

| | |
|-----------------------|---|
| Activity: | Construction of 1 Collective wastewater treatment and reuse pilot plants. |
| Locations: | TulKarim / Attil City |
| Beneficiaries: | 254 persons |
| Purpose: | The purpose of this treatment plant is to increase the available water for agricultural purposes and at the same time solve the problem of wastewater disposal in the targeted communities. |

Summary

Background Information:

There is currently no sewerage network in the targeted communities, and the wastewater is disposed of in percolation pits next to the houses. These pits are emptied periodically by vacuum tankers and the wastes discharged randomly.

The proposed sites of the WWTP which will serve around 43 households, the project will cover the related cost of the sewerage system (1.9 km) and the treatment plant construction and the targeted communities will offer the required land for the plant.

The treated effluent will be used for restricted irrigation purposes i.e. for irrigation of the orchard trees, fodder.

Design Assumptions:

The average values for wastewater generated by rural communities are:

- Water consumption: 50 Liter/ (capita.day).
- Min. Temperature (mean): 13 C°
- Max. Temperature (mean): 35 C°
- Influent characteristic. BOD: 750 mg/l COD: 1200 mg/l TDS: 1700 mg/l TSS: 340 mg/l
- Daily total water consumption = 14 m³ according to past year data.

Technical Data for sewer design (min and max allowable slopes, min and max velocities, flow,...etc).

Available Documents:

- Application Forms.
- List of beneficiaries
- Photo gallery
- Design Documents and drawings for the treatment plant.
- Design Documents and drawings for the sewer lines.
- Tender documents.
- Contractor schedule/ project plan.
- Agreements with local communities.
- Agreements with beneficiaries.
- Operating manual



with funding from

Austrian
 **Development Cooperation**

Benefits:

Increase the amount of available water for restricted irrigation with an amount of 4,380 m³ per year.

Reduce the environmental and health problems by treating 12 m³ of wastewater daily.

Save about 3500\$ yearly by connecting houses to main sewer lines and prevent them from pumping their filled cesspits annually.

Time Schedule for Implementation:

People connected to the WWTP since December 2006, the treatment plant have been working in full capacity since March 2007, the handover process will take place when the WWTP efficiency become as agreed with the contractor based on the design.

Irrigation networks were installed in the site and seedlings were planted.

Monitoring period have been started to measure the treatment efficiency of the WWTP.

Beneficiaries' Contribution:

- Offering a piece of land for WWTP construction which has a value of 10,000\$ in average.
- House connections to the main sewer lines.



| | |
|-----------------------|---|
| Activity: | Construction of 1 Collective wastewater treatment and reuse pilot plant (constructed wetland) |
| Locations: | Bidya City |
| Beneficiaries: | 298 persons |
| Purpose: | The purpose of this treatment plant is to increase the available water for agricultural purposes and at the same time solve the problem of wastewater disposal in the targeted communities. |

Summary

Background Information:

No sewerage network existed in the targeted community; the wastewater was disposed of in percolation pits next to the houses. These pits were emptied periodically by cesspool emptiers and the wastes discharged randomly.

For the WWTP, which serves around 42 households, the project covered the related cost of the sewerage system (1.2 km) and the treatment plant construction. The targeted communities offered the required land for the plant.

The treated effluent is used for restricted irrigation purposes i.e. for irrigation of the orchard trees, fodder.

Design Assumptions:

The average values for wastewater generated by rural communities are: -

- Water consumption: 50 Liter/ (capita.day).
- Min. Temperature (mean): 13 C°
- Max. Temperature (mean): 35 C°
- Influent characteristic. BOD: 750 mg/l COD: 1200 mg/l TDS: 1700 mg/l TSS: 340 mg/l
- Daily total water consumption = 11.2 m³ according to past year data.

Technical Data for sewer design (min and max allowable slopes, min and max velocities, flow,...etc).

Available Documents:

- Application Forms.
- List of beneficiaries
- Photo gallery
- Design Documents and drawings for the treatment plant.
- Design Documents and drawings for the sewer lines.
- Tender documents.
- Contractor schedule/ project plan.
- Agreements with local communities.
- Agreements with beneficiaries.
- Operating manual



Benefits:

Increase the amount of available water for restricted irrigation with an amount of 4,069 m³ per year.

Reduce the environmental and health problems by treating 11.2 m³ of wastewater daily.

Save about 2900\$ yearly by connecting houses to main sewer lines and prevent them from pumping their filled cesspits annually.

Time Schedule for Implementation:

The WWTP is working since September 2007, the Irrigation networks installed and seedlings were planted on 25/10/2007..

Monitoring period started on November 2007 to measure the treatment efficiency of the WWTP.

Beneficiaries' Contribution:

- Offering a piece of land for WWTP construction which has a value of 10,000\$ in average.
- House connections to the main sewer lines.



| | |
|-----------------------|---|
| Activity: | Construction of wastewater treatment and reuse pilot plant. |
| Locations: | Ghor Al-Safi |
| Beneficiaries: | Around 270 persons |
| Purpose: | Increase the available water for irrigation purposes and to solve the problem of wastewater disposal in the target community. |

Summary

Background Information:

Most areas in the Jordan valley are not covered by sewerage networks nor have a nearby waste water treatment facility. People in these areas dispose the wastewater into cesspits in their homes which are emptied periodically by vacuum tankers. The tankers dump these wastes either legally in far away waste water treatment plants or illegally in near Wadis.

In recent years, the Jordanian government shifted toward decentralized waste water treatment plants to solve the problem of difficult topography of Jordan. This treatment plant, while serving the residents in providing a location for waste water disposal, will form a pilot plant for treating waste water with least operational costs possible and it will be a location for further investigation and conducting trials for achieving the optimum results.

The treated effluent will be used for restricted irrigation purposes according to Jordanian standards of reclaimed water uses for irrigation.

Design Assumptions:

- Treatment Capacity : 50 m³/d
- Min. Temperature (average): 13 C°
- Max. Temperature (average): 40 C°
- Influent characteristic (average): BOD: 2000 mg/l, COD: 8000 mg/l
- Effluent characteristic: BOD: 200 mg/l, COD: 500 mg/l
- Waste water delivered by tankers from cesspits

Benefits:

Expected:

- Increase the amount of available water for

Available Documents:

- Photo gallery
- Design Documents and drawings for the treatment plant.
- Tender documents



restricted irrigation with an amount of more than 10,000 m³ per year.

- Reduce the environmental and health problems resulting from improper disposal of waste water.
- On the long run, production of organic fertilizers to be used for agriculture

Time Schedule for Implementation:

This activity was implemented as follows:

- i. Selection of Target area according to selection criteria.
- ii. Make the necessary arrangements with the municipality at the location to take over the operation, maintenance and monitoring of the plant after construction.
- iii. Acquire the land for construction the plant on.
- iv. Prepare and discuss the design of the treatment plant with authorities in relation (MOI. JVA, MOI)
- v. Construct the WWTP and start the operating.

Construction of the WWTP started in August 2007 due to drainage problems in the land. Expected date for completing the construction is on 20th of January 2008.



Beneficiaries' Contribution:

- Provide the land for construction of the WWTP.
- Operation, maintenance, and monitoring of the plant in cooperation with Ministry of Water and Irrigation and Jordan Valley authority.
- Increase public awareness among the local community about waste water handling and reuse

Criteria for location/beneficiary selection:

- Absence of a close waste water treatment facility.
- Absence of a sewage system.
- The need for such a plant in the area.
- A local community with a moderate number of residents in a rural area.
- Availability of suitable land for construction with all required approvals from authorities.
- Willingness of local municipality to operate and maintain the plant in the proper way.

| | |
|-----------------------|---|
| Activity: | Construction of 1 Collective wastewater treatment and reuse pilot plant |
| Locations: | Qalqilya / Sir Village |
| Beneficiaries: | 212 persons |
| Purpose: | The purpose of this treatment plant is to increase the available water for agricultural purposes and at the same time solve the problem of wastewater disposal in the targeted communities. |

Summary

Background Information:

There is currently no sewerage network in the targeted communities, and the wastewater is disposed of in percolation pits next to the houses. These pits are emptied periodically by vacuum tankers and the wastes discharged randomly.

The proposed sites of the WWTP which will serve around 212 households, the project will cover the related cost of the sewerage system (1.5 km) and the treatment plant construction and the targeted communities will offer the required land for the plant.

The treated effluent will be used for restricted irrigation purposes i.e. for irrigation of the orchard trees, fodder.

Design Assumptions:

The average values for wastewater generated by rural communities are: -

- Water consumption: 50 Liter/ (capita.day).
- Min. Temperature (mean): 13 C°
- Max. Temperature (mean): 35 C°
- Influent characteristic. BOD: 750 mg/l COD: 1200 mg/l TDS: 1700 mg/l TSS: 340 mg/l
- Daily total water consumption = 14 m³ according to past year data.

Technical Data for sewer design (min and max allowable slopes, min and max velocities, flow,...etc).

Available Documents:

- Application Forms.
- List of beneficiaries
- Photo gallery
- Design Documents and drawings for the treatment plant.
- Design Documents and drawings for the sewer lines.
- Tender documents.
- Contractor schedule/ project plan.
- Agreements with local communities.
- Agreements with beneficiaries.
- Operating manual



Benefits:

Increase the amount of available water for restricted irrigation with an amount of 5,040 m³ per year.

Reduce the environmental and health problems by treating 14 m³ of wastewater daily.

Save about 2000\$ yearly by connecting houses to main sewer lines and prevent them from pumping their filled cesspits annually.

Time Schedule for Implementation:

The WWTP is working in full capacity since December 2006, irrigation network for the reuse area were installed and seedlings were planted..

Monitoring period have been started to measure the treatment efficiency of the WWTP.

Beneficiaries' Contribution:

- Offering a piece of land for WWTP construction which has a value of 10,000\$ in average.
- House connections to the main sewer lines.




Activity: Construction of 1 Collective wastewater treatment and reuse pilot plants.

Locations: TulKarim / Zeita City

Beneficiary: 343 persons.

Gelöscht: Around

Purpose: The purpose of this treatment plant is to increase the available water for agricultural purposes and at the same time solve the problem of wastewater disposal in the targeted communities.

| Summary | Available documents |
|--|---|
| <p>Background information:</p> <p>There is currently no sewerage network in the targeted community, and the wastewater is disposed of in percolation pits next to the houses. These pits are emptied periodically by vacuum tankers and the wastes discharged randomly.</p> <p>The proposed sites of the WWTP which will serve around 54 households, the project will cover the related cost of the sewerage system (1.3 km) and the treatment plant construction and the targeted communities will offer the required land for the plant.</p> <p>The treated effluent will be used for restricted irrigation purposes i.e. for irrigation of the orchard trees, fodder.</p> | <ul style="list-style-type: none"> • Application Forms. • List of beneficiaries • Photo gallery • Design Documents and drawings for the treatment plant. • Design Documents and drawings for the sewer lines. • Tender documents. • Contractor schedule/ project plan. • Agreements with local communities. • Agreements with beneficiaries. |
| <p>Design assumptions:</p> <p>The average values for wastewater generated by rural communities are: -</p> <ul style="list-style-type: none"> ✓ Water consumption: 50 Liter/ (capita.day). ✓ Min. Temperature (mean): 13 C° ✓ Max. Temperature (mean): 35 C° ✓ Influent characteristic. BOD: 750 mg/l COD: 1200 mg/l TDS: 1700 mg/l TSS: 340 mg/l ✓ Daily total water consumption = 14 m³ according to past year data. ✓ Technical Data for sewer design (min and max allowable slopes, min and max velocities, flow,...etc). |  |
| <p>Benefits:</p> <p>Increase the amount of available water for restricted irrigation with an amount of 4,380 m³ per year.</p> <p>Reduce the environmental and health problems by treating 12 m³ of wastewater daily.</p> <p>Save about 3500\$ yearly by connecting houses to main sewer lines and prevent them from pumping their filled cesspits</p> | |

annually.



Beneficiary contribution:

- Offering a piece of land for WWTP construction which has a value of 10,000\$ in average.
- House connections to the main sewer lines.
-

Time schedule of implementation and progress:

The construction works started on July 2007, most of the works related to the sewer line completed.

Site preparation for the construction of the wastewater treatment plant has been started.

The works expected to be completed in February 2008



Fundación
Promoción
Social de la
Cultura



الصندوق الأردني الهاشمي للتنمية البشرية



with funding from

Austrian
Development Cooperation

Last Updated December 2007