	ESFP
3	Water contamination from animal wastes	v. Animal wastes/manure will be properly stored, composed and sold to farmers. vi. Surface runoff from animals sheds will be collected and treated in separate septic tanks before discharge to the drain.	Unit Supervisor	Waste water is monitored for fecal coliform	ESFP/TPV
4	Odor and smell from livestock's manure	iv. Manure will be regularly collected and stored in closed storage; Cleaning of animal shed will be carried out regularly. v. Good housekeeping practices will be adopted to reduce smell and odor.	Unit Supervisor	Cleanliness and smell is monitored.	ESFP
5	Spread of diseases from cattle farms	i. Regular check up of animals will be conducted to control diseases transmission. ii. Infected animals will be kept in separate sheds.	Unit Supervisor	No of animals provided health care are checked.	ESFP
6	Grazing	i. Grazing will not be allowed in forest areas. ii. Artificial feeds will be used to reduce the impact.	Unit Supervisor	Quantity of feed is regularly checked.	ESFP

7	Health hazards from bad odor and smell	<ul style="list-style-type: none"> i. Occupational health and safety measures will be defined and implemented. iii. Good housekeeping practices will be adopted to reduce the impacts. 	Unit Supervisor	Implementation GHP monitored.	ESFP
19. Fishing Huts.					
1	Project siting	<ul style="list-style-type: none"> i. Please propose here appropriate mitigation measures after site inspection. 	Field Officer	-	-
2	Air pollution	<ul style="list-style-type: none"> i. Cooking and heating will be carried out in open air to dilute and reduce the impact on tourist's health. ii. Preference shall be given to use natural gas for cooking, where not available dried wood will be used to produce minimum smoke and emissions 	Owner	Smokes emissions are monitored.	ESFP
3	Soil Pollution	<ul style="list-style-type: none"> i. Wastes cooked food and fish ribs, scales and fins from cleaning shall be collected and disposed off hygienically. 	Owner	Wastes disposal method is monitored.	ESFP
4	Water pollution	<ul style="list-style-type: none"> i. Septic tank shall be constructed for sewerage waster and washing water before discharge to environment. ii. Solid wastes will not be thrown into the river, streams or canals or any other water body 	Owner	Waste water disposal practice is monitored.	ESFP
5	Gender	<ul style="list-style-type: none"> i. Separate cabin/rooms for female tourists and families will be provided with washing and resting facilities. 	Owner	Facilities for females are verified.	ESFP
20. Manufacturing Units					
1	Land use change	<ul style="list-style-type: none"> i. Subproject will not be located in urban, and or agricultural land 	Owner	Project location is verified.	Field Officer
2	Air pollution	<ul style="list-style-type: none"> i. Air pollution control facility will be upgraded, and or rehabilitated to comply with NEQS. 	Owner	Air emissions is monitored to comply with NEQS	ESFP/TPV
3	Soil Pollution	<ul style="list-style-type: none"> i. Toxic and hazardous wastes will be incinerated in approved incineration facility. ii. Non-hazardous wastes will be disposed off in designated landfill site 	Unit Supervisor	Hazardous waste disposal practice is monitored during operation	ESFP
4	Water pollution	<ul style="list-style-type: none"> i. Waste water will be treated in appropriate treatment plant to comply with NEQS before discharge to the sewerage system 	Unit Supervisor	Waste water discharge is monitored for NEQS compliance	ESFP/TPV
5	Health and Safety	<ul style="list-style-type: none"> i. A well defined occupational health and safety plan will be prepared and implemented. ii. Workers will be provided required safety equipments and awareness trainings. iii. First aid box and emergency medical coverage will be 	Owner & Unit Supervisor	Provision of safety equipments verified from workers	ESFP

		provided to workers.			
6	Gender	<ul style="list-style-type: none"> i. Women's worker will be provided working environment according to their needs. ii. Separate wash room, rest room and prayer facilities will be provided. iii. Women's will be provide jobs opportunities according to defined policy and salary scales. 	Owner and Unit Supervisor	Facilities for women's employee are verified.	ESFP