OASIS WATER PROJECT
WATER CARE FOR LIFE

MARA MORBIN—ITALY
... water care for life!

Water care for life!

WHERE: Iraqi marshlands.

PROBLEM: Water scarcity, no-potable water with non-homogeneous propagation.

PURPOSE: To make the water from the Tigris and Euphrates drinking and repopulate the site.

ACTUAL SITUATION: After the 1991 war, Saddam Hussein ordered to drain through the construction of dams the Iraqi marshlands. Only after the intervention of American troops in 2003 it was possible to interfere with the plan of draining the fisheries, the harvest of sugar cane and reeds of the water buffalo and cattle. activities that were essential for the life of the people and the basis of their small economy.

THE PROBLEM

Many regions of the world suffer from the following issues:

- Drought;
- Climatic conditions inaccessible;
- Water scarcity and mismanagement of the same;
- Famine;
- Plague;
- Pollution;
- War;
- Natural disasters.

OBJECTIVE

Water care for life aims to:

- Develop company stable, self-sufficient and sustainable;
- Contain the phenomenon of nomadism;
- Improve the health, social and economic resources of people;
- Give education to people.

IT IS... WATER CARE FOR LIFE!

WCL was founded around any water source (well, new or existing, river, lake, sea, ocean). It’s making water potable, making a real community and providing all those infrastructures that lead to economic and social development in the region.

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River where we extract the water which will be treated and made drinkable.

Nomadic groups will find hospitality in the new village.
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More prevalent and profitable crops are sugar cane and crabs.
The water buffalo

Fishing and the typical boats used
PHASES:
1. Identification of source water, river, well, etc.
2. Analysis of the organoleptic characteristics of water: the palatability degree and the water flow.
3. Choosing the type of water purification plant to be preferred and its components.
4. Planning and management of land surrounding the source.
5. Internal investment expenditure and, later, the self-organization, internal funds, and material donations, to raise donations and loans.
6. Preparation of rules and management of technological equipment.
7. Education of the local staff on how to place the management of the drinking water.
8. Delivery of jobs to the communities which, being empowered as an active part of the realizable work and co-management, over time, will keep active the entire project.

TREATMENT AND WATER MANAGEMENT

Having identified the source of water and carried out the sensory analysis, it is extracted and collected by suction submersible pumps. The reverse osmosis water purification plant is divided into four modules. CONTAINER.

MODULE 1: water pump, filtration and purification of the water, with the reverse osmosis system. The natural process of osmosis: having two solutions that communicate with a semipermeable membrane, the more dilute solution passes to the most concentrated (as a backwash) for the osmotic pressure found in nature. If in the concentrated solution is applied a higher pressure than the osmotic, the water filter is stored in a water tank. The impurities will be retained by the membrane and filtered water is so pure. This is the principle of reverse osmosis.
TREATMENT AND WATER MANAGEMENT

Having identified the source of water and carry out the sensory analysis it is collected using suction submersible pumps.

The reverse osmosis water purification plant is divided into four modules:

MODULE 1
Treated water storage tank.

MODULE 2
Tank for storage of water which is supplied by distribution pumps.

MODULE 3
Container for electricity generator for the treatment plant, with a diesel fuel storage tank: the generator will activate when the photovoltaic system exceeds its run time. A small photovoltaic system for the use of clean energy has been designed and installed on the top of each module to meet the electricity requirements of the treatment plant. As well as in the distribution of water in the 30 km long distribution network has also been set up with water taps in the village.

A number of people have been trained in site, and they will then be able to manage the entire system. Making the inhabitants of the village responsible for the system will make them feel that they form part of the community and in this way the phenomena of nomadic ways of life will be reduced.

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SURROUNDING LAND PLANNING

The area surrounding the zone of water extraction will be designed and analysed in order to gain a comprehensive knowledge of the situation of the premises. Expanding on the present idea and process by identifying the various activities, services and destinations to be filled.

STAGES OF ANALYSIS OF SITE

The study of the site will be fully using the following analysis:

- Verification of the geomorphological characteristics of the land;
- Climate characteristics and climatic changes during the year;
- Characterization of topography between day and night;
- A study of sun exposure, air currents and climate;
- Study of soil and various atmospheric phenomena;
- Check for flood-prone areas as well as capture potential in the surrounding areas that may cause injury to people, animals and crops.

PLANNING AND LAND SURVEY

After these surveys identify the area of the oasis which will be urbanized by careful measurements, and subdivided into the specific intended use that are:

- Areas where we find the water purifying system;
- Areas of distribution of water with its study areas;
- Small business / craft and production;
- Small cultural centers, aggregation, religion and health;
- Cemeteries, housing for animals and tool shed;
- Green areas and cultivated areas.

The size of the village very depending on the number of people who live in it. In this case, the size was so large that it allowed me to expand freely as needed.
Conceptualistic subdivision of the village

- Oasis water project concept – treated water drawing area
- Distribution of water
- Equipment for operators
- Water filling area for camions
- Water storage area
- Shady zone

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Oasis water project concept – animal fencing

Excavation of water distribution network: 30 km long with a fountain every 500 meters.
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Construction of small drinking water network

Water supply systems to be carried to distant villages by tanker
Fountains: Water distribution points one every 500 meters

Another view of the oasis
TREATMENT AND WATER MANAGEMENT

Having identified the source of water and carry out the sensory analysis, it is collected/collected for further purification at the plant.

The reverse osmosis water purification plant is divided into four modules: CONTAINER.

SIZE OF VILLAGE

The village will be born on a base of 3,710 people of which:
- 2,400 people are currently living on both sides of a tributary of the Euphrates, the Gurnet Hasson;
- 950 people are currently living on both sides of a tributary of Gurnet Hasson; figure 19;
- 360 people are displaced and come to different sites; they would establish in the village only if the drinking water would be guaranteed the full year.

Our village has been so scaled up 400:

At the chart on the world's consumption of water per person per day we estimated a daily requirement per capita: 300 l to meet the whole village will be required 200,000l of water per day.

In this particular case just one plant reverse osmosis water purifying capacity of 200 cubic meters of water per day.

Diagram of water consumption per person per day in the world.
COSTS
A careful analysis of the site and water are key factors which impact heavily on cost estimates for presentation to potential funders of the work.

The main factors affecting the project are the following:
1. Nature of water, type of contamination and pollution level, available.
2. Proximity of the source to the village.
3. Type of materials to be used for the realization of the project and they come with their duties.
4. Type of basic required.
5. Type of additional modules required (medical centers, wind and solar stations, etc.)
6. Type of irreplaceable elements.

The equipment, construction of the works and their management involve also a significant employment contribution of local residents, so that the development of socio-economic development is also intended for the project.

The project, already known and seen with positive feelings on behalf of both international charitable associations and civil society organizations, is focused to create a self-sustainable community and territory with the utmost respect for the environment and people.

The Oasis project is a simple and modular project which will grow and be modified in line with the needs of the community, the community being with the project and having been involved in its management from the very beginning of its realization.
CONCLUSIONS

The Oasis project is a simple and modular project, which will grow and be modified in line with the needs of the community, which, living with it and having been involved in its management from the very beginning, will make it their own.

GOALS OF THE PROJECT

• Improving the level of people’s lives;
• Improving the health of the community through the provision of improved water and the emergence of small health centers;
• Improvement of health status at poverty and farm areas;
• Increase in income and welfare through small-scale business;
• Reduction in poverty, illiteracy and HIV, malaria and other serious illnesses;
• Creation of jobs for people who are in place where they must be settled;
• Social development through the supervision and engagement of the community;
• Economic development through the creation of small businesses and crafts and extensive crop farming to achieve economic self-sufficiency;
• Promotion of women and children with their rights in society because they no longer need to research and collect water and food;
• Reduction of cultural and economic gap with rural, urban and developing countries or developed surrounding;
• Achievement of a degree of sustainability by using renewable and alternative energy.
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