



Practitioner's Guide:

Systematic Planning of Resource Requirements



An example from a country in
Northern Africa



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Example:

Electrification of water wells in coastal districts

Access to water for irrigation has been an important resource that has helped the farmers in the region to substantially increase their production and thus their incomes. In the past 20 years the agricultural area under irrigation has more than doubled. Ground water extraction for irrigation purposes in the area has mainly been done through the use of diesel pumps at individual wells.

This small-scale irrigation approach has led to a huge waste of resources and has also led to a lot of pollution (i.e. seepage of oil and diesel into the soil and groundwater) in the area and in many cases also over-extraction from the wells. The high investment and running costs of individually owned diesel pumps has meant that the profits and thus incomes of the farmers have been diminished over the years.



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Example:

The planning team undertook the following main steps:

1. The planning team sought alternatives to this approach of irrigation and water extraction. Two alternatives were examined: replacing the individual water pumps with a centralised irrigation system or a smaller scale alternative of replacing the diesel pumps with electric pumps. The centralised irrigation system would have provided the most effective and environmentally sound way of regulating the extraction process and would also allow a more realistic value to be attached to the use of ground water for irrigation (water pricing policy). However, the resources available meant that a centralised ground water extraction system for irrigation purposes was simply not feasible. The planning team decided to pursue the pump replacement option. The reason for this was the financial viability and the fact that it contributed to alleviating at least some of the environmental concerns but not the problems of over extraction and water pricing policy.
2. A series of surveys and detailed field studies were undertaken in order to determine the priority of the irrigation wells. The prioritisation process looked into issues such as number of beneficiaries, level of impact, relative costs involved, area under irrigation and so on.
3. Once the alternatives with regard to replacing the diesel pumps with electrical pumps had been elaborated upon by the planning team they presented and discussed the ideas with farmers and local decision makers.
4. The planning team also contacted all relevant agencies that would need to be involved in the process in order to illicit their views and opinions (e.g. Ministry of Electricity, Ministry of Construction, Department of Water, etc.).
5. In an effort to realistically assess the costs and potential benefits of the proposal, the planning team consulted the expertise of the farmers, the various ministries and the private sector. A complete costs estimate was then formulated.



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6. In order to be able to reduce the overall cost of the whole scheme all partners in the process were requested to contribute. The contribution could be in terms of money, personnel or even materials. The costs estimates were then revised based upon the contributions from the various partners (including the farmers). The main contributions were as follows:
 - ▶ Local technical departments of the ministries built the link from the high voltage power grid to the medium voltage power grid.
 - ▶ the Local Department for Electricity in the region installed the transformers from high to medium voltage.
 - ▶ Local Farmers provided the pumps, digging and maintenance of wells and building chambers for the pumps and transformers.
 - ▶ The German Technical Assistance provided a financial contribution for the purchasing and instalment of some transformers in selected locations.
7. The plan was sent for approval to the head of the local government and the various other decision-making authorities once a realistic financial plan had been developed.
8. Finally, a detailed plan of operations was drawn up. The plan of operations defines the main inputs required to implement the project. It includes the costs involved and by when the various contributions would have to be received in order to implement the project successfully. In some cases individual implementation agreements were also signed with the project partners.
9. Thereafter the project could be implemented on the basis of the plan of operations.