



Practitioner's Guide:

Planning Using The Project Planning Matrix (PPM)



An example from a country in
Northern Africa



Deutsche Gesellschaft für
Technische Zusammenarbeit
(GTZ) GmbH



Bundesministerium für
wirtschaftliche Zusammenarbeit
und Entwicklung



Planning Using The Project Planning Matrix (PPM)

Example:

Electrification of agricultural water wells in two different districts

In some remote villages in the eastern part of the region one of the main problems is the provision of adequate supply of water both for the increasing population and growing agriculture needs. Most of the villages are connected to the electricity grid. However; in some villages electricity connections to the water wells do not exist. As a result many of the local wells operate inefficiently as they rely on the use of diesel pumps. Diesel pumps have high maintenance costs and are not particularly environmentally friendly due to oil leakages that pollute the soil. Furthermore, many wells are currently not being operated mainly due to the high operating costs.



Photo 1:
Tension lines are being mounted to the electricity poles



Photo 2:
Electricity poles have been mounted and a chamber for the transformer (foreground) has been constructed

In both districts the ground water layers can be found at a depth between 90m - 100m, which in turn means that water pumps are the only method of getting the water to the surface. The existing pumps operate about six hours a day in order to supply sufficient water. The water potential would permit a doubling of the area under cultivation, creating further employment in the villages and contributing to the ability of nomadic people to become more sedentary.



Planning Using The Project Planning Matrix (PPM)

A project on how the existing water supply system could be improved was developed and implemented. Essentially, a connection to the main 11KV electricity grid was established and a transformer that reduced the voltage down to 380 V was added (three-phase current). This is the most appropriate voltage required for powering the electric water pumps.

The beneficiary groups had to cover the costs of the buildings housing the transformers as well as the connections between the transformer station and the wells. In general, a transformer station serves four to six wells at a distance of up to three kilometers. In addition, if new wells are drilled, the wells and pumps are to be fully financed by the beneficiary groups.

Upon completion of the project, the operation costs of the wells were reduced by over two thirds compared to the use of diesel pumps. The water supply for irrigation purposes was significantly improved and in some cases additional irrigated areas were put under cultivation.



Photo 3: Area taken under cultivation by drip irrigation after successful project implementation



During the planning process of the project, the project planning matrix methodology was used (see PPM). The method proved useful not only to systematically plan the water wells electrification project but also other small projects that have been implemented by the Planning Unit. In order to secure the timely implementation of activities, the PPM was further elaborated in a separate plan of operations (see PoO). The plan of operations also provides the basis for the monitoring system that has been applied to most of the projects planned by the Planning Unit.



Planning Using The Project Planning Matrix (PPM)

Table 1: Project Planning Matrix for the Electrification of Water wells in districts

Project Planning Matrix (PPM)

Regional Planning Unit

Project title : Electrification of agricultural water wells in district		Estimated project period: 8 weeks	Prepared on: 01.01.2003
Strategy	Indicators	Assumptions	Indicators of the assumptions
Overall goal: The life quality of the beneficiary groups is improved.			
Development goal: The development in the main economic sector in the area (agriculture) is increased.	The area of agriculture land is increased.		
Project purpose: The distribution of water wells' in the district is more efficient.	The volume of water and the area of the agriculture land are increased simultaneously	Willingness of decision makers to implement such a plan	Decision makers are supporting the plan.
Results: 1. Data and information about the project is collected & analyzed. 2. Alternatives for the plan are produced and a plan is developed. 3. Cooperation with other agencies working in the same area is established. 4. An agreement on sharing the costs and responsibilities is made between the development agencies. 5. Implementation of the project is carried out efficiently.	- Data is collected and analyzed in 1 week. - Preparing the plan in 1 week. - An agreement is signed after 2 weeks from the beginning of the study. - Implementation is done within 4 weeks.	- Data is available. - Staff get a permission to go to the field. - Development agencies are willing to cooperate. - Enough funds are available from various sources.	Implementation is done in time.
Activities: 1.1 Collect data about similar projects. 1.2 Carry-out field surveys & questionnaires. 1.3 Discuss the issue with the beneficiary groups. 1.4 Prepare maps & data about the project area. 1.5 Carry-out data analysis. 2.1 Elaborate alternatives for the project. 2.2 Estimate cost for each alternative. 2.3 Evaluate alternatives. 2.4 Discuss alternatives with beneficiary groups 2.5 Prepare alternatives for decision-makers. 2.6 Prepare financing alternatives. 2.7 Get decision on one of the alternatives 2.8 Get decision on implementation during current budget year. 2.9 Detail the chosen alternative. 3.1 Define which agency is responsible for which item in the plan. 3.2 Study the development plans for each of the concerned agencies. 3.3 Make a list of the contribution of each agency. 4.1 Contact each agency and inform the responsible persons about the plan. 4.2 Negotiate with the agency about its possible role in the plan's implementation. 4.3 Make a written agreement with all involved agencies about the distribution of tasks in the implementation level. 4.4 Set up a plan of operations for project implementation 4.5 Set-up a monitoring programme for the implementation.			
5.1 Prepare the site for implementation. 5.2 Transport equipment to the site. 5.3 Install electricity poles 5.4 Tight the connectors on the poles 5.5 Install the cables and transformers' chambers. 5.6 Install the transformers 5.7 Test and release electricity. 5.8 Test water wells 5.9 Hand-over the project to the beneficiary groups.			



Planning Using The Project Planning Matrix (PPM)

Table 2: Plan of Operations for the Electrification of Water wells in districts

Plan of Operations

Regional Planning Unit

Project title: Electrification of agricultural water wells in a district			Planning period: 8 weeks			Prepared on: 01.01.2003			Page 1								
No.	Activity	Indicator/ interim result	Implementation period/weeks								Respon- sibility	Personnel requirements (expert months)			Costs of materials and equipment	Operating funds/costs	Assumptions/ remarks
			1	2	3	4	5	6	7	8		Project	Local expert	Additional staff			
1.1	Collect data about similar projects.	A set of data is gathered									RPU	6	1				
1.2	Carry out Field Survey & questionnaires.										RPU	6	2				
1.3	Discuss the issue with the beneficiary groups.										RPU	6	2				
1.4	Prepare maps & data about the project area.										RPU	6	1				
1.5	Carry-out data analysis.										RPU	6	1				
2.1	Elaborate alternatives for the project.										RPU	6	2				
2.2	Estimate cost for each alternative.										RPU	6	1				
2.3	Evaluate alternatives										RPU	6	2				
2.4	Discuss alternatives with beneficiary groups.										RPU	6	2				
2.5	Prepare alternatives for decision-makers.										RPU	6	1				
2.6	Prepare financing alternatives.										RPU	6	1				
2.7	Get decision on one of the alternatives.										RPU	6	1				
2.8	Get decision on implementation during the current budget year.										RPU	6	1				
2.9	Detail the Chosen alternative.										RPU	6	2				
3.1	Define which agency is responsible for which item in the plan.										RPU	6	1				
3.2	Study the development plans for each of the concerned agencies.										RPU	6	2				
3.3	Make a list of the contribution of each agency.										RPU	6	1				
4.1	Contact each agency and inform the responsible person about the plan.										RPU	6	2				
4.2	Negotiate with the agency about its possible role in the plan implementation.										RPU	6	2				
4.3	Make a written agreement with all agencies about the distribution of tasks in the implementation level.										RPU	6	2				
4.4	Set-Up a monitoring programme for implementation										RPU	6	1				
5.1	Prepare the site for implementation.										REA	3	1	20			
5.2	Transport equipment to the site										REA	3	1	20			
5.3	Install electricity poles										REA	3	1	20			
5.4	Tight the connectors on the poles										REA	3	1	20			
5.5	Install the cables and the transformer's chambers										REA	3	1	20			
5.6	Install the transformer										REA	3	1	20			
5.7	Test and release electricity										REA	3	1	20			
5.8	Test water wells										REA	3	1	5			
5.9	Hand-over the project to the beneficiary groups.										RPU	3	2	5			

RPU = Regional Planning Unit
 REA = Rural Electricity Agency