Annexes to Regional NGO Master Plan for Sustainable Development in the Jordan Valley

June 2015

Royal HaskoningDHV in partnership with:

MASAR Jordan
CORE Associates
DHVMED

EcoPeace Middle East / WEDO / FoE*

in co-operation with:

SIWI – Stockholm International Water Institute,
GNF – Global Nature Fund

European Union’s Sustainable Water Integrated Management (SWIM Program)

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* The future scenarios and strategic objectives for the Jordan Valley Master Plan presented in this report reflect the vision of EcoPeace Middle East, and do not necessarily reflect the opinion of the European Union, project partners or the individual consultants and their sub-consultants.
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  POLLUTION CONTROL AND SANITATION INTERVENTIONS</td>
<td>4</td>
</tr>
<tr>
<td>2  SUSTAINABLE WATER MANAGEMENT AND RIVER REHABILITATION</td>
<td>31</td>
</tr>
<tr>
<td>3  SUSTAINABLE AGRICULTURE</td>
<td>61</td>
</tr>
<tr>
<td>4  LOWER JORDAN BASIN GOVERNANCE</td>
<td>96</td>
</tr>
<tr>
<td>5  ECOLOGICAL REHABILITATION</td>
<td>99</td>
</tr>
<tr>
<td>6  SUSTAINABLE TOURISM AND CULTURAL HERITAGE DEVELOPMENT</td>
<td>116</td>
</tr>
<tr>
<td>7  SUSTAINABLE URBAN, ENERGY AND INFRASTRUCTURE DEVELOPMENT</td>
<td>149</td>
</tr>
<tr>
<td>8  LIST OF LITERATURE</td>
<td>175</td>
</tr>
<tr>
<td>9  WEAP MODEL SCHEME</td>
<td>183</td>
</tr>
</tbody>
</table>
2 POLLUTION CONTROL AND SANITATION INTERVENTIONS

<table>
<thead>
<tr>
<th>Name:</th>
<th>P01 REG – Jordan Valley Regional Coordination on Pollution Control</th>
<th>Location:</th>
<th>Jordan Valley</th>
<th>Type of Intervention:</th>
<th>Pollution Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives:</td>
<td>The purpose of this intervention setting up a regional coordination structure, or Steering Committee, among key Jordanian, Israeli and Palestinian governmental stakeholders for the implementation of the proposed national and regional interventions in the Jordan Valley with regards to the Pollution Control. The objective is that this Steering Committee will eventually be embedded in the structures of the overall River Basin Organization for the Jordan Valley (ref. intervention IC01 REG Jordan River Basin Organization)</td>
<td>Map:</td>
<td><img src="image" alt="Map of Jordan Valley" /></td>
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<tr>
<td>The Regional Coordination Structure aims at optimized regional co-operation in preparation and implementation of the interventions, maximized exchange and joint development of know-how and experiences among the three core parties, monitoring the outputs of the interventions and steering the implementation in terms of their contribution toward reaching the Pollution Control Objectives.</td>
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<tr>
<td>Intervention:</td>
<td>(1) Setting up a kick-off meeting with the key governmental stakeholders from the three core parties with regard to the Pollution Control Objectives</td>
<td>(4) Setting up structures for regional exchange of related know-how and experiences</td>
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<td></td>
<td>(2) Defining objectives, procedures and operational, organizational and financial frameworks for setting up the joint Steering Committee under the Pollution Control Objectives</td>
<td>(5) Development of key performance indicators and monitoring procedures towards the implementation of the interventions</td>
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<td></td>
<td>(3) Joint preparation of detailed implementation and financing plans for the proposed (groups of) interventions</td>
<td>(6) Assisting and steering the project implementing organizations accordingly</td>
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<tr>
<td>Results / Impacts:</td>
<td>Lower Risk in terms of production</td>
<td>Optimized regional co-operation during the preparation and implementation of the proposed interventions under the Pollution Control Objectives</td>
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<tr>
<td></td>
<td>Maximized regional exchange know-how and experiences</td>
<td>Maximized regional exchange know-how and experiences</td>
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<td></td>
<td>Optimized monitoring and steering of the interventions during detailed preparation and implementation</td>
<td>Optimized monitoring and steering of the interventions during detailed preparation and implementation</td>
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<td></td>
<td>Building up regional trust and the peace dividend</td>
<td>Building up regional trust and the peace dividend</td>
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<tr>
<td>Sustainability and Water Impacts:</td>
<td>This project will have a direct impact on the sustainable development of the Jordan Basin through optimized co-ordination and exchange of relevant information</td>
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<tr>
<td>Organization / Responsibilities:</td>
<td></td>
<td></td>
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</tbody>
</table>
- Key governmental and sectoral stakeholders from Jordan, Israel and Palestine
- Support, dissemination by EcoPeace

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation costs: 300,000 USD</td>
<td>Until 2050:</td>
</tr>
<tr>
<td>Implementation Cost: 200,000 USD per year</td>
<td></td>
</tr>
<tr>
<td>Name:</td>
<td>Location:</td>
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<tr>
<td>P01 ISR – Fish Ponds Short Term Pollution Control Improved Project</td>
<td>Northern Israeli Jordan Valley</td>
</tr>
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**Objectives:**
- Improve pre-treatment and dilution of wastewater discharge with fresh water in the river.
- Supply better water quality in the river.
- Note: This is short term only. Other and more sustainable options are proposed for the long term.

**Intervention:**
- Changing operations of wastewater discharge.
- Release of wastewater discharge during winter season into the Jordan River when water is high, or there are floods.
- Construction of settling ponds before release into the river.
- Expansion of 2 pilot projects that are currently being implemented.

**Results / Impacts:**
- Improve pre-treatment of fish pond wastewater
- Improve Jordan River water quality

**Organization / Responsibilities:**
- Lower Jordan River Basin Drainage Authority, Israel

**Costs and Revenues:**
- Preparation costs: 1 M USD
- Construction Cost: 15 - 20 M USD
- Operating costs: to be paid by fish farmers

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 2 year

**Other remarks:**
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P02 ISR – Mine Fields Removal Project.</td>
<td>Northern Israeli Jordan Valley along border zone</td>
<td>Water Management</td>
</tr>
</tbody>
</table>

**Objectives:**
- Remove all mine fields in the area by 2016 / early 2017

**Intervention:**
- Planning for identification and removal of mines
- Removal and destruction of mines

**Results / Impacts:**
- Safe areas along the Jordan River, again accessible for the general public

**Organization / Responsibilities:**
- Israeli Military

**Costs and Revenues:**
- Preparation costs: 100,000 USD?
- Construction Cost: 1 M USD???

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 1 year??

**Other remarks:**
<table>
<thead>
<tr>
<th>Name: P03 ISR – Sustainable Fish Farming in the Jordan Valley</th>
<th>Location: Northern Israeli Jordan Valley</th>
<th>Type of Intervention: Water Management &amp; Pollution Control</th>
</tr>
</thead>
</table>

**Objectives:**
- To further develop sustainable fish farm Technologies, into closed systems where no negative environmental impacts and minimized water use.
- To change existing fish farms into these fully sustainable closed system concepts.
- To remove fish farms from the region that cannot meet these criteria, either by changing them into bird reservoirs, or other type of less-polluting agriculture.
- This intervention shall be considered the long term sustainable follow up on intervention W04 ISR.

**Intervention:**
- Continue research on sustainable fish farming, including bio-pesticides; biological filtering and reusing of fish farm discharge water; including use of forced oxidation to maximize production; selection of higher revenue fish types like sea bass. Research has showed that this will result in only 10% of the water consumption compared to today; and no discharge of polluted water at all.
- Transferring this research and related pilots to real scale model fish farms.
- Change existing co-operative fish farms into these sustainable concepts.
- Removal of all other fish farms.

**Results / Impacts:**
- Better water quality and outflow in the Jordan River
- Increased fish farm related economic outputs
- Full mitigation of negative environmental impacts of the fish farms

**Organization / Responsibilities:**
- Lower Jordan River Basin Drainage Authority
- Spring Valley Regional Council
- Fish Farms and their organizations
- Edan Farm

**Costs and Revenues:**
- Preparation costs: 1 M USD
- Construction Cost: 25 MUSD

**Implementation Period**
- Preparation time: 5 year
- Construction time: 5 year

**Other remarks:**
<table>
<thead>
<tr>
<th><strong>Name:</strong></th>
<th>P04 ISR – Betanya Tertiary Wastewater Treatment</th>
<th><strong>Location:</strong></th>
<th>Betanya WWTP, Israel</th>
<th><strong>Type of Intervention:</strong></th>
<th>Pollution Control</th>
</tr>
</thead>
</table>

**Objectives:**
- To expand the current secondary treatment of Betanya with a Tertiary Treatment Facility.
- To bring the effluent to the downstream new Afikim reservoir (not part of this intervention), which will also receive desalinated water from the Salt Water Carrier.
- To reuse this water for agricultural purposes.

**Intervention:**
- Planning for tertiary treatment, conveyance and reservoir
- Construction of these interventions
- Operation of the new facilities

**Results / Impacts:**
- Better water quality
- Better reuse
- Better river water quality

**Organization / Responsibilities:**
- Jordan Valley Regional Council
- City of Tiberias

**Costs and Revenues:**
- Preparation costs: 1 M USD
- Construction Cost: 25 M USD (75 M ILS has been secured; 25 M NIS still to be identified)

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 1 year (2016)

**Other remarks:**
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P05 ISR – Betanya Desalination Plant and Afikim Reservoir Development Project</td>
<td>Betanya WWTP</td>
<td>Pollution Control</td>
</tr>
</tbody>
</table>

**Objectives:**
- To construct a desalination plant for much of the water in the Salt Water Carrier
- To mix this water with effluent from the Betanya WWTP into the Afikim Reservoir
- To reuse this mixed water (3.5 MCM / yr) for agricultural purposes
- To use desalinated water for drinking water purposes
- Using 6 MCM / yr of brine (4000 ppm) for Fish Ponds near Bezeq
- Or alternatively, discharging brine through pipeline in Dead Sea (additional 100 M NIS investment)

**Intervention:**
- Planning for desalination and Afikim reservoir; and planning for reuse
- Operation of the all operations

**Results / Impacts:**
- Better water quality
- Better reuse
- Better river water quality

**Organization / Responsibilities:**
- Jordan Valley Regional Council
- Private sector
- Farmer associations

**Costs and Revenues:**
- Preparation costs: 1 M USD
- Construction Cost: 50 M USD

**Implementation Period**
- Preparation time: 2 year
- Construction time: 2 year

**Other remarks:**
### Objectives:
Preparation of an integrated solid waste management plan for the Lower Jordan River Basin, including (separate) waste collection, transportation; transfer; including maximized reuse and recycling of solid waste streams; selection, planning, design and construction of a sanitary landfill; closing of existing non-sanitary dump sites; maximizing of composting of organic waste (including feedstock waste) for use in agricultural sector; municipal organizational and financial frameworks (polluter pays principles); and international exchange of best practices. The proposed Jordanian Solid Waste Management intervention is in line with the National Solid Waste Management Plan that is currently (2014) prepared by the Ministry of Environment and new legislation currently being prepared for the municipalities. The project includes an integrated planning section dedicated to the Lower Jordan River Basin, cross border waste transfer; transfer of the landfill in North Shuneh into a transfer station, focusing on composting organic waste for composting, including household organic waste, agricultural waste of solid waste generated by olive mills and PPPs. However, the National SWM strategy will be elaborated on the levels of governorates, which overlaps parts of the area of the Lower Jordan River Basin.

On the long term this should lead to full collection and sanitary treatment of all solid waste streams and maximized reuse and recycling of waste streams, including waste to energy generation.

### Intervention:
Setup and execution of an Integrated solid waste management plan for the entire area. This proposed interventions under this Master Plan focused explicitly on the Lower Jordan River Basin, without waste management plans for other regions, such as the Syrian refugee camps currently located close to the border. Additional elements to be addressed are way of financing; increasing public and governmental awareness and participation; private sector involvement; source separation, and following environmental and social procedures for the preparation of landfills.

### Preparation:
- Analysis of the current state of solid waste management (collection, transfer, transport, recycling and disposal)

### Construction / realization:
- Setting up National criteria for Solid Waste Management (of all waste streams, including domestic, agricultural, industrial, medical and hazardous waste)
- Setting up of the Solid Waste Management Plan, including maximized reuse and recycling of waste streams
- Setup of a waste management organization and make arrangements with municipalities (including separate collection, composting and recycling)
- Tendering for more waste containers and more frequent and separate collection
- Startup of composting and recycling pilots
- Tendering for the closure and rehabilitation of the landfills and construction of the final cover and other rehabilitation measures
<table>
<thead>
<tr>
<th>Exchange of regional experiences (including experiences in Israel) and a regional knowledge transfer with regard to optimal solid waste management and the use of various reuse and recycling options</th>
<th>Tendering for the post closure activities and Tendering and construction of the landfills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion with Ministries, municipalities and the Joint Service Council responsible for waste management, to determine the basis for future Solid Waste Management</td>
<td>Operations:</td>
</tr>
<tr>
<td>Information campaigns for inhabitants and industries</td>
<td>• Waste collection</td>
</tr>
<tr>
<td>Information campaign for farmers stimulating the reuse of compost</td>
<td>• Fee collection (new tariff system)</td>
</tr>
<tr>
<td>Inventory of markets for reusables</td>
<td>• Technical and financial management</td>
</tr>
<tr>
<td>Analyses of the current situation with regard to closed landfills, Closure/Rehabilitation plan for closed landfills and Post closure plan</td>
<td>• Start post closure program for closed dumpsites</td>
</tr>
<tr>
<td>Search for temporary landfilling options for the waste from the area</td>
<td>• Operation of recycling and composting pilot facilities</td>
</tr>
<tr>
<td>Determination of required landfilling capacity</td>
<td>• Operation of two sanitary landfills</td>
</tr>
<tr>
<td>Site selection for 2 sanitary landfills in the Jordan Valley</td>
<td>• Cost of operations to be recovered by “Polluters Pays Principle”</td>
</tr>
<tr>
<td>Revisit / perform planning &amp; design for the 2 sanitary landfills (based on national criteria described in the Solid Waste Management plan), including detailed design already prepared for Deir Alla Sanitary Landfill</td>
<td></td>
</tr>
<tr>
<td>EIA’s and licenses</td>
<td></td>
</tr>
<tr>
<td>Include waste management originating from (abandoned) Israeli settlements, with notice taken of previous development in former settlements in Gaza</td>
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</table>

**Results / Impacts:**
- Introduction of the polluter pays principles
- National criteria for solid waste management (including collection, reuse, recycling, composting, anaerobic digestion and other reuse options)
- Standards for the rehabilitation of old non sanitary landfills and of uncontrolled landfills (illegal dumpsites) and for the realization of sanitary landfills
- Increased capacity for and frequency of waste collection
- Improvement of environmental and public health situation
- Introduction of separate collection of specific organic waste streams (market waste, plant tissue from agriculture)
- Improvement of separate collection of plastics, paper en metals
- Decrease of the amount of waste to be land-filled
- Limiting environmental pollution/risks for contamination of drinking water as result of closure old dumpsites
- Waste, which is not reused or recycled, will be fully treated in two landfills located in suitable locations in the Jordan Valley (On average for the coming 30 years 200.000 tons/year, so 6 million tons of waste over 30 years, part of this will be recycled in future)

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin due to more efficient pollution control, and reuse and recycling of waste streams
- This project will have impact on the ambient water quality in the basin, due to mitigation of pollution by
unprotected waste dumping

**Organization / Responsibilities:**
- Joint Service Council
- Ministry of Environment
- Local municipalities

**Costs and Revenues (based on similar SWM projects in the region):**
- Preparation costs: JD 1,300,000,-
- Construction costs: JD 20,000,000,- (for landfills (30 years) and composting)
- Operation costs: 5 Million JD / yr (including collection)
- Annual Revenues: 2 Million JD in 2050

**Implementation Period**
- Preparation time: 2 years
- Construction time: 5 years

**Other remarks:**
- Short Term action
- Take into account both the inhabitants and small industries.
- Start with the more inhabited areas (larger towns along the main road like Deir Alla)
- start-up of (mechanical) waste separation, reuse, recycling and composting (or maybe anaerobic digestion) pilots
- Start with the more inhabited areas, like Deir Alla (maybe combination with the current composting facility for agricultural waste and manure)
- The current landfill in Deir Alla and the closed Manshea dumpsite in North Shuneh are not designed and the sites are not selected according to appropriate criteria. These landfills have no lining system or leachate collection and treatment system. They pose a threat to nearby communities and ground water/drinking water reservoirs. Landfilling in these locations should be stopped (short term) and the sites should be rehabilitated with at least a final water proof cover (middle term).
- The waste should temporarily be brought to sanitary landfills outside the Jordan Valley.
- Site selection and designs of the new sanitary landfills middle Term, Realization long term
**Name:** P02 JOR – Environmental Management and Public Awareness Program  
**Location:** Jordan Valley, Jordan  
**Type of Intervention:** Pollution Control

**Objectives:**  
The aim of this project is to set up an integrated environmental monitoring, enforcement and public awareness program for the Lower Jordan River Basin, including monitoring of wastewater and solid waste major pollution sources, including fish farms; ambient surface and groundwater quality; soil quality and air quality. The purpose of this program is to enable JVA and related authorities to establish the environmental baseline of the LJR Basin; to increase public awareness on environmental protection and water demands; and to monitor the impacts of pollution control measures, such as solid waste management and wastewater management interventions. The project will also include development of dedicated impact assessment tools for JVA, such as Strategic Environmental Assessments to be used to test new policies and strategies related to the LJR Basin.

**Map:**  
This project shall preferably be performed in conjunction with P02 PAL Environmental Management Project and the key Israeli stakeholders to harmonize monitoring practices and strengthen collaboration thought the Jordan Valley.

**Intervention:**  
Protecting, preserving and improvement of the environment through monitoring and law enforcement. Raising the awareness of the inhabitants and companies regarding the local environment and possible sources of pollution, and development of better community participation.

**Preparation:**  
- Planning  
- Assessment of the environmental hot spots  
- Elaborate 2014 EcoPeace proposals for groundwater protection zoning  
- Setting up an implementation plan including all relevant aspects (technical, financial, logistical, etc.)  
- Development of dedicated impact EIA tools  
- Information material (Flyers, brochures, leaflets, TV material etc.) for Public Awareness  
- Preparation of workshops

**Construction / realization:**  
- Establish an environmental baseline  
- Highlighting of the environmental key elements  
- Determination of the key threats to these key elements  
- Identification of the most vulnerable environmental areas/locations  
- Setup of relevant legislation along with a penalty system  
- Strategic Environmental Assessments for the new policies and strategies  
- Information campaign for inhabitants and companies  
- Strengthening of JVA and other authorities  
- Setup of an enforcement organization  
- Setup and introduction of a monitoring system  
- Include control of pollution originating from (abandoned) Israeli settlements, with notice taken of previous development in former settlements in Gaza

**Operations:**  
- Environmental Monitoring and rehabilitation  
- Pollution control  
- Law enforcement

**Results / Impacts:**  
- Improvement of the awareness regarding the protection and the preservation of the Environment  
- Improvement of urban and environmental planning capacities
- Improvement of the enforcement regarding waste water, air quality, waste and water resources (penalties and incentives)
- Enhancement of environmental data collection
- Strengthening of the capabilities of local governance
- A better coordination between JVA, MoA and local municipalities
- Empowerment of relevant authorities on monitoring, and enforcement (waste, wastewater etc.)
- Improvement of the knowledge and increase of public awareness of the inhabitants and companies in the Jordan Valley regarding the consequences of environmental pollution (littering, dumping, health issues) and the possibilities of waste collection and management, waste water collection and environmental collection. Final result will be improvement of environmental and health quality.
- This project will have a direct impact on the Jordan River due to more efficient pollution control
- This intervention can be part of bigger project for WWTP for cost efficiency reasons and time efficiency

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin due to more efficient pollution prevention and control
- This project will have an indirect impact on the ambient water quality in the basin, due to mitigation of pollution by various pollution sources

**Organization / Responsibilities:**
- JVA
- MoA
- Local municipalities
- Ministry of Environment
- Civil society organizations

**Costs and Revenues:**
- Preparation costs: JD 1.000.000,-
- Construction costs: JD 2.100.000,-
- Operation costs: JD 300.000,-/year
- Annual Revenues: JD 0,-/year

**Implementation Period**
- Preparation time: 2 year
- Construction time: 3 years

**Other remarks:**
**Name:**
P03 JOR – Agricultural Pollution Control Project

**Location:**
Jordan Valley, Jordan

**Type of Intervention:**
Pollution control

**Objectives:**
The aim of this project is to assist farmers and their organizations in applying sustainable agronomic practices, including minimized use of pesticides and fertilizers; regulation and distribution and types of pesticides on regional or national levels, and promotion of environmentally sustainable substances; stimulation of the reuse of organic agricultural waste as compost; improve the management of agricultural waste; improvement of the environmental performance of fish farms.

**Intervention:**
Introduction of environmentally sustainable practices in agriculture (including fish farms)

**Preparation:**
- Inventory of the agricultural market situation and common agricultural practice including waste management
- Analysis of the possibilities of turning certain agricultural plant tissues remains into animal food.
- Awareness raising, information campaign and training for farmers (stimulation of the reuse of organic agricultural waste as feedstock for animals or for compost, improved waste management, promotion of environmentally sustainable substances, limitation of use of pesticides and fertilizers)
- Inventory and assessment of the environmental performance of fish farms (location, capacity, technical state, manner of operations, potential pollution loads → e.g. Jordan Valley fish farm of Taloubi (closed?), The Arab fish farm in the North, Al-Natoor Fisheries, Al-Taba’a Fisheries)
- Awareness raising, information campaign and training for operators of the fish farms

This project shall preferably be performed in conjunction with P01 PAL Waste Management Project and the key Israeli stakeholders to harmonize monitoring practices and strengthening collaboration thought the Jordan Valley.

**Construction / Realization:**
- Stimulation program for environmentally sustainable farming
- Tendering for agricultural waste management and composting.
- Setting up of regulations for pesticide and artificial fertilizers
- Rehabilitation plan for fish farms to prevent pollution of the ground water or uncontrolled/untreated spillage of the water to the river, including planning and costs
- Tendering and rehabilitation/construction of fish farms

**Operations:**
- Adjust manure application to plant requirements
- Limit the use of pesticides and fertilizers
- Supervision/improvement of manure application (risks in areas with high runoff potential, high chances of rainfall, areas of high vulnerability to contamination)
- Use of organic agricultural remains as fodder or for compost production
- Waste collection and treatment
- Reuse of waste water in fish farms

**Results / Impacts:**
- Improvement of environmental situation
- Improvement of public health situation
- This project will have a direct impact on the Jordan River due to more efficient pollution control
Improvement of the reuse of organic agricultural waste
Reduction of the use of pesticides and artificial fertilizers, thus limiting pollution and costs for farmers
Increase of the organic matter content of soils
Minimization of the potential of contamination of spring water and shallow aquifers.

Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin due to more efficient pollution control, and reuse and recycling of waste streams
- This project will have impact on the ambient water quality in the basin, due to mitigation of pollution by unprotected waste dumping

Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin due to more efficient agricultural pollution control, and reuse and recycling of agricultural waste streams
- This project will have impact on the ambient water quality in the basin, due to mitigation of agricultural pollution

Organization / Responsibilities:
- JVA
- MoA
- Farmers organizations
- Ministry of Environment (MoENV)

Costs and Revenues:
- Preparation costs: JD 500,000,-
- Construction costs: JD 1,000,000,-
- Operation costs: JD 300,000,-/year
- Annual Revenues: JD 0,-/year

Implementation Period
- Preparation time: 1 year
- Construction time: 2 years

Other remarks:
- Agricultural waste includes but is not limited to plant tissue remains, manure, runoff from feedlots, waste water from farm buildings, dead animals, plastics, chemicals, empty containers, old machinery, animal health care products, etc.
- Various plant tissue remains, which are considered agricultural waste, can be used as feeding material for animals
- Concentrations of animal manure and carcasses on farms may cause environmental pollution (risk for groundwater) and health risks (diseases) for both animals and humans. Therefore collection and treatment (or use in the case of manure if possible) is required.
Name: P04 JOR – Separate waste collection and reuse pilots
Location: Jordan Valley, Jordan
Type of Intervention: Pollution Control

**Objectives:**
To stimulate the reuse of resources/waste streams and limit the amount of waste to be landfilled; Research to investigate the possibilities and bottlenecks for separate collection and reuse of certain waste streams.

This project shall preferably be performed in conjunction with P01 JOR SWM project.

**Intervention:**
Preparation and execution of pilot projects

**Preparation:**
- Selection of communities to perform pilots
- Information campaign for inhabitants with regard to a pilot for separate collection
- Information campaign for farmers with regard to a pilot for the use of compost
- Planning of the separate collection and composting pilots
- Basis design and operations manual for the composting pilot
- Test program

**Construction / realization:**
- Tendering for the waste containers and collection contract for the separate collection pilot
- Tendering for and realization of the composting pilot facility

**Operations:**
- Separate collection of organic waste and recyclables
- Composting of the organic waste to compost
- Application of the compost by a selected group of farmers
- Analysis of results of the separate collection, composting and farming pilot and comparison with a reference group of farmers

**Results / Impacts:**
- Introduction of separate collection of specific organic waste streams (market waste, plant tissue from agriculture)
- Improvement of separate collection of plastics, paper and metals
- Decrease of the amount of waste to be landfilled
- This project will have an indirect impact on the Jordan River due to more efficient pollution control

**Sustainability and Water Impacts:**
- This pilot project will have a direct impact on the sustainability of the Jordan River Basin due to more efficient waste management, and reuse and recycling of waste streams
- This pilot project will have impact on the ambient water quality in the basin, due to mitigation of pollution by unprotected waste dumping

**Organization / Responsibilities:**
- JVA
- MoA
- Selected communities
- Organization of farmers
- Ministry of Environment (MoENV)

**Costs and Revenues:**
- Preparation costs: JD 100,000

**Implementation Period**
- Preparation time: 0.5 years
<table>
<thead>
<tr>
<th>Construction costs: JD 200.000,-</th>
<th>Construction time: 0,5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation costs: JD 100.000,-</td>
<td></td>
</tr>
<tr>
<td>Annual Revenues: JD 0,- (pilot project)</td>
<td></td>
</tr>
</tbody>
</table>

**Other remarks:**
- Short Term
- Start-up of (mechanical) waste separation, reuse, recycling and composting (or maybe anaerobic digestion) pilots
- Start with the more inhabited areas, like Deir Alla (maybe combination with the current composting facility for agricultural waste and manure)
### Name:
P01 PAL – Solid and Hazardous Waste Management Plan and Construction Activities for the Jordan Valley

### Location:
Jordan Valley, Palestine

### Type of Intervention:
Planning and Construction

### Objectives:

1. To lay down a solid basis for a new waste management system in the Palestinian part of the Jordan Valley. On the long term this should lead to the full collection and sanitary treatment of all solid waste streams and maximized reuse and recycling of waste streams, including waste to energy.
2. To enable an adequate and safe collection of solid waste.
3. To stimulate the reuse of resources/waste streams and limit the amount of waste to be landfilled.
4. To prevent/limit environmental pollution and risks to drinking water (mainly shallow springs and shallow aquifers).
5. To limit the amount of organic material that will be turned into waste (considering the waste to energy option) and limit the amount of food to be bought for animals.
6. To prevent environmental pollution and health risks.
7. To construct a central landfill

### Map:
This project shall preferably be performed in conjunction with P01 JOR SWM project to waste management practices and strengthening collaboration thought the Jordan Valley.

### Intervention:

- Carry out an integrated comprehensive management plan for the entire area for the solid waste
- Improve and develop existing solid waste collection methods. In addition, development of new methods and plans will take care wherever needed. Integrate these plans for the entire area.
- New landfills will be constructed
- Dealing with agricultural waste typically associated with animals includes but is not limited to manure, wasted feed, runoff from feedlots, wastewater from farm buildings, waste from forage, and dead animals in addition to plastics, chemicals, empty containers, building materials, old machinery, and animal health care products

### Preparation:

- Analysis of the current state of solid waste management (collection, transfer, transport and disposal, and recycling)
- Exchange of experiences
- Discussion with Ministries, etc. to determine the

### Construction / realization:

- Setting up National criteria for Solid Waste Management (of all waste streams, including domestic, agricultural, industrial, medical and hazardous waste)
- Setting up of the Solid Waste Management Plan, including maximized reuse and recycling of waste streams
- Setup of a waste management organization and make arrangements with municipalities (including separate collection, composting and recycling)
- Tendering for more waste containers and more frequent collection
- Setup organization for the separate collection
- Tendering for more waste containers and separate collection
- Start up pilots
- Tendering for the closure and rehabilitation of the landfills and construction of the final cover and other rehabilitation measures
- Tendering for the post closure activities
- Tendering and construction of the landfills
- Training for operators
### Results / Impacts:
- Regional criteria for solid waste management (including collection, reuse, recycling, composting, anaerobic digestion and other reuse options)
- Standards for the rehabilitation of old non sanitary landfills and of uncontrolled landfills (illegal dumpsites) and for the realization of sanitary landfills
- Increased capacity for and frequency of waste collection
- Less littering
- Improvement of environmental situation
- Improvement of public health situation
- Potential financial benefits
- Introduction of separate collection of specific organic waste streams (market waste, plant tissue from agriculture)
- Improvement of separate collection of plastics (especially from agriculture), paper and metals
- Decrease of the amount of waste to be landfilled

### Operations:
- Study of current conditions
- Analysis
- Forecasts
- Management plans
- Conclusions
- Decisions to be recommended
- Waste collection
- Fee collection
- Technical and financial management
- Start post closure program
- New tariff system
- Implementation of the land rehabilitation plans
- Public awareness campaigns on sorting and recycling along with the need of having new landfills and the closure of the unsupervised dumpsites
- Closure of selected random dumpsites
- Cost sharing
- Post closure actions
- Limit manure application to plant requirements
- Supervise manure use in areas of high runoff potentials
- Do not apply manure when there are high chances of rainfall
- Avoid using manure (or having livestock grazing) in unmanaged way in areas of high vulnerability to contamination (or sensitive areas)
- Manure storage
- Odor and fly control

### Basis for future Solid Waste Management
- Investigate the number of waste containers required and the collection frequency
- Information campaigns for inhabitants and industries
- Information campaign for farmers stimulating the reuse of compost
- Inventory of markets for reusables
- Analysis of the current situation:
  - Inventory of the locations off and amounts of waste in all existing uncontrolled dumpsites
  - Analysis of the situation in the controlled landfill in Jericho
- Closure/Rehabilitation plan
- Post closure plan
- Search for temporary landfilling options for the waste from the area
- Determination of required landfilling capacity
- Site selection for a sanitary landfill in the Jordan Valley
- Planning & design for the sanitary landfill (based on national criteria described in the Solid Waste Management plan)
- EIA’s and licenses
- Analysis of the possibilities of turning certain agricultural plan tissue remains into animal food
- Inventory of the market
- Information campaign for farmers

### Set up operations structure
- Start a stimulation program for this application/recycling
- Awareness among farmers
- Limiting environmental pollution and risks for contamination of drinking water
- Waste, which is not reused or recycled, will be fully treated in a landfill located in a suitable location in the Jordan Valley
- Improvement of economic situation if recycling and reusing schemes are introduced and practiced
- Maintain a healthy environment for farm animals
- Reduce the need for commercial fertilizers and thus limit feeding costs for farmers
- Increase the organic matter content of soils
- Minimize the potential of contamination of spring water and shallow aquifers

**Organization / Responsibilities:**
- Municipalities and local councils
- Ministry of Environmental Affairs (regulator)
- Ministry of Local Governance
- Ministry of Agriculture
- Palestinian Water Authority (regulator)
- Ministry of Health
- Ministry of Planning

**Costs and Revenues:**
- Preparation costs: $200,000
- Construction costs: $30,000,000
- Operation costs: $150,000/year
- Annual Revenues:

**Implementation Period**
- Preparation time: 0.5 years
- Construction time: 3 years

**Other remarks:**
- Short Term action
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P02 PAL – Environmental Management Project</td>
<td>Jordan Valley, Palestine</td>
<td>Policy and legislative improvement</td>
</tr>
</tbody>
</table>

**Objectives:**
To enable:
- To develop integrated environmental management plan
- Improvement of urban and environmental planning capacities
- Enhance environmental data collection
- Improvement of the enforcement regarding (waste) water, air quality, waste (penalties and incentives), and water resources (groundwater aquifers and shallow groundwater that contributes to spring water)
- Make one organization responsible for environmental issues in the Jordan Valley, Empowerment of this organization on monitoring, and enforcement (waste, wastewater etc.)
- To improve the public awareness in the Valley with regard to waste collection and management, littering, wastewater collection, environmental protection and related health issues. In addition, focus will take into consideration additional environmental issues such as wastewater collection, treatment, and potential reuse and the pollution of water resources especially the springs.
- Institutional strengthening

This project shall preferably be performed in conjunction with P02 JOR Environmental Management Project and the key Israeli stakeholders to harmonize monitoring practices and strengthening collaboration throughout the Jordan Valley.

**Intervention:**
Protecting, preserving and improvement of the environment through monitoring and law enforcement
Raising the awareness of the residents of the study area regarding the local environment and its elements and possible sources of pollution, and organizing their participation in design of environmental management measures

**Preparation:**
- Planning
- Assessment of the environmental hot spots
- Setting up the implementation plan, including all the relevant aspects such technical, financial, logistics, etc.

**Construction / realization:**
- Highlighting the key elements of the environment in the study area
- The determination of the key threats to the elements of the environment
- Identification of the most vulnerable environmental areas/locations
- Legislation of relevant law along with penalties
- Information campaign for inhabitants and companies
- Workshops
- Flyers, brochures, leaflets, TV material and publicity, etc.

**Operations:**
- Monitoring
- Law enforcement
- Writing of information material
- Preparation of workshops etc.

### Results / Impacts:
- Improvement of urban and environmental planning capacities
- Improvement of the enforcement regarding (waste) water, air quality and waste (penalties and incentives)
- Clear understanding regarding which organization is responsible for environmental issues in the Jordan Valley.
- Empowerment of one specific organization on monitoring, and enforcement (waste, wastewater etc.)
- Improve the awareness regarding the protection and the preservation of the environment
- Acquire environmental data
- Improvement of the knowledge and increase of public awareness of the inhabitants and companies in the Jordan Valley regarding the consequences of environmental pollution (littering, dumping, health issues) and the possibilities of waste collection and management, waste water collection and environmental collection. Final result will be improvement of environmental and health quality.

### Organization / Responsibilities:
- Ministry of Environmental Affairs
- Ministry of Agriculture
- Palestinian Water Authority
- Ministry of Planning
- Ministry of Local Governance
- Ministry of Health

### Costs and Revenues:
- Implementation costs: $1,000,000

### Implementation Period:
- Preparation time: 0.5 year
- Construction time: 2 years

### Other remarks:
<table>
<thead>
<tr>
<th>Name:</th>
<th>P03 PAL – Wastewater collection and treatment</th>
<th>Location:</th>
<th>Jericho, Palestine</th>
<th>Type of Intervention:</th>
<th>Waste water collection and treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>To improve an adequate and safe collection of waste water for all the communities and small (agro) industries in the study area (by constructing wastewater collection networks)</td>
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<tr>
<td>2.</td>
<td>To treat the generated wastewater from the different communities and lay the ground for safe reuse of wastewater for agricultural purposes from the constructed wastewater treatment plant</td>
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<tr>
<td>3.</td>
<td>to introduce better functioning sanitation systems using substantially smaller amounts of water, such as vacuum removal of toilet effluents, or electric incinerating toilets.</td>
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<tr>
<td>4.</td>
<td>To plan for pre-treatment of agro-industries and wastewater from fish farms</td>
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<tr>
<td>Map:</td>
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</table>

<table>
<thead>
<tr>
<th>Intervention:</th>
<th>Connect all wastewater generation units (buildings) to wastewater collection networks</th>
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</thead>
<tbody>
<tr>
<td>This will be attained through the construction of 5 wastewater treatment plants in the 5 clusters in the study area, taking note of the completed WWTP design in Jericho (Japan) and related sewerage network (USAID); to introduce better functioning sanitation systems using substantially smaller amounts of water, such as vacuum removal of toilet effluents, or electric incinerating toilets.</td>
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<tr>
<td>Preparation:</td>
<td>Analyses of the current status of the sewerage</td>
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<tr>
<td>Planning and design for improvement/expansion of the sewerage system and connection to the WWTP</td>
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<tr>
<td>Analyses of technical state and capacity of cesspits in remote places, where sewerage is not feasible</td>
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<tr>
<td>Planning and design of improvement of the cesspits and increased tanker capacity</td>
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<tr>
<td>Planning and design of alternative sanitation systems</td>
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<tr>
<td>Investigation of the possibility of combining the effluent from the Nablus East WWTP and Tubas South WWTP</td>
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<tr>
<td>Planning and design of a wastewater collection networks and WWTP’s, including for small</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Construction / realization:</th>
<th>Tendering and construction/expansion of the sewerage system in the Jericho area</th>
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</thead>
<tbody>
<tr>
<td>Tendering and rehabilitation/expansion of cesspits in the more remote areas and alternative sanitation systems</td>
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<td>Tendering for waste water collection with trucks</td>
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<tr>
<td>Tendering for the feasibility/engineering and EIA studies for the conveyance of the effluent along with the WWTP location selection and design</td>
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<tr>
<td>Tendering for wastewater collection with trucks</td>
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<tr>
<td>Tendering and construction of the wastewater collection networks and WWTP’s</td>
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<tr>
<td>Training for operators</td>
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<tr>
<td>Operations:</td>
<td>Data collection</td>
<td></td>
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<tr>
<td>Assessment of the existing sewerage systems (baseline conditions)</td>
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<tr>
<td>Need assessment</td>
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<tr>
<td>Preparation of the engineering designs (plans and profiles)</td>
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<td>Preparation of bill of quantities</td>
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<tr>
<td>Financial analysis (costing)</td>
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<tr>
<td>Construction</td>
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<tr>
<td>Technical and financial management</td>
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<tr>
<td>Surveying</td>
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<tr>
<td>Excavations</td>
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<tr>
<td></td>
<td>industrial wastewater, and from fish farms</td>
<td>Rehabilitation</td>
<td></td>
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<td></td>
<td>EIA's and licenses</td>
<td>Tendering</td>
<td></td>
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<tr>
<td></td>
<td>Setting up Organizational structure</td>
<td>Fee collection</td>
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<td></td>
<td>Finance planning</td>
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</table>

**Results / Impacts:**
- Realization/expansion/improvement of the current wastewater collection system to a system to which all wastewater producers are connected without leakage of wastewater
- Improvement of environmental situation
- Improvement of public health situation
- Improvement of a WW collection system by realizing a sewerage system in combination with cesspits for remote areas, so wastewater producers are connected without leakage of wastewater.
- Produced wastewater will be fully treated
- Generation of about additional 1.

**Organization / Responsibilities:**
- Municipalities and village councils
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Farmer / Water User Association (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 1,500,000
- Construction costs: € 30,000,000
- Operation costs: € 1,750,000 / yr
- Annual Revenues: € 3,000,000/ yr

**Implementation Period**
- Preparation time: 1 year
- Construction time: 3 years

**Other remarks:**
- Short Term actions: Analysis and improvement of cesspits and of collection by tanker trucks
- Short term action: Analysis of current state of sewerage
- Middle term action: improvement/expansion of the sewerage system
**Name:** P04 PAL – Fish Farm Pollution Control Project  
**Location:** Jericho area, Palestine  
**Type of Intervention:** Inventory and assessment  

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>Map:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To limit the environmental pollution from the current pilot fish farm and potential future fish farms in the study area.</td>
<td><img src="image" alt="Map Image" /></td>
</tr>
<tr>
<td>The current four pilot fish farms in Jericho are not well lined against leakage. This project will assess the technical state of the fish farms and prepare for adequate lining and groundwater protection. The project will also focus on options for reusing the wastewater of the fish farms and on developing environmental standards for the management of current and future fish farms.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention:</th>
<th>Construction / realization:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of the potential pollution loads, pollution pathways for disposal/usage, economic feasibility, marketing potential aspects, and spatial distribution of fish farms. There are four farms in Jericho (total of 4 ponds, each has 4000 fish, with water volume of 100 m³ each)</td>
<td>- Improve the technical status of this Pilot Fish farm and its way of operation if required</td>
</tr>
<tr>
<td>Preparation:</td>
<td>Operations:</td>
</tr>
<tr>
<td>- Evaluation of the technical state (closed bottom, or leakage to the groundwater) and the manner of operation (what happens with the waste water → reuse in agriculture or spillage to the Jordan River) of the Pilot Fish Farm in the Jerico area</td>
<td>- Reuse of waste water</td>
</tr>
<tr>
<td>- Make improvement plan for the pilot fish farm and set standards for possible future fish farms</td>
<td>- Source of water for such pools (availability and quality)</td>
</tr>
<tr>
<td></td>
<td>- Technical and financial management</td>
</tr>
<tr>
<td></td>
<td>- M&amp;O to be paid by fish farms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Results / Impacts:</th>
<th>Organization / Responsibilities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of technical state (closed bottom, or leakage to the groundwater) and the manner of operation of the current pilot fish farm (what happens with the waste water → reuse in agriculture or spillage to the Jordan River)</td>
<td>- Ministry of Environmental Affairs (regulator)</td>
</tr>
<tr>
<td>Rehabilitation plan for this Fish farm to prevent pollution of the ground water or uncontrolled/untreated spillage of the water to the river, including planning and costs</td>
<td>- Ministry of Economy and Trade</td>
</tr>
<tr>
<td>Standards for future fish farms</td>
<td>- Ministry of Agriculture</td>
</tr>
<tr>
<td>Improvement of environmental situation</td>
<td>- Palestinian Water Authority (regulator)</td>
</tr>
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<td></td>
<td>- Ministry of Health (for safe use)</td>
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<td></td>
<td>- Farmer associations</td>
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<td></td>
<td>- Ministry of Planning</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation costs: $50,000</td>
<td>- Preparation time: 0.5 years</td>
</tr>
<tr>
<td>Construction costs: $500,000</td>
<td>- Construction time:</td>
</tr>
<tr>
<td>Operation costs:</td>
<td></td>
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<tr>
<td>Annual Revenues:</td>
<td></td>
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</tbody>
</table>
Other remarks:
• Short Term
<table>
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<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P05 PAL – Land and Water Quality Protection Project</td>
<td>Jordan Valley, Palestine</td>
<td>Assessment projects</td>
</tr>
</tbody>
</table>

**Objectives:**
- To study the vulnerability of the study area to contamination (considering the groundwater, surface water, and soil)
- To construct vulnerability maps for the study area
- To rank the land use according to vulnerability assessment

**Intervention:**
Assessment of the vulnerability to contamination for the entire area

**Preparation:**
- Data collection specifically for soil, groundwater, geologic formations, topography, etc.
- Digitization of all the relevant data (preferably in GIS format)
- Selection of the proper vulnerability method

**Construction / realization:**
Use of the vulnerability assessment method to prepare the maps that show the spatial distribution of vulnerability levels for the study area

**Operations:**
- Preparation of the vulnerability maps for the study area
- Ranking of the different land parcels and covers according to the vulnerability level to contamination

**Results / Impacts:**
- Preservation of the environment
- Preservation of the water resources (mainly springs and groundwater)
- Better planning for sustainable land use

**Organization / Responsibilities:**
- Ministry of Environmental Affairs
- Palestinian Water Authority
- Palestinian Energy Authority
- Ministry of Planning
- Ministry of local Governance

**Costs and Revenues:**
- Preparation costs: 
- Construction costs: $200,000
- Operation costs: 
- Annual Revenues: 

**Implementation Period**
- Preparation time: 3 months
- Construction time: one year

**Other remarks:**
- Short Term action
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>P06 PAL – Remediation of military bases</td>
<td>Jordan Valley, Palestine</td>
<td>Preparation projects</td>
</tr>
</tbody>
</table>

**Objectives:**
The aim of this intervention is to clean mine fields and remediate former Israeli military bases within the Palestinian study area. This will include soil, waste and groundwater pollution assessment. Financing such a project shall preferably be part of the final peace arrangements between Palestine and Israel.

**Intervention:**
Cleaning activities after the Israeli withdrawal from the West Bank

**Preparation:**
- Assessment of the existing conditions of mine fields and in the relevant military sites
- Determination of the proper methods of cleanup and mine removal
- Securing the necessary tools for cleanup and mines removal
- Activities and operations related to the cleanup and mine removal

**Map:**
[Image of a map showing the intervention area]

**Construction / realization:**
Environment in such areas will be safe

**Operations:**
- Handling
- Disposal
- Containment
- Testing
- Quality assessment
- Monitoring

**Results / Impacts:**
- Preservation of the environment and public health
- Preservation of the water resources (mainly springs and groundwater)
- Better planning for sustainable land use and safety

**Organization / Responsibilities:**
- Ministry of Environmental Affairs
- Palestinian Water Authority
- Ministry of Planning
- Ministry of local Governance

**Costs and Revenues:**
- Preparation costs: $300,000
- Construction costs: $10,000,000
- Operation costs:
- Annual Revenues:

**Other remarks:**
3 SUSTAINABLE WATER MANAGEMENT AND RIVER REHABILITATION

<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>W01 REG – Jordan Valley Domestic and Tourism Water Demands Management Project</td>
<td>Jordan Valley</td>
<td>Water Demands Management</td>
</tr>
</tbody>
</table>

**Objectives:**
The aim of this intervention is set up a system for instituting, regulating and monitoring of water demands and water use efficiencies for the Domestic and Tourism Sectors in the Lower Jordan River Basin.

This project has therefore a link with the other water related interventions.

**Intervention:**
(7) This intervention is to be linked to strengthening the Water Demands Management including promotion of Grey Water and efficient water use

(8) Assessment of and linking to current domestic and tourism water supply infrastructure, practices and policies in the valley

(9) provision of information for better and more efficient water use in the domestic and tourism sectors

(10) a training and information center in the Jordan Valley- special focus on domestic and tourism water efficiencies and water-related themes

(11) provision of services to individual and organizations related to water demand management

(12) to assist municipalities in applying sustainable water demand management practices on regional or national levels

**Results / Impacts:** Lower Risk in terms of production
- Substantially higher water use efficiencies, and lower unaccountant for water percentages in the Lower Jordan River Basin
- More options for the domestic and tourism sector to embark on water demands management and water use efficiencies
- Indirect impact positive on the Jordan River

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin due higher water use efficiencies

**Organization / Responsibilities:**
- Support, dissemination by EcoPeace

**Costs and Revenues:**
- Implementation Costs: 1,500,000 USD

**Implementation Period:**
- 3 year preparation:
**Name:** W02 REG – Jordan Valley  
**Location:** Jordan Valley  
**Type of Intervention:** Water Management

**Objectives:**  
The purpose of this intervention setting up a regional coordination structure, or Steering Committee, among key Jordanian, Israeli and Palestinian governmental stakeholders for the implementation of the proposed national and regional interventions in the Jordan Valley with regards to the Water Management. The objective is that this Steering Committee will eventually be embedded in the structures of the overall River Basin Organization for the Jordan Valley (ref. intervention IC01 REG Jordan River Basin Organization).

The Regional Coordination Structure aims at optimized regional co-operation in preparation and implementation of the interventions, maximized exchange and joint development of know-how and experiences among the three core parties, monitoring the outputs of the interventions and steering the implementation in terms of their contribution toward reaching the Water Management Objectives.

**Intervention:**  
(13) Setting up a kick-off meeting with the key governmental stakeholders from the three core parties with regard to the Water Management Objectives  
(14) Defining objectives, procedures and operational, organizational and financial frameworks for setting up the joint Steering Committee under the Water Management Objectives  
(15) Joint preparation of detailed implementation and financing plans for the proposed (groups of) interventions  
(16) Setting up structures for regional exchange of related know-how and experiences  
(17) Development of key performance indicators and monitoring procedures towards the implementation of the interventions  
(18) Assisting and steering the project implementing organizations accordingly

**Results / Impacts:** Lower Risk in terms of production  
- Optimized regional co-operation during the preparation and implementation of the proposed interventions under the Water Management Objectives  
- Maximized regional exchange know-how and experiences  
- Optimized monitoring and steering of the interventions during detailed preparation and implementation  
- Building up regional trust and the peace dividend

**Sustainability and Water Impacts:**  
- This project will have a direct impact on the sustainable development of the Jordan Basin through optimized co-ordination and exchange of relevant information

**Organization / Responsibilities:**  
- Key governmental and sectoral stakeholders from Jordan, Israel and Palestine  
- Support, dissemination by EcoPeace

**Costs and Revenues:** Implementation Period
<table>
<thead>
<tr>
<th>Preparation costs: 300,000 USD</th>
<th>Implementation Cost: 200,000 USD per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Until 2050:</td>
<td></td>
</tr>
<tr>
<td>Name:</td>
<td>Location:</td>
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</tr>
<tr>
<td>W01 ISR – Yarmouk River Dredging and Cliff Protection Project</td>
<td>Yarmouk River / Israel and Jordan</td>
</tr>
</tbody>
</table>

**Objectives:**
- Improve drainage and flow of water through the Yarmouk River in Israel/Jordan section.
- Prevent collapsing of banks and cliffs into the river flow.
- Prevent flooding in the Yarmouk Flood Plain in co-operation with Jordan.

**Intervention:**
- Dredging of the Yarmouk River segment along the border stretch between Israel and Jordan.
- Reinforcement of banks and cliffs alongside the river.

**Results / Impacts:**
- Improved drainage and flow of water through the Yarmouk River.
- Prevent flooding in the Yarmouk Flood Plain.
- Improved bank protection.

**Organization / Responsibilities:**
- Kinneret Drainage Authority, Israel
- Jordan Valley Authority, Jordan

**Costs and Revenues:**
- Preparation costs: 1 M USD
- Dredging costs: 20 M USD
- Cliff protection: 300,000 USD

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 2 year

**Other remarks:**
**Name:**
W02 ISR – Western Drainage Basins Flood Management

**Location:**
Western sub-Basins, Israel

**Type of Intervention:**
Water Management

**Objectives:**
- Improve drainage of the four Israeli sub-basins of the Lower Jordan River Basin.
- Prevent soil erosion from these basins into the Jordan River.

**Intervention:**
- Assessment of surface flow and drainage improvement measures
- Assessment of slopes and erosion risks, and erosion prevention measures, including land levelling
- Design and implementation of drainage and soil stabilization measures

**Results / Impacts:**
- Better drainage and flow of water from the four western sub-basins.
- More sustainable soil conservation.

**Organization / Responsibilities:**
- Lower Jordan River Basin Drainage Authority, Israel

**Costs and Revenues:**
- Preparation costs: 100,000 M USD
- Implementation: 2 M USD

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 2 year

**Other remarks:**
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>W03 ISR – Northern Sewerage Expansion Project</td>
<td>Northern communities, Israel</td>
<td>Water Management</td>
</tr>
</tbody>
</table>

**Objectives:**
- To connect all remaining Israeli communities from Moshav Menahamia to Harod Stream in the Israeli section of Jordan Valley to the Beit She’an waste water treatment plant (WWTP).
- To reuse treated water for olive tree irrigation.

**Intervention:**
- Design and construction of sewerage lines.
- Connecting sewer lines to Beit She’an WWTP.

**Results / Impacts:**
- Full collection and treatment of raw or party treated wastewater from Spring Valley Regional Council communities.
- Optimized reuse of Beit She’an WWTP.

**Organization / Responsibilities:**
- Lower Jordan River Basin Drainage Authority, Israel

**Costs and Revenues:**
- Preparation costs: 1 M USD
- Construction Cost: 12 M USD (50% finance already secured)

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 2 year

**Other remarks:**
<table>
<thead>
<tr>
<th><strong>Name:</strong> W04 ISR – Springs Rehabilitation Project</th>
<th><strong>Location:</strong> Northern Israeli Jordan Valley</th>
<th><strong>Type of Intervention:</strong> Water Management</th>
</tr>
</thead>
</table>

**Objectives:**
To enable:
- Improve water flow and environmental quality of five springs in the Israeli Lower Jordan Valley.
- Increase eco-tourism at these springs.
- Increase spring discharge into the Jordan River (3 – 4 MCM / yr).

**Intervention:**
- Planning for rehabilitation, spring protection and visitors facilities.
- Planning for runoff protection towards the Jordan River.
- Construction of these interventions.
- Operation of the five springs areas.

**Results / Impacts:**
- Improve water quality of springs and outflow in the Jordan River.
- Increase eco-tourism
- Improve Jordan River water quality.

**Organization / Responsibilities:**
- Lower Jordan River Basin Drainage Authority, Israel

**Costs and Revenues:**
- Preparation costs: 100,000 USD
- Construction Cost: 2.5 M USD

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 2 year

**Other remarks:**
**Name:** W01 JOR – Improved Lower Jordan River Basin Management Project  
**Location:** Lower Jordan River Basin, Jordan  
**Type of Intervention:** Water Management

**Objectives:** The goal of this Project is to improve the basin water management in terms of operational and information management of the Jordan Basin, and to prepare for full collection, treatment and reuse of locally generated wastewater in the basin. This includes investment planning and a pilot wastewater collection and reuse scheme, to demonstrate to the inhabitants in the basin the advantages of reusing treated wastewater for agricultural purposes. Interventions W01 – W04 shall be considered as one package, starting with the emergency and pilot projects W03 and W04, followed by W01 and W02.

Wastewater reuse shall be linked to existing infrastructure and national wastewater (reuse) policies, and be performed in an economically and ecologically sound manner under the proximity principle.

**Intervention:**

<table>
<thead>
<tr>
<th>1. LJR Basin Management Investment Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Water Resources and demand data updating, WEAP and IWRM</td>
</tr>
<tr>
<td>2. Sanitary Assessment of municipality in the basin</td>
</tr>
<tr>
<td>3. Alternative sanitary and wastewater reuse strategies</td>
</tr>
<tr>
<td>4. Elaboration of the preferred strategy</td>
</tr>
<tr>
<td>5. Outline designs and tender packages</td>
</tr>
<tr>
<td>6. Promotion of tender packages</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Pilot Wastewater Reuse in Muaz Bin Jabal</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Pilot Project design and tender documents</td>
</tr>
<tr>
<td>8. Construction of the Pilot works</td>
</tr>
<tr>
<td>9. Technical Assistance to the operations WWTP</td>
</tr>
<tr>
<td>10. Technical Assistance pilot reuse scheme</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Regional Co-operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Project Information workshop</td>
</tr>
<tr>
<td>12. Consultation workshop investment interventions</td>
</tr>
<tr>
<td>13. Final workshop Investment Plan</td>
</tr>
<tr>
<td>14. Information workshop Pilot wastewater reuse</td>
</tr>
<tr>
<td>15. Consultation workshop Pilot wastewater reuse</td>
</tr>
<tr>
<td>16. Final workshop Pilot wastewater reuse</td>
</tr>
<tr>
<td>17. Regional information and dissemination event</td>
</tr>
</tbody>
</table>

**Results / Impacts:** Improved IWRM; Full sanitation investment plan ready; pilot reuse project in operation; regional co-operation completed

This project will have a direct impact on the Jordan River due to more efficient water use.

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin due mitigation of discharge of untreated wastewater into the environment, and due to reusing treated wastewater for
agricultural instead of using water resources from the KAC.

- During the pilot project about 200 households, or 300 m³ / day of wastewater will be treated and reused.
- The project will prepare for a total of 24 MCM /yr in 2025 and 33 MCM / yr in 2050 to be treated and reused.
- This project will have impact on the ambient water quality in the basin, due to mitigation of pollution by untreated wastewater.

**Organization / Responsibilities:**
- JVA / WAJ / MoWI in steering committee
- Waternet, RHDHV, EcoPeace, operating partners
- Muaz Bin Jabal Municipality
- Linking project to ISSP National Wastewater Master Plan

**Costs and Revenues:**
- Costs: 1.7 M JOD
- 70% subsidy already requested from Netherlands Sustainable Water Fund

**Implementation Period**
- Implementation Period: 2 years

**Other remarks:**
- Follow up project will be to implement the sanitary investment plan prepared under this project.
**Name:**  
W02 JOR – Wastewater collection, treatment and reuse project

**Location:**  
Lower Jordan River Basin, Jordan

**Type of Intervention:**  
Waste water

**Objectives:**
To realize adequate and safe collection of wastewater from all the communities in the study area (by constructing wastewater collection networks) 540,000 people in 2025 and 607,000 people in 2050
1. To treat the generated wastewater from the different communities
2. To realize full scale reuse of treated wastewater in the Lower Jordan Valley (25 MCM per year in 2025 and 33 MCM in 2050)
3. Wastewater reuse shall be linked to existing infrastructure and national wastewater (reuse) policies, and be performed in an economically and ecologically sound manner under the proximity principle.
4. to introduce better functioning sanitation systems using substantially smaller amounts of water, such as vacuum removal of toilet effluents, or electric incinerating toilets
5. Interventions W01 – W04 shall be considered as one package, starting with the emergency and pilot projects W03 and W04, followed by W01 and W02.

**Intervention:**
In accordance with the Investment Plan prepared under intervention W01 JOR, connect all wastewater generation units (buildings) to wastewater collection networks
This will be attained through the construction of wastewater treatment plants in accordance with the above investment plan in the study area and the potential expansion of the existing wastewater treatment plants.
The feasibility of introduction of sanitation systems using substantially smaller amounts of water, such as vacuum removal of toilet effluents, or electric incinerating toilets shall be incorporated

**Preparation:**
- Planning and design of a wastewater collection networks and WWTP’s and alternative sanitation systems
- EIA’s and licenses
- Setting up Organizational structure
- Finance planning

**Construction / realization:**
- Tendering for the feasibility/engineering and EIA studies for the conveyance of the effluent along with the WWTP location selection and design
- Tendering for wastewater collection with trucks
- Tendering and construction of the wastewater collection networks and WWTP’s
- Tendering for pilot alternative sanitation systems
- Training for operators

**Operations:**
- Data collection
- Assessment of the existing sewerage systems (baseline conditions)
- Need assessment
- Preparation of the engineering designs (plans and profiles)
- Preparation of bill of quantities
- Financial analysis (costing)
- Construction
- Technical and financial management
- Surveying
- Excavations
- Tendering and construction/expansion of the sewerage systems
- Tendering and rehabilitation/expansion of cesspits in the more remote areas
- Tendering for waste water collection with trucks

### Results / Impacts:
- Realization/expansion/improvement of the current wastewater collection system to a system to which all wastewater producers are connected without leakage of wastewater, treated and reused
- Improvement of environmental situation
- Improvement of public health situation
- Improvement of a WW collection system by realizing a sewerage system in combination with cesspits for remote areas, so wastewater producers are connected without leakage of wastewater.
- Produced wastewater will be fully treated and reused
- This project will have a direct impact on the Jordan River due to more efficient water use

### Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin due mitigation of discharge of untreated wastewater into the environment, and due to reusing treated wastewater for agricultural instead of using water resources from the KAC.
- The project will treat and reuse a total of 24 MCM /yr in 2025 and 33 MCM / yr in 2050 This project will have impact on the ambient water quality in the basin, due to mitigation of all wastewater pollution by untreated wastewater

### Organization / Responsibilities:
- Municipalities and village councils
- JVA and WAJ (regulation)
- Ministry of Agriculture and WUA;s (farmers support)
- Farmer / Water User Association (beneficiary)

### Costs and Revenues:
- Preparation costs: JOD 200,000
- Construction costs: JOD 30,000,000
- Operation costs: JOD 1,750,000 / yr
- Annual Revenues: JOD 3,000,000/ yr

### Implementation Period
- Preparation time: 1 year
- Construction time: 5 years

### Other remarks:
- Short Term actions: Analysis and improvement of cesspits and of collection by tanker trucks
- Short term action: Analysis of current state of sewerage
- Middle term action: improvement/expansion of the sewerage system
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>W03 JOR – Emergency Wastewater Management Project</td>
<td>Jordan Valley, Jordan</td>
<td>Water management</td>
</tr>
</tbody>
</table>

**Objectives:**
Currently most wastewater in the Jordan Valley is collected in cesspits, which are partly in bad condition or irregularly emptied. This poses immediate threats for the public health and the environment. The aim of this project is to make an assessment of the scope and extent of the current problems; to plan for and implement a cesspits rehabilitation program in the Jordanian part of the Jordan Valley; to increase capacities for emptying cesspits; to purchase additional tanker trucks for wastewater collection; to plan for related organization and operational aspects; and to implement these short term emergency measures.

**Intervention:**
Wastewater reuse shall be linked to existing infrastructure and national wastewater (reuse) policies, and be performed in an economically and ecologically sound manner under the proximity principle.

Interventions W01 – W04 shall be considered as one package, starting with the emergency and pilot projects W03 and W04, followed by W01 and W02.

Introduction of short term emergency measures for adequate and save collection of waste water thus limiting environmental and health risks.

**Preparation:**
- Inventory and Assessment of cesspits in the Jordan Valley (number, exact locations, capacity and technical status (maintenance and design))
- Improvement plan for the cesspits (capacity and technical status), including planning and costs, or alternative solutions such as the use of bio-digestors at household level.
- Discussions with municipalities and the organization which will be made responsible for wastewater collection
- Improvement plan for organization and capacity of wastewater collection

**Construction / realization:**
- Tendering and rehabilitation/construction of cesspits
- Tendering for additional tanker trucks to empty cesspits for increased capacity and frequency of wastewater collection
- Setup organization and make arrangements with municipalities

**Operations:**
- Wastewater collection
- Fee collection
- Technical and financial management

**Results / Impacts:**
- Better understanding of the scale of the cesspit problem in the Jordan Valley and a plan for improvement to deal with this problem
- Adequate and save collection and treatment of waste water
- Less leakage of waste water out of cesspits and less overflow of cesspits.
- Improvement of fee collection and lower fees for waste water collection (now expensive due to long transportation distances).
- Improvement of environmental and public health situation
- This project will have a direct impact on the Jordan River due to more efficient water use

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin due to mitigation of discharge of untreated wastewater from cesspits into the environment.
- The project will rehabilitate cesspits collecting an estimated 8 MCM /yr of wastewater
- This project will have impact on the ambient water quality in the basin, due to mitigation of wastewater pollution through the cesspits

**Organization / Responsibilities:**
- JVA
- Municipalities

**Costs and Revenues:**
- Preparation costs: JOD 100,000,-
- Construction costs: JOD 20,000,000,-
- Operation costs: JOD 200,000,- / year
- Annual Revenues: JOD 200,000,- / year

**Implementation Period**
- Preparation time: 0.5 years
- Construction time: 5 years

**Other remarks:**
- Take into account both the cesspits of houses and of small industries.
- Start with the more inhabited areas (larger towns along the main road like Deir Alla)
- To lower the fees extra WW treatment capacity on lower distance should be made available (see intervention sheet W02 PAL)
<table>
<thead>
<tr>
<th><strong>Name:</strong></th>
<th>W04 JOR – Wastewater reuse pilot projects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location:</strong></td>
<td>North Shouneh or Tal al Mantah WWTP, Jordan</td>
</tr>
<tr>
<td><strong>Type of Intervention:</strong></td>
<td>Water management</td>
</tr>
</tbody>
</table>

**Objectives:**
Preparation and Implementation of a pilot wastewater reuse project in the Lower Jordan River Basin to serve as an example for the wider water and agricultural sector and as core for further expansion of local wastewater reuse throughout the basin. The pilot project shall be linked to collection and treatment of wastewater from existing cesspits in the Jordan Basin.

Wastewater reuse shall be linked to existing infrastructure and national wastewater (reuse) policies, and be performed in an economically and ecologically sound manner under the proximity principle.

This project requires coordination with the Palestinian and Israeli counterparts to create shared solutions and exchange of best practices.

**Intervention:**
Interventions W01 – W04 shall be considered as one package, starting with the emergency and pilot projects W03 and W04, followed by W01 and W02.

**Preparation:**
- Selection of farmers to perform pilots
- Information campaign for farmers with regard to a pilot for the use of the treated wastewater
- Planning and test program for the reuse pilot (current maximum capacity of WWTP’s is 600,000 m³/year

**Construction / realization:**
- Supply contracts with farmer organizations
- Training for operators and farmers

**Operations:**
- Main and Tertiary treatment and distribution of wastewater
- Analysis of results of the wastewater reuse and farming pilot and comparison with a reference group of farmers

**Results / Impacts:**
- Better understanding for authorities and farmers of the benefits and attention points of local wastewater reuse serving as an example for the wider water and agricultural sector and as core for further expansion of local wastewater reuse throughout the basin.
- This project will have a direct impact on the Jordan River due to more efficient water use

**Sustainability and Water Impacts:**
- This pilot project will have a direct impact on the sustainability of the Jordan River Basin due reusing wastewater for agricultural purposes
- The project will treat and reuse a total of 600,000 m³ / year of wastewater, which has a direct impact on the ambient water quality in the basin

**Organization / Responsibilities:**
- JVA
- MoA
- Selected communities
- Organization of farmers or WUA
- Ministry of Environment
- WAJ
- MWI
<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation costs: JOD 100.000,-</td>
<td>Preparation time: 1 year</td>
</tr>
<tr>
<td>Construction costs: JOD 1.000.000,-</td>
<td>Construction time: 2 years</td>
</tr>
<tr>
<td>Operation costs: JOD 100.000,-</td>
<td></td>
</tr>
<tr>
<td>Annual Revenues: JOD 180.000,-</td>
<td></td>
</tr>
<tr>
<td>Name:</td>
<td>W01 PAL – Wells Rehabilitation and drilling of new well in the Jordan valley</td>
</tr>
<tr>
<td>---</td>
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</tr>
<tr>
<td><strong>Objectives:</strong></td>
<td>To increase water resources availability and enhance water efficiency from 30 wells in the Jordan Valley and drilling of new well in order to increase water supply for different purposes from these 30 wells.</td>
</tr>
<tr>
<td></td>
<td>This project shall be linked to an integrated groundwater assessment, to ensure that groundwater abstractions remain sustainable in the long term</td>
</tr>
<tr>
<td><strong>Intervention:</strong></td>
<td>Rehabilitation through deepening and/ or change of equipments to 30 wells in the Jordan valley. Drilling of new groundwater well, 700 meter depth in the Eastern Aquifer Basin.</td>
</tr>
<tr>
<td><strong>Preparation:</strong></td>
<td>• Planning &amp; design new equipment</td>
</tr>
<tr>
<td></td>
<td>• Environmental Impact Assessment's and licenses</td>
</tr>
<tr>
<td></td>
<td>• Market study agricultural and domestic use up to 1.5 MCM per year and 1.5 MCM/year for domestic uses.</td>
</tr>
<tr>
<td></td>
<td>• Setting up utilization plan</td>
</tr>
<tr>
<td></td>
<td>• Finance planning</td>
</tr>
<tr>
<td><strong>Results / Impacts:</strong></td>
<td>Additional quantity of 1.5 Mcm/year from the 30 wells, serving approximately 1000 dunum of agricultural land against about 2.0 NIS / m³.</td>
</tr>
<tr>
<td></td>
<td>Increase income to well owners by some 3 Million NIS/year</td>
</tr>
<tr>
<td></td>
<td>Increase food production by some 3,000 ton per year and income to farmers by 3 Million NIS/year.</td>
</tr>
<tr>
<td></td>
<td>Additional quantity of 1.5 Mcm/year from the well, serving approximately 30,000 capita with 50 cubic meter of water or supply additional 1500 dunum of agricultural land against about 3.0 NIS / m³.</td>
</tr>
<tr>
<td></td>
<td>Increase income from additional water by some 4.5 Million NIS/year</td>
</tr>
<tr>
<td></td>
<td>Increase food production by some 4,500 ton per year and income to farmers by 4.5 Million NIS/year.</td>
</tr>
<tr>
<td><strong>Organization / Responsibilities:</strong></td>
<td>Palestinian Water Authority (regulation)</td>
</tr>
<tr>
<td></td>
<td>Ministry of Agriculture (farmers support)</td>
</tr>
<tr>
<td></td>
<td>Well owners/ Farmers / Water User Association (beneficiary)</td>
</tr>
<tr>
<td>Costs and Revenues:</td>
<td>Implementation Period</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>Preparation costs: € 250,000</td>
<td>Preparation time: 0.5 year</td>
</tr>
<tr>
<td>Construction costs: € 2,200,000</td>
<td>Construction time: 2.5 year</td>
</tr>
<tr>
<td>Operation costs: € 860,000 / yr</td>
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<tr>
<td>Annual Revenues: €1,500,000 / yr</td>
<td></td>
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</tbody>
</table>

Other remarks:
**Name:**
W02 PAL – Rehabilitation and Protection of Springs

**Location:**
Palestine, Jordan valley

**Type of Intervention:**
Water Resources

<table>
<thead>
<tr>
<th><strong>Objectives:</strong></th>
<th><strong>Map:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>To increase water resource efficiency and reduce losses through leakage and evaporation from the springs and the main channels.</td>
<td><img src="image" alt="Map of the area" /></td>
</tr>
</tbody>
</table>

**Intervention:**
Rehabilitation of Al Auja Spring includes
Rehabilitation of the main source of the spring and the rehabilitation of the upper unlined stream 1 km in length from the source in addition to Rehabilitation of the main canal from the spring with a total length of 15 km.

Construction of small pools for water collection in Al Malah area especially Al Farisiya and Al Deir

Rehabilitation of small springs in the area such as Qor’an, Blaybel, Al Shamsiya, Al Malih, Al Himma and Al Hilwah.

Develop protection zones criteria and procedures Identify and design protection zones Implement the protection zones on ground.

Rehabilitation of Fasayil Spring includes the creation of a buffer zone and the rehabilitation of the pipeline from the spring.

**Preparation:**
- Planning & design of the source structure and the pipeline.
- Licenses
- Setting up Organizational structure
- Finance planning

**Construction / realization:**
- Tendering and construction
- Supply contracts with farmer organizations
- Set up operations structure

**Operations:**
- Distribution of water
- Fee collection
- O&M
- Technical and financial management

**Results / Impacts:**
- Additional quantity of 1.5 Mcm/year from the spring, serving approximately 1500 dunum of agricultural land against about 2.0 NIS / m³.
- Increase income from additional water by some 3 Million NIS/year
- Increase food production by some 1,500 ton per year and income to farmers by 3.0 Million

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- Provide additional quantities of water in the marginalized communities through the enhancement of rainwater harvesting and the rehabilitation of small springs.
- More food production
- Fully protected springs in the area.
- Enhance both water quantity and quality from main springs
- Reduce health hazards from using water from springs.

**Organization / Responsibilities:**
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Al-Auja Village Council/ Farmers / Water User Association (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 215,000
- Construction costs: € 2,575,000
- Operation costs: € 125,000 / yr
- Annual Revenues: € 640,000 / yr

**Implementation Period**
- Preparation time: 1.0 year
- Construction time: 3 year

**Other remarks:**
<table>
<thead>
<tr>
<th>Name: W03 PAL – Rehabilitation and construction of water networks</th>
<th>Location: Palestine, Jordan valley</th>
<th>Type of Intervention: Water Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectives:</strong></td>
<td><strong>Map:</strong></td>
<td></td>
</tr>
<tr>
<td>To improve the water networks to reduce physical losses and improve water quality in the networks.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Intervention:**
Rehabilitation and extension of 30 km of water networks of different diameters. Installation of filling points. Distribution of 1.5 m³ plastic tanks and mobile water tankers with a variety of capacities. Rehabilitation of rainwater harvesting cisterns in marginalized communities.

**Preparation:**
- Planning & design of the pipelines to be replaced and upgraded.
- Setting up Organizational structure
- Finance planning

**Construction / realization:**
- Tendering and construction

**Operations:**
- Distribution of water
- O&M
- Technical and financial management

**Results / Impacts:**
- Provide better access to water in the marginalized communities.
- Reduce the water bill for the citizens in these communities.
- Additional quantity of water through the rehabilitation and construction of rainwater harvesting cisterns.
- A reduction of UFW by 10% which will provide an additional quantity of 0.5 Mcm/year from the rehabilitation, serving approximately 10,000 capita with 50 cubic meter per year against about 2.0 NIS / m³.
- Improve health conditions and reduce risk from water born diseases.

**Organization / Responsibilities:**
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Municipalities and Village Council/ Water User Association (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 320,000
- Construction costs: € 3,380,000
- Operation costs: € 120,000 / yr
- Annual Revenues: € 400,000 / yr

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 1.5 year
**Name:**
W04 PAL - Desalination of Brackish wells

**Location:**
Palestine, Jordan Valley

**Type of Intervention:**
Water Supply

**Objectives:**
To increase water resource efficiency and enhance water quality from brackish.

This project shall include an energy requirement assessment, and focus on options for applying non-fossil energy sources such as solar energy

**Map:**
![Map of Jordan Valley](image)

**Intervention:**
Installation of desalination units in 10 brackish water wells in the area.
Rehabilitate the water network from these wells

**Preparation:**
- Planning & design of the units specifications.
- licenses
- Setting up Organizational structure
- Finance planning

**Construction / realization:**
- Tendering and construction
- Supply brackish water units
- Set up operations structure

**Operations:**
- O&M
- Technical and financial management

**Results / Impacts:**
- Better quality of water from these wells.
- Reduce physical losses from wells main supply pipe.
- Increase agricultural production per dunum due to increase water quality
- Provide safe access to good quality water for additional domestic uses
- Enhance the hygiene conditions of the citizens.
- Protect the groundwater aquifer and the soil in the area.

**Organization / Responsibilities:**
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Village Councils/well owners/ Farmers / Water User Association (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 50,000
- Construction costs: € 700,000
- Operation costs: € 40,000 / yr
- Annual Revenues: € 150,000 / yr

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 1 year
### Name:
W05 PAL – Rehabilitation of Al Auja Springs

### Location:
Palestine, Auja

### Type of Intervention:
Water Resources

### Objectives:
To increase water resource efficiency and reduce losses through leakage and evaporation from the main channel.

This project shall include an assessment of the upper watershed water balance, in order to ensure long term and sustainable use of the Al Auja Springs.

### Intervention:
Rehabilitation of Al Auja Spring (PHASE I) includes
Rehabilitation of the main source of the spring and the rehabilitation of the upper unlined stream 1 km in length from the source

### Preparation:
- Planning & design of the source structure and the pipeline.
- Licenses
- Setting up Organizational structure
- Finance planning

### Construction / realization:
- Tendering and construction
- Supply contracts with farmer organizations
- Set up operations structure

### Operations:
- Distribution of water
- Fee collection
- O&M
- Technical and financial management

### Results / Impacts:
- Additional quantity of 0.5 Mcm/year from the spring, serving approximately 500 dunum of agricultural land against about 2.0 NIS / m³.
- Increase income from additional water by some 1 Million NIS/year
- Increase food production by some 1,500 ton per year and income to farmers by 1.5 Million NIS/year

### Organization / Responsibilities:
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Al-Auja Village Council/ Farmers / Water User Association (beneficiary)

### Costs and Revenues:
- Preparation costs: € 50,000
- Construction costs: € 700,000
- Operation costs: € 50,000 / yr
- Annual Revenues: € 200,000 / yr

### Implementation Period
- Preparation time: 0.5 year
- Construction time: 1 year

### Other remarks:
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>W06 PAL – Development of Water Tariff structure</td>
<td>Palestine, Jordan Valley</td>
<td>Water Resources</td>
</tr>
</tbody>
</table>

**Objectives:**
To unify water tariff for both domestic and agricultural water uses to achieve social equity, in co-operation with the Recently established Palestinian Water Regulatory Council.

The development of a water tariff structure shall be robust and implementable, and is to be developed with participation from main stakeholders, making use of similar examples developed elsewhere.

This project shall preferably be coordinated with Jordanian and Israeli counterparts to ensure that water tariff frameworks are aligned, thus providing consistent incentives to sustainable use of the scarce water resources throughout the Jordan Valley.

**Intervention:**
Develop a unified tariff structure for both domestic and agricultural water uses that will be used for water tariff for the different water supply facilities.

**Preparation:**
- Planning & data collection.
- Finance planning

**Construction / realization:**
- Tendering
- Review data, laws and policies
- Develop tariff structures

**Operations:**
- Apply proposed tariff structure
- Conduct public awareness campaigns

**Results / Impacts:**
- A unified tariff structure has been applied for different water uses.
- Fee collection rates improved and users satisfaction and willingness to pay has been increased.

**Organization / Responsibilities:**
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Village Council/ Farmers / Water User Association (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 100,000
- Construction costs: € 0
- Operation costs: € 0 / yr
- Annual Revenues: € 0 / yr

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 0.5 year

**Other remarks:**
Name: W07 PAL – Utilization of Al-Fashkha Spring  
Location: Palestine, Jericho Area  
Type of Intervention: Water Resources

**Objectives:**
To increase water resources availability to cover the growing water gap between available supply and increasing demand.

This project shall include an assessment of the upper watershed water balance, in order to ensure long term and sustainable use of the Al Fashkha Spring.

**Intervention:**
Conveyance of 10 MCM of water from Al Fashkha spring by a 15 km long 36” diameter pipe and the construction of a 5000 m³ reservoir to cultivate 10 thousand dunums at the southern entrance of Jericho City

**Preparation:**
- Planning & design new equipment
- EIA’s and licenses
- Market study agricultural and domestic use up to 10 MCM per year
- Setting up utilization plan
- Finance planning

**Construction / realization:**
- Identification of needs
- Tendering and construction
- Supply contracts with Municipalities and farmer organizations
- Training for operators and farmers

**Operations:**
- Distribution of water and management of pumping stations
- Fee collection
- O&M
- Technical and financial management

**Results / Impacts:**
- Additional quantity of 10 Mcm/year from the spring, serving approximately 10000 dunum of agricultural land against about 2.0 NIS / m³.
- Increase food production by some 24,000 ton per year and income to farmers by 24 Million NIS/year

**Organization / Responsibilities:**
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Well owners/ Farmers / Water User Association (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 200,000
- Construction costs: € 5,000,000
- Operation costs: € 350,000 / yr
- Annual Revenues: € 500,000/ yr

**Implementation Period**
- Preparation time: 1 year
- Construction time: 2 year
### Objectives:
The West Ghor water conveyance system aims to develop a temporary solution for conveying water from north to south through the West Bank area in the Jordan Valley to strategic water distribution. Under this Master Plan this intervention will be required until the three countries have developed a regional and peaceful basin water management framework, in which eventually the Jordan River will be used as the main strategic water conveyor through the Lower Jordan Valley, and will at that stage replace under the vision of this Master Plan both this West Ghor water conveyor as well as the east Ghor / King Abdullah Canal. This temporary West Ghor water conveyor encompasses a water pipeline (20 inch diameter) about 60 km pipeline that goes from North to south through the Palestinian Jordan Valley.

### Map:

![Map of the West Ghor water conveyance system](image)

### Intervention:
Develop a regional water pipeline (20 inch diameter) about 60 km pipeline that goes from North to south in the study area

### Preparation:
- Planning & design of the route
- EIA’s and licenses
- Setting up utilization plan
- Finance planning

### Construction / realization:
- Identification of needs per well
- Tendering and construction
- Supply contracts with well owners and farmer organizations
- Training for operators

### Operations:
- Distribution of water and management of available resources wells
- Fee collection
- O&M
- Technical and financial management

### Results / Impacts:
- Equitable distribution of water resources all over the study area.
- Minimize supply cost through the utilization of additional quantities from the Jordan River.
- Increase income and food production

### Organization / Responsibilities:
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Well owners/ Farmers / Water User Association (beneficiary)

### Costs and Revenues:
- Preparation costs: € 500,000
- Construction costs: € 12,000,000
- Operation costs: € 600,000 / yr
- Annual Revenues: € 1,200,000 / yr

### Implementation Period:
- Preparation time: 1 year
- Construction time: 2 year
### Objectives:
This Master Plan assumes that once full co-operation between Jordan, Israel and Palestine has been established, the Jordan River will become a multi-functional river, serving the needs for nature and the economy, and will be transferred into the key water conveyor in the Jordan Valley from north to south as well.

One of the quality related aspects is that the southern part of the Jordan River will always remain salty due to brackish groundwater inflow, and therefore cannot be used here as fresh water conveyor. This implies that the southern section of canals will remain crucial. However, this Master Plan sees a multi-functional river as the only feasible option for creating a long term and sustainable solutions for the Jordan Valley.

This project aims at constructing the necessary pumping station along the river to facilitate Palestinian water use from the river.

### Intervention:
Construction of pumping stations on the River and the development of the necessary conveyance system to link to river to the main water demands.

### Preparation:
- Planning & design new equipment
- EIA’s and licenses
- Market study agricultural and domestic use up to 35 MCM per year of fresh water and 35 MCM of brackish water
- Setting up utilization plan
- Finance planning

### Construction / realization:
- Identification of needs
- Tendering and construction
- Supply contracts with Municipalities and farmer organizations
- Training for operators and farmers

### Operations:
- Distribution of water and management of pumping stations
- Fee collection
- O&M
- Technical and financial management

### Results / Impacts:
- Additional quantity of 35 MCM/year from the River, serving approximately 40,000 dunum of agricultural land against about 2.0 NIS / m³.
- Applying 35 MCM of brackish water from the river to facilitate existing date tree fields
- Increase food production by some 120,000 ton per year and income to farmers by 120 Million NIS/year

### Organization / Responsibilities:
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Municipalities and Village councils/ Farmers / Water User Association (beneficiary)

### Costs and Revenues:

<table>
<thead>
<tr>
<th>Name: W09 PAL – Utilization of Jordan River</th>
<th>Location: Palestine, Jordan valley</th>
<th>Type of Intervention: Water Resources</th>
</tr>
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<tbody>
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</table>

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![Map of Jordan River and surrounding areas](image)
- Preparation costs: € 1,000,000
- Construction costs: € 25,000,000
- Operation costs: € 3,500,000 / yr
- Annual Revenues: € 5,000,000 / yr

- Preparation time: 1 year
- Construction time: 5 years

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<th>Other remarks:</th>
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<td><strong>Name:</strong></td>
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</table>

**Objectives:**
To increase amount of water recharge to the groundwater aquifers with access water during the rainy season, which will enhance and increase the safe yield of the aquifer in addition to improving water quality and reduce desalinization rates and finally to mitigate any future impact from climate change.

The project will assess the best locations for groundwater recharge in relation to the 2050 land use plans and soil conditions, and will use the outputs of intervention W12 PAL – Hydrogeological Assessment of the Study Area

**Intervention:**
Construction of recharge areas and injection wells in the study area.

**Preparation:**
- Planning & design new equipment
- Groundwater modeling to optimize the recharge impact
- Finance planning

**Construction / realization:**
- Identification of potential recharge areas
- Tendering and construction
- Groundwater modeling of the aquifers in the Basin.

**Operations:**
- Conveying of TWW to recharge areas.
- Monitoring of water quality
- O&M
- Technical and financial management

**Results / Impacts:**
- Additional quantity of 10 Mcm/year from the groundwater resources due to the rising of the water table and the additional recharge quantities serving approximately 100,000 capita and 5000 dunums of agricultural land against about 2.0 NIS / m³.
- Increase food production by some 15,000 ton per year and income to farmers by 15 Million NIS/year

**Organization / Responsibilities:**
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Municipalities and Village councils/ Farmers / Water User Association (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 1,000,000
- Construction costs: € 10,000,000
- Operation costs: € 1,500,000 / yr
- Annual Revenues: € 5,000,000/ yr

**Implementation Period**
- Preparation time: 1 year
- Construction time: 5 years

**Other remarks:**
**Name:**
W11 PAL – Construction of water networks

**Location:**
Palestine, Jordan valley

**Type of Intervention:**
Water Supply

**Objectives:**
To expand and construct new water networks and related water treatment plants for the new population

**Map:**
![Map of Palestine and Jordan valley]

**Intervention:**
Construction Rehabilitation and extension of water networks of different diameters for some 250,000 capita and related treatment plants.

**Preparation:**
- Planning & design of the pipelines to be replaced and upgraded and related treatment plants.
- Setting up Organizational structure
- Finance planning

**Construction / realization:**
- Tendering and construction

**Operations:**
- Distribution of water
- O&M
- Technical and financial management

**Results / Impacts:**
- An additional of 250,000 capita have access to safe drinking water and the network will provide an additional quantity of 12.5 MCM/year.
- Improve health conditions and reduce risk from water born diseases.

**Organization / Responsibilities:**
- Palestinian Water Authority (regulation)
- Municipalities and Village Council/ Water User Association (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 1,250,000
- Construction costs: € 30,000,000
- Operation costs: € 1,000,000 / yr
- Annual Revenues: € 3,000,000 / yr

**Implementation Period**
- Preparation time: 2 year
- Construction time: 8 year

**Other remarks:**
<table>
<thead>
<tr>
<th>Name: W12 PAL – Hydro-geological Assessment of the Study Areas</th>
<th>Location: Palestine, Jordan Valley</th>
<th>Type of Intervention: Water Resources</th>
</tr>
</thead>
</table>

**Objectives:**
To enable water managers and decision makers to better understand the hydro-geological conditions of the area. This project is a pre-requisite for the earlier mentioned groundwater development, recharge and spring development projects.

It shall be performed before and as basis for the project W10 PAL – Artificial Groundwater Recharge.

**Map:**
![Map of the study areas](image)

**Intervention:**
Develop hydro geological study for groundwater aquifer to better understand the behaviour and development options of the aquifer system.

**Preparation:**
- Identify the study components
- Finance planning

**Construction / realization:**
- Development of criteria and procedures
- Tendering

**Operations:**

**Results / Impacts:**
- Fully understand the hydro-geological conditions of the area.
- Enhance water management of springs and wells in the area.
- Reduce health hazards from using water from springs and wadis.

**Organization / Responsibilities:**
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)

**Costs and Revenues:**
- Preparation costs: € 1,000,000

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 1.5 year

**Other remarks:**
### SUSTAINABLE AGRICULTURE

<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01 REG – Jordan Valley Agricultural Water Efficiency Monitoring and Regulating</td>
<td>Jordan Valley Agricultural areas</td>
<td>Agriculture Improvement</td>
</tr>
</tbody>
</table>

#### Objectives:
The aim of this intervention is set up a system for instituting, regulating and monitoring the water efficiencies in agriculture, based on the EcoPeace Foot Print and Best Practices.

#### Map:

- **Intervention:**
  - This intervention is to be linked to strengthening the Extension Services in the Jordan Valley
  - (1) Assessment and analysis of current extension services and related flaws, based on field visits and interviews
  - (2) provision of improved extension services to better manage and monitor water use and distribution among farmers,
  - (3) a training center in the Jordan Valley—special focus on agricultural water efficiencies and water-related themes
  - (4) provision of services to optimize agriculture field water efficient crops
  - (5) to assist farmers and their organizations in applying sustainable agronomic practices, including minimized use of water, pesticides and fertilizers; regulation and distribution and types of pesticides on regional or national levels,

#### Results / Impacts:
- Lower Risk in terms of production
  - Substantially higher production rates per m³ of water used, or m² of land required
  - Better Quality crops
  - More options for farmers to use efficient water resources
  - Indirect impact positive on the Jordan River

#### Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin due higher agricultural outputs per m³ of water consumed

#### Organization / Responsibilities:
- Support, dissemination by EcoPeace

#### Costs and Revenues:
- Implementation Costs: 1,500,000 USD

#### Implementation Period:
- 3 year preparation:
Name: A02 REG – Jordan Valley
Regional Coordination on Agriculture

Location: Jordan Valley

Type of Intervention: Agriculture

Objectives:
The purpose of this intervention setting up a regional coordination structure, or Steering Committee, among key Jordanian, Israeli and Palestinian governmental stakeholders for the implementation of the proposed national and regional interventions in the Jordan Valley with regards to the Agriculture. The objective is that this Steering Committee will eventually be embedded in the structures of the overall River Basin Organization for the Jordan Valley (ref. intervention IC01 REG Jordan River Basin Organization)

The Regional Coordination Structure aims at optimized regional co-operation in preparation and implementation of the interventions, maximized exchange and joint development of know-how and experiences among the three core parties, monitoring the outputs of the interventions and steering the implementation in terms of their contribution toward reaching the Agriculture Objectives.

Intervention:
1. Setting up a kick-off meeting with the key governmental stakeholders from the three core parties with regard to the Agriculture Objectives
2. Defining objectives, procedures and operational, organizational and financial frameworks for setting up the joint Steering Committee under the Agriculture Objectives
3. Joint preparation of detailed implementation and financing plans
4. Setting up structures for regional exchange of related know-how and experiences
5. Development of key performance indicators and monitoring procedures towards the implementation of the interventions
6. Assisting and steering the project implementing organizations accordingly

Results / Impacts: Lower Risk in terms of production
- Optimized regional co-operation during the preparation and implementation of the proposed interventions under the Agriculture Objectives
- Maximized regional exchange know-how and experiences
- Optimized monitoring and steering of the interventions during detailed preparation and implementation
- Building up regional trust and the peace dividend

Sustainability and Water Impacts:
- This project will have a direct impact on the sustainable development of the Jordan Basin through optimized co-ordination and exchange of relevant information

Organization / Responsibilities:
- Key governmental and sectoral stakeholders from Jordan, Israel and Palestine
- Support, dissemination by EcoPeace

Costs and Revenues:
- Preparation costs: 300,000 USD
- Implementation Cost: 200,000 USD per year

Implementation Period
- Until 2050:
<table>
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<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01 JOR – Jordan Valley Greenhouses Expansion Project</td>
<td>Jordan Valley Agricultural areas PS 41 and PS 55</td>
<td>Agriculture Improvement</td>
</tr>
</tbody>
</table>

**Objectives:**
The aim of this intervention is to expand the number of greenhouses in the LJR to increase agricultural production and revenues, particularly in areas PS 41 and PS 55, and at the same level. This intervention also relates to intervention A04 – Post Harvesting Support.

This project shall be coordinated with Palestinian and Israeli counterparts in order to exchange best practices and maximize the project benefits.

**Intervention:**
1. Micro credit facilities for farmers to make investments (for instance through IFAD);
2. Provide services to the farmers on the management of greenhouses;
3. Provide advice on optimizing crop selection for the greenhouses, including options for organic products and applying (EU) Bio-label systems; Fair Trade products, and more;
4. Provide water management services aiming at reducing total water demands

**Target:**
- The project targets to establish about 1000 new greenhouses on the defined areas
- Considering an average investment of 2000 JD per GH, including structure; plastic; water system; monitoring) this would be a total investment of 2 Million JOD to be done by farmers through micro financing
- Farmers to be reached through their Water User Association

**Results / Impacts:** Lower Risk in terms of production
- Totally 1000 extra greenhouses, consuming about 2500 m3 of water / day in total
- Substantially higher production rates per m3 of water used, or m2 of land required
- Better Quality crops
- Promotion of organic farming where possible
- More options for farmers to diversify crops
- Better conservation of soil quality; greenhouses do not leach into the ground, cause no salinity of the soils and reduce carbon in the soil.
- Lower Evapotranspiration rates. GH have about 60% less ET than open field agriculture, but on the other hand enable a longer growing season leading to extended water demands
- Indirect impact positive on the Jordan River

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin due higher agricultural outputs per m3 of water consumed, and by promoting bio-label production systems and fair trade products

**Organization / Responsibilities:**
- Steering Committee: JVA, MoA, WUA’s
- Implementation by WUA Support Unit, with external technical assistance (TA) support and micro-financier
- Financing through micro-credit organization, such as IFAD, with support from international financiers for TA services
- Support, dissemination by EcoPeace
### Costs and Revenues:
- Preparation costs: 100,000 JD
- Credit Program: 2,000,000 JD
- TA costs: 200,000 JD
- Annual Revenues: 400,000 JD (for farmers)

### Implementation Period
- 1 year preparation:
- 4 years micro-financing / TA
- 1 year follow up support

### Other remarks:
**Name:** A02 JOR – Jordan Valley Extension Services Improvement Project  
**Location:** North, Middle and South LJV  
**Type of Intervention:** Agriculture Improvement

### Objectives:
The aim is to increase the quality of extension services to the farmers in the LJRB, and link these services to the existing 26 WUAs in the basin.

### Intervention:
1. Assessment and analysis of current extension services and related flaws, based on field visits and interviews.
2. Provision of improved extension services to better manage and monitor water use and distribution, and reduce energy consumption (ref. to EU Agri Climate Change project).
3. A training center in the Jordan Valley- special focus on agricultural water and water-related themes.
4. Provision of services to optimize agriculture field operations and production, including more climate change resistant crops and more organic agricultural practices;
5. To assist farmers to better organize themselves and strengthen their organizations (WUAs) in applying sustainable agronomic practices, including minimized use of pesticides and fertilizers; regulation and distribution and types of pesticides on regional or national levels, and promotion of environmentally sustainable substances.
6. To strengthen the expertise of WUA to provide these services to their farmers;
7. The improve the co-operation between the WUA’s and the JVA and MoA
8. Mobile Irrigation and Soil Lab- to conduct soil tests and conduct irrigation systems tests and maintenance.

### Results / Impacts:
About 30,000 farmers enabled to increase agricultural water efficiencies and to generate higher yields and profits per m3 used; leading to an overall economic strengthening of the agricultural sector in the LJRB against a more efficient water use. 
Raise awareness amongst members of WUAs.
This project will have an indirect impact on the Jordan River.

### Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin due to more efficient agriculture and related energy consumption, and by introduction of more climate change resistant crops and organic production practices.
- It will strengthen the institutional efficiencies of water management through the WUA’s.

### Organization / Responsibilities:
- Extension services to be provided by WUA Support Unit (three offices; North, Middle, Karamah).
- Supported by MoA, JVA, IRWA and NCARE.
- Project Office and TA provided by independent organization.
- Dissemination support provided by EcoPeace.
- NCARE role must be highlighted here.

### Costs and Revenues:
- Operations: 200,000 JD per year.
• Preparation 100,000 JD:
• Offices, hardware: 1 MJD
• Regional / International experts required on extension services, related to: irrigation, fertilization, pesticides, plant production; post harvesting techniques: 2 seasons, 2 years: 6 years x 12 x 20,000 JD = 1,440,000

• Annual Revenues: indirectly through better agricultural practices

**Implementation Period**
• Preparation time: 6 months
• Implementation period: 6 years

**Other remarks:**
### Name: A03 JOR – Jordan Valley Drip Irrigation Improvement Project

### Location: Lower Jordan River Basin

### Type of Intervention: Agricultural Improvement

### Objectives:
To expand the use of existing drip irrigation in the northern part of the Jordan Valley and to increase the operations and efficiencies of drip irrigation of the southern part of the Jordan Valley.

This project shall be coordinated with Palestinian and Israeli counterparts in order to exchange best practices and maximize the project benefits.

### Intervention:
1. Development of pilot drip irrigation schemes in the north to show farmers for advantages and best practices of drip irrigation;
2. Provision of credit facilities and technical support to farmers to invest in and operate drip irrigation schemes in the north, particular for citrus trees;
3. To improve operations and maintenance of drip irrigation schemes in the southern part of the LJR Basin;
4. To improve the life time of existing drip irrigation schemes and reduce annual investment costs;
5. This intervention will be a direct impact on the Jordan River due to more efficient water use.

### Targets / Results:
1. Two pilot drip irrigation schemes for fruit trees realized in the North
2. Finance Credit facilities (50 / 50) and TA support facilitating 30,000 dunum of new drip irrigation schemes for fruit trees in North Shouneh
3. Improved drop irrigation operations in Deir al Alla and Southern Shouneh facilitating 18,000 dunum.
4. Developed standards and certifications for drip irrigation design and equipment, irrigation efficiencies and monitoring applications.
5. Developed of vocational training center on the use of drip irrigation and green houses.

### Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin by making more efficient use of agricultural water supply (about 10 - 20 MCM / yr)

### Organization / Responsibilities:
- MoA and JVA as governmental agencies
- NCARE of public entity as project partner
- MIRRA or other firms as drip irrigation design and implementing firms
- International Technical Assistance and Project Management
- Credit facilitator (like IFAD)
- EcoPeace for dissemination and stakeholder management

### Costs and Revenues:
- Pilot drip irrigation projects including implementation costs

### Implementation Period:
- Preparation time: 1 year
<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JD 200,000</td>
<td>30,000 dunum with new drip irrigation: 6 Million JD (50% grant; 50% micro credit)</td>
</tr>
<tr>
<td></td>
<td>18,000 dunum with improved irrigation operations: 1.8 Million JD</td>
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<td></td>
<td>TA on standards, certificates, dissemination and farmers support: 1 Million JD</td>
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<tr>
<td></td>
<td>TOTAL: 9 Million JD</td>
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</tbody>
</table>

| Other remarks: |
| Construction time: 5 years |
**Name:** A04 JOR – Jordan Valley Post Harvesting Support Project  
**Location:** Lower Jordan Valley  
**Type of Intervention:** Agriculture Improvement

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>Map:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To improve the post-harvesting and marketing potentials of the farmers in the Jordan Basin. This interventions also relates to A01 – Greenhouse Extension Project. This project shall be coordinated with projects A11 PAL and A14 PAL as well as with the Israeli counterparts in order to exchange best practices and maximize the project benefits.</td>
<td><img src="image" alt="Map" /> (5) Assisting farmers with implementing joint pilot export initiatives for certain products (like strawberries etc.)</td>
</tr>
</tbody>
</table>

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<tr>
<th>Intervention:</th>
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<tbody>
<tr>
<td>(1) organizing farmers within the Jordan Valley in product organizations; (2) provide them with relevant local and international market information; related product quality requirements, prices and logistic requirements (3) Assisting farmers with development of good business models (including fair trade markets, organic product markets; etc), provision of information of product processing and agro-industry (like production of fruit juice, or almonds), marketing approaches and access to export markets; (4) opening up opportunities for niche markets especially for high value low water intensive products that have been produced on the basis of environmental and social justice, like dates, medicinal herbs, olive oil</td>
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<tr>
<th>Results / Impacts:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. constructed housing and staffing for Post Harvesting Support Unit 2. At least 5 organized product organizations, linked where needed to existing WUA’s 3. information on post harvesting provided to 10,000 farmers 4. This aims at raising their income levels with approximately 5,000 JD / year, or 50 M JD in total 5. 10 pilot projects on joint export initiatives implemented 6. This project does not have direct impact on the Jordan River</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sustainability and Water Impacts:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• This project will have a indirect impact on the sustainability of the Jordan River Basin due to higher economic outputs that will be realized by the agricultural sector per m3 of water used.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
<th></th>
</tr>
</thead>
</table>
| • Farmer Organizations, such as Water User Associations  
  • MoA and JVA  
  • Dedicated Implementation organization  
  • EcoPeace for dissemination and stakeholder information | |

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
</table>
| • Preparation Costs: JD 100,000  
  • Housing / accommodation: 300,000 JD  
  • Operations: 150.000 JD per year / 5 years | • Preparation time: 1year  
  • Implementation time: 5 years |
- 10 Pilot projects: 500,000 JD
- TOTAL: 1,650,000 JD
<table>
<thead>
<tr>
<th>Name: A05 JOR – Jordan Valley Irrigation Operation Efficiency Improvement Project</th>
<th>Location: Lower Jordan Valley</th>
<th>Type of Intervention: Agriculture Improvement</th>
</tr>
</thead>
</table>

**Objectives:**
Currently some large farmers outsource their irrigation operations to specialized (private) operating organizations. These specialized firms apply computerized operating system linked to weather stations and dedicated operating software. The aim is to expand these services to other farmers in the Jordan Valley.

This project shall be coordinated with Palestinian and Israeli counterparts in order to exchange best practices and maximize the project benefits.

**Intervention:**
1. provision of information to farmers about the economic benefits of outsourcing their irrigation operations;
2. setting of pilot projects to show farmers the practicalities of outsourcing irrigation operations;
3. providing technical and contractual support services to farmers to prepare them for outsourcing their operations;
4. monitoring the extend of outsourcing in time

**Results / Impacts:**
This project focuses on creating a central irrigation operations support unit in the Lower Jordan Valley, and offers design, installation, monitoring and management of irrigation systems, tied to local weather stations, and enabling operation support to 90,000 connected farmers. Cooperating farmers need to be connected through installation of a solenoid valve, flow sensors and a controller unit, which costs together about 3000 JD. The project may focus first on the Middle Area (say 10 farm connections) as a pilot, where relative bigger farms operate, and then expand to other areas. This project will have a direct impact on the Jordan River due to more efficient water use.

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin due more efficient irrigation operations for about 90,000 connected farmers.

**Organization / Responsibilities:**
- WUAs, MoA, JVA, Private firm contracted
- EcoPeace for dissemination and stakeholder management

**Costs and Revenues:**
- Central control unit, including housing and weather station: 300,000 JD
- 10 pilot projects: 50,000 JD
- Expansion to say 1000 farm units: 3 Million JD
- TA And operations: 100,000 JD per year (5 years)
- Total: 3,850,000 JD

**Implementation Period**
- Preparation time: 6 months
- Construction time: 6 months
- Operations: 5 years
<table>
<thead>
<tr>
<th>Name:</th>
<th>A06 JOR – Jordan Valley Authority Support Project</th>
<th>Location:</th>
<th>JVA</th>
<th>Type of Intervention:</th>
<th>Agriculture Improvement</th>
</tr>
</thead>
</table>

**Objectives:**
The aim of this project is to strengthen JVA in their role as authority and regulator of agricultural water supply in the Jordan Valley.

**Intervention:**
1. Strengthening water data collection and management;
2. Strengthening water planning capacities (WEAP, GIS, CAM (computer aided maintenance … etc);
3. Improving SCADA system and its operations of water storage and distribution networks in the Jordan Valley, including IT and wireless data transfer;
4. Strengthen role of JVA towards the WUAs in the Jordan Valley (less detailed control, more efficiencies).
5. This project will include purchase of mobile technical equipped units for light or medium repair works of water distribution networks.

**Results / Impacts:**
This project should lead to more efficient JVA in terms of water data management; water allocation planning; water supply systems operations; managing and coordinating with existing Water User Associations; and capacities for immediate and urgent repairs on water supply systems.

This project will have an indirect impact on the Jordan River, due to better water management.

**Sustainability and Water Impacts:**
- This project will have an indirect impact on the sustainability of the Jordan River Basin higher efficiencies of the JVA in terms of basin water management.

**Organization / Responsibilities:**
- JVA
- WAJ / MoWI
- Contracted organizations
- EcoPeace, dissemination and WUA stakeholder management

**Costs and Revenues:**
- Preparation costs: 100,000 JD
- Mobile Repair Unit: 100,000 JD
- Implementation costs: 2 Million JD

**Implementation Period**
- Preparation time: 6 months
- Construction time: 2 years
**Name:**
A01 PAL - Shifting in Cropping Pattern

**Location:**
Palestine, Jordan Valley

**Type of Intervention:**
Water Resources

**Objectives:**
To reduce per dunum agricultural water demands through the shifting of cropping pattern towards less water consumption plantation.

This project shall be coordinated with Jordanian and Israeli counterparts in order to exchange best practices and maximize the project benefits.

**Intervention:**
Distribution and construction of palms farms to replace bananas and vegetables in addition to public awareness campaigns and rehabilitation of the farms to match the new cropping patterns.

Opening up opportunities for niche markets especially for high value low water intensive products that have been produced on the basis of environmental and social justice, like dates, medicinal herbs, olive oil

**Preparation:**
- Planning & design the farms
- Market study on agricultural needs
- Setting up utilization plan
- Finance planning

**Construction / realization:**
- Identification of needs per farm
- Tendering and construction
- Supply contracts with farm owners and farmer organizations
- Training and public awareness campaigns on the importance of shifting to new crop patterns.

**Operations:**
- Distribution of trees
- O&M
- Technical and financial management

**Results / Impacts:**
- Additional dunums are cultivated with less water consumption plantation.
- Increase income to farmers
- Increase food production and food security by increasing the income and so the ability to buy products.

**Organization / Responsibilities:**
- Ministry of Agriculture (farmers support)
- Farm owners/ Farmers / Water User Association/ agricultural unions (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 50,000
- Construction costs: € 750,000
- Operation costs: € 100,000 / yr
- Annual Revenues: € 600,000 / yr

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 1.5 year
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A02 PAL - Rehabilitation and upgrading of water systems</td>
<td>Palestine, Jordan Valley</td>
<td>Agriculture- Irrigation</td>
</tr>
</tbody>
</table>

**Objectives:**
To increase water resources availability and enhance water efficiency from wells and pond in the Jordan Valley in order to increase water supply for different purposes from these sources and minimize losses from network.

**Map:**

### Intervention:
- Rehabilitation of 10 agricultural ponds in Jericho Governorate
- Rehabilitation of 7 agricultural wells in Al-Jiftlik, Al-Auja, Marj Naja and Al-Zubaidat.
- Construction of 10 km of main agricultural pipelines
- Rehabilitation of wells in Al-Jiftlik, Al-Auja, and Al-Zubaidat.
- Rehabilitation of irrigation networks for 50,000 dunums of irrigated land.
- Rehabilitation of 20 agricultural wells in Al-Jiftlik, Al-Auja, Marj Naja and Al-Zubaidat.
- Construction of 20 km of conveyance agricultural pipelines wells in Al-Jiftlik, Al-Auja, and Al-Zubaidat.

This project requires that issues linked to ownership of equipment, water pricing, institutional responsibilities will also be clarified.

### Preparation:
- Planning & design new equipment
- EIA’s and licenses
- Setting up utilization plan
- Finance planning

### Construction / realization:
- Identification of needs per location
- Tendering and construction
- Supply contracts with well owners and farmer organizations
- Training for operators and farmers

### Operations:
- Distribution of water
- O&M
- Technical and financial management

### Results / Impacts:
- Additional quantity of 2.65 Mcm/year, serving approximately 250 dunum of agricultural land against about 2.0 NIS / m³.
- Increase income to source owners by some 5.3 Million NIS/year
- Increase food production by some 6500 ton per year and income to farmers by 13.0 Million NIS/year.
- The economic value of the cubic meter of water is increased and more water is available for...
irrigation due to the reduction of losses in the irrigation networks.

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Palestinian Water Authority (regulation)</td>
</tr>
<tr>
<td>• Ministry of Agriculture (farmers support)</td>
</tr>
<tr>
<td>• Well owners/ Farmers / Water User Association/farmers associations (beneficiary)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Preparation costs: € 700,000</td>
</tr>
<tr>
<td>• Construction costs: € 16,300,000</td>
</tr>
<tr>
<td>• Operation costs: € 1,100,000 / yr</td>
</tr>
<tr>
<td>• Annual Revenues: € 3,300,000 / yr</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Preparation time: 1.0 year</td>
</tr>
<tr>
<td>• Construction time: 2.0 year</td>
</tr>
</tbody>
</table>
**Name:** A03 PAL – Water Right Policies and Regulations

**Location:** Palestine, Jordan Valley

**Type of Intervention:** Water Resources

**Objectives:**
To develop an agreed upon policy and regulations to organize water rights from the agricultural water resources in the area to better manage the resources available.

This project shall be coordinated with Jordanian and Israeli counterparts in order to exchange best practices and maximize the project benefits.

**Intervention:**
Develop a unified policy and regulations that will be applied to all agricultural water resources in the area.

**Preparation:**
- Planning & data collection.
- Finance planning

**Construction / realization:**
- Tendering
- Review data, laws and policies
- Develop the policy and regulations
- Conduct awareness campaigns and focus group meetings

**Operations:**
- Apply proposed regulations
- Conduct public awareness campaigns

**Results / Impacts:**
- A unified water rights policy and regulations that is applied for different water resources.
- Fee collection rates improved and user's satisfaction and willingness to pay has been increased.

**Organization / Responsibilities:**
- Palestinian Water Authority (regulation)
- Ministry of Agriculture (farmers support)
- Village Council/ Farmers / Water User Association/ owners (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 150,000
- Construction costs: € 0
- Operation costs: € 0 / yr
- Annual Revenues: € 0 / yr

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 1 year

**Other remarks:**

---

![Map](image-url)
<table>
<thead>
<tr>
<th><strong>Name:</strong></th>
<th>A04 PAL – Operate and expand the Agro-Industrial Park in the southern JV</th>
<th><strong>Location:</strong></th>
<th>Palestine, Jordan Valley</th>
<th><strong>Type of Intervention:</strong></th>
<th>Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectives:</strong></td>
<td>To optimize the benefits from the agro-industrial park near Jericho and expand it to consider other agro-industries.</td>
<td><strong>Map:</strong></td>
<td></td>
<td><strong>Construction / realization:</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **Intervention:** |  | **Preparation:** | Planning & design of the expansion  
EIA’s and licenses  
Setting up utilization plan  
Finance planning | **Operations:** |  |
| **Construction / realization:** |  |  |  |  | Identification of needs  
Tendering and construction  
Management contracts with companies  
Training for operators and public awareness for farmers and potential beneficiaries  |  |
| **Operations:** |  |  |  |  | Marketing  
Fee collection  
O&M  
Technical and financial management  |  |
| **Results / Impacts:** |  |  |  |  | The industrial park is fully utilized.  
The products are marketed more efficiently.  
Increase income to beneficiaries  |  |
| **Organization / Responsibilities:** |  |  |  |  | Ministry of Agriculture (farmers support)  
Ministry of National Economy  
Farmers / Farmers Unions/ Industrial sector(beneficiary)  |  |
| **Costs and Revenues:** |  |  |  |  | Preparation costs: € 200,000  
Construction costs: € 1,800,000  
Operation costs: € 300,000 / yr  
Annual Revenues: € 250,000/ yr  |  |
| **Implementation Period:** |  |  |  |  | Preparation time: 1 year  
Construction time: 1 year  |  |
<p>| <strong>Other remarks:</strong> |  |  |  |  |  |</p>
<table>
<thead>
<tr>
<th><strong>Name:</strong></th>
<th><strong>Location:</strong></th>
<th><strong>Type of Intervention:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A05 PAL – Construction of Agricultural Roads</td>
<td>Palestine, Jordan Valley</td>
<td>Agriculture</td>
</tr>
</tbody>
</table>

**Objectives:**
To construct agricultural roads to increase the accessibility to the different agricultural areas.

This project is linked to the objectives to Valley wide economic development and co-operation and aim at mobilising the Palestinian Agricultural Sector particularly.

**Intervention:**
Construct 45 km of agricultural roads in Al-Jiftlik, Al-Auja and Kardala area.

**Preparation:**
- Planning & design
- Setting up utilization plan
- Finance planning

**Construction / realization:**
- Identification of the roads
- Tendering

**Operations:**
- Monitor the constructed roads
- O&M

**Results / Impacts:**
- The willingness to utilize available land increases due to increase in accessibility.
- More land is being utilized.
- Transportation cost reduced.

**Organization / Responsibilities:**
- Ministry of Agriculture (farmers support)
- Village Council/ Farmers / Agricultural unions(beneficiary)

**Costs and Revenues:**
- Preparation costs: € 100,000
- Construction costs: € 900,000
- Operation costs: € 10,000 /yr
- Annual Revenues: € 0 / yr

**Implementation Period**
- Preparation time: 0.5 year
- Construction time: 1.5 year

**Other remarks:**
**Name:**
A06 PAL - Enhancement of Palm Production

**Location:**
Palestine, Jordan Valley

**Type of Intervention:**
Agriculture

### Objectives:
To increase the palm production through the enhancement and reproducing of male palm trees and support the marketing practices.

This intervention is likely to be financed by the private sector.

### Intervention:
Construction of 100 dunums of male Palm trees farms and provide of reproduction seeds in addition to the construction of packaging and storage center of 1000 ton capacity.

### Preparation:
- Planning & design the farms and the storage center
- Market study on agricultural needs
- Setting up utilization plan
- Finance planning

### Construction / realization:
- Identification of needs per farm
- Tendering and construction
- Supply contracts with farm owners and farmer organizations
- Training and public awareness campaigns on the importance of male palms and the proper packaging and storage.

### Operations:
- Distribution of palms
- O&M
- Technical and financial management
- Marketing of dates

### Results / Impacts:
- Additional 100 dunums of male palm trees are constructed and utilized producing the targeted amount of palm trees.
- The packaging center produces 1000 ton of dates which increases the income by an additional 10 Million NIS.
- Increase income to farmers; Increase food production and food security by increasing the income and so the ability to buy products.

### Organization / Responsibilities:
- Ministry of Agriculture (farmers support)
- Ministry of National Economy
- Farm owners/ Farmers / agricultural unions/ (beneficiary)

### Costs and Revenues:
- Preparation costs: € 100,000
- Construction costs: € 1,500,000
- Operation costs: € 100,000/ yr
- Annual Revenues: € 400,000 / yr

### Implementation Period:
- Preparation time: 0.5 year
- Construction time: 1.5 year
**Name:**  
A07 PAL - Development and Support Livestock Sector

**Location:**  
Palestine, Jericho

**Type of Intervention:**  
Agriculture

### Objectives:
To increase the effectiveness of the livestock and poultry agriculture to enhance the economic conditions of the participated beneficiaries and to meet the growing demands on meat.

This project shall be coordinated with Jordanian and Israeli counterparts in order to exchange best practices and maximize the project benefits.

### Intervention:
Support 30 beneficiaries in the Jericho area through providing them with:
- Production needs and equipment
- Import advanced queens
- Enhance marketing processes

Support the livestock sector through:
- Improve farm management through providing buildings, tools, scissors, milking machines to a 100 beneficiaries from Al-Dyouk, Fasayil, Al-auja and Al-Jiftlik for 100 beneficiaries.
- Improve health safety through the introduction of new yoghurt processing units and fight insects for 100 beneficiaries.
- Improve sheep types through artificial breeding for 50 beneficiaries.
- Support the poultry sector through improving the farm conditions by the construction of a thermal resistance roofs and the introduction of new technology in Poultry farming for 20 beneficiaries in Jericho Governorate.
- Support the livestock sector through developing and providing better breeds of sheep and cows.

### Preparation:
- Planning & design of the intervention
- Market study
- Setting up utilization plan

### Map:

### Construction / realization:
- Identification of needs
- Tendering and construction
- Supply contracts with beneficiaries

### Operations:
- Distribution and marketing of products
- O&M
- Technical and financial management
## Results / Impacts:
- The production of some 10 tons of honey for the market.
- Increase income to the 30 beneficiaries by some 1.0 Million NIS
- Increase food production and food security by increasing the income and so the ability to buy products.
- Increase livestock production in the area including meat and dairy products.
- Increase income to farmers.
- Increase Poultry production in the area including meat and eggs products.

## Organization / Responsibilities:
- Ministry of Agriculture (farmers support)
- Farmer unions/ Farmers / agricultural unions/ (beneficiary)

## Costs and Revenues:
- Preparation costs: € 145,000
- Construction costs: € 3,850,000
- Operation costs: €375,000 / yr
- Annual Revenues: € 1,300,000 / yr

## Implementation Period
- Preparation time: 1.0 year
- Construction time: 2.0 year

## Other remarks:
Name: A08 PAL - Support to Women organizations and Bedouin Communities
Location: Palestine, Jordan Valley
Type of Intervention: Agriculture

Objectives:
To increase the effectiveness of the women organization programs to enhance the economic conditions of the participated women in the programs and to increase the amount of water available for Bedouin communities to enhance the economic conditions of the participated communities in the programs.

Intervention:
Support 6 women organizations in Jericho, Al-Auja, Al-Jiftlik and Al-Zubaidat through the construction of dates processing and freezing units and secure the necessary machinery needed to process the extra quantities of dates produced.
Support the Bedouin communities of Al-Jiftlik and Al-Auja with 20 water storage tanks of 50 cubic meter to serve as a storage tank for the community and to distribute water.

Preparation:
- Planning & design the processing units.
- Market study on agricultural needs
- Setting up utilization plan
- Finance planning

Construction / realization:
- Identification of needs
- Tendering and construction
- Supply contracts with women organizations

Operations:
- Distribution and marketing of products
- O&M
- Technical and financial management

Results / Impacts:
- 10 dates processing units are functioning and supporting the working women with an additional income of 2.5 Million NIS per year.
- The shifting to dates from other more water consumption plants became more feasible.
- Women in these women groups are more active in their societies.
- The processing and freezing centers produces 1000 ton of dates.
- Increase income to farmers
- Increase food production and food security by increasing the income and so the ability to buy products.
- Increase water availability to Beduin communities by some 1000 cubic meters for different uses.

Organization / Responsibilities:
- Ministry of Agriculture (farmers support)
- Ministry of National Economy
- Women organizations/ Farmers / agricultural unions/ (beneficiary)

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation costs: € 60,000</td>
<td>Preparation time: 0.5 year</td>
</tr>
<tr>
<td>Construction costs: € 590,000</td>
<td>Construction time: 1.5 year</td>
</tr>
<tr>
<td>Operation costs: €45,000 / yr</td>
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<tr>
<td>Annual Revenues: € 200,000 / yr</td>
<td></td>
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</tbody>
</table>

Other remarks:
**Name:** A09 PAL - Land Rehabilitation  
**Location:** Palestine, Jordan Valley  
**Type of Intervention:** Agriculture  
**Start Up Year:** 2018

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>Map:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To increase the irrigable land by 40,000 dunums to enhance the agricultural production and increase the food security in Palestine using the most advanced methods available. This will not affect land for nature reserve since all this area is classified as grade A irrigable land. In addition, this land is classified as irrigable land so it will not affect the land use classification in the area.</td>
<td>![Map of the area]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention:</th>
<th>Construction / realization:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehabilitation of 40,000 dunums of irrigable land through leveling, terracing, cleaning of the land from any stones and supply the farms with state of the aret irrigation systems. These 40,000 dunums are those identified as irrigable land by the MoA at present and are not irrigated. Most of this newly developed land will use drip irrigation or any future revolved irrigation practices that proves to be more efficient. The anticipated crops are palms and any other products that show profitable with reasonable water requirements.</td>
<td></td>
</tr>
</tbody>
</table>
- Identification of needs per farm  
- Tendering and construction  
- Supply contracts with farm owners and farmer organizations  
- Training and public awareness campaigns on the new irrigation practices. |

<table>
<thead>
<tr>
<th>Preparation:</th>
<th>Operations:</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>
- Planning & design the farms and the irrigation systems  
- Market study on agricultural needs  
- Setting up utilization plan  
- Finance planning |  
- O&M  
- Technical and financial management  
- Marketing of dates |

<table>
<thead>
<tr>
<th>Results / Impacts:</th>
<th>Sustainability:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>
- Additional 40,000 dunums of irrigable land is reclaimed and supplied with irrigation networks.  
- The new irrigable land is irrigated by available treated wastewater and additional quantities from the Jordan River by some 40 Mcm/year.  
- The new irrigated land produces additional 120,000 tons of agricultural products for national markets which increases the income by an additional 120 Million NIS.  
- Increase income to farmers  
- Increase food production and food security by increasing the income and so the ability to buy products. |  
The project will increase land availability for irrigation and it will increase the sustainability of the agricultural activities in the area. The project will be sustainable since it will increase the income to farmers, provide means of food security and jobs for people living in the study area in particular and |
Palestine in general. Additional quantity of 40 Mcm/year from the river is less than the Palestinian water rights in the river and for that it will not affect the river environmental flows.

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ministry of Agriculture (farmers support)</td>
</tr>
<tr>
<td>• Ministry of National Economy</td>
</tr>
<tr>
<td>• Palestinian Water Authority</td>
</tr>
<tr>
<td>• Farm owners/Farmers/agricultural unions/ (beneficiary)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Preparation costs: 2,000,000 €</td>
<td>• Preparation time: 1 year</td>
</tr>
<tr>
<td>• Construction costs: 150,000,000 €</td>
<td>• Construction time: 5 years</td>
</tr>
<tr>
<td>• Operation costs: 15,000,000 € / yr</td>
<td></td>
</tr>
<tr>
<td>• Annual Revenues: 30,000,000€ / yr</td>
<td></td>
</tr>
</tbody>
</table>

Other remarks:
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
<th>Start Up Year:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A10 PAL- Strengthening of extension Services Public Awareness Program</td>
<td>Palestine, Jordan Valley</td>
<td>Agriculture</td>
<td>2021</td>
</tr>
</tbody>
</table>

**Objectives:**
To raise the level of awareness of stakeholders in agricultural and water management practices and strengthening of extension services.

This project shall be coordinated with project A02 JOR and Jordanian and Israeli counterparts in order to exchange best practices and maximize the project benefits.

**Intervention:**
Conduct a long term the extension services program within MoA and NGOs that includes the following main subjects:
- State of the art irrigation technologies
- Cropping patterns
- Building International partnership, marketing and export procedures and conditions

**Preparation:**
- Identification of needs
- Setting up utilization plan
- Finance planning

**Construction / realization:**
- Preparation of the long term programs and topics identification.

**Operations:**
- Conduct workshops, public awareness programs and distribution of awareness materials.
- Develop the institutional capacity of the program
- Technical and financial management

**Results / Impacts:**
- Awareness of farmers regarding the targeted subjects has been increased.
- More export agreements have been signed and more products are being exported
- Additional dunums are cultivated with less water consumption plantation.
- Increase income to farmers
- Increase food production and food security.

**Sustainability:**
The project will not only be sustainable but will enrich the sustainability of agricultural activities in the study area through raising the capacity of the agricultural community and enhance their knowledge.

**Organization / Responsibilities:**
- Ministry of Agriculture (farmers support)
- Palestinian Water Authority
- Farm owners/ Farmers / Water User Association/ agricultural unions (beneficiary)

**Costs and Revenues:**
- Preparation costs: € 100,000
- Construction costs:
- Operation costs: € 100,000 / yr
- Annual Revenues: € / yr

**Operation Costs:**
Shall be financed by project beneficiaries

**Implementation Period**
- Preparation time: 1 year
- Construction time: 10 year

**Other remarks:**
**Name:** A11 PAL - Promotions of Farmers Cooperatives  
**Location:** West Bank Jordan Valley  
**Type of Intervention:** Irrigation and marketing services  
**Start Up Year:** 2021

**Objectives:**  
To facilitate groups of family farms to invest jointly in user self-provision of irrigation, processing and/or marketing services for high value export crops, and responsible homestead recreational services.  

This project shall be coordinated with Jordanian and Israeli counterparts in order to exchange best practices and maximize the project benefits.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Construction / realization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family farms need support to undertake communal initiatives that enable them to develop the economic potentials of resources they control in their communities and to benefit from economies of scale.</td>
<td>• Piloting of production and marketing contracts between CAs and Private agribusinesses</td>
</tr>
</tbody>
</table>

**Preparation:**  
- Dissemination of good experiences with Cooperative Associations for communal self-provision of services.  
- Planning of high priority communal service to family farms in rural community to enhance the production potentials of resources controlled  
- Exploring the possibilities to engage farmer groups in partnerships with private agribusiness/industries (production/processing/marketing contracts)  
- Exploring the possibilities to engage local farmer groups in responsible homestead recreational services.  
- Preparing investment plans using beneficiaries’ contributions, loans from saving and credit institutions and a matching grant from a public sector organization.

**Construction / realization:**  
- Training of CA members in technical and commercial aspects of the production / marketing contract

**Results / Impacts:**  
- Family farms enabled to engage in a modernization process to increase labour productivity and resilience  
- Dynamic rural economies through cooperation and diversification of family farms

**Sustainability:**
The project will enhance the sustainability of family farming and will enable rural economies to become more dynamic. For that the project is considered sustainable.

**Organization / Responsibilities:**
- Ministry of Agriculture (enabling policy environment and M&E)
- NGOs working on community development in the Jordan/West Bank (facilitation of communal initiatives)
- Private investors interested in processing/marketing of products of family farms (processing and marketing services)

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation costs: € 100,000</td>
<td>Preparation time: 1yr</td>
</tr>
<tr>
<td>Construction costs: € 400,000</td>
<td>Construction time: 2yr</td>
</tr>
<tr>
<td>Operation costs:</td>
<td></td>
</tr>
<tr>
<td>Annual Revenues:</td>
<td></td>
</tr>
</tbody>
</table>

**Other remarks:**
**Name:** A12 PAL - Jordan Valley Credit Program  
**Location:** Jericho Governorate  
**Type of Intervention:** Credit program for LEISA and IWRM initiatives  
**Start Up Year:** 2019

**Objectives:**
To create a credit program focusing on semi-subsistence family farms to overcome financial bottlenecks they face in adapting GAP and LEISA agricultural practices and using available water resources most efficiently. In addition the project will aim to enable farmers to invest in drip irrigation and green houses.

This project shall be coordinated with Jordanian and Israeli counterparts in order to exchange best practices and maximize the project benefits.

**Intervention:** to provide one private and one cooperative financial institution funding for providing affordable loans to family farms that developed technical and commercially viable plans to enhance sustainable crop and livestock production systems and off-farm activities (B&B) on their farms. Also, the intervention will support farmers in the adaptation of drip irrigation and green houses.

**Preparation:**
- Preparation of a credit program for encouraging semi-subsistence families to invest in modernization of the farms and the adaptation to the impacts of climate change
- Call for proposals of financial institutions to manage the credit program in all clusters on the West Bank of the Lower Jordan Valley

**Construction / realization:**

**Operations:**
- Promotion of savings and credit groups in the rural communities farming in the Lower Jordan Valley
- Development of standard credit packages for modernization of family farms (e.g. water harvesting, green house development and precision irrigation)
- Piloting of modernization packages through cooperative and water users associations linked to the savings and credit groups.
- Up-scaling of successful modernization packages
- Technical and financial management

**Results / Impacts:**
- Affordable credit services for developing production and service potentials of family farms through communal security and demand-led extension services
- More farmers are using drip irrigation techniques and green houses.

**Sustainability:**
The project is considered sustainable since it will enables more farmers to have more sustainable income.

**Organization / Responsibilities:**
- Cooperative and private financial institutions that have network of service units or saving and credit groups in the Jericho Governorate
- Ministry of Agriculture and Department of Agriculture in Jericho Governorate
- Private Agricultural Support Services Providers

**Costs and Revenues:**
- Preparation costs: € 150.000

**Implementation Period**
- Preparation time: one year
- Construction costs: € 950,000
- Operation costs: € 400,000
- Annual Revenues: € 200,000

**Funding:**
Funding for the Credit funds shall be searched for through dedicated banks or programs, such as IFAD.

- Piloting time: two years
- Up-scaling time: four years

**Other remarks:** Family farms have proven to be innovative and resilient when an appropriate enabling policy environment and demand-oriented support service provision are established.
<table>
<thead>
<tr>
<th>Name: A13 PAL - LEISA Research and certification</th>
<th>Location: NAR Stations in Dair Al Alla and Jericho</th>
<th>Type of Intervention: Regional cooperation in demand-led research</th>
<th>Start Up Year: 2019</th>
</tr>
</thead>
</table>

**Objectives:**
To create research capacities on the development and certification of Low External Inputs Sustainable Agricultural systems (integrated and organic agriculture) in the Lower Jordan Valley.

**Intervention:**
to fulfill the environmental quality standards imposed on export markets crucial for agricultural commodities for which the Lower Jordan Valley has comparative advantages. The research program includes a model project with certified Global GAP farms and the farms aiming for certification with the focus on water.

**Preparation:**
- Preparation of a proposal for research program covering on-station and on-farm research and laboratories and includes a model project with certified Global GAP farms and the farms aiming for certification with the focus on water
- Establishment of a governing and management structure for this regional research institution that manages the research programs at the existing agricultural research stations in Dair Al Alla and Jericho
- Financial planning and development of a business plan for the research program

**Construction / realization:**
- Tendering, construction and procurement for on-station research infrastructure and laboratories

**Operations:**
- Perennial and annual planning of research program
- Managing on-station and on-farm research on Good Agricultural Practices for integrated and organic agriculture
- Produce, soil and irrigation water testing for issuing farm and product certificates
- Monitoring and evaluation
- Technical and financial management

**Results / Impacts:**
- Clusters of Global G.A.P and OFOAM certified farms in the Lower Jordan Valley
- Demand-led research activities and knowledge sharing networks between farmers and researchers
- Internationally accredited research and certification institute providing demand-oriented services

**Sustainability:**
The project is not only sustainable but it will enhance the sustainability of agricultural activities and will increase awareness to environmental issues.
### Organization / Responsibilities:
- Ministries of Agriculture in Jordan and Palestinian Territories
- PPP managed research institute in partnership with Global G.A.P and OFOAM

### Costs and Revenues:
- Preparation costs: € 150,000
- Construction costs: € 450,000
- Operation costs: € 300,000
- Annual Revenues: € 200,000

### Implementation Period
- Preparation time: two years
- Establishment time: two years

### Other remarks: Basic services must charge cost-covering fees and research funding obtained through competitive research proposals with beneficiaries contributions and public matching grant.
### Name: A14 PAL - Establish an Agro-Industrial Zone in the Northern JV

<table>
<thead>
<tr>
<th>Location:</th>
<th>Type of Intervention:</th>
<th>Start Up Year:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern JV</td>
<td>Agriculture</td>
<td>2022</td>
</tr>
</tbody>
</table>

### Objectives:
To establish an agro-industrial zone in the Northern Jordan Valley in order to meet the needs of agricultural development in the medium to long term.

### Map:
![Map of the project area]

### Intervention:
Establish an Agro-Industrial zone in the northern JV, which includes a packing and grading center, agro-conversion industries and a logistics center to facilitate the export of goods.

### Preparation:
- Identify land area, prepare plans and start implementation, including identifying donors

### Construction / realization:
- Prepare plans and implement an agro-industrial zone on up to 200 dunums of land, including infrastructure, such as electricity, water, sewage planning and roads

### Results / Impacts:
Agro-industrial zone established to meet the needs of agricultural development in the Jordan Valley.

### Sustainability:
The project will enhance the sustainability of the agro-businesses and will increase the income of farmers which will enhance the sustainability of the agricultural sector.

### Organization / Responsibilities:
- Ministry of Agriculture
- Ministry of National Economy
- Jordan Valley Authority
- Ministry of Public Works
- PIEFZA

### Costs and Revenues:

<table>
<thead>
<tr>
<th>Construction based on needs and area</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation costs: $500,000</td>
<td>Preparation time: 2 yrs.</td>
</tr>
<tr>
<td>Construction costs: $11,500,000</td>
<td>Construction time: 2 yrs.</td>
</tr>
</tbody>
</table>

### Other remarks:
<table>
<thead>
<tr>
<th>Name:</th>
<th>A15 Hand over of Settlements Agricultural Land</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Palestine, Jordan Valley</td>
</tr>
<tr>
<td>Type of Intervention:</td>
<td>Agriculture</td>
</tr>
<tr>
<td>Start Up Year:</td>
<td>2020</td>
</tr>
</tbody>
</table>

**Objectives:**
To handover the irrigable land of some 60,000 dunums currently being irrigated by the Israeli settlers in the study area to enhance the agricultural production and increase the food security in Palestine using the most advanced methods available. This will not affect land for nature reserve since all this area is at present is part of the irrigated area classified as grade A irrigable land.

**Intervention:**
Handover of some 60,000 dunums of irrigable land to Palestinians and the rehabilitation of this irrigable land through supplying the farms with state of the art irrigation systems.

**Preparation:**
- Planning & design the farms and the irrigation systems
- Market study on agricultural needs
- Setting up utilization plan
- Finance planning

**Construction / Realization:**
- Identification of needs per farm
- Supply contracts with farm owners and farmer organizations
- Training and public awareness campaigns on the new irrigation practices

**Operations:**
- O&M
- Technical and financial management
- Marketing of dates

**Results / Impacts:**
- Additional 60,000 dunums of irrigable land is handed over and are supplied with irrigation networks.
- The new land is irrigated by available treated wastewater and the present quantities from the Jordan River and the groundwater in the area.
- The new irrigated land produces additional 180,000 tons of agricultural products for national markets and export which increases the income by an additional 180 Million NIS.
- Increase income to farmers
- Increase food production and food security by increasing the income and so the ability to buy products.

**Sustainability:**
The project will increase land availability and will offer new jobs so it will increase the sustainability of the agricultural activities in the area. The project will be sustainable since it will increase the income to farmers, provide means of food security and jobs for people living in the study area in particular and Palestine in general. No additional quantities from fresh water sources will be needed. On the contrary, savings from the present used fresh water will be replaced by treated wastewater.

**Organization / Responsibilities:**
- Ministry of Agriculture (farmers support)
- Ministry of National Economy
- Palestinian Water Authority
• Farm owners/ Farmers / agricultural unions/ (beneficiary)

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Preparation costs: 1,000,000 €</td>
<td>• Preparation time: 1 year</td>
</tr>
<tr>
<td>• Construction costs: 15,000,000 €</td>
<td>• Construction time: 5 years</td>
</tr>
<tr>
<td>• Operation costs: 2,000,000 € / yr</td>
<td></td>
</tr>
<tr>
<td>• Annual Revenues: 3,000,000€ / yr</td>
<td></td>
</tr>
</tbody>
</table>

Other remarks:
5 LOWER JORDAN BASIN GOVERNANCE

<table>
<thead>
<tr>
<th>Name:</th>
<th>IC01 REG - Establishing a Jordan River Basin Organization (JORBO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Entire Basin</td>
</tr>
<tr>
<td>Type of intervention:</td>
<td>Governance intervention</td>
</tr>
</tbody>
</table>

**Objectives:**
In preparation for a final peace agreement in the LJR Basin, the feasibility and institutional set-up of a transboundary river basin organization (RBO) will be assessed, in line with the UN Watercourses Convention (scheduled to enter into force on 17 August 2014). The RBO’s key objective is to ensure coordinated water resources and quality management between riparian countries Jordan, Israel and Palestine (in the long run this may include Lebanon and Syria as well) on a shared Jordan River Basin, while addressing the legitimate social and economic needs of each of the riparian states, and to enable joint development and management of the Jordan River and water resources infrastructure between the riparians. The Organization may act as a coordinating body for the riparian countries of the LJR, fostering co-operation over the Jordan River and its water resources through a coordinated, transparent and democratic process, under the principle of “one river, one management”. The objective is that the Steering Committees related to each individual Strategic Objective for the Jordan will eventually be embedded in the structures of this Jordan River Basin Organization.

A respective agreement should provide the legal framework and mandate for the functioning of the Jordan RBO (in short: JORBO). In particular existing legislation and transboundary agreements might require revision. National governments’ water departments or ministries will engage with this legally mandated institution in terms of their national interests.

**Intervention:**
In order to promote coordinated and environmentally sustainable Jordan River and regional water resources development, while addressing the legitimate social and economic needs of each of the riparian states, the set-up of a River Basin Organization for the Jordan Basin is being studied and prepared in a strategic study, also devoted to understanding the political barriers towards implementing such a Basin Organization, and the (international) incentives and pressure required to overcome these barriers.

Institutional responsibilities for the envisaged JORBO may include:

- Quantification and attainment of water rights of each riparian, especially as the demand for water for multiple purposes is growing throughout the region as a whole. In line with the UN Convention on the Law of the Non-Navigational Uses of International Watercourses (scheduled to enter into force on 17 August 2014), key elements in such a process might include determination of annual safe yield per riparian (= average volume of water which may be exploited per riparian without causing hydrological/environmental damage) and/or the allocation of equal per capita volumes of fresh water to the various parties.
- Identification and development of ‘strategic’ regional water resources (e.g. desalination, water transfer schemes, shared benefits from ecosystem services or regional tourism, etc.), based on a mutual gains approach / positive-sum game, which would allow both the reallocation of the existing water resources and the attainment of the water rights of the parties.
- Identification and development of provisions for addressing flow variability and availability of safe water.
- Joint Jordan River Flow Management based on monthly and seasonal flow fluctuation (ref. GNF report on temporary flow management, and WEAP model developed under this project)
- Joint Water Quality Monitoring and control, including hazard response management for major sites like Peace Park and Baptism Site
- Monitoring and evaluation
- Joint information management, including joint knowledge production, information exchange (e.g. open and shared database), communication, etc.
- Capacity building on transboundary water management, by training, workshops, pilots, etc

Results / Impacts:
A detailed set-up of the institutional structure (i.e. mandate, organization, regulations, dispute settlement and operations) of the envisaged JORBO.

Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin due to more efficient regional co-operation and management of the water sector

Responsibilities:
National governments’ water departments or ministries

Investment Cost:
Phase 1 Strategic study: 150,000 JD (1 yr)
Implementation: 200,000 JD / yr (20 yrs)
Phase 2 Wide River Basin Studies: 150,000 JD (1 yr)
Implementation (After 2045): 300,000 JD / yr (20 yrs)
### IC01 - PAL Jordan Valley Authority Development Program

<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authority Development Program</td>
<td>JV</td>
<td>Planning</td>
</tr>
</tbody>
</table>

#### Objectives:
The aim of this program is to establish a single Palestinian entity that is responsible for development planning and regulation of the Jordan Valley. This authority shall also address political, economic and environmental sustainability management issues.

#### Map:
![Map](image)

#### Intervention:
Establish the Jordan Valley Authority with the responsibility of coordinating the development plans for the Jordan Valley, consisting of public – private and civil society management system. This program shall include an institutional needs assessment and to develop this authority as authority and regulator of the Palestinian Jordan Valley. This includes: land, water, services management and economic development components; monitoring and regulating, land use planning, export promotion and related capacity development. The JVA will be empowered to provide investment incentives for businesses and residents to be established or re-located.

#### Preparation:
- Obtain local consensus and coordinate with the Ministry of Local Government, as well as president’s office and other relevant ministries and governmental authorities.

#### Construction / realization:
- Prepare legal framework for the establishment, by-laws and a presidential decree for members of the governing body.

#### Operations:
- Prepare an operational strategy and action plan, as well as SOPs for the authority.

#### Results / Impacts:
One address responsible for coordinating the development of the JV.

#### Organization / Responsibilities:
- Ministry of local government
- Other relevant ministries and governmental authorities

#### Costs and Revenues:
- Preparation costs: 2 million USD

#### Implementation Period:
- Preparation time: 1.5 yrs.
## ECOLOGICAL REHABILITATION

<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>E01 REG – Jordan River Environmental Flows Project</td>
<td>Lower Jordan Valley</td>
<td>Ecological Management</td>
</tr>
</tbody>
</table>

### Objectives:

Before degradation, the LJR flowed freely for thousands of years from the Sea of Galilee to the Dead Sea creating a lush wetland ecosystem, rich in biodiversity.

The aim of this intervention is to restore the rehabilitate the Lower Jordan River by increasing the water flow level in the river to an environmental efficient level that will aid in supporting not only the river riparian ecosystem services and biodiversity, but also the biodiversity of the basin in general. This project will depend on the gradual improvement of water quality, water supply and environmental flow into the river, and will include design and implementation of dedicated ecological restoration projects.

The realization of this intervention is the corner stone for the success of most of the rest of interventions within this category.

### Interventions:

1. Designate specific environmental flow targets for dedicated sections along the Jordan River
2. Management of water inflow and outflow of the Jordan River from its major sources, within the framework of the proposed transboundary River Basin Organization (see also IC01 REG)
3. Designing river flow monitoring and metering devises
4. Setting up operational procures for monitoring and management of river flows for different seasons and locations
5. Implementing operations of monitoring and management of river flows based on agreed environmental flow requirements

### Results / Impacts:

- Restore the environmental flow regime required for full ecological restoration of the river
- Require optimized co-operation among the three riparian countries to manage inflows and outflows
- Requires monitoring of flows at different section and throughout the year
- This project will have a direct impact on the Jordan River

### Sustainability and Water Impacts:

- This project will have a direct impact on the sustainability of the Jordan River Basin by restoring the environmental flows in the river, which will support redevelopment of the ecosystem services and biodiversity, but also the biodiversity of the region in general.
### Organization / Responsibilities:
- Ministries of Environmental Affairs
- JVA, PWA, IWA
- NCAR, farmer associations,
- Municipalities

### Costs and Revenues:
- Preparation and planning: 500,000 USD
- Implementation and monitoring: 500,000 USD
- Operations / maintenance: 500,000 USD / yr

### Implementation Period
- Preparation time: 1 year
- Operations: permanently

### Other remarks:
This intervention requires strong coordination among Israel, Jordan and Palestine, and depends therefore on real co-operation among the three parties, preferably within the context of a Peace Treaty between Israel and Palestine. This intervention also depends on the agreement of the basin’s water balance and related inflow and outflow of the river. This project is expected to be implemented therefore not before 2020.
**Name:**
E02 REG – Jordan River Ecological Restoration Project

**Location:**
Lower Jordan Valley

**Type of Intervention:**
Policy and legislative improvement

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**Objectives:**
Before degradation, the LJR flowed freely for thousands of years from the Sea of Galilee to the Dead Sea creating a lush wetland ecosystem, rich in biodiversity.

The aim of this intervention is to restore the ecological status of the river again – supporting not only the own riparian ecosystem services and biodiversity, but also the biodiversity of the region in general. This project will depend on the gradual improvement of water quality, water supply and environmental flow into the river, and will include design and implementation of dedicated ecological restoration projects and developing eco-services such as eco-parks along its borders, as well as detailed surface water quality and ecological protection and monitoring projects. One of these projects may relate to assigning “nitrate” vulnerability zones along the river, to prevent emissions of nitrate from farmer practices into the river system.

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**Interventions:**

6. Designate specific sections with valuable habitats along the river as “no-touch” zones.
7. Performing the ecological rehabilitation for several years while constantly monitoring the changes, based on experience with previous pilot projects
8. Expanding the river flood zone, including side wadis, rehabilitation of river banks; dredging the flow channel where needed, and protecting buffer zones between the cultivated agricultural lands and the habitat along the stream.
9. Enriching the diversity of natural vegetation with the expected improvement in water quality.
10. Treating and removal invasive species, such as Eucalyptuses trees along the stream
11. Restoring diverse original (native) habitats to increase biological diversity
12. Restoration of natural vegetation species according to suitability and to the expected flow regime of the river, including clumped bank vegetation, wetlands, bank forests, xeric native plants and aquatic plants. This includes preparation of seedlings to be planted
13. Preserving the stream meanders, including river bank protection and vegetation management.
14. Landscaping and vegetation rehabilitation in river areas where fragmented, to enable continuous eco-zones
15. Managing environmental flow regimes in accordance with water availability, including regulated floods for the encouragement of vegetation development in riparian buffer zones.
16. River maintenance in the first period after planting to prevent the overrun by common reed. Maintenance will be reduced to a minimum after the vegetation is established, including water quality monitoring.
17. Creating a sequence of ecological corridors along the stream including the possibility for the migration of fish upstream to the Yarmouk.
18. Development of specific touristic and hiking routes along the river, meanwhile minimizing potential damage to sensitive habitats.
19. Setting up (international) river management structure for implementation and monitoring  
20. Including a pilot restoration project, such as in Wadi Ziglab

### Results / Impacts:
Eventually, this intervention once its outcomes are implemented will lead to:
- Protecting or restoring the natural structure of ecosystems to maintain ecosystem services
- Guarantee the right interaction between all the eco-system elements in the study area
- Involved stakeholders through participation
- This project will have a direct impact on the Jordan River

### Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin by restoring the green character of the river again – supporting not only the own riparian ecosystem services and biodiversity, but also the biodiversity of the region in general.

### Organization / Responsibilities:
- International coordination with Israel and Palestine
- Ministry of Environmental Affairs
- JVA
- Ministry of Agriculture
- Municipalities

### Costs and Revenues:
- Preparation and planning: 500,000 USD
- Implementation and monitoring: 30 million USD
- Operations / maintenance: 500,000 USD / yr

### Implementation Period
- Preparation time: 1 year
- Construction time: 10 year

### Other remarks:
This intervention requires strong coordination among Israel, Jordan and Palestine, and depends therefore on real co-operation among the three parties, preferably within the context of a Peace Treaty between Israel and Palestine. This intervention also depends on the completion of the pollution control related interventions. It also depends on increasing the environmental baseflow in the river. According to previous EcoPeace studies, Jordan would have to convey 90 MCM extra water through the River system to restore the environmental baseflow of the river. This project is expected to be implemented therefore not before 2020.
### Name:
E03 REG – Jordan River Fish Stock Restoration Project

### Location:
Lower Jordan River

### Type of Intervention:
Ecological Management

### Objectives:
This intervention will depend on the gradual improvement of water quality, water supply and environmental flow into the lower Jordan River.

The aim of this intervention is to recreate the aquatic structure of river to the best level possible depending on the quantity and quality of the water flow in the river.

The goal is the restoration and protection of the natural fish stock of river.

This intervention will have a positive direct impact on the Jordan river.

### Interventions:
- The gradual restoration of the natural fish stock structure of river
- The realization of the full potential of river ecosystem services

### Results / Impacts:
This intervention will:
- Restore the endemic Fish Stock in the Jordan River
- Environmental flow regime required for full ecological restoration of the river
- Require optimized co-operation among the three riparian countries to manage inflows and outflows
- Requires monitoring of flows at different section and throughout the year
- This project will have a direct impact on the Jordan River

### Sustainability and Water Impacts:
This project will have a direct impact on the sustainability of the Jordan River Basin by restoring the environmental flows in the river, which will support redevelopment of the ecosystem services and biodiversity, but also the biodiversity of the region in general.

### Organization / Responsibilities:
- Ministries of Environmental Affairs
- JVA, PWA, IWA
- NCAR, farmer associations,
- Municipalities

### Costs and Revenues:
- Preparation and planning: 500,000 USD
- Implementation and monitoring: 500,000 USD

### Implementation Period
- Preparation time: 1 year
- Operations: permanently
### Operations / maintenance: 500,000 USD / yr

<table>
<thead>
<tr>
<th>Operations / maintenance: 500,000 USD / yr</th>
</tr>
</thead>
</table>

**Other remarks:**
This intervention requires strong coordination between all relevant stakeholders. The pollution control related interventions and the restoration of environmental flows into the LJR are a precondition for the implementation of this intervention and are vital for the success of this intervention. This intervention is expected to be implemented after 2020.
**Name:** E04 REG - Nature Protection Areas and Management Plan  
**Location:** Jordan Valley, Regional  
**Type of Intervention:** Planning

**Objectives:**
The aim of this project is to make a detailed assessment of the nature and ecological status through the LJR Basin, including the nature areas designated earlier by the Israeli Military Authorities in the West Bank, and will lead to defining plans and policies for nature preservation and protection areas, including grazing lands and parks, under Palestinian, Jordanian and Israeli Lawa and ecological development and protection plans.

**Intervention:**
The intervention includes integrated comprehensive surveys on Flora; Fauna (including endangered species); Topographic features (soil, geology, elevations, etc.); Habitats; Regional vegetation communities; Locations of significant species; Additional elements such as habitat trees. It encompasses related Data management and collection; Setting up methodologies and plans; Comprehensive field visits and public meetings; Consultations with official authorities.

**Preparation:**
- Data management and collection
- Setting up methodologies and plans
- Comprehensive field visits and public meetings
- Consultations with official authorities

**Construction / realization:**
- Planning for the project (consultation with official and relevant bodies)
- Preparation of available data (site maps, roads, parcels, land use, land cover, topography, soil, geology, rainfall contours, temperature distribution, etc.)
- Survey work (utilization of GPS and GIS, field work, meetings, etc.)
- Data processing and classification

**Operations:**
- Producing maps for the distribution of flora and fauna with emphasis on the endangered ones
- Preparation of the vulnerability maps for the study area
- Ranking of the different land parcels and covers according to the vulnerability level to contamination
- Highlighting areas of high sensitivity (vulnerability) and matching that with proposed sites for interventions

**Results / Impacts:**
Better understanding and facilitation off/or the following:
- Vegetation mapping
- Assessment of aquatic ecology

**Organization / Responsibilities:**
- Ministries of Environment
- Ministries of Agriculture
- Farmer associations
- Ministry of Planning

**Costs and Revenues:**
- Preparation costs: 500,000 USD
- Construction costs: 5 million USD

**Implementation Period**
- Preparation time: 6 months
- Construction time: 2 years

**Other remarks:**
### Name:
E05 REG – International Accreditation of the Lower Jordan River Valley

### Location:
Jordan Valley

### Type of Intervention:
Planning

### Objectives:
The aim of this project is to have the Lower Jordan River Valley accredited under the UNESCO World Heritage, Ramsar and IUCN Protected Area.

### Intervention:
The intervention includes prepared for the required baseline and related information to apply for the accreditation with the UNESCO World Heritage, IUCN Protected Areas and RAMSAR. A number of initiatives within Eco-Peace and other organizations like the “Jordan Heritage Company” have highlighted the Cultural and Spiritual values existing within the Jordan Valley. These initiatives are important starting point in the accreditation process. This project will be linked to intervention IC01 REG- Establishing a Jordan River Basin Organization (JORBO), because governance is important to the accreditation process.

### Preparation:
- Data management and collection of information
- Preparing application with UNESCO World Heritage, Ramsar and IUCN Protected Area.
- Comprehensive field visits and public meetings with representatives of UNESCO World Heritage, Ramsar and IUCN Protected Area.
- Consultations with official authorities
- Conclusion of accreditation

### Results / Impacts:
*Full accreditation with UNESCO World Heritage, Ramsar and IUCN Protected Area.*
- Increase international attention for the LJR Basin
- Increased international visits to the LJR Basin
- Higher financial resources for sustainable management of the LJR Basin

### Organization / Responsibilities:
- Ministries of Environment
- Ministries of Agriculture
- Ministries of Planning

### Costs and Revenues:
- Preparation costs: 1,500,000 USD

### Implementation Period:
- Preparation time: 3 years
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>E06 REG – Jordan Valley Regional Coordination on Ecology</td>
<td>Jordan Valley</td>
<td>Ecology</td>
</tr>
</tbody>
</table>

**Objectives:**

The purpose of this intervention setting up a regional coordination structure, or Steering Committee, among key Jordanian, Israeli and Palestinian governmental stakeholders for the implementation of the proposed national and regional interventions in the Jordan Valley with regards to the Ecology. The objective is that this Steering Committee will eventually be embedded in the structures of the overall River Basin Organization for the Jordan Valley (ref. intervention IC01 REG Jordan River Basin Organization).

The Regional Coordination Structure aims at optimized regional co-operation in preparation and implementation of the interventions, maximized exchange and joint development of know-how and experiences among the three core parties, monitoring the outputs of the interventions and steering the implementation in terms of their contribution toward reaching the Ecology Objectives.

**Intervention:**

| (7) Setting up a kick-off meeting with the key governmental stakeholders from the three core parties with regard to the Ecology Objectives |
| (8) Defining objectives, procedures and operational, organizational and financial frameworks for setting up the joint Steering Committee under the Ecology Objectives |
| (9) Joint preparation of detailed implementation and financing plans for the proposed (groups of) interventions |
| (10) Setting up structures for regional exchange of related know-how and experiences |
| (11) Development of key performance indicators and monitoring procedures towards the implementation of the interventions |
| (12) Assisting and steering the project implementing organizations accordingly |

**Results / Impacts:** Lower Risk in terms of production

- Optimized regional co-operation during the preparation and implementation of the proposed interventions under the Ecology Objectives
- Maximized regional exchange know-how and experiences
- Optimized monitoring and steering of the interventions during detailed preparation and implementation
- Building up regional trust and the peace dividend

**Sustainability and Water Impacts:**

- This project will have a direct impact on the sustainable development of the Jordan Basin through optimized co-ordination and exchange of relevant information

**Organization / Responsibilities:**

- Key governmental and sectoral stakeholders from Jordan, Israel and Palestine
- Support, dissemination by EcoPeace

**Costs and Revenues:**

- Preparation costs: 300,000 USD
- Implementation Cost: 200,000 USD per year

**Implementation Period**

- Until 2050:
Name: E01 ISR – Jordan River
Ecological Restoration Project - Israel

Location: Northern Israeli Jordan Valley

Type of Intervention: Water Management

Objectives:
To enable:

- Ecological Restoration of the Jordan River Section between Sea of Galilee to Nanaraym and then to Bezeq Stream.
- Section between Naharaym and Bezeq (where the river is the border between Israel and Jordan) will be done in co-operation with Jordan, and is described in the regional intervention E01 REG.
- The aim of this intervention is to restore the ecological status of the river again – supporting not only the riparian ecosystem services and biodiversity, but also the biodiversity of the region in general.
- This project will depend on the gradual improvement of water quality, water supply and environmental flow into the river.

Interventions:
1. Designate specific protected sections with valuable habitats along the river
2. Performing the ecological rehabilitation for several years while constantly monitoring the changes, based on experience with previous pilot projects.
3. Expanding the river flood zone, including side wadis, rehabilitation of river banks; dredging the flow channel where needed, and protecting buffer zones between the cultivated agricultural lands and the habitat along the stream.
4. Enriching the diversity of natural vegetation with the expected improvement in water quality.
5. Treating and removal of invasive species, such as eucalyptus trees along the stream.
6. Restoring diverse native habitats to increase biological diversity.
7. Restoration of natural vegetation species according to suitability and to the expected flow regime of the river, including clumped bank vegetation, wetlands, bank forests, xeric native plants and aquatic plants. This includes preparation of seedlings to be planted.
8. Preserving the stream meanders, including river bank protection and vegetation management.
9. Landscaping and vegetation rehabilitation in river areas where fragmented, to enable continuous eco-zones.
10. Managing environmental flow regimes in accordance with water availability, including regulated floods for the encouragement of vegetation development in riparian buffer zones.
11. River maintenance in the first period after planting to prevent the overrun by common reed. Maintenance will be reduced to a minimum after the vegetation is established, including water quality monitoring.
12. Creating a sequence of ecological corridors along the stream including the possibility for the migration of fish upstream to the Sea of Galilee.
13. Development of specific touristic and hiking routes along the river, meanwhile minimizing potential damage to sensitive habitats.
14. Setting up river management structure for implementation and monitoring (see also intervention IC01 REG).

Results / Impacts:

- Increased river ecology
- Better environment for recreation and eco-tourism

**Organization / Responsibilities:**
- Jordan Valley Regional Council
- Springs Valley Regional Council
- Kinneret Drainage Authority
- Lower Jordan River Drainage Authority
- Ministry of Environment, Regional Cooperation, Agriculture and Tourism.
- Private Sector

**Costs and Revenues:**
- Preparation and planning: 100,000 USD
- Implementation and monitoring: 3 million USD??
- Operations / maintenance: 100,000 USD / yr

**Implementation Period**
- Preparation time: 1 year
- Construction time: 3 year

**Other remarks:**
**Name:** E01 JOR – Ecological Corridors around Valleys and Dams  
**Location:** Lower Jordan Valley  
**Type of Intervention:** Reintroduction of natural flora to watersheds flowing Eastern Jordan and Yarmouk Rivers

**Objectives:**
The aim of this intervention is to restore the natural vegetation in areas surrounding dams in the eastern Lower Jordan River basin. This includes also restoration activities in areas surrounding the valleys that flow into the Lower Jordan River. This intervention is designed to support riparian areas ecosystem services and biodiversity, which will have far reaching positive impacts on the biodiversity of the region in general.

In addition, work on this intervention will include the improvement of side valleys channel systems and discharge channels; and the reintroduction to these areas the natural plants and forest species as part of a systematic ecological restoration of the eastern Lower Jordan River basin.

**Intervention:**
- Improve and replant natural trees and plants in and around dams such as: Salix spp., Populus euphratica, Tamarix Spp, Juncus spp. and Phragmytis australis. Pistacia atlantica not Tamarix or Phragmites. Of particular significance to the eastern part of the Lower Jordan River basin is the Ceratonia silqua in the North part and the Acacia raddiana and Salvadora in the South part.
- Improve channel systems and discharge channels and replant with natural plant and forest species such as: Salix spp., PopulusEuphratica, Tamarix Spp, Juncus spp., Acacia spp., Ziziphus spp., and Phragmytis australis.
- Establish picnic areas close to each Dam complete with recreational parks and information centers.

**Results / Impacts:**
Eventually, this intervention once implemented will lead to the following:
- Protection and restoration of the natural flora structure of ecosystems in the sub watersheds within the Eastern Lower Jordan River watershed; in particular around dams and side valleys.
- Restoration of the ecosystem services of the Eastern Lower Jordan River watershed.
- Direct positive impact on the LJR through enhancing biodiversity and ecological corridors in the basin.

**Organization / Responsibilities:**
- Ministry of Environment
- Royal Botanical Garden
- Royal Society for the Conservation of Nature
- Jordan Valley Authority
- Ministry of Agriculture
- The National Center for Agricultural Research and Extension (NCARE)
- Municipalities

**Costs and Revenues:**
- Preparation and planning: 500,000 JD
- Implementation and monitoring: 5 M ID
- Operations / maintenance: 500,000 JD / yr

**Implementation Period**
- Preparation time: 1 year
- Implementation time: 5 year

**Other remarks:**
This intervention requires strong coordination between the different Ministries and NGOs, and the strong adaptation by the relevant municipalities.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>E02 JOR – Wetlands and Aquatic Fauna Restoration</td>
<td>Lower Jordan Valley</td>
<td>Wild and aquatic life management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of this intervention is to recreate the wetland and aquatic structure of the valleys flowing into the Lower Jordan and Yarmouk rivers. This intervention is intended to create a balanced ecological system in which wildlife and aquatic fauna is re-introduced in all relevant elements of the Lower Jordan River basin.</td>
</tr>
</tbody>
</table>

In particular, this intervention targets a select number of endemic dragonflies, reptiles, endangered and rare species of relevance to the Lower Jordan River basin. In-directly, this intervention will have a positive impact on the aquatic life and ecosystem services of the Lower Jordan river.

<table>
<thead>
<tr>
<th>Intervention:</th>
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</thead>
<tbody>
<tr>
<td>Secure adequate water sources to:</td>
</tr>
<tr>
<td>• Protect the endemic dragonflies of the River such as the Calopteryx hyalina, C. syriaca, Ceriagrion georgifreyi, and Pseudagrion torridumhulae; and the Coenagrionvan brinkiae, P. Sublacteum mortoni, Gomphus kinzelbachi, Onychogomphusmacron, Brachythemisfuscopalliata, Crocothemissanguinolenta species which are considered vulnerable; and finally the following two extinct species: the Rhyothemissemihyalinasyriaca and the Urothemisedwardsihulae.</td>
</tr>
<tr>
<td>• Restore the population of endangered reptiles of the Lower Jordan River such as: Natrix tesselata and Amphibian Hylasavignyi.</td>
</tr>
<tr>
<td>• Protect endangered and rare such as the Common Otter Lutralutra and White Tooth Shrew Crociduramonacha by minimizing the salinity, pesticide and agrochemical residues in the Lower Jordan River and its tributaries.</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Results / Impacts:</th>
</tr>
</thead>
<tbody>
<tr>
<td>This intervention will aid in the:</td>
</tr>
<tr>
<td>• Protection and restoration of the natural aquatic fauna structure.</td>
</tr>
<tr>
<td>• Guarantee of the right interaction and balance between all the eco-system elements in the study area.</td>
</tr>
<tr>
<td>• Improvement of biodiversity and ecological corridors in the Lower Jordan River basin.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Environment</td>
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<tr>
<td>JVA/ Dams authority</td>
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<tr>
<td>Ministry of Agriculture</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation and planning: 500,000 JD</td>
</tr>
<tr>
<td>Implementation and monitoring: 1 M JD</td>
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<tr>
<td>Operations / maintenance: 500,000 JD / yr</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation time: 1 year</td>
</tr>
<tr>
<td>Implementation time: 5 year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other remarks:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pollution control and salinity management in the Lower Jordan Basin is vital for the success of this intervention.</td>
</tr>
<tr>
<td>Name:</td>
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<td>-------</td>
</tr>
<tr>
<td>E03 JOR – Ecological Monitoring and Management Project</td>
</tr>
</tbody>
</table>

**Objectives:**

The aim of this intervention is to support the implementation and monitoring of the various ecological interventions. It is very well known that inadequate policy and the lack of law enforcement can hamper any effort.

In particular, policy and law enforcement related to the protection of aquatic life and flora and fauna in the designated areas within the Lower Jordan River basin.

This intervention consists of dam reservoir management, protection and management and the introduction of a number of protected areas.

of river ecosystems to maintain ecosystem services

**Interventions:**

- Protect and regularly monitor the reservoirs of the Arab, Ziglab, Shueib and Kafrein dams from pollution.
- Create a water management plan for the dams in order to stabilize the populations of natural fish, Bat, Fresh water turtle, Common Otter Egyptian fruit bat.
- Declare the following areas around the Yarmouk and Jordan river as protected national rangeland or forest reserves: Wadi Damiya, Wadi Al Kharar, and King Hussein Bridge surrounding areas.

**Results / Impacts:**

This set of interventions will lead to the:

- Protection and restoration of the population of natural mammals and amphibian population structure.
- Insuring the maintenance of the right interaction between all the eco-system elements in the area.

**Organization / Responsibilities:**

- Ministry of Environmental Affairs
- JVA / Dams authority
- Ministry of Agriculture
- Water Authority and Municipalities
- Farmers associations
- NGOs
- Universities

**Costs and Revenues:**

- Preparation and planning: 500,000 JD
- Implementation and monitoring: 2 M JD
- Operations / maintenance: 100,000 JD / yr

**Implementation Period**

- Preparation time: 1 year
- Implementation: 10 year

**Other remarks:**
Name: E04 JOR – Jordanian Eco parks and Protected Areas

Location: Lower Jordan Valley

Type of Intervention: Policy regulations for protected areas designation

Objectives:

The Lower Jordan River basin is rich in unique cultural and natural sites. The full potential of these can only be harnessed by well planned investment in environmental friendly project.

This intervention envisions a number ecological parks and carefully selected special zones including a number of bird observation sites. Part of this intervention as well is a comprehensive planning and analysis for each of the proposed sites.

Each site will serve and act as a center for spreading and showcasing knowledge and awareness about the value of the Lower Jordan River.

These interventions are expected to have a positive impact on the touristic activities in the Jordan Valley and the overall restoration of the valley ecosystem services.

Interventions:

- Designate the Bakoura area, unique for its natural and cultural values, as a National Park.
- Designate the area of the Al Huaija Tree as a National Natural Monument.
- Designate the Karama dam area as a National Park.
- Set a bird monitoring center at the Bakoura Park, Karama dam area, and the Jordan River meeting point with the Dead Sea complete with cutting edge monitoring technologies.
- Expansion of the SHE ecological park in the westerly direction until reaching the Jordan River.

Results / Impacts:

This set of interventions will lead to:

- The development of environmental friendly touristic activities in the LJR basin.
- The enhancement of the economical diversification in the LJR basin.

Organization / Responsibilities:

- Ministry of Environmental Affairs
- JVA /Dams authority
- Water Authority and Municipalities,
- NGOs

Costs and Revenues:

- Preparation and planning: 500,000 JD
- Implementation and monitoring: 20 M JD
- Operations / maintenance: 2 M JD / yr

Implementation Period:

- Preparation time: 1 year
- Implementation time: 10 year

Other remarks:
**Name:** E01 PAL - Nature Protection and Management Plan  
**Location:** Jordan Valley, Palestine  
**Type of Intervention:** Nature Protection

### Objectives:
The aim of this project is to make a detailed assessment of the nature and ecological status in the Palestinian LJV, including the nature areas designated earlier by the Israeli Military Authorities, and will lead to defining plans and policies for nature preservation and protection areas, including grazing lands and parks, under Palestinian Law and ecological development and protection plans.

### Intervention:
The intervention includes integrated comprehensive surveys on Flora; Fauna (including endangered species); Topographic features (soil, geology, elevations, etc.); Habitats; Regional vegetation communities; Locations of significant species; Additional elements such as habitat trees. It encompasses related Data management and collection; Setting up methodologies and plans; Comprehensive field visits and public meetings; Consultations with official authorities.

### Preparation:
- Data management and collection
- Setting up methodologies and plans
- Comprehensive field visits and public meetings
- Consultations with official authorities

### Construction / realization:
- Planning for the project (consultation with official and relevant bodies)
- Preparation of available data (site maps, roads, parcels, land use, land cover, topography, soil, geology, rainfall contours, temperature distribution, etc.)
- Survey work (utilization of GPS and GIS, field work, meetings, etc.)
- Data processing and classification

### Operations:
- Producing maps for the distribution of flora and fauna with emphasis on the endangered ones
- Preparation of the vulnerability maps for the study area
- Ranking of the different land parcels and covers according to the vulnerability level to contamination
- Highlighting areas of high sensitivity (vulnerability) and matching that with proposed sites for interventions

### Results / Impacts:
**Better understanding and facilitation of for:**
- Vegetation mapping
- Assessment of aquatic ecology
- Threatened species survey and assessment
- Threatened species management

**Environmental impact assessment**
- Biodiversity planning
- Wildlife assessment

### Organization / Responsibilities:
- Ministry of Environmental Affairs
- Ministry of Agriculture
- Farmer associations
- Ministry of Planning

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Preparation costs: 500,000 USD</td>
<td>• Preparation time: 6 months</td>
</tr>
<tr>
<td>• Construction costs: 5 million USD</td>
<td>• Construction time: 2 years</td>
</tr>
</tbody>
</table>
7 SUSTAINABLE TOURISM AND CULTURAL HERITAGE DEVELOPMENT

<table>
<thead>
<tr>
<th>Name: C01 REG – Jordan River Mouth Tourism Information Center</th>
<th>Location: Meeting point of the Jordan River and the Dead Sea</th>
<th>Type of Intervention: Tourism and Cultural Heritage Development</th>
</tr>
</thead>
</table>

**General Objectives:**
To develop a tourism center, at the meeting point of the Jordan River with the Dead Sea, aiming at providing information and guidance to tourists and visitors to the Lower Jordan Valley. To organize touristic events, happenings and tours in the Jordan Valley particularly during the tourist season, such as theatre performances and music events at key historic sites in the lower basin, or rural traditional meals and events in co-operation with local population. The centre shall be linked to the main tourism related websites for Jordan and Palestine, and shall be linked to the main tourism support centres in Palestine, Jericho, Amman, Jerash; Petra, Wadi Rum and Aqaba.

**Preparation:**
- Planning with stakeholders (Concept approach).
- Assessment of most appropriate site
- Develop information; materials; website
- Develop alternative events; happenings; tours in the region
- Define tourism support requirements (restaurants, souvenirs; signs, etc)
- Use of bio-climatic design practices and of renewable building materials

**Construction / realization:**
- Get agreement on financial and organizational management structures
- Prepare for information campaigns, including website
- Prepare for designs and tender documents for the center

**Operations:**
- Operation of Tourism Center and websites

**Results / Impacts:**
- It will increase the number of tourists in the Jordan Valley
- In combination with all JV portal interventions, the centre is expected to attract tens of thousands additional visitors, both regionally as well as internationally.

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials for the establishment of the Tourism Information Center

**Organization / Responsibilities:**
Ministries of Tourism and Antiquities
Involved municipalities
EcoPeace

**Costs and Revenues:**
- Preparation costs: 0.2 Million USD
- Construction costs: 2 Million USD
- Annual Operation costs: 0.2 Million USD
- Annual Revenues: 0.4 Million USD

**Implementation Period:**
- Preparation time: 1 Years
- Construction time: 2 Years
<table>
<thead>
<tr>
<th>Name: C02 REG – Faith Based Tourism and Baptism Site Improvement Project</th>
<th>Location: Jordan River, Jordan, Palestine</th>
<th>Type of Intervention: Tourism and Cultural Heritage Development</th>
</tr>
</thead>
</table>

**Objectives:**
The Baptism Site, “Bethany Beyond the Jordan (Al-Maghtas) is located in the Southern Jordan Valley on the easters and western side of the Jordan River around 9 km north of the Dead Sea and is part of the West Banks and the District of South Shunah in the Governorate of Al-Balqaa. The site is located a few kilometers to the east of the oasis and ancient site of Jericho and 50 km west of Amman, the capital of Jordan. The site covers an area of 533.7 hectares where five archaeological sites dating back to the Roman and Byzantine periods have been discovered. The precise limits of the archaeological remains are undetermined, although all identifiable cultural traces are included in the protected area. This intervention aims at improving the tourism facilities at the Baptism site along the River Jordan, particularly with regard to establishing a good restaurant, a rest house, a bookshop and souvenirs shop, and a river walk, and integrating the Jordanian and Israeli / Palestinian site into one concept. This project links furthermore link the Baptism site to other faith based destinations in the valley, including Jericho, Kaser el Yehud, Bethany Beyond the Jordan, Mount Nebo, Yardenit and Gadara.

**Intervention:**
- Planning for requested improvements
- Development of Commercial Business Model
- Design
- Tendering

**Construction / realization:**
- Restaurant
- Rest house
- Book and souvenir shops

**Operations:**
- Outsourcing according to commercial business model

**Results / Impacts:**
- More attractive tourism destination, leading to higher number of visitors and more revenues
- This leads to better options for additional investments.
- Use of bio-climatic design practices and of renewable building materials

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials for the improvement of the baptism site

**Organization / Responsibilities:**
- Ministries of Tourism and Antiquities, EcoPeace for dissemination and stakeholder management

**Costs and Revenues:**
- Preparation costs: 100,000 USD
- Construction costs: 4,000,000 USD
- Operation costs: 100,000 JD / yr
- Annual Revenues: 300,000 JD / yr

**Implementation Period**
- Preparation time: 1 year
- Construction time: 2 years
### Name: C03 REG – Jordan River Peace Park Improvement

**Location:** Jordan River, Jordan, Israel

**Type of Intervention:** Tourism and Cultural Heritage Development

### Objectives:

The Jordan River Peace Park is proposed to combine two adjacent areas; Al Bakoora / Naharayim, where a small island was created at the junction of the Jordan and Yarmouk Rivers, and the Jeser Al Majama / Gesher site, known as the historical crossing point of the Jordan River Valley. This intervention aims at improving the nature facilities at the park along both sides of the River Jordan, particularly with regard to establishing a good restaurant, a rest house, a bookshop and souvenirs shop, and nature and river walks.

### Interventions:

- Feasibility studies & designs of Lake restoration (240 – 380 dunum); reconstructing worker’s homes into eco-lodges; rehabilitation of the bridges, trails, railway station, entrance gate
- FS and designs of conversion of former Power Station into visitors / cultural center
- FS and design of cross border peace park, including security issues and fences, development of panoramas, conventions center and hotel facilities, electricity and water utilities, treatment plant
- Tendering and construction of different phases and Operations

### Construction / Realization:

- Flood Plains, Nature development, bird watching facilities, Restaurant
- Rest house
- Book and souvenir shops

### Operations:

- Outsourcing according to commercial business model

### Results / Impacts:

The creation of a protected area on both sides of the river will provide greater opportunities for biodiversity protection, cooperative management, joint research programs, education and collaboration on nature-based tourism.

More attractive tourism destination, leading to higher number of visitors and more revenues

This leads to better options for additional investments.

Use of bio-climatic design practices and of renewable building materials

### Sustainability and Water Impacts:

- This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials for the improvement of the peace park

### Organization / Responsibilities:

Ministries of Tourism and Antiquities, EcoPeace for dissemination and stakeholder management

### Costs and Revenues:

- Preparation costs: 100,000 USD
- Construction costs: 4,000,000 USD
- Operation costs: 100,000 JD / yr
- Annual Revenues: 300,000 JD / yr

### Implementation Period:

- Preparation time: 1 year
- Construction time: 3 years
<table>
<thead>
<tr>
<th>Name: C04 REG – Jordan River Regional Routes</th>
<th>Location: Jordan, Israel, Palestine</th>
<th>Type of Intervention: Tourism Attraction, Experiential Tourism</th>
</tr>
</thead>
</table>

**General Objectives:**
- To provide an authentic tourism attraction (destination) throughout the Jordan Valley within an appropriate security framework.
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To well prepare and introduce the JV with diverse attractions to tourism industry (internal and inbound).
- This project aims at developing attractive trans-boundary routes for tourists and for local people. This includes planning; road signs and information signs; booklets and promotion activities.

**Intervention:**
- To create a new tourism attraction

**Preparation:**
- Feasibility studies.
- Concept development.
- Detailed plans and Designs.
- Training.

**Construction / realization:**
- Community based activities (awareness and training)

**Operations:**
- Realization of safety measures.
- Construction.
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods. Cultural and Natural Heritage conservation guidelines need to be provided managers guides and hikers.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV.
- It will partially use the hospitality potentials and increase overnights in the JV.
- It will expand the market to target experiential tourism seekers.
- In combination with all JV attraction sites, hiking trails will provide unique cultural and natural experiences in the JV as well as in Palestine. Hiking Trails will expand the welfare from tourism to marginal and rural areas.
- Trail development will provide hiking / touring options of diverse cultural and natural experiences.

**Organization / Responsibilities: Ministries, and local authorities**

**Costs and Revenues:**
- Preparation costs: 0.4 MUSD
- Construction costs: 1.6 MUSD
- Operation costs: (services needs to be provided by an existing institution(s)).
- Annual Revenues: It is recently active tourism. Bases for estimating revenues still to be investigated (note that 1$ value in the rural and marginal areas is very effective)

**Implementation Period**
- Preparation time: 1 year
- Construction time: 4 years

**Other remarks:** Trail management better to be assigned to sport centers or Youth Guest Houses.
<table>
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<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C05 REG – Cultural and Historic Museums network for the Lower Jordan Valley</td>
<td>Jordan Valley</td>
<td>Tourism and Cultural Heritage Development</td>
</tr>
</tbody>
</table>

**General Objectives:**
- To coordinate authentic network of museums in the three countries on a regional level, each one complementing the other.
- To provide information on the natural, historic and cultural history of the valley from different perspectives.
- To support growth of the tourism sector in the valley.
- To include specific information on the pre-historic importance of sites throughout the valley.
- To include a presentation of key natural and cultural heritage objects and artefacts.
- The project shall be coordinated with the national projects C03 JOR and C03 PAL.

**Intervention:** To develop a regional museum concept, presentations and construction design.

**Preparation:**
- Planning with stakeholders (Concept approach).
- Theme research and comparative studies.
- Feasibility and Market review.
- Museum Concept development (three countries).

**Construction / realization:**
- Museum thematic collections and presentations.
- Construction (Concept and detailed Designs).
- Construction and mounting museum displays.

**Operations:**
- Operations and Management Plans.
- 2 - 5 years of operational support.

**Results / Impacts:**
- It will increase the number of tourists in the Jordan Valley.
- In combination with all JV portal interventions, the museum is expected to attract about 1 – 2 million visitors per year throughout the basin. During operational period, the museum may provide 50 direct jobs and various indirect jobs.
- Use of bio-climatic design practices and of renewable building materials.

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials for the establishment of the Museum.

**Organization / Responsibilities:**
- Ministries of Tourism and Antiquities, EcoPeace

**Costs and Revenues:**
- Preparation costs: 0.5 Million USD
- Construction Costs: 2.5 M USD
- Annual Operation costs: 200,000 JD
- Annual Revenues: 300,000 JD

**Implementation Period**
- Implementation time: 3 Years
Name: C06 REG – Jordan Valley Regional Coordination on CH and Tourism
Location: Jordan Valley
Type of Intervention: CH and Tourism

Objectives:
The purpose of this intervention setting up a regional coordination structure, or Steering Committee, among key Jordanian, Israeli and Palestinian governmental stakeholders for the implementation of the proposed national and regional interventions in the Jordan Valley with regards to the CH and Tourism. The objective is that this Steering Committee will eventually be embedded in the structures of the overall River Basin Organization for the Jordan Valley (ref. intervention IC01 REG Jordan River Basin Organization)

The Regional Coordination Structure aims at optimized regional co-operation in preparation and implementation of the interventions, maximized exchange and joint development of know-how and experiences among the three core parties,

Intervention:
(13) Setting up a kick-off meeting with the key governmental stakeholders from the three core parties with regard to the CH and Tourism Objectives
(14) Defining objectives, procedures and operational, organizational and financial frameworks for setting up the joint Steering Committee under the CH and Tourism Objectives
(15) Joint preparation of detailed implementation and financing plans for the proposed (groups of) interventions
(16) Setting up structures for regional exchange of related know-how and experiences
(17) Development of key performance indicators and monitoring procedures towards the implementation of the interventions
(18) Assisting and steering the project implementing organizations accordingly

Results / Impacts: Lower Risk in terms of production
- Optimized regional co-operation during the preparation and implementation of the proposed interventions under the CH and Tourism Objectives
- Maximized regional exchange know-how and experiences
- Optimized monitoring and steering of the interventions during detailed preparation and implementation
- Building up regional trust and the peace dividend

Sustainability and Water Impacts:
- This project will have a direct impact on the sustainable development of the Jordan Basin through optimized co-ordination and exchange of relevant information

Organization / Responsibilities:
- Key governmental and sectoral stakeholders from Jordan, Israel and Palestine
- Support, dissemination by EcoPeace

Costs and Revenues:
- Preparation costs: 300,000 USD
- Implementation Cost: 200,000 USD per year
- Implementation Period
  - Until 2050:
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C01 ISR – Tsemach to Naharaym Tourism Development Program</td>
<td>Northern Israeli Jordan Valley</td>
<td>Cultural Heritage Tourism Development</td>
</tr>
</tbody>
</table>

**Objectives:**

To enable:
- Substantially improved regional and local tourism facilities from Tsemach to Naharaym.
- The project components may be implemented separately, but are listed hereunder all together.

The hotel / motel related project components are most likely to be financed through the private sector.

**Interventions:**

- Rehabilitation of Tsemach Old Police Station into visitor information center.
- Restoring the Zero Canal and its flow, to enable rafting and related water tourism.
- To create combined agriculture – tourism facilities into specific rural tourism concepts.
- Development of water sports facilities between Naharaym to Old Gesher.
- Further develop existing museums, like the Gordon, Pre-historic and agriculture museums.
- Further development of hiking and bicycling tourism routes with various information themes along the river section between Tsemach and Naharaym.
- Rehabilitation of various small sized archaeological sites and tels, and improvement of their tourism facilities.

**Results / Impacts:**

- Increase tourism

**Organization / Responsibilities:**

- Jordan Valley Regional Council
- Kinneret Drainage Authority, Israel
- Relevant tourism ministries and organizations
- Private Sector

**Costs and Revenues:**

- Preparation costs: 1 MUSD
- Construction Cost: 25 MUSD

**Implementation Period:**

- Preparation time: 2 year
- Construction time: 5 year

**Other remarks:**
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C02 ISR – Gesher to Bezeq Stream Tourism Development Program</td>
<td>Northern Israeli Jordan Valley</td>
<td>Cultural Heritage Tourism Development</td>
</tr>
</tbody>
</table>

**Objectives:**
- Substantially improved regional and local tourism facilities from Gesher to Bezeq Stream.
- The project components may be implemented separately, but are listed hereunder all together.

**Interventions:**
- Old Gesher: development of a third baptism religious site at Old Gesher.
- Old Gesher: restoration of the old British Tegart police station into a hotel and welcome facility.
- Development of water sports facilities between Naharaym and Old Gesher.
- Build a promenade along the river near Yardena.
- Further development of Beit She’an tourism center in the Ottoman Khan area.
- Linking Beit She’an tourist facilities to the surrounding tels and the future river tourism along Harod and the Jordan River.
- Rehabilitation of old Flour Mills.
- Construction of Café and lookout over Jordan River near the Sheikh Hussein Bridge.
- Expansion of Gene Khulda camping site along Harod (500 m from Jordan River) in addition to the current Mongolian tent facilities.
- Conversion of current Rupin Kibbutz Fish Pond near Bezeq Stream and Jordan River into a Bird Park (costs 5 M ILS).
- Development of a Tourism Information Center within the joint Jordanian – Israeli Gateway Economic Park (3 km north of Bezeq), and linking this to existing facilities and museums.
- Development of hiking and bicycling tourism routes with various information themes along the river section between Gesher and Bezeq.
- Rehabilitation of various small sized archaeological sites and tels, and improvement of their tourism facilities.

**Results / Impacts:**
- Increase tourism
- Strengthen co-operation with Jordan

**Organization / Responsibilities:**
- Lower Jordan River Basin Drainage Authority, Israel
- Springs Valley Regional Council
- Beit Shean Municipality
- Relevant tourism ministries and organization
- Private Sector in co-operation with Jordan Government

**Costs and Revenues:**
- Preparation costs: 1 MUSD
- Construction Cost: 25 MUSD

**Implementation Period:**
- Preparation time: 2 year
- Construction time: 5 year
**Name:** C01 JOR – Pella Tabaqat Fahl Site Improvement Project  
**Location:** Jordan Valley, Jordan  
**Type of Intervention:** Tourism and Cultural Heritage Development

<table>
<thead>
<tr>
<th>Objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancient Pella at Tabaqat Fahl is one of the most important archaeological sites in the Jordan Valley. Its central location in the land of biblical ‘Gilead’ on the most strategic east-west trade route to the Mediterranean coast was the key to its prosperity. The city is referred to almost a hundred times in various historical texts including the Old Testament which names this city ‘Penuel’. In the fourth century BC, Pella was established as a Hellenistic city and was later included in the Roman Decapolis league. This intervention aims at improving the tourism facilities at Pella</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention:</th>
</tr>
</thead>
</table>
| Planning for requested improvements  
Development of Commercial Business Model  
Development of plan to link Pella to other Decapolis cities  
Design  
Tendering |  

<table>
<thead>
<tr>
<th>Construction / realization:</th>
</tr>
</thead>
</table>
| Info-stand, public education  
Tourism operations |  

<table>
<thead>
<tr>
<th>Results / Impacts:</th>
</tr>
</thead>
</table>
| More attractive tourism destination, leading to higher number of visitors and more revenues  
This leads to better options for additional investments  
Use of bio-climatic design practices and of renewable building materials |  

<table>
<thead>
<tr>
<th>Sustainability and Water Impacts:</th>
</tr>
</thead>
<tbody>
<tr>
<td>This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials for the improvement of the Pella Tabaqat Fahl Site</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Tourism and Antiquities, EcoPeace for dissemination and stakeholder management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
</tr>
</thead>
</table>
| Preparation costs: 200,000 JD  
Construction costs: 2,000,000 JD  
Operation costs: 200,000 JD / yr  
Annual Revenues: 400,000 JD / yr |  

<table>
<thead>
<tr>
<th>Implementation Period</th>
</tr>
</thead>
</table>
| Preparation time: 1 year  
Construction time: 2 years |
**Name:** C02 JOR – Abu Ubaydah Tomb Improvement Project  
**Location:** Jordan Valley, Jordan  
**Type of Intervention:** Tourism and Cultural Heritage Development

<table>
<thead>
<tr>
<th>Objectives:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Tomb of Abu Ubaydah is one of the most important Islamic sites in the Jordan Valley (Ref. EcoPeace Faith Based activities) He was a relative and one of the ‘Blessed Ten’ companions of the Prophet Mohammed. He died during a plague in the central Jordan Valley where he is buried. An impressive modern mosque complex has been built over Abu Ubaydah’s tomb, which serves as the principle Islamic centre in the Jordan Valley. This intervention aims at improving the facilities for Muslim visitors, particularly with regard to establishing a good restaurant, a rest house, and souvenirs shop.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention:</th>
</tr>
</thead>
</table>
| Planning for requested improvements  
Design and Tendering |

<table>
<thead>
<tr>
<th>Construction / realization:</th>
</tr>
</thead>
</table>
| Restaurant near the Tomb  
Rest house near the Tomb  
Souvenir shops |

<table>
<thead>
<tr>
<th>Operations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>In co-operation with the Mosque</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Results / Impacts:</th>
</tr>
</thead>
</table>
| More attractive tourism destination, leading to higher number of Muslim visitors and more revenues  
This leads to better options for additional investments  
Use of bio-climatic design practices and of renewable building materials |

<table>
<thead>
<tr>
<th>Sustainability and Water Impacts:</th>
</tr>
</thead>
<tbody>
<tr>
<td>This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials for the improvement of the Abu Ubaydah Tomb</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Tourism &amp; Antiquities, Ministry Of Awqaf &amp; Islamic affairs, EcoPeace for dissemination and stakeholder management</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
</tr>
</thead>
</table>
| Preparation costs: 50,000 JD  
Construction costs: 500,000 JD  
Operation costs: 50,000 JD / yr  
Annual Revenues: 100,000 JD / yr |

<table>
<thead>
<tr>
<th>Implementation Period</th>
</tr>
</thead>
</table>
| Preparation time: 1 year  
Construction time: 2 years |
### Name:
C03 JOR – Cultural and Historic Museum for the Lower Jordan Valley

### Location:
Deir Alla

### Type of Intervention:
Tourism and Cultural Heritage Development

### General Objectives:
- To provide an authentic tourism destination.
- To provide information on the natural, historic and cultural history of the valley.
- To support growth of the tourism sector in the valley.
- To include specific information on the pre-historic importance of Deir Alla.
- To include a presentation of key natural and cultural heritage objects and artefacts.
- This museum is seen as part of a network of similar museums in the three countries on a regional level, each one complementing the other.

### Intervention:
To develop the museum concept and presentations, including pilgrim routes and biblical maps; Historic importance from agricultural perspective, early migration of mankind out of Africa, presence of Neanderthalers and more.

### Preparation:
- Planning with stakeholders (Concept approach).
- Theme research and comparative studies.
- Construction Design concept
- Feasibility and Market review.
- Museum Concept development.

### Construction / realization:
- Museum thematic collections and presentations.
- Construction (Concept and detailed Designs).
- Construction and mounting museum displays.

### Operations:
- Operations and Management Plans.
- 2 - 5 years of operational support.

### Results / Impacts:
- It will increase the number of tourists in the Jordan Valley.
- In combination with all JV portal interventions, the museum is expected to attract about 0.5 -0.8 million visitors per year. During operational period, the museum may provide 50 direct jobs and various indirect jobs.
- Use of bio-climatic design practices and of renewable building materials

### Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials for the establishment of the Museum.

### Organization / Responsibilities:
Ministry of Tourism and Antiquities, Deir Alla Municipality, EcoPeace

### Costs and Revenues:
- Preparation costs: 0.5 Million JD
- Construction costs: 2 Million JD
- Annual Operation costs: 200,000 JD
- Annual Revenues: 300,000 JD

### Implementation Period:
- Preparation time: 3 Years
- Construction time: 3 Years
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location: Lower Jordan Valley</th>
<th>Type of Intervention: Tourism and Cultural Heritage Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>C04 JOR – Archaeological Landmarks Development Project</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**General Objectives:**
To develop and rehabilitate a series of important archaeological “Tell” landmarks in the Lower Jordan Valley, including visiting facilities, provision of touristic and historic background information, and linking the various sites with touring tracks for pedestrians and bicyclers. The sites to be developed and linked by “Tell tracks” include: Tell El Hammar; Tell Es Saidiyeh; Tell Es Sakhneh; Tell Kreinah; Tell North Shuna and Tell Umm Hammad.

**Preparation:**
- Planning with stakeholders (Concept approach).
- Assessment of Sites for CH and tourism perspective.
- Define CH improvements and tourist information needs.
- Define tourism support requirements (restaurants, souvenirs; signs, etc.).
- Define attractive linking tracks between the tells, and prepare to information, signs and facilities along these tracks.
- Get agreement on financial and organizational management structures.
- Prepare for information campaigns, including website.
- Prepare for designs and tender documents.

**Construction / realization:**
- Rehabilitation of tells.
- Constructing visitor facilities.
- Preparing tracks and signs.

**Operations:**
- Operations tell sites and information facilities along the tracks.

**Results / Impacts:**
- It will increase the number of tourists in the Jordan Valley.
- In combination with all JV portal interventions, the project is expected to attract tens of thousands additional visitors, both regionally as well as internationally.
- Use of bio-climatic design practices and of renewable building materials.

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials for the improvement of the Archeological Landmarks.

**Organization / Responsibilities:**
Ministry of Tourism and Antiquities
Involved municipalities
EcoPeace

**Costs and Revenues:**
- Preparation costs: 0.5 Million JD
- Construction costs: 3 Million JD
- Annual Operation costs: 0.2 Million JD
- Annual Revenues: 0.4 Million JD

**Implementation Period**
- Preparation time: 2 Years
- Construction time: 3 Years

**Other remarks:**
Name: C1 PAL- Cultural Heritage Protection and Management Plan.  
Location: Palestine, All LJV  
Type of Intervention: Management Planning

<table>
<thead>
<tr>
<th>General Objectives:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>To develop an integrated Cultural Heritage Projection and Management Plan for the LJV,</td>
<td></td>
</tr>
<tr>
<td>To upgrade visitor experience (understanding and enjoying the cultural history of the rift valley).</td>
<td></td>
</tr>
<tr>
<td>To facilitate the creation and the growth of the tourism business environment.</td>
<td></td>
</tr>
<tr>
<td>To stimulate private enterprise growth and investment and to increase jobs and exports.</td>
<td></td>
</tr>
<tr>
<td>To well prepare the Palestinian northern part of the JV to tourism industry (internal and inbound).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific Objectives:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>To select potential authentic tourism attractions (destinations) through a methodological approach that represents the value of the JV (Historic urban and industrial sites, Valleys, Panoramic Locations and other key tourism sites and features).</td>
<td></td>
</tr>
<tr>
<td>To provide detailed assessment and descriptions of potential sites based on literature and field investigations.</td>
<td></td>
</tr>
<tr>
<td>To develop an overall site specific financial, technical and protection and development management plans.</td>
<td></td>
</tr>
<tr>
<td>To provide provisional training to create the Cultural and Natural Heritage Preservation Center (CNHPC) and to Cultural and Natural Heritage site specific management staff.</td>
<td></td>
</tr>
</tbody>
</table>

| Intervention: | To create a regional conservation and management plan  |
| Preparation: | Planning with stakeholders (Concept Approach).  |
| Theme research and comparative studies. |  |
| Technical and legal protection plans. |  |
| Concept development. |  |

<table>
<thead>
<tr>
<th>Construction / realization:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data collection, surveys and mapping.</td>
<td></td>
</tr>
<tr>
<td>Data analysis and classification.</td>
<td></td>
</tr>
<tr>
<td>Protection, Conservation and management plan.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operations:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Management and Protection Plan.</td>
<td></td>
</tr>
<tr>
<td>2 - 5 years of operational support.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental Impact:</th>
<th>It will provide a better anticipated mitigation measures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results / Impacts:</td>
<td></td>
</tr>
<tr>
<td>Prevent Cultural Heritage from being an obstacle for all development plans in all sectors.</td>
<td></td>
</tr>
<tr>
<td>Provide comprehensive vision and action plans for the cultural heritage and tourism development.</td>
<td></td>
</tr>
<tr>
<td>Provide the guidance and strategic objectives for sustainable development in the JV.</td>
<td></td>
</tr>
<tr>
<td>Provide the necessary data, tools and strategies for the protection, management and development of the cultural heritage in the JV (Center for Cultural Heritage Preservation).</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
<th>MOTA, MEA, MOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs and Revenues:</td>
<td></td>
</tr>
<tr>
<td>Preparation costs: 0.2 USD</td>
<td>Annual Revenues: Indirect Revenues</td>
</tr>
<tr>
<td>Construction costs: 1.8 USD</td>
<td>Implementation Period</td>
</tr>
<tr>
<td>Operation costs: Cultural Heritage Center</td>
<td>Preparation time: 6 months</td>
</tr>
</tbody>
</table>

<p>| Other remarks: | The coordination and the integration between the cultural heritage management plan and the natural heritage management is inevitable. Due to the nature of the Jordan valley, it is recommended to undertake the two projects and their management measures under the same institutional structure that should to establish the Natural and Cultural Heritage Preservation Center. |</p>
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C2 PAL - Tourism Branding and Promotion.</td>
<td>Palestine, All LJV</td>
<td>Tourism Promotion</td>
</tr>
</tbody>
</table>

**General Objectives:**
- To promote the authentic tourism attraction (destination).
- To promote and disseminate the available visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To integrate the promotion tourism attractions of the JV into the promotion of the Palestinian tourism in general.
- To promote cultural and natural heritage sites in local, regional and international markets.
- To promote cultural activities and community based tourism.
- To develop promotion materials, international publications and websites as well as information centers.
- To promote cultural and sport activities as well as events in the JV in the context of the promotion of Palestinian tourism.
- To develop tourism promotion activities like trade shows, familiarization tours as well as B to B conferences and meetings.

**Intervention:** To create and conduct a local, regional and international promotion activities.

**Preparation:**
- Planning with stakeholders (Concept approach).
- Theme research and comparative studies.
- Market review.
- Concept development.

<table>
<thead>
<tr>
<th>Construction / realization:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data collection, surveys and mapping.</td>
</tr>
<tr>
<td>Data analysis and classification.</td>
</tr>
<tr>
<td>Branding and Marketing Strategy</td>
</tr>
</tbody>
</table>

**Operations:**
- 2 - 5 years of operational support.

**Environmental Impact:** No Significant Environmental Impact.

**Results / Impacts:** This project will provide access of the tourism product to the local, regional and international markets.

**Organization / Responsibilities:** MOTA, HILTOA and AHA

**Costs and Revenues:**
- Preparation costs: 0.1 MUSD
- Promotion Material costs: 0.4 MUSD
- Operation costs: 1 MUSD
- Annual Revenues: Tourism Demand Increase

**Implementation Period**
- Preparation time: 1 year
- Construction time: 4 years

**Other remarks:** Branding the JV as a destination is the main challenge to attract the attention of the local and international markets.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3 PAL - Museum of Natural and Cultural</td>
<td>Palestine, Jiftlick or</td>
<td>Tourism Attraction:</td>
</tr>
<tr>
<td>History of the Rift Valley</td>
<td>Toubas Area</td>
<td>Interpretation of the Rift Valley</td>
</tr>
</tbody>
</table>

**General Objectives:**
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.
- This museum is seen as part of a network of similar museums in the three countries on a regional level, each one complementing the other.

**Specific Objectives:**
- To well prepare the Palestinian northern part of the JV to tourism industry (internal and inbound).
- To plan and realize the development of Natural and Cultural History Museum in the LJV in Jitlik or Toubas.
- To include a presentation and an illustration of the geological, geomorphological, and geographic unique history of the Rift Valley.
- To include a presentation of key natural and cultural heritage objects and artefacts.

**Intervention:** To develop the museum concept, museum presentations and museum construction.

**Preparation:**
- Planning with stakeholders (Concept approach).
- Theme research and comparative studies.
- Feasibility and Market review.
- Museum Concept development.

**Construction / realization:**
- Museum thematic collections and presentations.
- Construction (Concept and detailed Designs).
- Construction and mounting museum displays.

**Operations:**
- Management and curation Plans.
- 2 - 5 years of operational support.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal interventions, the museum is expected to attract about 0.5 -0.8 million visitors per year. During operational period, The museum will provide more than 250 direct jobs, 350 adjacent jobs as well as more than 1500 indirect jobs.

**Organization / Responsibilities:** MOTA, MEA, MOC

**Costs and Revenues:**
- Preparation costs: 5.5 MUSD
- Construction costs: $40 MUSD
- Annual Operation costs: $6,000,000
- Annual Revenues: $8,000,000

**Implementation Period**
- Preparation time: 10 Years
- Construction time: 5 Years

**Other remarks:** The scale of this project is important to have a strong impact on the tourism industry and programs. It is of a great value to have this distinguished destination to attract and upgrade the visitor experience in the JV.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4 PAL - Rehabilitation of the Catchment of Ancient Jericho</td>
<td>Palestine, Jericho</td>
<td>Tourism Attraction: Rehabilitation of the Portal catchment</td>
</tr>
</tbody>
</table>

**General Objectives:**
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To conduct a full study of the catchment area and provide a comprehensive a conservation and development zone plan that will rearrange tourist mobility around the site and its services.
- To construct the necessary pedestrian paths, roads, parking areas as well as information center.
- To equip the area with the necessary direction signs, interpretation panels and street furniture.

**Intervention:** To rehabilitate the immediate area surrounding the archaeological site of Ancient Jericho

**Preparation:**
- Planning with stakeholders (Concept approach).
- Feasibility study.
- Archaeological surveys.
- Concept development.

**Construction / realization:**
- Site Urban concept and detailed designs.
- Site Rehabilitation.

**Operations:**
- Management Plan (responsibilities of MOTA and the Municipality).

**Environmental Impact:** Full Mitigation will be necessary from design to operations.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- It will expand and distribute the benefits of Ancient Jericho visitors among the immediate services available around the site.
- In combination with all JV portal interventions, the Ancient Jericho expanded area will be able to receive additional 0.8m visitors per year (in the last 5 years, Jericho was receiving about 1 m. daily visits per year). During operational period, this area will be able to open the business to create more than 250 direct jobs, 350 adjacent jobs as well as more than 1500 indirect jobs.

**Organization / Responsibilities:** MOTA, MOLG, Municipality of Jericho

**Costs and Revenues:**
- Preparation costs: 0.3 MUSD
- Construction costs: 6 MUSD
- Operation costs: 0.3 MUSD
- Annual Revenues: 0.72 MUSD

**Implementation Period**
- Preparation time: 1 year
- Construction time: 4 year

**Other remarks:** Revenues are only calculated from the parking area so the management. The archaeological site linked to the spring will create a better entry fee collection left in the context of Pal-Tourism 16. The rehabilitation of the area will generate additional private investment responding to better business environment.
<table>
<thead>
<tr>
<th>Name:</th>
<th>C5 PAL - Rehabilitation of salt industry sites, Rusheideyeh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Palestine, Mallahat Er Rusheidiyeh (North edge of the Dead Sea)</td>
</tr>
<tr>
<td>Type of Intervention:</td>
<td>Tourism Attraction, Rehabilitation of Cultural and Natural Heritage Sites</td>
</tr>
</tbody>
</table>

### General Objectives:
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

### Specific Objectives:
- To well prepare and introduce tourism attractions in the Palestinian southern part of the JV to tourism industry (internal and inbound).
- To introduce the history of salt industry from Bronze period until present in the north edge of the Dead Sea.

### Intervention:
- To create a new cultural heritage attraction.

### Preparation:
- Feasibility studies.
- Theme research and comparative studies.
- Archaeological surveys.
- Concept development.
- Site Study: Archaeological excavations.

### Construction / realization:
- Site presentation concept designs.
- Site museum concept design.
- Site Rehabilitation.

### Operations:
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

### Environmental Impact:
Full Mitigation will be necessary through design and for construction and operational periods.

### Results / Impacts:
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal sites, the salt industry site will provide an additional optional attraction in the JV. The site is expected to attract about 0.1 - 0.2 million visitors per year. During operational period, the site will provide more than 10 direct jobs, 10 adjacent jobs as well as more than 150 indirect jobs.

### Organization / Responsibilities:
MOTA, MLG and MOPW

### Costs and Revenues:
- Preparation costs: $1,300,000
- Construction costs: $3,000,000
- Operation costs: $200,000
- Annual Revenues: $500,000

### Implementation Period
- Preparation time: 6 years
- Construction time: 4 years

### Other remarks:
The site is composed of an archaeological mound, landscape, salt drying fields and other landscape features. It represents three main successive salt production traditions that probably goes back to the Bronze period (from 5000 years ago till present). The industrial site as well as the archaeological site will bring important knowledge about the salt production, salt trade as well as the socio economic life around it.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C6 PAL - Rehabilitation of Ancient Jericho</td>
<td>Palestine, Jericho</td>
<td>Tourism Attraction, Rehabilitation of Cultural and Natural Heritage</td>
</tr>
</tbody>
</table>

**General Objectives:**
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To well prepare and introduce tourism attractions in the Palestinian southern part of the JV to tourism industry (internal and inbound).
- To widen the exposure of the archaeological remains of Ancient Jericho to have the site more attractive to tourists and better understood by them.

**Intervention:** To upgrade an existing cultural heritage attraction.

**Preparation:**
- Feasibility studies.
- Theme research and comparative studies.
- Archaeological surveys.
- Concept development.
- Site Study: Archaeological excavations.

**Construction / realization:**
- Site presentation concept designs.
- Site museum concept design.
- Site Rehabilitation.

**Operations:**
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal sites, Ancient Jericho site will be linked to Ein Sultan Spring and will serve as a portal to understand other optional attraction in the JV.
- The site is expected to attract about 0.3 -0.4 million visitors per year. During operational period, the site will provide additional than 20 direct jobs, 30 adjacent jobs as well as more than 300 indirect jobs.

**Organization / Responsibilities:** MOTA, MLG and MOPW

**Costs and Revenues:**
- Preparation costs: $1,300,000
- Construction costs: $3,000,000
- Operation costs: $400,000
- Annual Revenues: $800,000

**Implementation Period**
- Preparation time: 8 years
- Construction time: 4 years

**Other remarks:** The archaeological site is disappointing visitors as it has limited exposure in comparison to its important reputation. It is also a challenge to both archaeologists and rehabilitation/conservation architects as it is a very vulnerable site.
Name: C7 PAL - Rehabilitation of Hisham’s Palace (mosaic)
Location: Palestine, Jericho
Type of Intervention: Tourism Attraction, Rehabilitation of Cultural and Natural Heritage

**General Objectives:**
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To well prepare and introduce tourism attractions in the Palestinian southern part of the JV to tourism industry (internal and inbound).
- To widen the exposure of the archaeological remains of Hisham’s (expose the largest intact mosaic in the ME) and have the site more attractive to tourists and better understood by them.

**Intervention:** To upgrade an existing cultural heritage attraction.

**Preparation:**
- Feasibility studies.
- Theme research and comparative studies.
- Concept development.
- Site Study: Archaeological excavations.

**Construction / realization:**
- Site presentation concept designs.
- Site Rehabilitation.

**Operations:**
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal sites, Hisham’s Palace site will serve as an optional attraction in the JV.
- The site is expected to attract about 0.3 - 0.4 million visitors per year. During operational period, the site will provide additional than 20 direct jobs, 30 adjacent jobs as well as more than 300 indirect jobs.

**Organization / Responsibilities:** MOTA

**Costs and Revenues:**
- Preparation costs: $1,200,000
- Construction costs: $2,500,000
- Operation costs: $400,000
- Annual Revenues: $800,000

**Implementation Period**
- Preparation time: 3-4 years
- Construction time: 1 years

**Other remarks:** Several international experts evaluated the mosaic in order to have it accessible to visitors. Several concept designs were developed including ones supported by UNESCO. This is already an advance stage in terms of concept design.
<table>
<thead>
<tr>
<th>Name:</th>
<th>C8 PAL - Rehabilitation of Tel Abu el ‘Alayek</th>
<th>Location:</th>
<th>Palestine, Jericho</th>
<th>Type of Intervention:</th>
<th>Tourism Attraction, Rehabilitation of Cultural and Natural Heritage Sites</th>
</tr>
</thead>
</table>

**General Objectives:**
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To well prepare and introduce tourism attractions in the Palestinian southern part of the JV to tourism industry (internal and inbound).
- To expand the exposure of the chronological history (Roman Period) of the city of Jericho to have the city more attractive to tourists and better understood by them.

**Intervention:** To create a new cultural heritage attraction.

**Preparation:**
- Feasibility studies.
- Theme research and comparative studies.
- Archaeological surveys.
- Concept development.
- Site Study: Archaeological excavations.

**Construction / realization:**
- Site presentation concept designs.
- Site museum concept design.
- Site Rehabilitation.

**Operations:**
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal sites, Tel Abu el ‘Alayek will provide an additional optional attraction in the JV. The site is expected to attract about 0.1 -0.2 million visitors per year. During operational period, the site will provide more than 10 direct jobs, 10 adjacent jobs as well as more than 150 indirect jobs.

**Organization / Responsibilities:** MOTA, MLG and MOPW

**Costs and Revenues:**
- Preparation costs: $1,300,000
- Construction costs: $3,000,000
- Operation costs: $200,000
- Annual Revenues: $600,000

**Implementation Period**
- Preparation time: 3 years
- Construction time: 3 years

**Other remarks:** The site is well located on the current tourism trails as well as on the Wadi Quilt hiking trail which is well visited by pilgrimage and experiential tourists.
### General Objectives:
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

### Specific Objectives:
- To well prepare and introduce the Palestinian middle part of the JV to tourism industry (internal and inbound).
- To expand the exposure of the chronological history (Chalcolithic to Islamic Periods) of Ouja and in the JV to have it more attractive to tourists and better understood by them.

### Intervention:
- To upgrade an existing cultural heritage attraction.

### Preparation:
- Feasibility studies.
- Theme research and comparative studies.
- Concept development.
- Site Study: Archaeological excavations.

### Construction / Realization:
- Site presentation concept designs.
- Site Rehabilitation.
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

### Environmental Impact:
Full Mitigation will be necessary through design and for construction and operational periods.

### Results / Impacts:
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal sites, the Khirbet Biyadat or Tel Ouja will provide an additional optional attraction in the JV. The site is expected to attract about 0.2 -0.3 million visitors per year. During operational period, the site will provide more than 20 direct jobs, 40 adjacent jobs as well as more than 200 indirect jobs.

### Costs and Revenues:
- Preparation costs: $1,800,000
- Construction costs: $4,000,000
- Operation costs: $400,000
- Annual Revenues: $1,000,000 - $1,500,000

### Implementation Period
- Preparation time: 8 years
- Construction time: 4 years

### Other remarks:
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C10 PAL - Rehabilitation of Khirbet el Makhrouq</td>
<td>Palestine, Jiftlick</td>
<td>Tourism Attraction, Rehabilitation of Cultural and Natural Heritage Sites</td>
</tr>
</tbody>
</table>

**General Objectives:**
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To well prepare and introduce the Palestinian middle part of the JV to tourism industry (internal and inbound).
- To expand the exposure of the chronological history (Chalcolithic to Islamic Periods) of Jiftlick and in the JV to have it more attractive to tourists and better understood by them.

**Intervention:** To upgrade an existing cultural heritage attraction.

**Preparation:**
- Feasibility studies.
- Theme research and comparative studies.
- Concept development.
- Site Study: Archaeological excavations.

**Construction / realization:**
- Site presentation concept designs.
- Site Rehabilitation.

**Operations:**
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal sites, Khirbet el Makhrouq will provide an additional optional attraction in Jiftlick and the JV. The site is expected to attract about 0.1 - 0.2 million visitors per year. During operational period, the site will provide more than 10 direct jobs, 10 adjacent jobs as well as more than 150 indirect jobs.

**Organization / Responsibilities:** MOTA, MLG and MOPW

**Costs and Revenues:**
- Preparation costs: $1,800,000
- Construction costs: $4,000,000
- Operation costs: $200,000
- Annual Revenues: $500,000 - $1,000,000

**Implementation Period**
- Preparation time: 8 years
- Construction time: 4 years

**Other remarks:**
**Name:** C11 PAL - Rehabilitation of Tel el Hamma  
**Location:** Palestine, Ein el Beida  
**Type of Intervention:** Tourism Attraction, Rehabilitation of Cultural and Natural Heritage Sites

### General Objectives:
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

### Specific Objectives:
- To well prepare and introduce the Palestinian northern part of the JV to tourism industry (internal and inbound).
- To expand the exposure of the chronological history (Chalcolithic to Islamic Periods) of KB and Ein Beida as well as the JV to have it more attractive to tourists and better understood by them.

### Intervention:
- To create a new cultural heritage attraction.

### Preparation:
- Feasibility studies.
- Theme research and comparative studies.
- Archaeological surveys.
- Concept development.
- Site Study: Archaeological excavations.

### Construction / realization:
- Site presentation concept designs.
- Site museum concept design.
- Site Rehabilitation.

### Operations:
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

### Environmental Impact:
Full Mitigation will be necessary through design and for construction and operational periods.

### Results / Impacts:
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal sites, Tel el Hamma will provide an additional optional attraction in the JV. The site is expected to attract about 0.2 - 0.3 million visitors per year. During operational period, the site will provide more than 20 direct jobs, 40 adjacent jobs as well as more than 200 indirect jobs.

### Organization / Responsibilities:
MOTA, MLG and MOPW

### Costs and Revenues:
- Preparation costs: $2,300,000  
- Construction costs: $3,000,000  
- Operation costs: $400,000  
- Annual Revenues: $1,000,000 - $1,500,000

### Implementation Period
- Preparation time: 11 years  
- Construction time: 4 years

### Other remarks:
<table>
<thead>
<tr>
<th>Name: C12 PAL - Archaeological Landmark Features.</th>
<th>Location: Palestine: All the JV</th>
<th>Type of Intervention: Tourism Attraction, Rehabilitation of Cultural and Natural Heritage Sites</th>
</tr>
</thead>
</table>

**General Objectives:**
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To well prepare and introduce the Palestinian JV to tourism industry (internal and inbound).
- To rehabilitate selected and distinctive archaeological features like Water Mills, Water Sugar Mills, Water Aqueducts, Water Reservoirs, Watch Towers and other.

**Intervention:** To create a new cultural heritage attraction.

**Preparation:**
- Site Selection and Assessment Research
- Archaeological surveys and Documentation
- Concept development.

**Construction / realization:**
- Site presentation concept designs.
- Site Rehabilitation.
- Site Interpretation.

**Operations:**
- Management Plan.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods.

**Results / Impacts:**
- Upgrade the visitor experience in the JV and on Palestine in general.
- Protect the degradation of cultural and natural heritage resources.

**Organization / Responsibilities:** MOTA, MLG and MOPW

**Costs and Revenues:**
- Preparation costs: 0.3 MUSD
- Construction costs: 1.2 MUSD
- Operation costs: Monitored and maintained by the CNHPC.
- Annual Revenues: (No direct revenue)

**Implementation Period**
- Preparation time: 1 year
- Construction time: 3 years

**Other remarks:** In addition to the historic value of the selected features to be rehabilitated, the selection criteria are more influenced by the visibility of the site on roads, walking track, hiking trails as well as panoramic locations. This is not to disregard the aesthetic importance historic and the protection intention.
**Name:** C13 PAL - Spa, Thalasso therapy and Balneo therapy Center  
**Location:** Palestine, Al-Maleh, Toubas  
**Type of Intervention:** Tourism Attraction, Rehabilitation of Cultural and Natural Heritage Sites

### General Objectives:
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

### Specific Objectives:
- To well prepare and introduce the Palestinian northern part of the JV to tourism industry (internal and inbound).
- To develop the Spa Thalassotherapy and Balneotherapy Centers into an attractive tourism destination. This includes water source restoration, management and promotion activities.

### Intervention:
- To create a new tourism attraction

### Preparation:
- Feasibility studies (Reexamine Location).
- Concept development.
- Detailed plans and Designs.
- Training.

### Construction / realization:
- Water Source Rehabilitation.
- Construction.

### Operations:
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

### Environmental Impact:
Full Mitigation will be necessary through design and for construction and operational periods.

### Results / Impacts:
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal attraction sites, the medical center will provide a unique service in the JV as well as in Palestine. The site is expected to attract about 10000 visitors per year. During operational period, the site will provide more than 15 direct jobs, 10 adjacent jobs as well as more than 50 indirect jobs.

### Organization / Responsibilities: MOTA and MOH

### Costs and Revenues:
- Preparation costs: 0.3 MUSD
- Construction costs: 3 MUSD
- Operation costs: 0.2 MUSD
- Annual Revenues: 0.3 MUSD (Residence Capacity over 30 persons).

### Implementation Period
- Preparation time: 1 year
- Construction time: 4 years

### Other remarks:
- It will be the only center of its kind that provides this service in Palestine.
<table>
<thead>
<tr>
<th>Name: C14 PAL</th>
<th>Location: Jericho</th>
<th>Type of Intervention: Tourism Attraction, Faith Tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Objectives:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• To provide an authentic tourism attraction (destination).</td>
<td></td>
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</tr>
<tr>
<td>• To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).</td>
<td></td>
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</tr>
<tr>
<td>• To facilitate the creation and the growth of the tourism business environment.</td>
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</tr>
<tr>
<td>• To stimulate private enterprise growth and investment.</td>
<td></td>
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</tr>
<tr>
<td>• To increase jobs and exports.</td>
<td></td>
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</tr>
<tr>
<td><strong>Specific Objectives:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• To well prepare and introduce the Palestinian JV with diverse attractions to tourism industry (internal and inbound).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• To integrate faith tourism experience with cultural experience.</td>
<td></td>
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</tr>
<tr>
<td>• To develop the Jesus Village into an attractive tourism destination. This includes restoration, management and promotion activities</td>
<td></td>
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</tr>
</tbody>
</table>

**Intervention:** To create a new tourism attraction

**Preparation:**
- Feasibility studies.
- Concept development.
- Detailed plans and Designs.
- Training.

**Construction / realization:**
- Construction.

**Operations:**
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- In combination with all JV attraction sites, Jesus village will provide a unique service and cultural experience in the JV as well as in Palestine. The site is expected to attract about 20000 overnight visitors and more than 200000 daily visits per year. During operational period, the site will provide more than 30 direct jobs, 10000 adjacent jobs as well as more than 5000 indirect jobs.

**Organization / Responsibilities:** MOTA

**Costs and Revenues:**
- Preparation costs: 0.5 MUSD
- Construction costs: 3 MUSD
- Operation costs: 0.2 MUSD
- Annual Revenues: 0.5 MUSD (Residence Capacity over 100 persons)

**Implementation Period**
- Preparation time: 1 year
- Construction time: 4 years

**Other remarks:** Having the location close (walking distance) to the Baptism Site and the Mount of Temptation is added value to the project.
Name: C15 PAL - Hiking Trail Development
Location: Hezma - Jericho Trails, Kofor-Malek Ouja Trails, Nablus Jiftlick Trails, Toubas Ein Beida Trails.
Type of Intervention: Tourism Attraction, Experiential Tourism

General Objectives:
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

Specific Objectives:
- To well prepare and introduce the Palestinian JV with diverse attractions to tourism industry (internal and inbound).
- This project aims at developing attractive hiking trails for tourists and for local people, particularly between Hezme and Jericho; Kofor Malek and Auja; Nabuls and Jiftlik; Toubas Tayseer and Ein el Beida. This includes planning; road signs and information signs; booklets and promotion activities.

Intervention: To create a new tourism attraction
Preparation:
- Feasibility studies.
- Concept development.
- Detailed plans and Designs.
- Training.

Construction / realization:
- Community based activities (awareness and training)
- Realization of safety measures.
- Construction.

Operations:
- Management Plan.
- Site Promotion and Marketing.
- 2 - 5 years of operational support.

Environmental Impact: Full Mitigation will be necessary through design and for construction and operational periods. Cultural and Natural Heritage conservation guidelines need to be provided managers guides and hikers.

Results / Impacts:
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- It will expand the market to target experiential tourism seekers.
- In combination with all JV attraction sites, hiking trails will provide unique cultural and natural experiences in the JV as well as in Palestine. Hiking Trails will expand the welfare from tourism to marginal and rural areas.
- Palestine showed an increase in experiential tourism especially hiking. Trail development will provide hiking options of diverse cultural and natural experiences.

Organization / Responsibilities: MOTA, MLG and local authorities

Costs and Revenues:
- Preparation costs: 0.4 MUSD
- Construction costs: 1.6 MUSD
- Operation costs: (services needs to be provided by an existing institution(s)).
- Annual Revenues: It is recently active tourism. Bases for estimating revenues still to be investigated (note that 1$ value in the rural and marginal areas is very

Implementation Period
- Preparation time: 1 year
- Construction time: 4 years
<table>
<thead>
<tr>
<th>effective)</th>
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</thead>
<tbody>
<tr>
<td><strong>Other remarks:</strong> Trail management better to be assigned to sport centers or Youth Guest Houses.</td>
<td></td>
</tr>
</tbody>
</table>
**Name:** C16 PAL - Sport and Adventure Center  
**Location:** Palestine, Jericho, Auja, Jiftlick and Ein Beida area.  
**Type of Intervention:** Tourism Attraction, Experiential Tourism

### General Objectives:
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

### Specific Objectives:
- To well prepare and introduce the Palestinian JV with diverse attractions to tourism industry (internal and inbound).
- To develop sport and adventure facilities for local, regional and international tourist.
- To develop and construct adjacent camping facilities.
- To include camping and recreation facilities for family based tourism.

### Intervention:
- To create a new tourism attraction

### Preparation:
- Feasibility studies.
- Concept development.
- Detailed plans and Designs.
- Training.

### Construction / realization:
- Construction.

### Operations:
- Management Plan.
- Center Promotion and Marketing.
- 2 - 5 years of operational support.

### Environmental Impact:
Full Mitigation will be necessary through design and for construction and operational periods. Safety measures are the most important mitigations under this project.

### Results / Impacts:
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will partially use the hospitality potentials and increase overnights in the JV as well as in Palestine.
- It will expand the market to target experiential and adventure tourism seekers.
- In combination with all JV attraction sites, those sport and adventure centers will provide a wide range of experiences in open spaces that is not available in the JV as well as in Palestine. They should be water based and nature friendly adventures.
- Sport and adventure centers will expand the welfare from tourism to marginal and rural areas.
- Palestine showed increase activities in experiential and adventure tourism especially linked to water and nature. Those centers will provide new options of diverse adventure tourism linked to cultural and natural experiences.

### Organization / Responsibilities:
MOTA, MOYS

### Costs and Revenues:
Calculated for medium scale 4 centers.
- Preparation costs: 2 MUSD  
- Construction costs: 16 MUSD  
- Operation costs: (Not Available)  
- Annual Revenues: (Not Available)

### Implementation Period
- Preparation time: 2 years
- Construction time: 3-5 years

### Other remarks:
Those centers should be developed adjacent to youth and guest houses and could provide camping services and facilities.
<table>
<thead>
<tr>
<th>Name: C17 PAL - Travellers Centres</th>
<th>Location: Ein Beida and Jiftlick</th>
<th>Type of Intervention: Travellers Services</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Objectives:</strong></td>
<td><strong>Construction / realization:</strong></td>
<td></td>
</tr>
<tr>
<td>• To provide an authentic tourism attraction (destination).</td>
<td>• Construction.</td>
<td></td>
</tr>
<tr>
<td>• To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).</td>
<td>• Management Plan.</td>
<td></td>
</tr>
<tr>
<td>• To facilitate the creation and the growth of the tourism business environment.</td>
<td>• Center Promotion and Marketing.</td>
<td></td>
</tr>
<tr>
<td>• To stimulate private enterprise growth and investment.</td>
<td>• 2 - 5 years of operational support.</td>
<td></td>
</tr>
<tr>
<td>• To increase jobs and exports.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Specific Objectives:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• To well prepare and introduce the Palestinian northern and middle parts of the JV to tourism industry (internal and inbound).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• To create two traveler centers that provide road services and have selling points for local product (gas station, restaurants and gift shops) on road 90 which is the main road NS for local regional and international tourists.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• To create commercial centers for local product (in gross) including the necessary refrigerators and freezing capacity for agricultural product.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Intervention:** To create a new tourism attraction  
**Preparation:**  
- Feasibility studies.  
- Concept development.  
- Detailed plans and Designs.  
- Training.  

**Construction / realization:**  
- Construction.  
- Management Plan.  
- Center Promotion and Marketing.  
- 2 - 5 years of operational support.  

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods. Safety measures are the most important mitigations under this project.  

**Results / Impacts:**  
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.  
- It will expand the market to target travelers on road 90 by providing a competitive product and service.  
- In combination with all JV attraction sites, traveler’s centers will provide a wide range of services and products in rest areas in the JV.  
- Traveler’s centers will expand the welfare from tourism to marginal and rural areas.  

**Organization / Responsibilities:** MOTA, MOYS  

**Costs and Revenues:**  
- Preparation costs: 0.7 MUSD  
- Construction costs: 4.5 MUSD  
- Operation costs: Not Available  
- Annual Revenues: Not Available  

**Implementation Period:**  
- Preparation time: 1 year  
- Construction time: 2-3 years  

**Other remarks:** None of those is available in the northern part of the JV.
### General Objectives:
- To upgrade the overnight capacity of the tourism industry in the JV as well as Palestine.
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

### Specific Objectives:
- To well prepare and introduce the Palestinian JV with diverse services to tourism industry (internal and inbound).
- To build 1550 4 stars hotel rooms (200/3 years in Jericho and 50/5 years Ein Beida Area).

### Intervention:
To construct additional 4 stars hotels that has the capacity of 150 - 300 rooms each.

### Preparation:
- Feasibility studies.
- Concept development.
- Detailed plans and Designs.
- Training.

### Construction / realization:
- Construction.

### Operations:
- Management Plan.
- Promotion and Marketing.
- One years of operational support.

### Environmental Impact:
Full Mitigation will be necessary through design and for construction and operational periods.

### Results / Impacts:
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will use the hospitality and the cultural experience potential and increase overnights in the JV as well as in Palestine.
- In combination with all JV attractions, the 4 stars hotels of resort kind will easily gain 50% occupancy rate during the first 5 years of their function.

### Organization / Responsibilities: MOTA

### Costs and Revenues:
- Preparation costs: 2.5 MUSD
- Construction costs: 77.5 MUSD
- Operation costs: Not Available
- Annual Revenues: Not Available

### Implementation Period
- Preparation time: 1-2 years per hotel
- Construction time: 3 years per hotel

### Other remarks:
The introduction of hotels in the northern part of the JV is dependent on the creation of the other interventions in Ein Beida area. Therefore, they are considered under the long term plans.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C19 PAL - The Mud Brick Youth Village</td>
<td>Palestine, Jiftlick or Toubas</td>
<td>Tourism Attraction</td>
</tr>
</tbody>
</table>

**General Objectives:**
- To provide an authentic tourism attraction (destination).
- To upgrade visitor experience (understanding and enjoying the natural and cultural history of the rift valley).
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To well prepare the Palestinian northern part of the JV to tourism industry (internal and inbound).
- To upgrade the overnight capacity in the JV so as in Palestine.
- To provide an authentic stay or a one day visit in a traditional mud brick compounds in a traditional JV village.
- To create a destination for cultural and adventure youth tourism activities.

**Intervention:** To create a new tourism attraction

**Preparation:**
- Feasibility studies.
- Concept development.
- Detailed plans and Designs.
- Training.

**Construction / realization:**
- Construction.

**Operations:**
- Management Plan.
- Center Promotion and Marketing.
- 2 - 5 years of operational support.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will use the hospitality and the cultural experience potential and increase overnights in the JV as well as in Palestine.
- In combination with all JV portal interventions, the Mud Brick Village is expected to attract about 0.1-0.2m visits and 45000 overnights per year. During operational period, the center will provide more than 120 direct and more than 30 adjacent jobs as well as more than 200 indirect jobs.

**Organization / Responsibilities:** MOTA, MOYS, MOC, MOLG

**Costs and Revenues:**
- Preparation costs: $800,000
- Construction costs: $4,300,000
- Operation costs: $1,800,000
- Annual Revenues: $2,350,000

**Implementation Period**
- Preparation time: 3 years
- Construction time: 3 years

**Other remarks:** 50 residential mud brick units and 25 exhibition units can be designed in an architectural design competition as one of the Youth Center activities with young architects from the world. The center should be able to generate income from subsidized activities related to local and international youth themes.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>C20 PAL - Youth and Guest Houses</td>
<td>Aqbet Jaber (100 beds), Ouja (100 beds), Jiftlick (150 beds), Kardala Bardala and Ein el Beida (150 beds)</td>
<td>Tourism Services &amp; Attraction</td>
</tr>
</tbody>
</table>

**General Objectives:**
- To upgrade the overnight capacity of the tourism industry in the JV as well as Palestine.
- To facilitate the creation and the growth of the tourism business environment.
- To stimulate private enterprise growth and investment.
- To increase jobs and exports.

**Specific Objectives:**
- To well prepare and introduce the Palestinian northern part of the JV with diverse services to tourism industry (internal and inbound).
- To build guest houses with 500 beds capacity distributed in the above mentioned locations.

**Intervention:** To construct additional 4 stars hotels that has the capacity of 150 - 300 rooms each.

**Preparation:**
- Feasibility studies.
- Concept development.
- Detailed plans and Designs.
- Training.

**Construction / realization:**
- Construction.

**Operations:**
- Management Plan.
- Promotion and Marketing.
- 1-2 years of operational support.

**Environmental Impact:** Full Mitigation will be necessary through design and for construction and operational periods.

**Results / Impacts:**
- It will extend the length of daily visits and increase them in the JV as well as in Palestine.
- It will use the hospitality and the cultural experience potential and increase overnights in the JV as well as in Palestine.
- In combination with all JV attractions as well as youth and sport centers activities, the guest houses will easily gain 50% occupancy rate during the first 5 years of their function.

**Organization / Responsibilities:** MOTA

**Costs and Revenues:**
- Preparation costs: 0.5 MUSD
- Construction costs: 3.7 MUSD
- Operation costs: Not Available
- Annual Revenues: Not Available

**Implementation Period**
- Preparation time:
- Construction time:

**Other remarks:** The creation of those guest houses should be mainly linked to the development of hiking trails as well as sport centers and other youth activities in the JV. They can be built in a ration of 25-50 beds per 5 years depending on the location.
## SUSTAINABLE URBAN, ENERGY AND INFRASTRUCTURE DEVELOPMENT

<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>U01 REG – Non-fossil, Renewable Energy Development Project</td>
<td>Lower Jordan Valley</td>
<td>Development projects</td>
</tr>
</tbody>
</table>

### Objectives:
- Regional coordination on renewable energy generation schemes in the Lower Jordan River Basin
- Aiming at 50% renewable energy throughout the basin by 2050
- Promoting the use of renewable energy sources, such as biogas; waste-to-energy; small scale solar energy and wind energy potentials in the basin
- Promoting sustainable energy co-operation in the region
- Promoting vocational education and research facilities in the Jordan Valley in the area of sustainable energy development.

### Intervention:
Regional co-operation in the realization of renewable energy schemes such as solar systems and waste-to-energy systems

#### Coordination includes:
- Selection of the optimal sites for the construction of the renewable energy schemes
- Consideration of land ownership
- Integration of such schemes with the power transmission lines for the served communities
- Scope for regional operation and maintenance
- Scope for regional research
- Develop legal framework
- Attract investors

### Construction / realization:
- Reflect a common vision among the residents of the study area that such a project is vital for the area and its future development
- Appreciate the economic and environmental gains of such schemes

### Operations:
- Distribution of electricity
- Fee collection
- O&M
- Technical and financial management
- Provide investment incentives to investors
- Provide land and infrastructure for implementation

### Results / Impacts:
- Preservation of the environment
- Improvement of the financial status of the residents
- Improvement of the social conditions
- Promotion of regional co-operation and research

### Sustainability and Water Impacts:
- This project will have a direct impact on mitigation of climate impacts in the Jordan River Basin by applying renewable energy, bio-climatic design practices and of renewable building materials, and by
using efficient water use systems

**Organization / Responsibilities:**
- Ministries of Energy and Mineral Resources
- Natural Resources Authorities
- Ministries of Environment
- Ministries of Planning

**Costs and Revenues:**
<table>
<thead>
<tr>
<th>Implementation</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,000,000 USD</td>
<td>Preparation time: 2 year</td>
</tr>
</tbody>
</table>

**Other remarks:**
- Long Terms action
<table>
<thead>
<tr>
<th>Name: U02 REG - Adam/ Damia Bridge Rehabilitation Project</th>
<th>Location: Adam/Damia Bridge&lt;br&gt;King Abdallah I Bridge</th>
<th>Type of Intervention: Planning and Construction</th>
</tr>
</thead>
</table>

**Objectives:**
Adam/Damia Bridge rehabilitated and operational for commercial traffic.

**Map:**
[Map Image]

**Intervention**
Rehabilitate and open Adam bridge for agricultural goods and commercial traffic as an additional outlet for imports and exports to or through Jordan.

**Preparation:**
- Conduct a study and prepare a construction plan.

**Construction / realization:**
- Rehabilitate the bridges
- Create a Customs Clearance Area
- Create a logistics Consolidation Center

**Results / Impacts:**
Facilitated export and import route from the Northern JV into Jordan.

**Organization / Responsibilities:**
- Ministries of Finance
- Ministries of Public Works and Housing
- Ministries of Planning
- Ministry of National Economy
- JVA, PNA

**Costs and Revenues: Estimates derived from actual cost of rehabilitation of Allenby Bridge by JICA**
- Preparation costs: 300,000 USD
- Implementation costs: 90 million

**Implementation Period**
- Preparation time: 1 Yrs.
- Construction time: 4 Yrs.

**Investment Priorities (SIWI Criteria)**
- Social: 45
- Regional Political: 68
- National Political: 79
- Environmental: 17
- Economic: 82
- Overall: 58
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>U03 REG - King Abdullah I Bridge Rehabilitation Project</td>
<td>King Abdallah I Bridge</td>
<td>Planning and Construction</td>
</tr>
</tbody>
</table>

Objectives:
King Abdallah I Bridge, which facilitates the shortest distance between Amman and Jerusalem, across the Jordan River, rehabilitated and operational for tourists.

**Map:**

Intervention
Rehabilitate and open King Abdallah I bridge for easy movement of tourists between Jordan and Palestine as an additional outlet

Preparation:
- Conduct a study and prepare a construction plan

Construction / realization:
- Rehabilitate the bridge
- Create a Customs Clearance Area

Results / Impacts:
Facilitated movement of tourists between Jordan and Palestine

Organization / Responsibilities:
- Ministries of Finance
- Ministries of Public Works and Housing
- Ministries of Planning
- JVA, PNA

Costs and Revenues: Estimations Derived from Actual Cost of rehabilitation of the Allenby Bridge by JICA
- Preparation costs: 200,000 USD
- Implementation costs: 30 million

Implementation Period
- Preparation time: 1 Yrs.
- Construction time: 2 Yrs.

Investment Priorities (SIWI Criteria)
Social: 35
Regional Political: 77
National Political: 78
Environmental: 20
Economic: 70
Overall: 56
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>U04 REG- Efficient Border Crossing at Allenby / King Hussein and Sheikh Hussein Bridges</td>
<td>Allenby / King Hussein and Sheikh Hussein Bridges</td>
<td>Planning and Construction</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>Map:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To create more efficient border crossing regulations and procedures for all nationalities at the Allenby / King Hussein and Sheikh Hussein Bridges.</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Construction / realization:</th>
</tr>
</thead>
</table>
| Based on a joint security assessment, prepare and plan for more efficient border crossing procedures for all nationalities | - Security checking  
- Customs Clearance Area  
- logistics |

<table>
<thead>
<tr>
<th>Preparation:</th>
<th></th>
</tr>
</thead>
</table>
| Coordination and joint assessment  
Preparation and implementation procedures | |

<table>
<thead>
<tr>
<th>Results / Impacts:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitated more efficient cross border procedures</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Security and military specialists from three countries</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
</table>
| Preparation costs: 300,000 USD  
Implementation costs: 10 million USD | - Preparation time: 1 Yrs.  
Realization: 2 Yrs. |

<table>
<thead>
<tr>
<th>Other remarks:</th>
<th></th>
</tr>
</thead>
</table>
**Name:**
U05 REG – Jordan Valley
Regional Coordination on Urban and Infra Dev

**Location:**
Jordan Valley

**Type of Intervention:**
Urban and Infra Dev

**Objectives:**
The purpose of this intervention setting up a regional coordination structure, or Steering Committee, among key Jordanian, Israeli and Palestinian governmental stakeholders for the implementation of the proposed national and regional interventions in the Jordan Valley with regards to the Urban and Infra Dev. The objective is that this Steering Committee will eventually be embedded in the structures of the overall River Basin Organization for the Jordan Valley (ref. intervention IC01 REG Jordan River Basin Organization)

The Regional Coordination Structure aims at optimized regional co-operation in preparation and implementation of the interventions, maximized exchange and joint development of know-how and experiences among the three core parties, monitoring the outputs of the interventions and steering the implementation in terms of their contribution toward reaching the Urban and Infra Dev Objectives.

**Intervention:**
1. Setting up a kick-off meeting with the key governmental stakeholders from the three core parties with regard to the Urban and Infra Dev Objectives
2. Defining objectives, procedures and operational, organizational and financial frameworks for setting up the joint Steering Committee under the Urban and Infra Dev Objectives
3. Joint preparation of detailed implementation and financing plans for the proposed (groups of) interventions Setting up structures for regional exchange of related know-how and experiences
4. Development of key performance indicators and monitoring procedures towards the implementation of the interventions
5. Assisting and steering the project implementing organizations accordingly

**Results / Impacts:** Lower Risk in terms of production
- Optimized regional co-operation during the preparation and implementation of the proposed interventions under the Urban and Infra Dev Objectives
- Maximized regional exchange know-how and experiences
- Optimized monitoring and steering of the interventions during detailed preparation and implementation
- Building up regional trust and the peace dividend

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainable development of the Jordan Basin through optimized co-ordination and exchange of relevant information

**Organization / Responsibilities:**
- Key governmental and sectoral stakeholders from Jordan, Israel and Palestine
- Support, dissemination by EcoPeace

**Costs and Revenues:**
- Preparation costs: 300,000 USD
- Implementation Cost: 200,000 USD per year

**Implementation Period:**
- Until 2050:
<table>
<thead>
<tr>
<th>Name:</th>
<th>U01 ISR – Center of Excellence at Kinneret College</th>
<th>Location:</th>
<th>Northern Israel, at Kinneret Collage</th>
<th>Type of Intervention:</th>
<th>Research</th>
</tr>
</thead>
</table>

**Objectives:**
- Development of Center of Excellence at the Kinneret College, located at the college southern campus focused on Water and Environment Innovation and Technology, open for Israeli, Jordanian, Palestinian and international researchers and students.
- Development of related research facilities, laboratories and study programs

**Interventions:**
- Planning and design for 1,200 students devoted to water and environmental research and training facilities
- Design of a WWT and sewage laboratory; a desalination laboratory; and land and water research facility;
- Design of a 200 m2 robotics laboratory
- Design of 600 m2 devoted to social and humanities sciences, including class rooms, computer rooms, auditorium
- Including computerized telescope on the roof of this building
- Tendering and construction of different phases
- Operations

**Results / Impacts:**
- Major Research Center in the Jordan Valley
- Strengthen co-operation with Jordan and Palestine

**Organization / Responsibilities:**
- Kinneret College on the Sea of Galilee
- Jordan Valley Regional Council.
- Private Sector
- Ministries of Science and Education

**Costs and Revenues:**
- Preparation costs: 0.5 MUSD
- Construction Cost: 10 MUSD
- Annual Operations: 0.5 MUSD

**Implementation Period**
- Preparation time: 2 year
- Construction time: 5 year

**Other remarks:**
### Name:
U02 ISR – Eden Regional Agricultural Research and Training Center

### Location:
Northern Israeli Jordan Valley

### Type of Intervention:
Sustainable Agriculture

### Objectives:
- To develop a regional agricultural research and training center focused on crop management, improved water management and increase production quantities and qualities.
- This center is currently based on know-how developed in Israel and serves the Israeli farmers in the Jordan Valley; its activities are also attended today by Jordanian and Palestinian farmers.
- The aim is to expand this center for the benefit of all farmers in the Lower Jordan River Basin, including Israeli, Jordanian and Palestinian farmers.

### Intervention:
- Continue research and piloting in the areas of crop management, sustainable fish pond development, birds management, natural insect combating techniques; biological water filtering and recycling; optimized crop and fish selection; agricultural and fish farm operational practices and more.
- Linking this research with the Kinneret College’s Research Center for Water and Environment.
- Provide training to farmers in the region on all these subjects when requested.
- Providing programs for school students from around the Basin.
- Providing on-farm follow-up support to the farmers.

### Results / Impacts:
- Optimized agricultural practices and higher economic outputs throughout the Jordan River Basin.
- Increased rural income levels.

### Organization / Responsibilities:
- Eden Farm
- Springs Valley Regional Council
- Ministries of Agriculture in Jordan, Israel and Palestine
- Farmer Production Organizations

### Costs and Revenues:
- Preparation costs: 100,000 USD
- Annual Operation Costs: 1.5 MUSD

### Implementation Period:
- Preparation time: 0.5 year
- Operation time: > 10 years

### Other remarks:
The Center seeks to support Jordanian and Palestinian farmers in the research and training.
**Name:** U01 JOR – Infrastructure Development Project  
**Location:** Lower Jordan River Basin  
**Type of Intervention:** Infrastructure

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>Map:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The current route 65 is the main north south road through the Jordan Valley, and crosses all major villages in the valley. However, traffic along the road is dense and relative dangerous, and intersected by many minor roads and used by pedestrians, slow traffic and heavy traffic alike. This intervention supports the plans of the Ministry of Transportation, who is responsible for Infrastructure, to rehabilitate this road for local traffic purposes only, including safe pedestrian sidewalks, signs and lighting, and safe crossings, bypasses, green corridors, related parks, and meanwhile constructing a new parallel North-South highway for heavy traffic that bypasses the urban centres.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Preparation:</th>
<th>Operations:</th>
</tr>
</thead>
</table>
| Planning and design of a infrastructure works, taking into account future urban expansion areas  
EIA’s and licenses  
Setting up Organizational structure  
Finance planning |
| Tendering and construction/expansion of the existing route 65 infrastructure works  
Tendering and rehabilitation/expansion of the new parallel highway  
Tendering for rehabilitation of crossings, crossovers and additional infrastructure facilities |
| Operations  
Maintenance |

<table>
<thead>
<tr>
<th>Construction / realization:</th>
<th></th>
</tr>
</thead>
</table>
| Tendering and construction/expansion of the existing route 65 infrastructure works  
Tendering and rehabilitation/expansion of the new parallel highway  
Tendering for rehabilitation of crossings, crossovers and additional infrastructure facilities |

<table>
<thead>
<tr>
<th>Results / Impacts:</th>
<th></th>
</tr>
</thead>
</table>
| Realization/expansion/improvement of the traffic and traffic safety  
Preparing for urban expansion of the Lower Jordan River Basin  
Use of bio-climatic design practices and of renewable building materials |

<table>
<thead>
<tr>
<th>Sustainability and Water Impacts:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials for urban and infrastructure development projects</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
<th></th>
</tr>
</thead>
</table>
| Municipalities and county councils  
Ministry of Transportation  
JVA  
Ministry of Environment |

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation costs: 10 Million JD</td>
<td></td>
</tr>
<tr>
<td>Preparation time: 3 year</td>
<td></td>
</tr>
<tr>
<td>Construction costs: 180 Million JD</td>
<td>Rolling Construction time: 18 years</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------</td>
</tr>
<tr>
<td>Maintenance: 1 Million JD / year</td>
<td></td>
</tr>
<tr>
<td>Annual Economic Revenues: 3 - 6 Million JD</td>
<td></td>
</tr>
</tbody>
</table>

Other remarks:
- Infrastructure Planning should be done in an integrated combination with land use and urban expansion planning
Name: U02 JOR – Urban and Spatial Master Plan
Location: LJV
Type of Intervention: Planning & Construction

Objectives:
The aim of this project is to develop detailed urban, infrastructure and physical land use plans for the LJV, taking into account the foreseen population and economic projections of the Lower Jordan River Basin, considering to foreseen growth of the population to over 600,000 people in 2050, requiring a total of about 130,000 housing or apartment units in 2050, including related infrastructure, transport, water (100 MCM / yr), sanitation, electricity and IT related utilities, public services, schools and recreational areas and facilities.

Intervention:
To develop the projected requirements for housing and urban facilities, including planning of new urban areas; as well as the need for expansion of secondary and primary roads, linkage to the national highway system and public transport requirements. This includes planning, management and training aspects
At the same time this interventions includes enforcement of land use plans and halting unplanned expansion of urban areas towards dedicated agricultural lands

Preparation:
Conduct Physical Master Plans for localities in cooperation with the Jordan Valley Authority and Ministry of Housing and Public Works.

Construction / realization:
- Conduct physical planning for existing towns and villages, including roads, residential areas, land development
- Planning for infrastructure, transport, water, sanitation, electricity and IT related utilities
- Planning for public services, schools and recreational areas and facilities
- Elaboration of Investment Plans
- Elaboration of financing and management structures

Results / Impacts:
Urban development and housing needs met
Use of bio-climatic design practices and of renewable building materials

Sustainability and Water Impacts:
- This project will have a direct impact on the sustainability of the Jordan River Basin by applying bio-climatic design practices and of renewable building materials, and by using efficient water use systems for new housing projects

Organization / Responsibilities:
- Jordan Valley Authority
- Ministry of Housing and Public Works
- Ministry of Planning
- Ministry of Transportation
- All other relevant governmental authorities

Costs and Revenues: Implementation Period
<p>| Planning costs: 10 Million USD | Preparation time: 3 Yr. starting 2015 |
| Construction Costs ~ 1 Billion USD | Implementation Time: on-going up to 2050 |</p>
<table>
<thead>
<tr>
<th>Name: U03 JOR - Higher Education and Vocational Development Project</th>
<th>Location: Northern and Jordan Valley</th>
<th>Type of Intervention: Planning &amp; Construction</th>
</tr>
</thead>
</table>

**Objectives:**
This program aims at establishing a university in the Lower Jordan Valley to accommodate (future) 600,000 residents and to utilize hands on education and training to meet the developmental needs and the growing population, including agricultural and environmental research;

A Vocational Training Center to ensure access to professional trainers and experts who will offer training and information, that will be utilized to develop residents’ skills and identify their career choices and development objectives

**Map:**

**Intervention:**
- Establish a university in the Northern Jordan Valley
- Establish a modern and advanced vocational training centre in the LJV

**Preparation:**
Dependent on the education needs assessment conducted

**Construction / realization:**
- Build a modern university in the Northern JV
- Build an advanced and highly specialized vocational training centre.

**Results / Impacts:**
Higher education and vocational training opportunities provided to JV residents

**Sustainability and Water Impacts:**
- This project will have a direct impact on the sustainability of the Jordan River Basin by applying bioclimatic design practices and of renewable building materials, and by using efficient water use systems

**Organization / Responsibilities:**
- Ministry of higher education
- Ministry of education
- JVA
- Other relevant authorities

**Costs and Revenues: TBD**
- Planning costs: 1 Million JD
- Construction costs: 20 Million JD

**Implementation Period**
- Preparation time: 2 Yrs.
- Construction time: 3 Yrs.
Name: U04 JOR – Non-fossil, Renewable Energy Development Project
Location: Lower Jordan Valley
Type of Intervention: Development projects

Objectives:
• To plan for and realize renewable energy generation schemes in the Lower Jordan River Basin, taking into account the foreseen economic growth to 13 Billion JD / yr and related population growth of 600,000 people in 2050.
• Link this to the Water-Energy Nexus objectives of EcoPeace
• Assuming an advanced economy by 2050, this would require about 1.8 Billion Kwh of energy in 2050
• Assuming 50% renewable energy, this requires renewable energy capacity of 0.9 Billion Kwh / yr by 2050, or for instance 750 ha of solar panels (120 Kwh / m2)

Intervention:
Construction of renewable energy schemes such as solar systems and waste-to-energy systems

Preparation:
• Selection of the optimal sites for the construction of the renewable energy schemes
• Consideration of land ownership
• Integration of such schemes with the power transmission lines for the served communities
• Scope for operation and maintenance
• Develop legal framework
• Attract investment

Construction / realization:
• Reflect a common vision among the residents of the study area that such a project is vital for the area and its future development
• Appreciate the economic and environmental gains of such schemes

Operations:
• Distribution of electricity
• Fee collection
• O&M
• Technical and financial management
• Provide investment incentives to investors
• Provide land and infrastructure for implementation

Results / Impacts:
• Preservation of the environment
• Improvement of the financial status of the residents
• Improvement of the social conditions

Sustainability and Water Impacts:
• This project will have a direct impact on mitigation of climate impacts in the Jordan River Basin by applying renewable energy, bio-climatic design practices and of renewable building materials, and by using efficient water use systems

Organization / Responsibilities:
• Ministry of Energy and Mineral Resources
• Natural Resources Authority
• JVA
• Ministry of Environment
• Ministry of Planning and International Cooperation (MoPIC)

Costs and Revenues:
• Preparation costs: 2 million JOD

Implementation Period
• Preparation time: 2 year
| Construction costs: 200 million JOD | Construction time: ongoing up to 2050 |

**Other remarks:**
- Short Term action
Name: U01 PAL - Urban and Infrastructure Development Master Plan
Location: LJV
Type of Intervention: Planning & Construction

Objectives:
The aim of this project is to develop detailed urban, infrastructure and physical land use plans for the LJV, taking into account the foreseen population and economic projections of the independent Palestinian State.

Map:

Intervention:
To develop the a comprehensive and detailed urban, infrastructure and physical land use plan to meet the projected requirements for housing and urban facilities for both existing towns and villages as well as projected needs for population and economic growth.
The plan would also address the need for expansion of secondary and primary roads, and the linkage to national highway system and public transport requirements. This includes planning, management and training aspects.
The project also includes the planning of two new towns (see projected location in map indicated in pink), one in the northern Jordan Valley around the area of Kardala and Bardala, and the other in the central Jordan Valley, around the area of Kirbet ar Ras al Ahmar. These towns would have a population of around 150 thousand each, and would be built on the basis of environmentally friendly infrastructure.

Preparation:
Conduct Physical Master Plans for localities in cooperation with the Jordan Valley Authority and Ministry of Local Government to ensure meeting the growth needs of the region and being environmentally friendly by minimizing the negative impact of development.

Construction / realization:
- Conduct physical planning for existing towns and villages, including roads, residential areas, land development and identify how they can become more environmentally friendly
- Start rehabilitation and construction of secondary roads in the region
- Rehabilitate, construct and connect LJV highway system with the national highway system within the West Bank
- Construct two towns in the Central and Northern JV of up to 50 thousand housing units each with all relevant infrastructure

Results / Impacts:
Urban development and housing needs met

Sustainability:
Such types of projects depends on population growth and needs, thus its sustainability can not be calculated or in other words guaranteed.

Organization / Responsibilities:
- Jordan Valley Authority
- Ministry of Housing and Public Works
- Ministry of Planning
- Ministry of Transportation
- All other relevant governmental authorities
**Costs and Revenues:** cost estimates derived from interviews with urban planners, Rawabi management and PIF investment management.
- Planning costs: 9.9 Million USD
- Implementation: 1 Billion USD

<table>
<thead>
<tr>
<th><strong>Implementation Period</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Preparation time: 3 Yr. starting 2015</td>
</tr>
<tr>
<td>• Implementation Time: on-going up to 2050</td>
</tr>
</tbody>
</table>

**Investment Priorities (SIWI Criteria)**
- Social: 45
- Regional Political: 78
- National Political: 89
- Environmental: 50
- Economic: 71
- Overall: 67
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>U2 PAL - Educational and Vocational Needs Assessment</td>
<td>LJV</td>
<td>Planning</td>
</tr>
</tbody>
</table>

**Objectives:**
Identify educational and vocational training needs based on current data and future population growth projections.

**Intervention:** Conduct an assessment of the LJV area to identify the number and quality of schools and vocational training centers and where they need to be located, as well as any rehabilitation to existing schools to ensure their utility, coupled with an assessment of specialization needs for vocational and higher education in the short and long term population and development projections.

**Construction / realization:**
- Conduct a needs assessment of the Educational Facilities for the LJR
- Prepare an education strategy and master plan for the LJR

**Results / Impacts:**
Improve education opportunities

**Organization / Responsibilities:**
- Ministry of Education
- Ministry of Higher Education
- Public – Private Academic Partnership

**Costs and Revenues:**
- Preparation costs: $250,000

**Implementation Period**
- Preparation time: 1 Yr. starting 2015

**Other remarks:**
**Name:** U3 PAL - School Building Program  
**Location:** LJR  
**Type of Intervention:** Planning & Construction

<table>
<thead>
<tr>
<th>Objectives:</th>
<th>Map:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Based on the educational needs assessment, construct and rehabilitate schools where needed.</td>
<td>[Map Image]</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Intervention:</th>
<th>Construction / realization:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build modern and efficient elementary and secondary schools to accommodate the needs of young population (1,000 to 1,500 students per school), including a transportation system for students to get to their schools.</td>
<td>Build schools based on the concept of 12 grades with 5 sections per grade of average 25 students per section with classes of around 80m²</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Results / Impacts:</th>
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<tbody>
<tr>
<td>Improved access to world class education in the LJR</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Organization / Responsibilities:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ministry of education</td>
<td></td>
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<tr>
<td>• Ministry of public works</td>
<td></td>
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<tr>
<td>• Ministry of planning</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs and Revenues:</th>
<th>Implementation Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>per school of 6,000 m² ($800/m²) to include equipment and busses...Etc.</td>
<td>• Preparation time: 6 months after assessment</td>
</tr>
<tr>
<td>• Preparation costs: $100,000</td>
<td>• Construction time: 8 months</td>
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<tr>
<td>• Construction costs: $ 4.8 million</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Other remarks:</th>
<th></th>
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<tr>
<td>[Empty]</td>
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<tr>
<td>Name:</td>
<td>Location:</td>
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</tr>
<tr>
<td>U4 PAL - Higher Education and Vocational Training Program</td>
<td>Northern and Jordan Valley</td>
</tr>
</tbody>
</table>

**Objectives:**
This program aims at establishing a university in the Northern Jordan Valley to accommodate residents and to utilize hands on education and training to meet the developmental needs and the growing population, including agricultural and environmental research;

A Vocational Training Center to ensure access to professional trainers and experts who will offer training and information, that will be utilized to develop residents’ skills and identify their career choices and development objectives.

**Intervention:**
- Establish a university in the Northern Jordan Valley
- Establish a modern and advanced vocational training center in the LJV

**Preparation:**
- Dependent on the education needs assessment conducted

**Construction / realization:**
- Build a modern university in the Northern JV
- Build an advanced and highly specialized vocational training center

**Results / Impacts:**
Higher education and vocational training opportunities provided to JV residents

**Organization / Responsibilities:**
- Ministry of higher education
- Ministry of education
- JVA
- Other relevant authorities

**Costs and Revenues: TBD**
- Preparation costs: 300,000 USD
- Construction costs: 10 million USD

**Implementation Period**
- Preparation time: 2 Yrs.
- Construction time: 2 Yrs.

**Other remarks:**
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>U5 PAL - Health Care Services Development Project</td>
<td>LJV</td>
<td>Planning &amp; Construction</td>
</tr>
</tbody>
</table>

**Objectives:**

This project aims at assessing needs to health care services in the LJV, and plan for the establishment of HC centers, to identify the existing infrastructure, current and projected needs, including Primary health care centers and clinics, secondary health care centers and tertiary or specialized care to ensure timely access to health services for LJV residents, as well as the provision of Mobile Veterinary Clinics for access to livestock farms;

**Map:**

**Intervention:** Identify HC needs in the LJV, and in the short term, provide human resources necessary for the operation of existing health care centers, ensure access to required health care equipment, including emergency vehicles to transport patients to secondary and tertiary care centers in a timely manner;

In the long term, it aims at establishing a specialized secondary and tertiary hospital in the Northern JV to serve the growing population in the area – May be connected to the University to be established in the region with a specialized training hospital; and it aims at establishing Mobile Veterinary clinics that would provide access to livestock farms to vet. Services

**Preparation:**

- Conduct assessment to identify the short and long term HC needs

**Construction / realization:**

- In the short term, Rehabilitate, equip and staff existing primary health care centers
- In the short term, establish Mobile Veterinary Clinics
- In the Medium Term, Establish a hospital in the Northern JV

**Results / Impacts:**

Health Care needs of the population are met

**Organization / Responsibilities:**

- Ministry of Health
- Ministry of Planning
- Jordan Valley Authority

**Costs and Revenues:** ¼ cost of university

- Preparation costs: 1 Million USD
- Construction costs: 10 Million USD

**Implementation Period**

- Preparation time: 2 Yr.
- Construction time: ongoing.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Location:</th>
<th>Type of Intervention:</th>
</tr>
</thead>
<tbody>
<tr>
<td>U6 PAL -Electricity and Telecommunications Development Project</td>
<td>LJV</td>
<td>Planning and Construction</td>
</tr>
</tbody>
</table>

**Objectives:**
This project aims at expanding the electricity grid to cover all residential areas in the JV to ensure universal access to electricity; and to develop Telecommunications Networks to ensure access by residents to both voice and data telecommunications.

**Intervention:**
- Expand the Electricity Grid to cover all residential areas to ensure universal access to electricity.
- Construct and expand telecommunications network to ensure access by residents to voice and data telecommunications.
- Preparation:
  - Map Electricity and Telecommunications needs to meet current and future population growth projections.

**Construction / realization:**
- Expand the grid to reach all residential areas
- Expand the telecommunications network to cover the whole region

**Results / Impacts:**
Residents in the short and long term have access to electricity and telecommunications.

**Organization / Responsibilities:**
- Palestinian Energy Authority
- Ministry of telecommunications
- PalTel
- Jerusalem Electricity Undertaking
- Ministry of Planning
- Ministry of Public Works
- Jordan Valley Authority

**Costs and Revenues:**
- Preparation costs: 2 million USD
- Construction Costs: 200 million USD

**Implementation Period:**
- Preparation time: 1 Yr.
- Implementation time: ongoing (up to 5 yrs.)
| Name:    | U7 PAL - Develop Renewable Energy Resources |
| Location: | Jordan Valley, Palestine |
| Type of Intervention: | Development projects |

**Objectives:**
- To construct renewable energy generation schemes

**Intervention:**
Construction of renewable energy schemes such as solar systems

**Preparation:**
- Selection of the optimal sites for the construction of the renewable energy schemes
- Consideration of land ownership
- Integration of such schemes with the power transmission lines for the served communities
- Scope for operation and maintenance
- Develop legal framework
- Attract investment

**Construction/Realization:**
- Reflect a common vision among the residents of the study area that such a project is vital for the area and its future development
- Appreciate the economic and environmental gains of such schemes

**Operations:**
- Distribution of electricity
- Fee collection
- O&M
- Technical and financial management
- Provide investment incentives to investors
- Provide land and infrastructure for implementation

**Results/Impacts:**
- Preservation of the environment
- Improvement of the financial status of the residents
- Improvement of the social conditions

**Organization/Responsibilities:**
- Palestinian Energy Authority
- Ministry of Environmental Affairs
- Ministry of Planning
- Ministry of local Government

**Costs and Revenues:**
- Preparation costs: 2 million USD
- Construction costs: 20 million USD

**Implementation Period:**
- Preparation time: 1 year
- Construction time: ongoing up to 2020

**Other remarks:**
- Short Term action
<table>
<thead>
<tr>
<th><strong>Name:</strong></th>
<th>U8 PAL - Import and Export Logistics Center</th>
<th><strong>Location:</strong></th>
<th>Near Karama Bridge</th>
<th><strong>Type of Intervention:</strong></th>
<th>Planning and Construction</th>
</tr>
</thead>
</table>

**Objectives:**
Create a logistics consolidation center in the JV to facilitate export and import of goods to/from and through Jordan

**Map:**
![Map of the area](image)

**Intervention**
Establish a Logistics Consolidation Center near the Karama Bridge to facilitate the movement of goods and reduce the cost of transportation. The center would include refrigeration facilities and trucks that would continue the cooling chain for fresh produce and cooled products

**Preparation:**
- Prepare implementation study and provide for land and infrastructure

**Construction / realization:**
- Private sector investment, with land and infrastructure provided by the government

**Operations:**
- Operated by private sector company (ies) under supervision of Palestinian customs

**Results / Impacts:**
Reduced transaction costs for exports and imports

**Organization / Responsibilities:**
- Ministry of National Economy
- Ministry of Finance (customs)
- Jordan Valley Authority

**Costs and Revenues:**
- Preparation Costs: 200,000 USD
- Implementation costs: 1.8 million USD

**Implementation Period**
- Preparation time: 6 months
- Construction time: 1 yr.

**Other remarks:**
Objectives:
To extract salts and minerals from the dead sea for utilization by Palestine as both production inputs for cosmetics and other production, as well as for export as raw of processed materials.

Intervention
To create a research and development centre for the extraction of Dead Sea Minerals and Salts, which would be utilized for production of cosmetics and other production inputs, as well as for export as raw materials for production by other countries.

Preparation:
- Identify areas of research and prepare a business plan
- Identify needed technical and technological assistance to be achieved through international consultations and twinning with similar research centres in Europe and the other countries
- Establish the research centre
- Identify private sector investors to finance research and establish production facilities for equipment and machinery
- Establish extraction facilities and packing and packaging production lines

Construction / realization:
- Build research centre
- Build production facilities

Operations:
- Produce equipment and machinery required for implementation

Results / Impacts:
Potential economic benefits from the Dead Sea Salts and Minerals for both research and development as well as job creation.

Organization / Responsibilities:
- Palestinian Natural Resources Authority
- Ministry of Planning
- Ministry of National Economy
- JVA

Costs and Revenues: Estimates from ECOPEACE - Palestine
- Preparation costs: 1.5 million USD
- Implementation costs: 22 million USD

Implementation Period
- Preparation time: 1 Yrs.
- Construction time: 4 Yrs.

Investment Priorities (SIWI Criteria)
Social: 44
<table>
<thead>
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<th>Category</th>
<th>Score</th>
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<td>Regional Political</td>
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<td>National Political</td>
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<td>Environmental</td>
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<tr>
<td>Economic</td>
<td>70</td>
</tr>
<tr>
<td>Overall</td>
<td>52</td>
</tr>
</tbody>
</table>
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10 WEAP MODEL SCHEME

North