REPUBLIC OF IRAQ

MINISTRY OF PLANNING

Iraq "Social Fund for Development" Project (SFDP)

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

FOR THE UPGRADE

OF

A TOTAL OF 12.4 KM RURAL ROADS IN SIX VILLAGES (AL AHBAB, AL KHAZIFI, AL BOSHRAN, GEWIZRAT, ARAB AL KABEERA, AND OWAINAT)
AND THE RECONSTRUCTION OF ONE CULVERT IN GEWIZRAT VILLAGE

IN SALAH AL-DIN GOVERNORATE

9TH **JANUARY 2020**

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| List of A | Abbreviations | |
| CDGs | Community Development Groups | |
| ESMP | Environmental and Social Management Plan | |
| EHS | Environmental, Health, and Safety | |
| ESMF | Environmental and Social Management Framework | |
| GIIP | Good International Industry Practice | |
| GOI | Government of Iraq | |
| GRM | Grievance Redress Mechanism | |
| GBV | Gender Based Violence | |
| MOE | Ministry of Environment | |
| MOP | Ministry of Planning | |
| MSDS | Material Safety Data Sheets | |
| OP | Operational Policy | |
| PAPs: | Project Affected Peoples | |
| PMO | Project Manager Office | |
| PPE | Personal Protective Equipment | |
| RE | Resident Engineer | |
| SFD | Social Fund Development | |
| TOR | Terms of Reference | |
| WB | World Bank | |
| WHO | World Health Organization | |
| ,,,,, | ,, orra ricaron Organization | |

EXECUTIVE SUMMARY

| INTRODUCTION | This ESMP is prepared in accordance to the ESMF requirements of the SFD project. The main objective of the ESMP is to assess the environmental and socio-economic impacts of the subprojects (during construction and operation phases) and to propose mitigation measures to mitigate the impacts associated with subproject. This subproject includes the upgrading of rural roads in six villages in Salah Al-Din governorate. The roads are expected to result in significant socio-economic benefits for the local communities and surrounding areas and for the road users as it will improve the transportation infrastructure in the area. | | | | |
|------------------------|--|--|--|--|--|
| PROJECT DESCRIPTION | Km in each villag are: Al Ahbab vil and Owainat villa worker per day for deemed necessary materials will be | The subproject consists of upgrading of 12.4 Km of existing (8 m width) dirt roads in 6 villages (around 2 Km in each village) as well as reconstruction of a destroyed 10 m culvert in Gewizrat village. The 6 villages are: Al Ahbab village, Al Khazifi village, Al Boshran village, Gewizrat village, Arab Al Kabeera village, and Owainat village in Shlah Al-Din governorate. The upgrading and reconstruction will need about 25-30 worker per day for each site. Workers are expected to be hired locally, however if a construction camp is deemed necessary, it will be installed on vacant state-owned land. Also, equipment and construction materials will be stored on vacant state-owned land. The anticipated duration of all works is around 240 days for all roads including mobilization and demobilization of contractors. | | | |
| ENVIRONMENTAL | Climate | Salah Al-Din governorate is located in the northern mid-East part of Iraq, which has a semi-desertic climate. The major rain, is about 177 mm yearly, falls during the period November thru February, with a spread showering in March. The average annual temperature is 29.7 °C. | | | |
| AND SOCIAL BASELINE | Air quality | The ambient air quality is within normal range. | | | |
| CONDITIONS | Land | No additional land for the work is needed to proceed with these roads. | | | |
| | Biodiversity | No protected areas or endangered species (there is no critical or high biodiversity values that might be affected) in the vicinity of the sites. | | | |
| | Culture heritage | The sites adjacent areas do not include any historical or cultural sites. | | | |

| | Applicable Iraqi laws | Applicable WB Policies | | |
|-----------------------------------|--|--|--|--|
| POLICY AND LEAGAL FRAMEWORK | Law no. 37 of 2008 MoE roles and responsibilities. Law no. 27 of 2009 Protection of Environment Regulation 2 of 2001 Preserving water resources Law No. 3,1997 Environment protection Law No. 55. 2002 Heritage and antiques | OP 4.01 Environmental Assessment OP 4.12 Involuntary Resettlement OP 4.11 Physical and Cultural Resources WB General Environmental, Health, and Safety guideline Grievance Redress Service | | |
| | • Environmental Receptor | Impact Significance | | |
| | Air Quality | Medium | | |
| | Noise | | | |
| ENVIRONMENTAL | Water Resources | Low | | |
| AND SOCIAL | Soil Solid and hazardous wastes | Low Low | | |
| IMPACT | Flora & Fauna | Not significant | | |
| ANALYSIS | Topography and landforms | Not significant | | |
| | Impacts on local traffic | Low | | |
| | Health and Safety | High | | |
| | Socio-Economic impacts | Low | | |
| | Child Labor Medium | | | |
| PUBLIC | | this subproject. Public consultation was conducted in | | |
| CONSULTATION | , | where 62 participants attended. The second approach | | |
| RESULTS | was one-o-one interviews with both men and women to have their views and concerns of potential impacts | | | |
| | during implementation. The number of individuals interviewed were 25 women and 26 men. The SFD is in the process of establishing a free hotline and is expected to be functioning within the next | | | |
| GRIEVANCE | <u> </u> | WB requirements, SFD has temporary assigned three | | |
| REDRESS | staffs as focal points with their cell phone numbers to | | | |
| MECHANISM | and handling complaints. The contact details will be posted at site signboard and the complaint boxes will | | | |
| | be installed in each location. | | | |

Main Report

1. INTRODUCTION

According to the Environmental and Social Management Framework (ESMF) which was prepared for the Social Fund for Development project (SFDP) and disclosed locally and on the WB website, an Environmental and Social Management Plan (ESMP) should be prepared, cleared and publically consulted upon and disclosed prior to the commencement of any construction activities for the Roads' component.

This ESMP was developed to identify, assess and mitigate the environmental and social risks and impacts with the upgrade of six roads about 2km long in each village and the reconstruction of one culvert. These roads are located in the following villages: Al Ahbab, Al Khazifi, Al Boshran, Gewizrat, Arab Al Kabeera, and Owainat within Shlah Al-Din governorate.

The ESMP was prepared by an independent consultant according to requirements of the World Bank (OP 4.01), and Iraqi regulations. The ESMP should be implemented by all relevant parties.

The objectives of this ESMP are to:

- Provide practical and achievable actions to ensure that the subprojects adverse environmental and social impacts are properly avoided or mitigated.
- Illustrate the institutional arrangements for implementing and monitoring the mitigation actions
- Integrate community views and input on the environmental and social impacts of the projects
- Comply with WB and national requirements
- Provide information to the local community on the subprojects activities, the associated risks and impacts, mitigation measures and Grievance Redress Mechanism (GRM) system.

2. PROJECT DESCRIPTION

This subproject involves the upgrade of six roads for a total length of 12.4 km located in the Governorate of Salah Al-din northeast of Baghdad. These roads and the culvert serve Al Ahbab, Al Khazifi, Al Boshran, Gewizrat, Arab Al Kabeera, and Owainat villages which are located about 119km, 25km, 28km, 108km, 7km and 17km from Tikrit respectively. Most of these villages have no paved roads or destroyed during ISIS occupation. In addition, there is a

destroyed culvert in Gewizrat Village that needs to be reconstructed. The locations of these roads are shown in the figure below:

The locations of these subprojects shown in the figure below:



Figure 1: location of the six villages (google earth)

2.1 Objective of the Works

The objective of the subproject is to upgrade six roads and one culvert in six villages. The subproject will improve the transportation infrastructure in these villages by providing asphalt surface to facilitate transport for local communities and road users.

2.2 Scope of Work

Upgrading activities of these roads involve similar works and will include the following activities:

- 1. The first step in the asphalt installation process is to remove the existing surface. The surface needs to be completely clean and clear. The total width of the existing roads is 8 m and one lane in each direction.
- 2. Providing materials (gravel) to create double layer of subbase (each one is 15cm in thickness) and well compacted. The sub base provides a stable surface to support new payement.
- 3. Providing materials to install a single concrete pipe culvert (three pipe culverts per each village) with a diameter of 30cm.

- 4. Binder will be added after the sub base is laid and any soft areas are identified and repaired.
- 5. Once the supportive structures of a new asphalt surface are installed, the top layer of fresh asphalt (10 cm in thickness) is added to provide a clean and smooth ride.

The reconstruction works for the culvert in Gewizrat village in Salah Al-Din Governorate. It is used to pass the cars above the culvert. It is located on one of the Tigris river branches and it has a width of about 9 meters (figure 12) will include the following:

- 1. Install a partially temporary diversion to change the water flow direction during the construction of the culvert.
- 2. Provide equipment necessary for demolition of the damaged culvert and cleaning the riverbed and then transporting concrete rubble and earth works to the authorized locations.
- 3. Provide machinery and equipment to create two layers of graded gravel and 10 cm layer of cobblestone, followed by 10 cm concrete thickness to be used as a floor for the culvert.
- 4. Install the pre cast reinforced concrete culvert consists of 3 opening each one has a dimension of (2.2mX 2.2mX9m).
- 5. Rehabilitate the approaches lanes above the culvert from both sides of the river (50 m each) including removing of the damaged asphalt layer, and supplying materials and equipment to make a new sub base layer of gravel with a thickness of not less than (20 cm).
- 6. Binder will be added after the subbase is laid and any soft areas are identified and repaired.
- 7. Once the supportive structures of a new asphalt surface are installed, the top layer of fresh asphalt (10 cm in thickness) is added to provide a clean and smooth ride.
- 8. Install the guard rail above the culvert.

The anticipated duration of upgrading works is about 240 days with about 20-30 workers per day with about 95% of them are local workers and the rest are engineers and technicians that may be from the closest area.

2.3 Contractors Camp and Storage of Equipment

The upgrading works will imply the setup of camps in the area near each road if neede. The setup of camps will be established on vacant state-owned lands for storage of equipment and construction materials. The work activities will need about 15-25 local workers per day for each site. If there are non-local workers,

these workers will need to have their accommodation facilities in the camp, during the construction phase.

The construction equipment that will be used are mainly: 30 ton- crane, compressor, jack – hammer, shovel, typical lorry with tipping, skipping, body to load of transport the demolished material, truck mixer, asphalt grinder, bitumen tanker, asphalt finisher, compactor, welding machine, diesel generator, grader, pickups and sedan cars, air shot, bell and bugger.

3. BASELINE CONDITIONS

3.1 The Project Area

The subproject is located in the governorate of Salah Al-Din that is situated in mid-north of Iraq, sharing internal boundaries with the governorates of Baghdad, Dyala, Kirkuk, Musel, Erbil, Sulaymaniyah and Ramadi as shown in figure below.

The length of each road and the population in each village are shown in the table below:

Table 1: Information about the villages

| No. | Village | Length (Km) | Population |
|-----|-----------------|-------------|------------|
| 1 | Al Ahbab | 2.0 | 3011 |
| 2 | Al Khazifi | 2.4 | 3309 |
| 3 | Al Boshran | 2.0 | 1227 |
| 4 | Gewizrat | 2.0 | 1409 |
| 5 | Arab Al Kabeera | 2.0 | 2882 |
| 6 | Owainat | 2.0 | 5574 |
| | Total | 12.4 | |



Figure 2: Salah Al-Din governorate working area

3.2 Environmental and Social Baseline Conditions

The environmental baseline section is presented to give clear overview of the environmental and social conditions in the vicinity of the subproject location prior to commencement of works.

3.2.1 Climate

Salah Al-Din governorate is located in the northern mid part of Iraq and has a semi- desertic climate. The climate in the subprojects area is called a semi desert climate. The major rain falls during the period November thru February, with a spread showering in March. During the year, about 177 mm of precipitation falls annually. Highest temperatures occur in July and August and reach over 45 °C, while the average annual temperature is 29.7 °C. The driest weather is in June, July & August, September when no rainfall (precipitation) occurs. While, the wettest weather is in February & March when rainfall (precipitation) occurs. The average monthly wind velocity is 2.7m/s.

3.2.2 Air Quality

The roads are located in an open area, so the expected concentration of these pollutants is low. The project area is in open area, so good ventilation and dispersion of any air pollutants is expected, therefore, the ambient air quality is expected to be within the normal range.

3.2.3 Site Topography and location

The subproject sites area represents an extension of the flat areas that starting from the middle of Iraq till the mid-southern parts of the country. No natural land obstacles are presented in the project area. The project area is free of mountains, cliffs, and valleys.

The roads are located in flat area. It can be seen that the surrounding is desert. There are no protected areas or endangered species (there is no critical or high biodiversity values that might be affected) in the vicinity of the sites (more than 2 Km).



Road in Owainat Village



Road in Arab Al Kabeera Village





Roads in Al Khazifi, Village

Roads in Gewizrat, Village



Roads in Al Boshran Village



Roads in Al Ahbab Village

Figure 3: Photos of the current roads for these villages



Figure 4: Photo of the current Culvert in Gewizrat village

3.2.4 Land use and acquisition

The land use in the surrounding areas of the proposed roads is described as flat area and vacant lands. There are few natural trees found close to road sites but not expected to be impacted during implementation. There are few residential houses scattered to be served by these roads. is state owned and hence there are no issues related to land acquisition. No additional land is required for the project. Involuntary nor voluntarily relocation of people and any individuals are not needed.

3.2.5 Flooding

Sometimes, during spring season, there are some canals works as a drain channel (with a low water flow). There are no records of flooding that occurred previously in the area.

3.2.6 Noise

Currently, there is no traffic congestion and consequently the existed noise level is within the normal levels.

3.2.7 Heritage Environment

There are no sites of historical or cultural importance in the area. There are no cemeteries, historical-cultural monuments, churches, mosques near the project that need to be removed in order to construct the roads.

3.2.8 Traffic Level

No traffic problem or traffic congestion will be expected during the construction phase or in the operation phase. It important to mention that these roads are within the villages as a network, therefore the other roads can be used as alternative roads. In addition, the contactor will work daily for specific distance and for one lane and leaving the lane for the users.

3.2.9 Land acquisition

The existing roads are built on state land and hence there are no issues related to land acquisition. If widening of roads is needed, it will be within the existing right of way. The construction activities will not cause relocation of people and any individuals.

3.2.10 Social Aspects

There are no people associated with the road works who will be adversely affected through the need to relocate, or whose livelihoods will be adversely affected by the road works activities.

The main economic benefits generated by the project will be vehicle operating cost savings, reduced travel time, cost savings from reduced accidents. The benefits from a reduction in the number and severity of accidents are an important element of the economic benefits.

The socio-economic impacts of the implementation phase on inhabitants can be minimized by adopting traffic management plans to ensure a safe and efficient movement of traffic during construction as well as by informing the public about the schedule of road works activities.

4. LEGAL ASPECTS

4.1 Iraqi environmental legislations

During rehabilitation and operation phases of the project, the work must follow the Iraqi laws and regulations for the environmental standards. These are:

- 1. Laws of the environment protection No.3 issued in 1997 and its relevant published regulations. No environmental regulations for gaseous emissions, noise and other air pollution standards are in force and legally binding. However, limits for water disposal in any surface waters and main sewers are regulated according to the regulations no. (25)/1967 and their update modifications released from the Ministry of Health (MOH) and the Ministry of Environment.
- 2. New environmental framework Law No. 27 of 2009 by the Iraqi National Government was introduced but the executive decrees remain to be prepared. There are as yet no formally adopted requirements for environmental assessment.
- 3. Regulations governing contact with archaeological sites extend also to encompass developmental activities like road construction and rehabilitation wherever these developmental activities lie within archaeological vicinity.
- 4. Regulations of the MOE on sanitary waste must be followed, and for the rubbles (construction & demolition waste) the regulations, legislations and instruction of both MOHE and MOCHPM.

Table 2: Applicable Laws and Regulations in Iraq

| Law | Subject |
|-----------------------------|---|
| INITIAL OF HANDINGH MANT | Describes institutional arrangements of the Ministry of Environment and Outlines policies and roles and responsibilities toward protecting the environment. |
| Law no. 27 of 2009 | Protection and Improvement of Environment Environmental protection from pollution resulted from petrol and natural gas extraction |
| Regulations no. 2 of 2001 | Preserving water resources. |
| Law no. (55) Issued in 2002 | Law of heritage and antiques |
| Law No. 37 of 2015. | Labor Law No. 37 of 2015. |

For legal aspects, the work during construction and operation must follow the Iraqi laws and regulations for the Environmental Standards. These are laws of the environment protection No.3 issued in 1997 and the published regulations. No environmental regulations for gaseous emissions, noise and other air

pollution standards are in force and legally binding. However, limits for water disposal in any surface waters and main sewers are regulated according to the regulations no. (25)/1967 and their update modifications released from the ministry of health and the ministry of the environment. Law of heritage and antiques no. (55) Issued in 2002, while for a sanitary waste (municipal) the regulations of the MOE must be followed, and for the rubbles (construction &demolition waste) the regulations, legislations and instruction of both MOHE and MOCHPM must be followed. It is important also to mention that, the contractor will sign employment agreement with all construction workers by following labor law of Iraq.

It should be noted that legislation relating to social safeguards issued in Iraq since 2003 has focused primarily on the ratification of international conventions and protocols on issues such as cultural heritage. As yet there are no formally adopted requirements for social assessments relating to road works. Hence, social safeguards issues remain very largely uncovered except to the extent they are referred to under environmental laws.

4.2 The World Bank Safeguards Policies

In addition to the Iraqi laws and regulation the ESMP follows key policies and procedures of the World Bank; the following section presents the WB operational policies relevant to the rehabilitation and reconstruction of the Roads.

- ❖ OP/BP 4.01 Environmental Assessment.
- ❖ OP/BP4.12 Involuntary Resettlement
- OP/BP 4.11 Physical Cultural Resources

4.3 WBG EHS: The Environmental, Health, and Safety (EHS) Guidelines

These are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). When one or more members of the WB Group are involved in a project, these EHS Guidelines are applied as required by their respective policies and standards.

5. IMPACT ASSESSMENT AND MITIGATION MEASURES

5.1 Construction Phase

This section of the report describes the environmental and social impacts that are likely to result from the construction and rehabilitation of these roads, and the mitigation measures addressing them. The Environmental actions, procedures and responsibilities as required during the construction phase must comply with the available specifications, legislation, laws issued by the MOHE.

The construction contractor(s) will be responsible for compliance with the ESMP provisions during the construction phase of the subprojects. The contractor will be also in charge of undertaking construction works in a manner which complies with all relevant environmental procedures, adheres to all legislative requirements, and ensures that all environmental objectives associated with the contract are achieved. The overall

assessment of the key environmental and social impacts is summarized below. According to the above environmental baseline and mitigation measures, it can be expected that the significant impact is low for most of the environmental receptors due to the minimum concentrations (as a background) for some parameters while health and safety has a high impact due to the fact this issue is related directly with the health and safety for the workers and staff as shown in the table below:

Table 3: Summary of Impact Assessment during Construction

| | Environmental Receptor | Impact Significance | |
|----|----------------------------|---------------------|--|
| 1 | Air Quality | Medium | |
| 2 | Noise | Low | |
| 3 | Water Resources | Low | |
| 4 | Soil | Low | |
| 5 | Solid and hazardous wastes | Low | |
| 6 | Flora & Fauna | Not significant | |
| 7 | Topography and landforms | Not significant | |
| 8 | Impacts on local traffic | Not significant | |
| 9 | Health and Safety | d Safety High | |
| 10 | Socio-Economic impacts | Low | |
| 11 | Child labor | Medium | |

5.2 Operational Phase

During the operational period, the project is expected to result in positive socioeconomic outcomes for the local communities. Socially harmful consequences of road operation are not anticipated. However, the continued operation of a GRM for one year following opening of the road for use will ensure that local community members have an accessible, fair and transparent means of reporting any emerging adverse impacts, and a means of obtaining mitigation.

6. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

In this section, the identified mitigation measures will be summarized. The responsibility for implementation of the mitigation measures will be mostly upon the contractor. However, the supervision and assurance that the mitigation measures are implemented will be the responsibility of the Resident Engineer who represents the ministry as the Project Owner.

The Resident Engineer (RE) will be assisted by a team of environmental and social officers who will be responsible for supervising the daily activities of the contractor and will report non-compliances to the Resident Engineer in order to take necessary actions towards the contractor in addition to the OHS aspects. Regular supervision site visits will also be conducted by the PMT environmental/social officer in association with a qualified environmental and social consultant who will provide technical advice in case there is a need to modify or add new mitigation measures as work necessitates.

The costs of mitigation measures are estimated based on the average market rates for similar activities in Iraq and can be used as indicative costs. It is the sole responsibility of the contractor to estimate the costs associated with the recommended mitigation measures based on his work experience.

In terms of hazardous waste, the following mitigation should be followed:

- Provide adequate sanitation facilities serving all workers (mentioned in HSE).
- Paints with toxic ingredients or solvents or lead-based paints will not be used

 All waste should be deposed through licensed haulers/transporters to licensed and regulated landfill sites appropriate to the type of waste generated (e.g. solid, household, hazardous).

The following tables summarize the mitigation measures which are required to be undertaken to avoid any negative impacts on the environment. Responsibilities and estimated costs are also presented.

Table 4: Mitigation Measures during Construction Phase.

| Pot | ential Impact | Mitigation Measures | Responsibility | Supervision | Total estimated Cost in US\$ |
|-----|---------------|---|----------------|----------------------|------------------------------------|
| 1 | Air quality | Unpaved roads, e.g. which may be utilized for construction vehicles movement or transportation of construction materials should be prepared in a way to avoid dust emissions. Watering to suppress dust should take place regularly. Watering or increase of the moisture level of the open materials storage piles to reduce dust levels. Enclosure or covering of inactive piles to reduce wind erosion. Loads in all trucks transporting dust-generating materials have to be sprayed with water to suppress dust, as well as wheels of means moving inside and outside of the construction-site. Limiting Speed for vehicles approaching the site to less than 40 km/hr. On site, speed limit should not exceed 20 km/hr. | Contractor | Resident engineer | 1000 |
| | | Engines of vehicles and other machinery are kept turned on only if necessary, avoiding any unnecessary emission. Machines and equipment are periodically checked and maintained to ensure their good working condition. All equipment and machines must be maintained and tested for compliance with standards and technical regulations for the protection of the environment and have appropriate certifications. Activities are carried out using the minimum required number of means at the same time. Electric small-scale mechanization and technical tools are used when available and feasible. | | Resident engineer | Included in contractor cost |
| 2 | Noise | Construction activities are to take place within reasonable hours during the day and early evening. Night-time activates near noise sensitive areas, such as residential buildings, should not be allowed. | Contractor | Resident engineer | Included in contractor cost |

| Pot | ential Impact | Mitigation Measures | Responsibility | Supervision | Total estimated Cost in US\$ |
|-----|--------------------|---|----------------|----------------------|------------------------------------|
| | | Equipment must be kept in good working order and where appropriate fitted with silencers which are kept in good working order. Equipment to run only when necessary Positioning of the noise sources in a concealed area with respect to acoustic receptors, consistent with the needs of the construction site. | Contractor | Resident engineer | Included in contractor cost |
| | | Use of personal protection equipment for workers especially those who use jack hammers or near noisy engines or compressors. | Contractor | Resident engineer | 1000 |
| | Water resources | Damaged sections of the bridge should be carefully removed without polluting the river water. Wastewater from the worker rest areas or construction offices should be contained in sealed containers and should be removed regularly from site by means of authorized contractors. No solid wastes are to be thrown into the river. | Contractor | Resident engineer | 1000 |
| 3 | | • In case of the need to change engine, oils or refuel some construction equipment, a proper maintenance workshop or shelter should be installed to ensure containment of any fuel or oil spills via provision of secondary containment, drip trays or other overflow and drip containment measures, for hazardous materials containers at connection points or other possible overflow points | | Resident engineer | 1000 |
| | | • In case of using septic tanks on site, the engineering drawings of these tanks should be presented to the Resident Engineer for approval. The wastewater in these tanks should be collected and then transported periodically to the nearest authorized wastewater treatment plant. | Contractor | Resident engineer | Included in contractor cost |
| 4 | Soil | • To prevent soil contamination by oil/grease spills, leakages or releases, all manipulations of oil derivatives in the process of construction and provision of the fuel to the machines should be performed with maximum care; leak proof containers should be used for storage and transportation of oil/grease and wash off from the oil/grease handling area shall be drained through drains and collected and disposed properly | Contractor | Resident engineer | Included in contractor cost |

| Pot | ential Impact | Mitigation Measures | Responsibility | Supervision | Total estimated Cost in US\$ |
|-----|----------------------------------|---|----------------|--|------------------------------------|
| | | Construction waste and debris shall be collected on a regular basis and disposed of at designated landfills; Only authorized quarries shall be used for purchasing soil to be used for embankment, padding, bedding, backfilling during construction; and It must be prohibited to operate equipment and vehicles outside the designated work areas and roads. No hazardous waste storage to take place directly on soils. Appropriate and enclosed containers away from direct sunlight, wind and rain. Provide adequate ventilation where volatile wastes are stored. Limiting access to hazardous waste storage areas to employees who have received proper training | Contractor | Resident engineer | 1000 |
| 5 | Solid and hazardous wastes | Minimizing hazardous waste generation by implementing stringent waste segregation to prevent the commingling of non-hazardous and hazardous waste to be managed. Provision of readily available information on chemical compatibility to employees, including labeling each container to identify its contents Limiting access to hazardous waste storage areas to employees who have received proper training Simple waste management plan for specific waste streams must be developed. Non- hazardous or municipal waste must be collected and transported to local council approved disposal sites. Food wastes must be collected, where practicable, considering health and hygiene issues, for disposal off-site through licensed contractors. Waste containers must be located at each worksite. Chemical wastes must be collected in 200-liter drums (or similar sealed container), appropriately labeled, for safe transport to an approved chemical waste depot or collection by a liquid waste treatment service. Storage, transport and handling of all chemicals must be conducted in accordance with all legislative requirements, through licensed contractors and in coordination with the local authority. | Contractor | Resident engineer in coordination with the local authority and ministry of science and technology regarding hazardous wastes | 2000 |

| Pot | ential Impact | Mitigation Measures | Responsibility | Supervision | Total estimated Cost in US\$ |
|-----|--------------------------------|--|--|---|------------------------------------|
| | | All hazardous wastes must be appropriately stored in bounded areas and should be clearly identified as "hazardous". Transportation and disposal of hazardous wastes should be done through licensed contractors and in close coordination with the relevant local authority and in compliance with the legal requirements and instructions of the ministry of science and technology previously. Hazardous liquids, such as solvents, rust proofing agents and primer must be managed in accordance with the requirements of relevant legislation and industry standards. Material Safety Data Sheets (MSDS) for hazardous materials must be available onsite during construction and made available and explained to workers. Hydrocarbon wastes, including lube oils, must be collected for safe transport off-site for reuse, recycling, transport or disposal at approved locations. | | | |
| 6 | Flora & Fauna | Not Applicable | Not Applicable | Not Applicable | Not Applicable |
| 7 | Topography and landforms | Not Applicable | Not Applicable | Not Applicable | Not Applicable |
| 8 | Traffic | Where practicable, truck deliveries must be restricted to daytime working hours. Clear traffic signs and signs signals must be installed on-site to provide for safe traffic. | Contractor in coordination with the Local Traffic Department | Resident Engineer | 500 |
| 9 | Health and Safety | Limit speed of construction vehicles and provide road signage for drivers and local community. | | Local traffic department in coordination with the Resident engineer | 1000 |

| Potential Impact | Mitigation Measures | Responsibility | Supervision | Total estimated Cost in US\$ |
|------------------|---|----------------|----------------------|------------------------------------|
| | Having a clear set of OHS Plan and Procedures. Having a detailed emergency plan including the nearest medical center and the location of the first aid kits. Qualified personnel must be employed for the construction equipment, and personnel must be trained for health and safety issues. Personal protection equipment such as eyeglasses, gloves, hard heads and safety belts must be supplied and continuously used by all workers, technicians, engineers and site visitors. | Contractor | Resident engineer | 1500 |
| | Testing structures for integrity prior to undertaking work; Implementation of a fall protection program that includes training in climbing techniques and use of fall protection measures; An approved tool bag should be used for raising or lowering tools or materials to workers on structures; Use of helmets and other protective devices will mitigate against scratches, bruises, punctures, lacerations and head injuries due to dropping objects. Adherence to local and international guidance and codes of practice on EHS management during construction; management, supervision, monitoring and record-keeping; implementation of EHS procedures as a condition of contract with contractors and their sub-contractors; clear definition of the EHS roles and responsibilities of the companies involved in construction and to individual staff (including the nomination of EHS supervisors during construction and an EHS coordinator during operation); pre-construction assessment of the EHS risks and hazards associated with construction and operation, including consideration of local cultural attitudes, education level of workforce and local work practices; provision of appropriate training on EHS issues for all construction and operation workers, including initial induction and regular refresher training, taking into account local cultural issues; | Contractor | Resident engineer | Included in contractor cost |

| Pote | ential Impact | Mitigation Measures | Responsibility | Supervision | Total estimated Cost in US\$ |
|------|------------------------|---|-------------------|--|------------------------------------|
| | | provision of health and safety information; regular inspection, review and recording of EHS performance; | | | |
| | | Any accidents to be reported and treated within site as a first aid procedure. Safety training for the workers. Fuel and oil changing shelters should be equipped with necessary firefighting and safety equipment First aid boxes should be available all times onsite and trained staff on emergency aids should be identified. | Contractor | Resident engineer in coordination with health and safety officials. | 1000 |
| | | Provide surveillance and active screening, and immunization Provide treatment on-site or in community health care facilities Eliminate unusable impounded water, and apply vector control programs Erect suitable and adequate warning signage along culvert cleaning and excavation sites Collaborate with local communities and responsible authorities to improve signage and visibility Avoid uncovered piles of aggregates and other construction materials Avoid burning waste in worksites Avoid or minimize driving through community areas and dangerous routes during daytime Alert drivers on local speed limits, and monitor implementation Minimize traffic by purchasing from the local markets to the extent possible | Contractor | Resident engineer in coordination with health and safety officials. | 1000 |
| 10 | Handling Complaints | A complaints register will be kept on site and this will feed into the GRM. Details of complaints received will be incorporated into the audits as part of the monitoring process. | D a a : d a - a 4 | РМТ | Included in contractor cost |
| 11 | | In case of accidental discovery stop all works and contact the responsible authority within 24 hours; Provide training to the construction crew on the mode of conduct in case of accidental findings Chance find procedures will be used as follows: Stop the construction activities in the area of the chance find; Delineate the discovered site or area; Secure the site to prevent any damage or loss of removable objects. In cases of removable | Contractor | Resident engineer in coordination with health and safety officials. | Included in contractor cost |

| Pot | ential Impact | Mitigation Measures | Responsibility | Supervision | Total estimated Cost in US\$ |
|-----|--|---|----------------|----------------------|------------------------------------|
| | | antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Ministry of Culture take over; Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Ministry of Culture immediately (within 24 hours or less); Responsible local authorities and the Ministry of Culture would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archeologists from the Department of Antiquities and the Ministry of Culture (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values; Decisions on how to handle the finding shall be taken by the responsible authorities from DA and the Ministry of Culture. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage; Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Ministry of Culture; and Construction work could resume only after permission is given from the responsible local authorities and the Ministry of Culture concerning safeguard of the heritage | | | |
| 12 | Child labor and Gender Based Violence | Rigid obligations and penalties will be added to the contractor contracts in order to warrantee no child labor exist in the subproject The PMT will oblige the contractor to keep a copy of IDs of laborers in order to monitor the hired staff (Chapter 11 of the 2015 Labor Law of Iraq sets the age for hazardous works 18 years old). Labor influx should also be managed by contractor and ensure Code of Conduct is introduced and applied to avoid impact on local community and provide mitigation measure for GBV risks The contractor also will be obliged to maintain daily attendance sheets in order to verify the attendance of workers in case of accidents and provide the injured persons with proper health insurance The code of conduct for workers/contractors should be introduced to prevent misconducts, including prevention of sexual harassment and gender-based violence and also training and awareness rising for workers should be continued, through daily toolbox talks and other training opportunities. | Contractor | Resident engineer | Included in contractor cost |
| | , | Total cost US\$ (rehabilitation phase) | | | 11,000 |

Table 5: Mitigation Measures during Operation Phase.

| Im | pact | Mitigation Measures | Responsibility | Supervision | Total estimated Cost in US\$ |
|----|----------------------------------|---|-----------------------------------|--------------------------------------|------------------------------------|
| 1 | • Air quality | • During the license issuance or renewal process of vehicles, traffic authorities to ensure that all vehicle engines are in good conditions. | Traffic Department | Traffic Department | No direct cost |
| 2 | • Noise | During the license issuance or renewal process of vehicles, traffic authorities should ensure that all vehicle engines are in good conditions. Speed limits should be reduced especially near residential buildings. Limit trucks movement especially at night in coordination with the local traffic authorities. | Traffic Department | Traffic Department | No direct cost |
| 3 | Sanitary Waste | • Not applicable | Not applicable | Not applicable | Not applicable |
| 4 | Soil | • Not applicable | Not applicable | Not applicable | Not applicable |
| 5 | Solid and hazardous wastes | During the operational period, some littering and waste generation resulting from the repair activities will occur. Littering may occur due to wind action. All waste should be deposed through licensed haulers/transporters to licensed and regulated landfill sites appropriate to the type of waste generated | Local Authority (Municipality) | Local Authority (Municipality) | Within municipal budget |
| 6 | Flora & Fauna | Not applicable | Not Applicable | Not Applicable | Not Applicable |
| 7 | Topography and landforms | Not Applicable | Not Applicable | Not Applicable | Not Applicable |
| 8 | Handling Complains | The continued operation of a GRM for one year following operating of the Road for use will ensure that local community members have an accessible, fair and transparent means of reporting any emerging adverse impacts, and a means of obtaining mitigation. | Local authorities | Local authorities | No cost |
| 9 | Health and Safety | Provision signage to improve visibility and overall safety of roads, particularly along stretches located near Roads or other locations where children may be present. Having a clear set of emergency Plan and Procedures. provision of health and safety information; regular inspection, review and recording of EHS performance; | Contractor | Resident engineer | Included in contractor cost |
| | | Total cost US\$ (Operation phase) | | | No Cost |

7. ENVIRONMENTAL AND SOCIAL MONITORING PLAN

7.1 Environmental and Social Monitoring

In order to ensure full compliance of the performed activities to the environmental and social requirements, regular monitoring should be performed. For this purpose, an environmental and social monitoring program has been established for the construction phase to ensure the proper implementation of the environmental and social mitigation measures.

7.2 ESMP Institutional Arrangements

In order to ensure full compliance with the environmental and social requirements which are described above, PMT nominated a qualified engineer to act as the focal point for environmental and social affairs at the central level. On the field level, PMT nominated two engineers in Salah Al-Din to act as environmental and social officers. Those engineers will be trained on monitoring and reporting of environmental and social impacts and how to fill the checklist to be used during field visits before implementation starts.

The Resident Engineer will be the officially responsible staff member for ensuring environmental and social compliance. S/He will be assisted by the designated environmental and social field officers.

In addition, a qualified consultant is recruited by the PMT to provide technical assistance and capacity building to the environmental and social team both at the central level and at the field level.

7.3 Reporting requirements

In order to ensure that the mitigation and monitoring measures are being carried out effectively with the required frequency, a clearly defined and regular reporting and response system must be established. The needed frequency of report generation for inspection is to be monthly, and for auditing twice a year, environmental monitoring is once per year.

The information will be made available to the relevant regulatory authorities as required. In addition to the monitoring and reporting requirements documented in the relevant sections of the ESMP, the following reporting regime will be implemented:

- a) All incidents or accidents during the rehabilitation should be reported immediately to relevant authorities.
- b) All corrective measures must be discussed to ensure compliance with laws and regulations.
- c) Reports for personnel training on environmental issues or emergency practices must be produced.
- d) Progress reports, environmental monitoring report and other inspections reports must be produced periodically.

The PMT environmental and social field officers will provide the Resident Engineer with a weekly report briefing their observations and recommendations for action. Whereas the Resident Engineer shall prepare an environmental and social management report on monthly basis to PMT in Baghdad.

Table 6: Monitoring Activities during Construction Phase.

| Indi | cator | Monitoring Activities | Monitoring Indicators | Frequency | Responsibility | Supervision | Total estimated Cost in US\$ |
|------|-----------------|---|--|--|----------------------|-------------|------------------------------------|
| 1 | Air quality | workers and residents | Recorded and documented complaints Record the status of equipment and vehicles on site (excessive black or white smoke) | Daily visual inspectionOnce every six months | Resident Engineer | РМТ | 1,500 |
| 2 | Noise | Investigate noise complaints from workers and neighboring communities in the affected locations | Recorded and documented complaints Recorded tests results | Weekly inspection of complaints Only in case of complains | Resident Engineer | РМТ | 1,000 |
| 3 | Water resources | Investigate implementation of mitigation measures and observe any oil or fuel spills. Investigate wastewater disposal measures | Site Investigation report | Daily Investigation | Resident Engineer | РМТ | No cost |
| 4 | Soil | Observe any soil contamination with oil or fuel Observe any accumulation of wastes | Site Investigation report | Monthly | Resident Engineer | PMT | No cost |

| Indio | cator | Monitoring Activities | | | Responsibility | Supervision | Total estimated Cost in US\$ | |
|-------|-------------------------------|---|---|-------------------|----------------------|----------------|------------------------------------|--|
| 5 | Solid and hazardous wastes | Maintain records on waste types and quantities Observe any waste accumulation in un approved locations | Waste management contracts with authorized contractors Waste delivery receipts from local authorities. | Weekly Weekly | Resident Engineer | PMT | No cost | |
| 6 | Health and safety | Ensure compliance of workers to Health and Safety requirements Maintain log on incidents and accidents | Observation report Accidents report | Weekly | Resident Engineer | PMT | No cost | |
| 7 | Flora & Fauna | Record any observation about wild animals or plants on site or nearby and report to the Environmental Authority | Observation report | Upon occurrence | Resident Engineer | PMT | No cost | |
| 8 | Topography and landforms | No monitoring required | Not applicable | Not applicable | Not applicable | Not applicable | Not applicable | |
| 9 | Traffic | Ensure speed limits and warning signs are installed | Road signs are installed. | Monthly | Resident Engineer | PMT | No cost | |
| | Handling Complaints | Ensure that the GRM is effective and well communicated | Number of complaints received, analyzed and responded to. | Weekly | Resident Engineer | PMT | No cost | |
| | | Total cost US\$ | (Operation/Maintenance pha | ase) | | | 2,500 | |

The environmental and social consultant will prepare a monthly environmental and social supervision report after conducting site supervision visits.

On quarterly basis, PMT shall prepare an environmental and social progress report which will be submitted to the international financial institution (WB) for review and disclosure.

7.4 Capacity Development and Resources Requirements

PMT dedicated sufficient human resources to undertake the environmental and social management requirements as explained above. The assigned staff at the central and field levels are competent in the field of engineering and have variable practical experience. For the staff who will be responsible for undertaking the environmental and social tasks, they will require some capacity development.

All construction personnel and contractors are required to undertake appropriate environmental training and induction programs including, importantly, on GRM procedures.

All managers and supervisors will be responsible for ensuring that personnel under their control have the requisite competencies, skill and training to carry out their assigned tasks in accordance with the requirements of the ESMP. They will also be responsible for identifying additional training and competency requirements.

All project supervisors and managers will receive additional detailed training on the use and implementation of the ESMP. The following Table presents the proposed institutional strengthening program and capacity development requirements.

Capacity development topic Provider(s) **Duration Estimated Cost (US\$) Environmental Impact Assessment** 1,500 Consultant 3 Days Environmental social Management in Construction Sites Environmental Legal Ministry of Iraqi 500 1 Day Requirements Environment World Bank Environmental and Social 1,000 Consultant 2 Days Safeguards **Total Estimated Cost** \$3,000

Table 7: Capacity Development Requirements

In order to ensure full compliance of the environmental and social requirements, regular site visits should be conducted. Dedicated office spaces, office equipment and supplies in addition to adequate means of transportation should be made available for the environmental and social management team at the central level and most importantly on the field level. MOP PMT should ensure the allocation of sufficient budget resources to ensure availing the required resources to achieve the required tasks.

8. PUBLIC CONSULTATION

8.1 Consultation Process:

The public consultations were carried out in the six villages for upgrades of the roads on Oct 1, 2019. The public consultations included only men and number of participants was 62 in these villages. Accordingly, a questionnaire was formatted to cover the key environmental and social aspects related to the subproject. The consultation started by providing briefs about the subproject activities, potential impacts and future benefits.

In addition to public consultation, one on one interviews were conducted on Oct 2, 2019. The formatted questionnaire was then addressed to 19 women and 18 men in the surrounding community randomly to have their opinions and thoughts regarding the construction activities.

8.2 Consultation Results:

All participants in these villages expressed that; the upgrade of these roads will have a positive impact on their social daily life. Please refer to annex 2 for sample of public consultations in Al Ahbab village and also sample of individual interviews for both men and women. The full list of participants for public consultations and individual interviews are attached in standalone document to reduce the size of the instrument. As per the questionnaire prepared for individual interview, the below are the main findings.

- 1. All interviewed locals agreed that the construction of the roads will have a positive impact from the social perspectives on the locals.
- 2. No claims from any locals were recorded or alleged regarding the ownership of the land; all agreed that it is governmental land property.
- 3. No vegetation covers, crops, plants, trees...etc. will be removed in order to execute the construction activities of these Roads.
- 4. The interests of the locals will not be affected in any way by the construction activities.
- 5. No infrastructure within the project area will be affected negatively due the construction activities.
- 6. No deportation, dislocation of any of the local community will be needed due to these activities.
- 7. The upgrade of these roads will enhance the social relationship among the locals; improve their achievements and performance.
- 8. Most locals agreed that the roads need more instructional signs near the Roads' area.

9. GRIEVANCE REDRESS MECHANISM

The SFD is in the process of establishing a free hotline and is expected to be functioning within the next few months. SFD is planning to set up a digital system with multichannels for receiving complaints, inquiries, feedbacks or comments like WhatsApp, Facebook, email and complain boxes for each subproject. Additionally, focal points will be assigned at local level and central level to be in charge of handling complaints.

Meanwhile, in order to comply with the WB requirements, SFD has temporary assigned three staffs as focal points with their cell phone numbers to be disseminated at each subproject level for receiving calls and handling complaints. The contact details will be posted at subproject signboard and the complaint boxes will be installed in each location as shown in the below table.

Name Job Title Phone Number E-mail Ahmed Ibrahim clerk 07701830500 Basmamohammed337@yahoo.com Hussam Shaael Translator 07827793093 hussamshail@yahoo.com 3 Ibtisam Jasim Deputy head 07724674469 Sfd.iraq.2018@gmail.com

Table 8: Contact Information for GRM

The process of managing complaints will be as follows:

- 1- Complaints should be sorted out according to complexity;
- 2- Simple inquiries should be resolved on the spot by concerned staff members in 3-6 working days as a maximum and should be documented and archived as per the relevant procedure;
- 3- Complex issues should be investigated and communicated with higher management for final decisions within a timeframe of 20 working days as a maximum;
- 4- After the completion of the proceedings, the complaint is closed, and information is included in the system, including the action(s) taken and the result(s) required; and
- 5- The complainant shall be notified of the result and the action immediately and informed of the possibility of objecting to the procedure.

In addition to PMO, the MOP, project offices in governorates, and Community Development Groups (CDGs), the World Bank's Grievance Redress System (GRS) can also be approached for reporting and resolving issues.

ANNEXES

Annex 1: Public Consultations Photos



Public Consultations at Al Ahbab village with 15 participants



Public Consultations at Owainat village with 14 participants

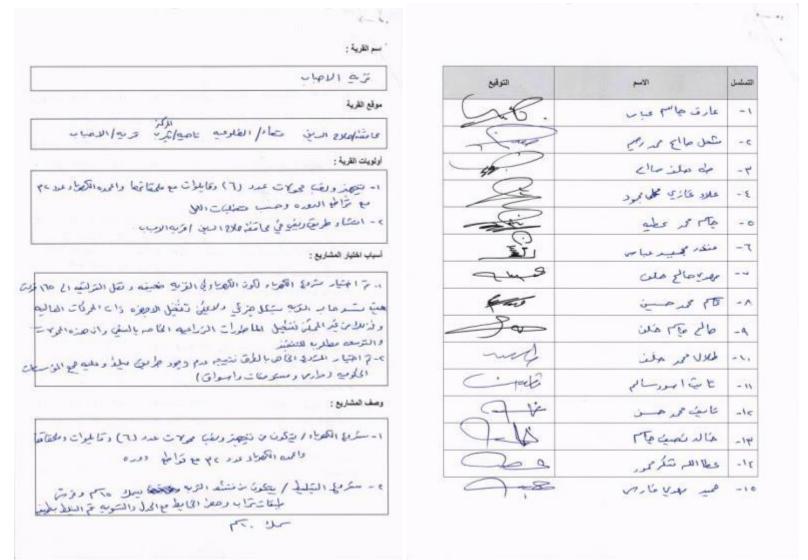


Public Consultations at Arab Al Kabeera village with 11 participants



Public Consultations at Al Khazifi village with 13 participants

Annex (2): Sample of Public & individual Consultation at these six Villages



| | 8 | أنثى | , دخان سامر ذکر 🗆 | اسم: الحِما ك | 10 H | | | ئى | | ڻابين محرمہ نتر 🕾 | لاسم: د لجنس: |
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| | | طنين في المناطق | ماعية بالنسبة للسكان القا | الناحية الاجت | | | | ~ | ع به التر الجابية من القاطنين في المناطق | وتماعية باللسبة للسكار | الناحية الإ. |
| | 1./ | من قبل السكان | مشروع ادعاءات او مطالبات | القريبة من ال | | | - | | ات من قبل السكان | المشروع. بالاعامات اد مطال | |
| | X | المشروعة | دية الارض المقام عايها | المحلس بعاة | | | | | ليها المشروع؟ | مائدية الإرض المقام ء | المحليين يا |
| | X | لك عمليات رفع غطاء نياتي تعود | ل الاعمار ، هل هذا راعية او اشجار او اي | يسبب اعم المحاسيل ز | | | / | 1 | هنالک عملیات رابع ای غطاء نیاتی تعود | | |
| | | 1 | طنين او السكان المحليين! | عانديته لموا | | | | | اسن؟ | راطنين او السكان المح | عائديته لمو |
| | V | | ت مصالح المواطنين القا بب اعمال الاعمار ؟ | المشروع بسا | | | / | | القاطنين بالقرب من | ِت مصالح المواطنيز سبب إعمال الاعمار؟ | |
| | V | مؤقتة تلعب دورا د ال كانالان | ي بني تحتية دائمية أو النشاطات الحيوية الوو | عل مثالك ا | | | | | او مؤقتة تلعب دورا | اي بني تحتية دائمية | هل هناتك |
| | 1^1 | 1000000 | المشر و ۱۶۰ | بعماية اعمار | | | / | | يومية للسكان ستتاثر | التشاطات الحيوية ا ار المشروع؟ | |
| | X | تصبب باجراءات مناطق جديدة؟ | بال اعمار المشروع م الشخص او لاشخاص ال | هل ان اعد | | | / | | إ ستتسبب باجراءات | | |
| | V | لمشروع من قبل | صلية استخدام ارض ا | ا هل تست | | | - | | ن الى مناطق جنيددا ل المشروع من قبل | ن لشخص او لاشخاص عملية استخدام ارض | |
| | 10 | هه للنوله؟ له سادية بالمنطقة | ليين، علما ان الارض تا وجود تاثيرات اجتماع | السكان المد | | | | - | ن تابعة للدولة؟ باعية سلبية بالمنطقة | طيين، علما أن الأرض | |
| | X | | ، المشروع؟ | الثيجة اعمال | | | / | | The state of the s | ل المشروع؟ | تتبجة اصا |
| | X | شرر في النموج | تغيير ديموغرافي او نتيجة عمليات الاعمار؟ | | . 1 | | 1 | 1 | و ضرر في السيج م | تغيير ديموغرافي ا نتيجة عمليات الاعمار | |
| | X | ، المشروع لوضع ة سعدلات الامان؟ | المواطنون القريبون من نيرية او استدلالات لزياد | هل بحثام | | | | 1 | من المشروع لوضع | | هل بحتاج |
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