تجمع مؤسسة التعاون لإدارة مشروع المؤسسات الأهلية الفلسطينية
WELFARE ASSOCIATION CONSORTIUM FOR THE MANAGEMENT OF THE PALESTINIAN NGO PROJECT

مؤسسة التعاون
WELFARE ASSOCIATION

هيئة إدارة المشروع
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Appraisal of the Palestinian NGO III Project

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Environmental Management Plan

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List of Abbreviations

CAF	**Charities Aid Foundation**
CP	**Cultural Property safeguard policy**
EA	**Environmental Assessment**
EIA	**Environmental Impact Assessment**
EMP	**Environmental Management Plan**
EAu	**Environmental Audit**
EQA	**Environmental Quality Authority**
EO	**Environmental Officer**
ES	**Environmental Index**
EI	**Environmental Index**
EEM	**Environmental Evaluation Matrix**
IEE	**Initial Environmental Examination**
LGU	**Local Government Unit**
MLG	**Ministry of Local Government**
MOH	**Ministry of Health**
NDC	**NGO Development Center**
NGO	**Non-governmental Organization**
PNGO	**Palestinian Non-governmental Organizations**
PM	**Pest Management safeguard policy**
PMO	**Project Management Organization**
PO	**Project Officer**
WAC	**Welfare Association Consortium**
WA	**Welfare Association**

1. INTRODUCTION

The Palestinian NGO Project (PNGO) is a major initiative of the World Bank, which began in 1997, when the Welfare Association Consortium (WAC) composed of the Welfare Association (WA) as the lead partner, the British Council and the Charities Aid Foundation (CAF) won the World Bank's competitive tender for the management of the PNGO Project. The consortium formed a management partnership, which oversees the work of the Project Management Organization (PMO). The PMO was the implementation agency for PNGO I and PNGO II.

The World Bank has been requested to support a third Palestinian NGO Project based on the successes of the first two. Palestinian NGOs still need support and a reliable funding in supplementing their services to vulnerable communities, which the public service delivery system does not adequately reach. NGOs, particularly smaller community-based NGOs, need strengthening, especially in effective planning, managing and monitoring of their service delivery programs.

PNGO III will support the development of a credible and sustainable professional agency (the NGO Development Center, NDC) which will effectively provide technical, policy, and funding support to the NGOs service delivery programs in the West Bank and Gaza. NDC will oversee the management of PNGO III. The PNGO III project has three main components: NGO Grant Facility, NGO Sector Development, and Institutional Development of NDC.

To proceed with the preparation of the project it is necessary to prepare an Environmental Impact Assessment (EIA) and an Environmental Management Plan (EMP) as part of the procurement requirements under the Project. These two environmental reports shall comply with the World Bank policies and procedures. Universal Group for Engineering and Consulting has been consulted to prepare the EIA and EMP for PNGO III. The EIA and EMP provide the following key outputs:

- Identify the types, nature and scale of interventions under the NDC components of the project;
- Determine based on knowledge of these interventions, whether the proposed investments may result in environmental or social impacts;
- Propose mitigation and monitoring measures in the form of a project-EMP and applicable safeguard documentation to address potential impacts;
- Provide recommendations to build capacity and strengthen environmental management;

- Develop procedures to identify and address potential environmental and social safeguard issues of PNGO III subprojects;
- Provide a budget for mainstreaming environmental and social issues into the PNGO III budget.

This EMP report presents the environmental criteria for selecting the projects to be covered by PNGO III and give details for administering and monitoring the potential environmental impacts and their mitigation measures. The environmental matrices in annex 1 provide means to be considered during the design, implementation, operation, and control of the subprojects. Terms of reference for EA are annexed to the EMP (Annex 2).

The EIA addressing the potential environmental impacts and the mitigation measures is prepared in a separate document. In the EIA, the overall environmental situation, the status of environmental legislation and regulation, the legal status of NGOs in the West Bank and Gaza are presented.

2. ENVIRONMENTAL MANAGEMENT PLAN

2.1 OBJECTIVES AND FEATURES

The objective of the EMP is to cater to the environmental and social needs of the PNGO III project in a simple, responsive and cost effective manner that will not unnecessarily overload or impede the project cycle. The EMP outlines the measures needed to address the issues identified in the EIA. Moreover, the EMP demonstrates proposed monitoring activities that encompass all major impacts and identify how they will be integrated into project supervision. The following are outlined in the EMP:

- Main environmental and social mitigation measures;
- Environmental training and capacity program; and
- Environmental and social monitoring.

The EMP can be considered as an audit of selected projects and an assessment of potential impacts and mitigation measures. The following are highlighted by the EMP:

- Environmental screening and assessment of key environmental issues.
- Ensure adequate consultation during the assessment process.
- Develop complying Guidelines and environmental management and monitoring plan
- Identify linkages to other safeguard policies relating to the project.

2.2 ENVIRONMENTAL MANAGEMENT PLAN

The PNGO III subprojects are not likely to result in any significant adverse environmental impacts. The majority of the subprojects might only cause limited, both geographically and insignificance, small-scale adverse environmental impacts. However if not adequately managed from an environmental perspective, the large numbers of subprojects could, over the time, cumulatively affect public health and contribute to a slow degradation of natural resources. In addition, there are a limited number of subprojects, which because of their relatively large size and/or nature might cause significant adverse environmental impacts. These would require special attention.

When implemented efficiently, the EMP should ensure that:

- Any environmental issues or concerns are addressed in the design phase of the subprojects.
- Mitigation measures minimizing environmental impacts are being implemented.
- Monitoring for compliance and sound environmental performance is continued.

The basic elements of the environmental management and monitoring plan are:

- Environmental classification of subprojects
- A simple environmental screening and registration process using classification lists
- A simple environmental assessment for subprojects using environmental assessment forms, checklists and guidelines
- Environmental self monitoring, reporting and periodic inspection
- Environmental education, training and periodic inspection
- Periodic auditing and reporting

2.3 ENVIRONMENTAL CATEGORIES

The subprojects applied to PNGO III would be classified into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts. Category A, B, C and FI would represent these groups as follows:

Category A: This list is limited to those subprojects with significant environmental impacts, which require a full detailed EIA. These projects are not eligible for PNGO III. The list of subprojects under this category would include, but are not limited to:

- Landfill subprojects,
- Large healthcare waste management projects,
- Wastewater treatment systems.

Category B: A proposed project is classified as Category B if its potential adverse environmental impacts on human populations or environmentally important areas including wetlands, forests, grasslands, and other natural habitats are less adverse than those of Category A projects. Subprojects falling under this category would include, but are not limited to:

- Construction of schools, housing, training centers, etc.
- Construction of health units, dispensaries, maternity clinics, medical research, etc.
- Construction of roads, bridges and water passage ways.
- Construction of water reservoirs.
- Establishing livestock markets, slaughter houses, vaccination yards, etc.

Category C: These are subprojects, which are known to have no adverse environmental impacts, and accordingly will not require any environmental assessment or follow-up. Training, institutional capacity building, awareness, minor rehabilitation and furnishing/equipping of schools and training centers are examples of subprojects falling under Category C. Most of the service delivery type of projects falls under this category.

Categories B and C require Initial Environmental Examination, limited EMP, and/or Environmental Screening (ES).

Category FI: A proposed project is classified as Category FI if it involves investment of the Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts. Environmental Screening is applied to FI projects to determine the level of Environmental Assessment (EA) to be required.

2.4 PNGO III INVESTMENT COMPONENTS

The subprojects of PNGO III are of the community development driven type of projects. They are mostly classified as Categories B or C and have limited adverse environmental impacts. The following is a brief introduction of the investment components and programs of PNGO III project.

Partnership Grants

The objective of this activity is to improve social service delivery through increased cooperation, coordination and planning between local governments and local NGOs. Activities that are eligible for this grant include:

- Youth Development;
- Cultural Development;
- Early Childhood Development;
- Adult learning;
- Technology training;
- Job and vocational training, and
- Environmental Activities.

Development Program

This component provides additional funds and customized institutional support to medium capacity NGOs to extend successful projects to thresholds of sustainability.

Sector Support Program

This Program aims to build the institutional capacity of the NGOs by creating opportunities for networking, information exchange and learning.

Technical Assistance, Monitoring and Evaluation

This component aims to support the programs by providing capacity support to improve the performance and effectiveness of the project activities, while creating an appropriate frame for monitoring and evaluation.

2.5 ENVIRONMENTAL POSITIVE IMPACTS

PNGO III is to include activities that will, as per project sector, mainly have positive environmental impacts for most sectors. Positive impacts identified include the following:

Rehabilitation of Buildings: Generally, the rehabilitation of schools, clinics, public centers or other buildings will increase the capacity of employees and improve the work environment. Building maintenance projects improve the physical conditions of the structures and enhance safety conditions.

Road Maintenance Projects: Reduce or prevent dust, improve drainage, minimize disturbances and obstacles and ensure road safety, especially in roads close to schools and markets. Pavement and sidewalks add positively to the people's attitude towards preserving these assets and therefore keeping their localities clean and safe.

Electricity: Improvement of electricity services will improve the living and safety conditions of the people. Provision of street lighting will improve the traffic condition in heavy populated areas and will have positive impacts on accessibility and minimization of accidents and risks.

Sewage and Water Projects: Subprojects of this sector mainly include awareness programs and small scale projects aiming at improving the public health of the local communities. These projects will thus improve health conditions and enhance groundwater protection.

After construction, the implemented projects will have no impacts on most of the physical environmental factors such as noise, dust, and air pollution. Water projects will improve the quality and quantity of water and enhance system efficiency. The rehabilitation and maintenance of water networks will reduce the losses due to water leakage and illegal house connections. Sewage projects will improve the health conditions, reduce leakage and have positive impacts on water resources.

Solid waste projects: Solid waste management practices ensure natural resources protection, fewer and safer disposal sites, clean environment and minimization of environmental, cultural, social, and economic effects. The awareness activities of this sector will increase the efficiency of collection system and control illegal dumping sites.

Supply Tools and Equipments: Such projects improve the capacities of local communities' staff and enable them to carry out their tasks with less time and in safe environment. The provisions of sewer cleaning equipment, as an example, will adequately maintain the flow capacity of the sewers and will prevent damage during the cleaning operation. Provision of tools and equipment for solid waste management will enhance cleaning of streets and thus improve the health conditions; accumulation of wastes in roads and residential areas will be minimized or eliminated.

2.6 ENVIRONMENTAL NEGATIVE IMPACTS

The risks and negative impacts of the proposed PNGO III subprojects can be minimized by addressing mitigation measures during construction and post-construction operation phases. The matrices in Annex 1 are detailed planning and environmental matrices of selected project sectors. They summarize the expected impacts of each sector and the suggested mitigation measures.

2.7 SCREENING AND REGISTERING

Environmental Screening (ES) would take place at an early stage of the PNGO III subprojects cycle. During the project appraisal stage (stage 1), the Project Officer (PO) and/or the Environmental Officer (EO) would classify the subprojects into categories A, B, C or IF. The classification is based on the subproject proposal and with the help of the classification lists, World Bank regulations and procedures, and Palestinian Environmental Assessment Policy.

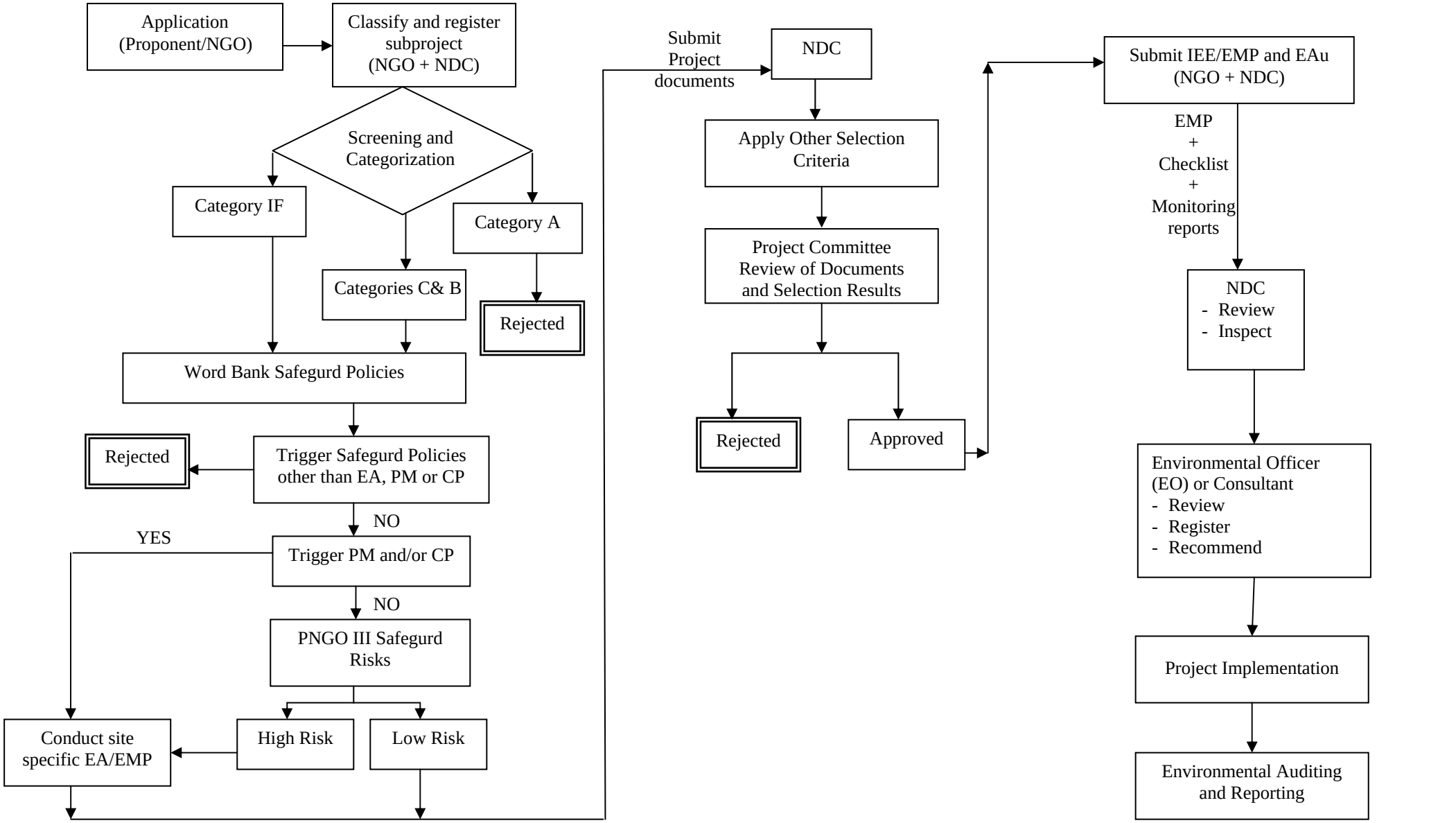
Subprojects classified as A are rejected as they are ineligible for PNGO III. Subprojects under categories B, C and IF would be subject to environmental assessment and follow-up as described by the EMP chart presented on the next page. The subprojects that trigger any of the ten World Bank safeguard policies, other than Environmental assessment (EA), Pest Management (PM) and Cultural Property (CP), are rejected. Those triggering PM and/or CP are subjected to site specific EA/EMP.

The subprojects are then applied to the PNGO III safeguard risks. Those subprojects listed as high-risk are also subjected to site specific EA/EMP, while low-risk projects would further processed with no further environmental assessment or follow-up. The selected projects are then applied to stage 2 of the screening and registering process. Stage 2 is the project documentation stage, where all documents including the EA and EMP are submitted to the NDC. In stage 2 other selection criteria are applied and project documents are reviewed, resulting either rejection or approval of the subprojects. Those approved proceed further to the Implementation and Auditing stage (stage 3).

The screening and review process will be conducted in close cooperation with NDC. Environmental review of projects will be conducted by a special appointed staff member, Environmental Officer (EO), or by an external consultant. Subprojects that have been earmarked will be subjected to detailed site review. The implementation of construction work will be closely monitored.

The standard appraisal and mitigation matrix will be part of the specific specifications for the contractor, and will form the basis of regular monitoring by both the contractor and the NDC staff. The EMP matrix consists of sectors, phase, and potential environmental impacts due to the project, mitigation measures, operation and supervision. Environmental Auditing is conducted during and after project implementation.

Screening and Registering



Stage 1: Field Appraisal and EA preparation

Stage 2: Project Documentation

Stage 3: Implementation and Auditing

2.8 ENVIRONMENTAL ASSESSMENT OF SUBPROJECTS

Environmental assessment takes place during stage 2 of the subproject life cycle (preparation of project document). Subprojects classified under category B would be subject to a focused EA. The subproject consultant would be required to complete a simple EA or an IEE. Subprojects triggering PM and/or CP of the World Bank safeguard policies or those listed as high-risk would be subject to site specific EA/EMP. The EO will provide the NGO/consultant checklists and guidelines to help him identify and include the relevant mitigation measures. Mitigation measures indicated in the EMP should be included in the project design and reflected in the project documents.

A short list of recommended environmental consultants could be provided to sub-contract from among to conduct the EA. The short list available by the Palestinian Environmental Quality Authority (EQA) is recommended to be used.

The EMP for the subproject, whether classified as B or C, will first be reviewed by the NGO to check for any missing data, information or unaddressed issues. The subproject documents and the EMP are then sent to the NDC. The NDC will forward a copy of the subproject documents and the EMP to the EO.

The Environmental Officer (EO) will provide back to the NGO his comments and opinion concerning the EA/EMP of the subprojects. In particular he will evaluate and comment on the proposed mitigation measures, as well as the environmental auditing and reporting plan. The subproject documents including the EA/EMP as well as the opinion of the EO are then put forward to the NDC.

Based on the subproject document, the preliminary decision and short listing of the projects is taken by the NDC. In case the subproject site is changed after approval, the EA would have to be re-conducted for the new site.

2.9 ENVIRONMENTAL SELF MONITORING

Both construction and operation phases involve activities that can be associated with impacts on the surrounding environment and need to be monitored. The project activities during construction and operation are listed in Tables 1 and 2 identifying the potential impacts on the significant environmental issues. Whereas Annex 1 of this EMP presents matrices detailing representation of

the environmental and social impacts typically associated with the type of subprojects expected by PNGO III. These environmental matrices show the expected impacts covered by the subprojects, sector wise, and list the mitigation measures proposed to be implemented during and after the construction of the projects.

2.9.1 Construction Phase

Concerns generally exist in many of the subproject categories (education, health, transportation, water supply, etc.) during the construction phase. These concerns are usually minor and can be easily addressed using appropriate mitigation measures in the civil works contracts. The most important issues include:

- Construction and demolition wastes
- Risk of damage to archaeological or historical sites

Table 1: Construction Activities and Potential Impacts

Project Construction Activities	Significant Environmental Issues				
	Agricultural Resources	Water Resources	Air Quality	Cultural and Historical Resources	Socio-economic Conditions
Demolition			✓	✓	✓
Removal of Existing Infrastructure				✓	✓
Heavy Machinery Operation			✓	✓	✓
Construction of Infrastructure		✓	✓	✓	✓
Excavations and Earthwork	✓	✓	✓	✓	✓
Construction of Buildings and Facilities			✓	✓	✓
Material Procurement		✓	✓		✓
Waste Disposal (solid, liquid, hazardous, ect.)	✓	✓	✓		✓
Wastewater Disposal	✓	✓	✓		✓
Transportation			✓	✓	✓
Accidents and Unplanned Events	✓	✓	✓	✓	✓

2.9.2 Operation Phase

These are concerns most typical in the operation of subprojects, primarily in the education and health sectors. General issues during operation include:

- Availability of functioning and maintained sanitation facilities;
- Improper disposal of municipal wastewater; (e.g. establishments such as schools or healthcare units may dispose their wastewater in percolation pits without conducting an assessment of the surrounding environment, so it is important to identify its sensitivity and accordingly whether there are potential environmental and/or public health risks); and
- Improper management of municipal solid waste generated by the subproject. This usually results in the accumulation of municipal waste on or around the subproject premises/area.

Table 2: Operational Activities and Potential Impacts

Project Construction Activities	Significant Environmental Issues				
	Agricultural Resources	Water Resources	Air Quality	Cultural and Historical Resources	Socio-economic Conditions
Transportation			✓		✓
Power Generation			✓		✓
Water Supply		✓			✓
Solid Waste Collection and Disposal	✓	✓	✓		✓
Wastewater Disposal	✓	✓	✓		✓
Educational Training	✓			✓	✓
Production and Investments					✓
Landscape Irrigation	✓	✓			✓
Accident and Unplanned Events	✓	✓	✓		✓
Overall Project Development	✓	✓	✓	✓	✓

2.9.3 Safeguard risks associated with subprojects

Certain types of small-scale projects can be considered high risk (e.g. new rural roads) while others can be considered low risk (rehabilitation of wells and boreholes, construction of classrooms). High-risk subprojects are those that require a site specific EA/EMP because they present potential adverse environmental and social risks. Low-risk subprojects are those that have minimal to no

impacts and can be managed through the insertion of clauses within the construction and supervision contracts. Some types of subprojects such as training and capacity building or dissemination of toolkits and school accessories do not present any risk and can be appraised without any safeguard measures. Table 3 provides an illustration of these safeguard risks.

Table 3: Safeguard risks expected by the PNGO III investments

PNGO III investments (examples)	No risk	Low risk	High risk
Education			
• Construction of classrooms		x	
• Teacher housing		x	
• Fencing		x	
• Provision of classroom furnishings	x		
• School supplies and medical kits	x		
• Laboratories			x
• Sports fields/recreation facilities		x	
• Functional adult literacy activities	x		
Water Supply			
• Water point rehabilitation			x
• Tertiary distribution piping		x	
• Rehabilitation of wells and springs		x	
• Spring protection	x		
• Community reservoirs (small scale)			x
• Drainage canals (small scale)		x	
• Water harvesting facility			x
• Hand pumps and mechanized boreholes		x	
Sanitation and Waste Management			
• Washing facilities		x	
• Public toilets/ pit latrines		x	
• Sewerage facilities and collection (small scale)			x
• Soak pits and septic tanks		x	
• Waste disposal facility			x
Health			
• Construction of health centers			x
• Healthcare waste management			x
• Dispensaries	x		
• Emergency rooms			x
• Maternity clinics			x
• Health control centers			x
• Laboratories	x		
Transportation, Communication and Energy			
• Tertiary and secondary level roads		x	
• Primary level culverts and bridges			x
• Footpaths		x	
• Rural telephone		x	
• Rural electrical distribution (small scale)		x	
• Retaining walls		x	

2.10 Environmental Mitigation and Auditing

Environmental mitigation and monitoring actions are presented by the EMP matrices (Annex 1). The matrices include identifying the issues, mitigation measures, and responsibility for carrying out the mitigation measures, environmental monitoring, and responsibility for carrying out the monitoring actions. The matrices are for selected project types.

In order to implement sufficient and adequate EMP in terms of project monitoring, reporting and supervision, the following actions are recommended:

1. Site-specific environmental screening and review process conducted at least two times a month for randomly selected projects. The screening and review process would be conducted in close coordination with the NGO. Environmental review shall be conducted by the EO or external consultant and for specific projects that have been earmarked to be subjected to detailed site review. A standard appraisal and mitigation form or checklist is recommended to be used. The form or checklist should basically include:
   - Current environmental problems such as water supply contamination, dust and air pollution at the site.
   - Any potential environmental impacts of the project.
   - Mitigation measures.

2. Prepare a bi-monthly progress report (Environmental Audit) addressing the environmental issues, status of mitigation measures taken and recommendations.

3. Review the existing Palestinian environmental laws and regulations. For this purpose the two main articles 45 and 47 of the Environmental law of Palestine of 1999 and the Palestinian Environmental Assessment Policy are presented under chapter 3 of the EIA of PNGO III. The EO should ensure comply of the subprojects and the EA with these laws and regulations.

2.11 EMP Cost Implications and Schedule

Table 4 presents a tentative implementation schedule for the actions of EMP. The actions are listed as per the major project activities. The cost implication of the EMP and the fees are listed in the last column of Table 4.

Table 4: EMP Cost Implications and Schedule

Major Project Activity	Proposed Action	Cost Implications
1. Appraisal and pre-feasibility phase	- Conduct the Environmental Screening (ES) - Prepare IEE report	Consultancy fees for preparing the ES, IEE and project documents
2. Design and detailed feasibility Phase	Consider all mitigation measures required by consultant and those to be implemented by the contractor in the tender documents and specification	- Fees for preparation of EA, EMP - Additional fees for consideration of mitigation measures
3. Construction and implementation Phase	- Training for contractors - Hiring of Environmental engineer to follow up the implementation of the EMP measures during construction.	- Costs for mitigation measures to be taken by contractors - Training fees - Environmental engineer salaries
4. Operation and Monitoring Phase	- Capacity building and training of NCD staff. - Appointment of an environmental engineer.	- Capacity building and training fees - Fees for monitoring and Environmental Auditing (EAu) - Environmental engineer salaries

3. ENVIRONMENTAL TRAINING AND CAPACITY PROGRAM

In order to ensure proper implementation of the environmental screening and mitigation measures, PNGO III will undertake an intensive program of environmental training and institutional capacity building. The environment capacity building on the preparation and implementation of EA/EMP would be for the NGO Development Center staff, participating NGOs staff and volunteers, contractors, and local environmental consultants.

The following environmental educational and training events are required as a minimum at this stage:

- A number of 2 days are needed for preparing the outline and training materials.
- One day training session (workshop) for NGO Development Center staff to present the EMP and explain its objectives and benefits. The EA process as well as roles and responsibilities will also be presented and discussed. During the workshop, guidelines and checklists will be provided and explained.

A comprehensive capacity building program is needed to provide a range of aids that can be used to engender skill development and knowledge transfer. This can include:

- Developing a library of environmental assessment reports and maintaining a database of information collected during the assessment;
- Collecting examples of good practice and establishing environmental awards in the workplace
- Holding an environment day or week inviting guest speakers on environmental issues,
- Producing desk aids such as a yearly calendar based on environmental themes and designing corporate environmental posters

4. ANNEXES

4.1 Annex 1: Environmental Planning Matrices

1. Construction Project
2. Rehabilitation of Roads
3. Water Projects
4. Sewage Maintenance Projects
5. Solid Waste Management
6. Electricity

4.2 Annex 2: Environmental Assessment and Sample TOR

4.1 Annex 1: Environmental Planning Matrices

1. Construction Projects

Impacts	Mitigation Measures	Phase	Operation	Supervision
Dust generated by construction activities.	Monitor the excavations. Applying (spraying) water where possible. Avoid work during windy days.	During Construction	Consultant and Contractor	NGO and Supervision Engineer
Increase the risk of accidents.	- Proper scheduling of any risky activity. - Provision of first Aid Kits and programs	- During Construction - During Construction	Consultant and Contractor Contractor	NGO and Supervision Engineer Consultant and Supervision Engineer
Construction waste generated and left in site.	Clear site management plans and dumping at proper and approved sites	During Construction	Contractor	NGO and Supervision Engineer
Noise, disturbances and other congestions	Monitor the use of safety measures and tools.	During Construction	Consultant and Contractor	NGO and Supervision Engineer
Loss of aesthetic due to the increase in built-up areas.	Design of landscaping around the facility.	During Design	Consultant	NGO and NDC
Noise around the facility by traffic movement.	Traffic regulation signs and traffic calming measures.	During Design and Construction	Consultant and Contractor	NGO and Supervision Engineer
Improper disposal and pile up of construction wastes.	Cleaning and removal of wastes to landfills or designated areas.	During Construction	Contractor	NGO and Supervision Engineer

2. Rehabilitation of Roads

Impacts	Mitigation Measures	Phase	Operation	Supervision
Environmental criteria	Include environmental criteria in Tender documents	During Design	Consultant	NGO and Supervision Engineer
Dust and construction wastes	- Monitor the excavations.	- During Construction	- Consultant	- NGO and Supervision Engineer
	- Applying (spraying) water where possible.	- During Construction	- Contractor	- NGO and Supervision Engineer
	- Avoid work during windy days.	- During Construction	- Contractor	- NGO and Supervision Engineer
	- Stabilize the road surface with gravel and other rocky surfacing materials	- During Construction	- Contractor	- NGO and Supervision Engineer
	- Proper activity scheduling and working hours and days.	- During Design and Construction	- Consultant and Contractor	- NGO, NDC and Supervision Engineer
	- Implement agreed dust control measures such as wetting dirt roads, truck washing for trucks exiting site, and monitoring dust emissions	- During Design and Construction	- Consultant and Contractor	- NGO, NDC and Supervision Engineer
Increasing the concentration of pollutants and noise.	Proper scheduling and working hours and of any risky activities.	During Design and Construction	Consultant and Contractor	NGO, NDC and Supervision Engineer
Increase the risk of accidents during construction.	- Traffic regulation signs and Traffic calming measures.	- During Design and Construction	- Consultant and Contractor	- NGO and Supervision Engineer
	- Use signs to control speed limit	- During Construction	- Contractor	- NGO and Supervision Engineer
	- Provision of adequate notification procedures for any road closures	- During Construction	- Contractor	- NGO and Supervision Engineer
Loss of natural areas, important habitats, biodiversity	- Avoid infringing on Critical habitats or areas with significant biodiversity (e.g. wetlands)	- During Construction	- Contractor	- NGO and Supervision Engineer
	- Avoid infringing on protected natural sites and wilderness areas	- During Construction	- Contractor	- NGO and Supervision Engineer
Loss of aesthetic features due to illegal dumps.	- Monitor the using of safety measures.	- During Construction	- Contractor	- NGO and Supervision Engineer
	- Collect all solid waste from all site areas and dispose of either in local landfill or well-screened waste pits	- During Construction	- Contractor	- NGO and Supervision Engineer
	Provide temporary sanitation, where this is not possible, instruct crews to employ soil mining	- During Construction	- Contractor	- NGO and Supervision Engineer

2. Rehabilitation of Roads (Continue)				
Impacts	**Mitigation Measures**	**Phase**	**Operation**	**Supervision**
Potential accidental break of other water lines and other utilities. Traffic concentration and congestions.	Survey of existing facilities during the design. The contractor consults relevant utilities, agencies or companies.	During Design and Construction	Consultant and Contractor	NGO, NDC and Supervision Engineer
Construction waste generated.	Proper plans for disposing off construction waste to be included in the contract documents.	During Design	Consultant	NGO and NDC
Due to obstruction, traffic concentration will be transferred to other streets causing traffic congestions.	Monitor the use of traffic signs, safety measures and tools.	During Construction	Consultant and Contractor	NGO and Supervision Engineer
Increased traffic speed	Public awareness, stringent traffic control	During Construction	Police LGU and Private sector	NGO and, NDC
Long-term traffic increase.	Traffic signs to reduce the traffic (one-way sign) and traffic calming signs.	During Design and Construction	Consultant and Contractor	NGO, NDC and Supervision Engineer
Increase the risk of accidents.	Traffic regulation signs and traffic calming measures.	During Construction and Operation	Contractor and Police LGU and Private sector	NGO and Supervision Engineer
Cumulative increase in dust and gas emissions because of more traffic movement.	- Control the traffic speed. - Maintain vegetation cover. - Regular checks of vehicle.	- During Operation - During Operation - During Operation	- Police - LGU - Police	- NGO and NDC - NGO and Supervision Engineer - NGO and NDC
Impact of road noise	Plant 30 meter tree buffer strips between road and populated areas	During Operation	LGU	NGO and NDC
Improper drainage and clogging of ditches	Construction and maintenance of drainage ditches	During Construction and Operation	Contractor and LGU	NGO, NDC and Supervision Engineer

3. Water Projects

Impacts	Mitigation Measures	Phase	Operation	Supervision
Potential accidental break of other water lines.	Survey of existing facilities.	During Construction	Contractor	NGO and Supervision Engineer
Dust generated by construction activities	Proper activity scheduling and working hours and days and limit the activities to day times and prevent any construction activity weekends.	During Construction	Contractor	NGO and Supervision Engineer
Increasing the concentration of pollutant emissions.	Proper scheduling and monitor of any risky activities such as excavation and backfilling.	During Construction	Contractor	NGO and Supervision Engineer
Generate noise levels above existing ambient levels in the project vicinity	Traffic regulation signs and Traffic calming measures	During Construction	Contractor	NGO and Supervision Engineer
Obstacle the accessibility and increase the risk of accidents	- Provision of adequate notification procedures for any road closures - Monitor the using of safety measures and tools.	- During Construction - During Construction	- Contractor - Contractor	- NGO and Supervision Engineer - NGO and Supervision Engineer
Loss of some vegetation on the street.	Implement a re-vegetation plan	During Operation	LGU	NGO and NDC
Construction waste generated	Proper plans for disposing off construction waste to be included in the contact documents.	During Design and Construction	Consultant and Contractor	NGO, NDC and Supervision Engineer
Increase the demand for water services and impact the municipal limited water supplies	Implement proper tariff structure	During Operation	LGU	NGO and NDC
Increase the demand for sanitary sewer services and inflow to treatment plant.	- Increase the capacity of the treatment plant and sewer mains. - Design a comprehensive sewerage system for the non-serviced areas.	During Operation During Operation	LGU LGU	NGO and NDC
Dust due to the unpaved parts of the street.	Repave the parts of the street, which undergone excavation.	During Construction and Operation	Contractor and LGU	NGO, NDC and Supervision Engineer

4. Sewage Maintenance Projects

Impacts	Mitigation Measures	Phase	Operation	Supervision
Digging wide areas to locate covered manholes and pipelines.	Supply the municipalities with proper equipment for locating manholes and pipes.	During Construction and Operation	Contractor and LGU	NGO, NDC and Supervision Engineer
Disposal of wastes (system cleaning wastes).	Control and monitor disposal process; the waste must be removed to the nearest landfill with proper transportation vehicle.	During Operation	LGU	NGO and NDC
Dangers of toxic gases inside the manholes and other facilities.	Use of safety measures and tools. Supply the necessary tools and equipment; ▪ Necessary appurtenances for maintenance, ▪ Convenient flushing and hosing to facilitate cleaning. ▪ Dry pumps to transport flooded water to nearest manholes, ▪ Air jitters to vacuum toxic gases from manholes during maintenance and cleaning activities.	During Construction and Operation	Contractor and LGU	NGO, NDC and Supervision Engineer

5. Solid Waste Management

Impacts	Mitigation Measures	Phase	Operation	Supervision
Dumping of waste, domestic and construction wastes in open areas.	- Control the illegal dumping sites, using signs, fences around the sites	During Collection, transportation and disposal	Contractor and LGU	NGO, NDC and Supervision Engineer
	- Enforce dumping in the sanitary landfills	During Collection, transportation and disposal	Contractor and LGU	NGO, NDC and Supervision Engineer
- Burning of solid waste in illegal dumping sites. - Jeopardize infrastructure facilities electricity poles, telephone poles, UPVC pipes as well as public health.	- Proper distribution of containers according to the population density and behavior of the residents in the rural and urban areas.	- During Collection, transportation and disposal	- LGU	NGO, NDC
	- Public awareness campaign	- During Operation	- LGU	NGO, NDC
Loss of aesthetic features due to illegal dumps	Enhance the collection from house to house especially for the internal areas of the cities.	During Collection, transportation and disposal	LGU	MLG and EQA
	The authority shall take steps to close or upgrade the open dumping sites.	During Operation	LGU	MLG, MOH and EQA
	- In case of urgent need to temporary dumping sites, the natural ground should be compacted and isolated by use of clay layers and lining materials. - Proper fencing should be ensured. No burning of waste is to be allowed in these sites.	During Operation	LGU	MLG, MOH and EQA
Spread of insects and rodents inside the dumping sites.	- Daily cover of wastes, spraying and fighting rodents and insects are required to control the unhealthy conditions. - Public awareness program	During Operation	LGU	MLG, MOH and EQA
- The uncontrolled releases of dump sites gases - Odor and other potentially dangerous conditions.	- Reuse and recycling options are to be encouraged. - Vegetation fences around landfills and dumpsites.	During Operation	LGU	MLG, MOH and EQA
The containers are not used efficiently.	Planning for the transfer routes.	During Collection, transportation and disposal	LGU	NGO, LGU

6. Electricity

Impacts	Mitigation Measures	phase	Operation	Supervision
Risks during maintenance activities (electric shocks, fallen objects, cutting wires)	Follow safety measures and conditions.	During Construction and Operation	Contractor and LGU	NGO, NDC and Supervision Engineer
Electricity cut off due to maintenance activities.	Maintenance activities should be carried out in off-peak periods.	During Construction and Operation	Contractor and LGU	NGO, NDC and Supervision Engineer
Electricity poles hinder the movement and traffic.	- Relocate electricity poles. - Replace and re-install the cables that are very close to houses. - Routine checks to installed poles.	- During Operation - During Operation - During Operation	- LGU - LGU - LGU	- NGO and NDC - NGO and NDC - NGO and NDC

4.2 ANNEX 2: ENVIRONMENTAL ASSESSMENT AND SAMPLE TOR

I. Environmental Assessment

Scoping Statement

The EA is a planning process used to help ensure that environmental matters are taken into account early in the project planning process, along with the more traditional technical and economic considerations. It is a valuable tool that enables undesirable effects on the environment that may arise from the implementation of a project to be identified and avoided. It is an aid to planners, and decision and policy makers. An EA facilitates the following:

1. Identifies adverse environmental problems as well as benefits that might be expected to occur,
2. Allows the incorporation of appropriate mitigation measures into a project,
3. Identifies the critical problems which require further study or monitoring, and enables the selection of optimal alternatives from the various relevant options available.

General Purpose

The purpose of the Environmental Assessment is to provide the Employer with a full discussion of the significant environmental effects of the proposed action or project. EA is intended to prevent or minimize potentially adverse environmental impacts and enhance the overall quality of a project. The EA process allows environmental issues to be addressed in a timely and cost-effective way during project design, preparation and implementation. EA can therefore help reduce overall project costs, assist in completing projects on schedule and help design projects which are acceptable to stakeholders.

Contents and Form

The Environmental Assessment shall be based upon the Scoping Statement and shall address the following elements: Summary, Purpose, Alternatives include the proposed action, the affected environment, environmental consequences, list of prepares, impacts and measures and management plans.

1. Environmental Setting

1. Description of the physical and biological environment: topography, geology and hydrology, water resources, soils, climate and flora and fauna.

2. The socio-economic environment: agriculture, industry, historical and archaeological sites and waste disposal.

2. Impacts and Mitigation Measures

1. Project location impacts.
2. Project design impacts.
3. Project construction impacts.
4. Project operation impacts.

3. Monitoring Plan

4. Overall Assessment

5. Annexes

All the required pictures, data and annexes are to be provided wherever is required.

II. Sample TOR

The following are sample environmental assessment TOR for selected project types