

STEP 9 PREPARATION AND SIGNING OF WORKS AND SUPPORT AGREEMENTS

Target Group: WUA Management Board members and WUA General Assembly members.

Field Staff Involved: PIM Extensionist and PIM Support Team.

Timing: Within one month after the formation of the WUA (PIM Step 8) and/or completion of the Participatory Planning and Design of Rehabilitation Works (PIM Step 7).

Duration: One month.

Main Purposes:

- Preparation of Works and Support Agreement, which specifies the rights and obligations of all signing parties during the construction of the Contractor Works and WUAs' Works, the technical and institutional strengthening and support of the WUGs and WUA.
- Review and approval of Works and Support Agreement by the General Assembly of the WUA.
- Signing of the Works and Support Agreement by the WUA Chairperson on behalf of the WUA and the PMU Director on behalf of the IIP/MAI.

Documents:

- (Model) Works and Support Agreement (Annex 9.1).

Visual Aids: None.

INFORMATION AND GUIDELINES

To ensure that the PIM approach will be properly implemented, so that farmers can take up the management of the completed scheme immediately and make full utilisation of all irrigation infrastructure, a Works and Support Agreement shall be signed by all concerned parties, in which the conditions and time schedules for the implementation of the rehabilitation works (PIM Steps 10 and 11), the technical and institutional strengthening of the WUGs and WUAs (PIM Step 13) and the agricultural extension programme (PIM Step 14).

9.1 Preparation of Works and Support Agreement

The Works and Support Agreement shall specify the rights and obligations of all parties involved in the implementation of the PIM approach as well as the conditions and time schedules for the implementation the construction of the Main and WUA Works, the technical and institutional strengthening of the WUGs and WUA, and the planning and implementation of the agricultural extension programme.

9.1.1 Main Issues of the Works and Support Agreement

The Works and Support Agreement shall cover at least the following issues:

Contractor Works and WUA Works

- Detailed inventory of all irrigation facilities to be rehabilitated under the Contractor Works Contract and WUA Works Contract(s);
- Detailed time schedules for execution of Contractor Works Contract and WUA Works Contract(s);
- Authorities of WUA to contract out WUA Works Contract(s) to third parties;
- Provision of training of the WUA Construction Committee by the PIU Construction Team before the start of the construction of the WUA Works;
- Provision of technical assistance to the WUA by the PIU Construction Team during the preparation of detailed Work Plans and the execution of the WUA Works;
- Leasing of any government-owned machinery and equipment to the WUA for the execution of the WUA Works;

- Minimum standards of workmanship;
- Responsibilities for any losses and damage resulting from non-compliance with any of the obligations in the signed Works and Support Agreement and/or from execution of the Contractor Works and WUA Works;
- Supervision of Contractor Works and WUA Works;
- Financing schedule for farmers' contributions, including sanctions for late and non-payment;
- Emergency procedures in case of calamities due to extreme climatic conditions, such as flash floods;
- Communication and reporting procedures;
- Right-of-way; and
- Procedures for joint inspections of completed Contractor Works and WUA Works.

Provision of Training and Support

- Responsibilities and obligations of the PIU with regard to the technical and institutional strengthening of the WUGs and WUA through the provision of training and support, so that the WUGs and WUA would have the necessary technical and organisational skills for the effective O&M of the rehabilitated distribution system and the (administrative and financial) management of the WUA itself; and
- Responsibilities and obligations of the PIU in collaboration with the Agricultural Extension Department within MAI and/or contracted service provider with regard to the participatory planning and execution of a comprehensive agricultural extension programme.

Procedures

- Procedures to be followed in case of non-compliance by any party with any of the responsibilities and obligations described in the Works and Support Agreement;
- Procedures for changing or termination of the Works and Support Agreement; and
- Procedures for settlement of disputes.

Farmers' Contributions to Rehabilitation Costs

Farmers will be particularly interested in their expected contributions to the estimated rehabilitation costs of the headworks and the distribution system. Therefore, this issue shall be very clearly specified in the Works and Support Agreement and discussed in detail with the WUA members.

Farmers are expected to contribute about 30% of the costs of the civil works and it will be collected in two stages:

- a contribution of about 7% of the civil works costs during the implementation of the civil works, which may be provided either as labour, materials or in cash; and
- an annual cash repayment of about 25% of the civil works expenditures, starting 5 years after completion of the civil works, over a 20-year period.

Farmers' Contributions to O&M Costs

The annual payment of ISFs to cover the costs of operating and maintaining the primary and secondary canal systems, including all structures (i.e. cross-regulators, drop structures and intake structures) is also an issue that farmers want to know clearly.

Farmers are expected to payment an Irrigation Service Fee (ISF) to WUA that will gradually increase over 7-year period following completion of rehabilitation so that all O&M costs are fully recovered.

The actual amount of money that each farmer shall pay as an ISF per hectare/*feddan* of land to the WUA will be different for each spate irrigation systems as it mainly depends on the type, number and size of irrigation structures. In addition, the ISF may also vary every year on each spate irrigation system as the estimated maintenance costs may be different each year.

Water Allocation and Distribution

One of the two main goals of the IIP is to ensure sustainable and efficient distribution and use of water in spate irrigation schemes through rehabilitation and improvement of irrigation infrastructure and implementation of PIM.

In principle, available spate water shall not only be distributed efficiently but also as equitably as possible, so that as many farmers as possible will have access to spate water to irrigate their fields. Equitable distribution of spate water can only be achieved if the farmers through their WUAs would agree that available spate water is distributed in accordance with (existing) water distribution rules, such as the *Ala'ala Fala'ala* (locally known as *Rada'ah* in Wadi Tuban), which gives precedence to upstream users, both between and within diversion structures and canal systems. This means that upstream users have the right to a single full irrigation before their downstream neighbours.

It is envisaged that a Wadi Water Management Plan will be formulated and adopted through the Irrigation Council (PIM Step 17) for the efficient and equitable distribution of spate water between all spate irrigation system along the Wadi. In addition, each WUA shall formulate and adopt a Primary Canal Water Management Plan (PIM Step 18) to ensure the efficient and equitable distribution of spate water along the entire primary and secondary canal system.

It shall be clearly stated in the Works and Support Agreement that:

- the WUA shall adhere to the rules for the distribution of spate among all spate irrigation systems along the Wadi as stipulated in the Wadi Water Management Plan that will be formulated and approved through the Irrigation Council at a later stage; and
- the WUA shall distribute spate water efficiently and equitably in accordance with rules as stipulated in the Primary Canal Water Management Plan, which shall be formulated and approved by the WUA before the signing of the Irrigation Management Transfer Agreement (PIM Step 19).

Right-of-Way


One issue that could hinder the smooth execution of the Main and WUA Works by the contractor and the WUA respectively is the matter of 'right-of-way', whereby the owners of the land allows the contractor and WUA to cross their fields during the implementation of the construction works.

To ensure that the 'right-of-way' issue will not prohibit the smooth implementation of any construction works, the WUA shall collect a written statement from all concerned landowners that none of them have objections that: staff of the contractor and/or WUA can cross their fields during the construction and inspections of the works. If required, the landowners shall be (financially) compensated for any damage to crops and any structure on the land.


The 'right-of-way' statements signed by all concerned landholders shall be attached to the Works and Support Agreement as an annex.

9.2 Review and Approval of Works and Support Agreement by WUA General Assembly

Before the Works and Support Agreement could be signed by the WUA Chairperson on behalf of the WUA and the PMU Director on behalf of the IIP/MAI, the WUA General Assembly shall formally approve this important document following a review of its content.

 To allow the General Assembly members to read the Works and Support Agreement, the PIM Extensionist shall submit a number of copies of the translated version of the Works and Support Agreement to the WUA Committee at least one week before the planned Meeting of the WUA General Assembly.

After having explained and discussed the Works and Support Agreement, the PIM Extensionist and PIM Support Team shall ask the members of the WUA General Assembly if the content is clear to them and that they could formally approve the Works and Support Agreement as presented to them.


 It is very important that the PIM Extensionist and PIM Support Team emphasise that the Works and Support Agreement is a type of contract between equal parties, the WUA and the IIP, specifying their specific rights and obligations prior and during the implementation of the construction works, strengthening of the WUA and the agricultural extension and land development programme.

 A copy of a (Model) Works and Support Agreement can be found in Annex 9.1.

9.2.1 Rejection of Works and Support Agreement by WUA General Assembly

If the WUA General Assembly does not agree with one or more articles of the Works and Support Agreement, the PIM Extensionist and PIM Support Team shall discuss with its members the main reason(s) for their objection. If possible, the PIM Extensionist and PIM Support Team shall ask the General Assembly to change the content of the concerned article(s) in such a way, that it will be acceptable for them. The proposed alterations in one or more articles of the Works and Support Agreement have to be approved by the other parties before a final version of the Works and Support Agreement with the approved alterations could be prepared by the PIU.

However, if the IIP cannot accept the alterations proposed by the WUA General Assembly, its objections shall be discussed with the members of the WUA General Assembly during another meeting in an attempt to find a consensus, which will be acceptable for both parties.

 **Exit:** If the WUA General Assembly formally decides to reject the Works and Support Agreement, the IIP does not have another choice than to cancel the rehabilitation of the concerned spate irrigation systems and the transfer of irrigation management to the WUA. The WUA Management Board shall be formally informed in writing about the IIP's decision.

9.3 Signing of Works and Support Agreement

After the WUA General Assembly has formally approved the Works and Support Agreement, the PIM Extensionist and PIM Support Team in collaboration with the WUA Management Board shall arrange a special ceremony, during which the Works and Support Agreement will be signed by the WUA Chairperson on behalf of the WUA and the PMU Director on behalf of the IIP/MAI.

**MILESTONE 2:
WORKS AND SUPPORT AGREEMENT SIGNED BY WUA CHAIRPERSON ON
BEHALF OF WUA AND PMU DIRECTOR ON BEHALF OF IIP/MAI**

STEP 10 TENDER AND EXECUTION OF CONTRACTOR WORKS

Target Group: Contractor(s) and WUA Construction Committee.

Field Staff Involved: PIU Construction Team (i.e. PIU Resident/Construction Engineer, PIM Extensionist and PIM Support Team).

Timing: Following the signing of the Works and Support Agreement (PIM Step 9) and at least two to three months before the start of the construction season.

Duration: 8 to 9 months.

Main Purposes:

- Tender and award of Contractor Works Contract.
- Execution of Contractor Works by the contractor.
- Progress monitoring and quality control by PIU and WUA Construction Committee.
- Regular Contractor Works Monitoring Meetings.

Documents:

- Final Rehabilitation Plan & Cost Estimates.
- Contractor Works Contract and specifications.
- Works and Support Agreement.
- Relevant Quality Control Guidelines.

Visual Aids:

- Map(s).
 - Drawings.
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INFORMATION AND GUIDELINES

10.1 Tender and Award of Contractor Works Contract

Following the signing of the Works and Support Agreement, the PIU/PMU could start the tendering and the award of the Contractor Works Contract in accordance with the existing Government and World Bank procedures.

10.2 Execution of Contractor Works

Following the award of the Contractor Works Contract, the contractor shall commence the construction works in accordance with the agreed time schedule. The PIU Construction Team shall monitor the execution of the construction works closely. To avoid serious delays in the execution of the Contractor Works Contract, the PIU Construction Team shall identify any problems as early as possible and try to resolve them immediately in consultation with the contractor and the WUA Construction Committee.

10.3 Progress Monitoring and Quality Control of Contractor Works

During regular (two-weekly) Contractor Works Monitoring Meetings, the PIU Construction Team, site engineers, contractor and WUA Construction Committee shall review the progress and the quality of the construction works and discuss any problems encountered during the execution of the Contractor Works.

A quality assurance audit of test results to ensure compliance with specifications must be completed and duly signed by all parties.

Irrigation Improvement Project

If necessary, the PIU Construction Team, contractor and WUA Construction Committee shall jointly visit the site(s) where the contractor of the Contractor Works has encountered problems during the execution of the construction works. If possible, the problems shall be resolved immediately. However, if major changes have to be made in the detailed system designs, the PIU Construction Team shall discuss the matter with the concerned Design Engineers before any decision can be made.

If the progress review has revealed that the execution of the Contractor Works is behind schedule with the execution of its construction works, the PIU Construction Team and the contractor shall assess the possibilities to adjust the work plan, so that the construction of the Contractor Works can catch up with the time schedule as agreed in the signed Works and Support Agreement as well as the Contractor Works Contract.

STEP 11 EXECUTION OF WATER USERS' ASSOCIATION WORKS

Target Group: WUA Construction Committee and WUA Management Board.

Field Staff Involved: PIU Construction Team (i.e. PIU Resident/Construction Engineer, PIM Extensionist and PIM Support Team).

Timing: Following signing of Works and Support Agreement (PIM Step 9) and at least one month before the start of the construction season (the month of October).

Duration: 6 to 7 months.

Main Purposes:

- Formation and training of WUA Construction Committee.
- Preparation of work plan and detailed budget for WUA Works.
- Procurement of materials and mobilisation of labour and equipment.
- Execution of WUA Works.
- Progress monitoring and quality control by PIU and WUA Construction Committee.
- Regular WUA Works Monitoring Meetings.

Documents:

- Final Rehabilitation Plan & Cost Estimates.
- (Model) WUA Works Contract (Annex 11.1).
- Works and Support Agreement.
- Relevant Quality Control Guidelines.

Visual Aids:

- Map(s).
- Drawings.

INFORMATION AND GUIDELINES

The Procurement and Disbursement Arrangements for the Irrigation Improvement Project are specified in Annex 6 of the Project Appraisal Document (August 2000). These arrangements specify that, *“subject to prior agreement with IDA in each case and practical considerations, works below an estimated value of US\$ 10,000 up to an aggregate amount of US\$ 1.0 million equivalent may occasionally be implemented, instead, by using direct contracting with the nearest available source”*. (p.70) It is also specified that *“IDA Guidelines shall be followed for all types of procurement, with some simplification of procedures and documents for small sub-projects, especially community involvement projects”*. (p.73)

It seems that the Procurement and Disbursement Arrangements for IIP allow that small works can be executed through direct contracts with the nearest available source, which can be the WUA. These same arrangements also allow that works can be implemented through “community involvement sub-projects”, for which simplified procedures and documents may be developed.

Proposed Method of Farmers' Contributions to Rehabilitation Works

The Project Appraisal Document (August, 2000) stipulates that beneficiaries shall contribute 10% of the costs of civil works (except headworks, see p 65) and that their share may be provided either in labour, materials or in cash. (p16 and p 60).

It is anticipated that it will be difficult to collect cash contributions equivalent to 10% of the civil works costs from the farmers. Therefore, it is proposed that farmers through their WUA undertake part of the rehabilitation works (e.g. earthworks) on their spate irrigation system by themselves, using direct contracting. The WUA would sign a contract (contract value below US\$ 10,000) with the Project, in which the WUA agrees to carry out a certain amount of rehabilitation works against the engineer's cost estimates minus their 10% contribution towards the capital costs of the rehabilitation works.

The execution of part of the rehabilitation works by the WUA also has the following two main advantages:

- WUA will acquire the necessary technical and organisational skills to plan, execute and supervise civil works, which are needed for the implementation of O&M works following the formal transfer of the O&M responsibility;
- Farmers will develop a greater sense of ownership as they have directly implemented a part of the rehabilitation works on their spate irrigation system.

11.1 Formation and Training of WUA Construction Committee

To ensure the smooth execution of the WUA Works, the WUA Management Board could decide to establish a WUA Construction Committee for that particular purpose. During a meeting of the WUA Management Board, the concept of the WUA Construction Committee and its main functions and authorities shall be presented to its members before the WUA Construction Committee could be established.


11.1.1 Functions and Authorities of WUA Construction Committee

With regard to the execution of the WUA Works, the WUA Construction Committee will have the following functions and responsibilities:

- To prepare a detailed work plan and budget for the execution of WUA Works in collaboration with the PIU Construction Team;
- To procure the materials and mobilise labour and equipment;
- To prepare and let contracts for works beyond WUA's capacity;
- To supervise the execution, control the quality and monitor the progress of the WUA Works;
- To report to the WUA Management Board on the progress, quality and problems regarding the execution of the WUA Works and, if required, to discuss any changes in the work plan;
- To monitor the implementation progress and control the quality of the Contractor Works;
- To participate in regular meetings with the PIU Construction Team and the contractor of the Contractor Works to review the progress of the Contractor Works and to discuss any problems encountered;
- To investigate and resolve any dispute, such as right-of-way, to avoid any unnecessary delay or suspension in the execution of the WUA Works and Contractor Works; and
- To participate in the final inspections of the Contractor Works and WUA Works as soon as they have been completed.

11.1.2 Formation of WUA Construction Committee

The WUA Construction Committee shall have five to ten members. To have an effective WUA Construction Committee, the election or nomination of competent members is crucial. Candidates for the WUA Construction Committee shall be literate in order to be able to read work plans and budgets, instructions, designs and inspection reports. If possible, candidates with (some) experience in planning and/or execution of construction works shall be proposed.

 It is recommended that the WUA Construction Committee shall consist of representatives from the head, middle and tail reaches of the primary canal. At least one seat in the WUA Construction Committee may be reserved for the village women.

In principle, the members of the WUA Construction Committee shall be elected or nominated among the WUA members. However, one or more non-members could also be nominated because of their specific skills and experience with respect to planning and/or monitoring of construction works.

11.1.3 Training of WUA Construction Committee

Following the formation of the WUA Construction Committee, its members shall receive some training in relevant technical issues that are required for the supervision, monitoring and quality control of the construction works, including:

- preparation of work plan and budget
- procurement of materials;
- mobilisation of labour and equipment;
- progress monitoring; and
- quality control.

The provision of training for the WUA Construction Committee members shall be arranged by the PIU Construction Team in accordance with provisions in the signed Works and Support Agreement.

11.2 Preparation and Signing of WUA Works Contract

Following the formation and training of the WUA Construction Committee, the PIU Construction Team shall introduce the WUA Works Contract to its members. Following a detailed review of the WUA Works Contract, the WUA Construction Committee and the PIU Construction Team shall prepare a scheme-specific version of the contract, which shall be submitted to the WUA Management Board and General Assembly for review and approval.

11.2.1 Review and Approval of WUA Works Contract by WUA General Assembly

Before the WUA Works Contract could be signed by the WUA Chairperson on behalf of the WUA and the PIU Director on behalf of the MAI/IIP, the WUA General Assembly shall formally approve this important document following a review of its content.



To allow the General Assembly members to read the WUA Works Contract, the PIU Construction Team shall submit a number of copies of the translated version of the WUA Works Contract to the WUA at least one week before the planned Meeting of the WUA General Assembly.

After having explained and discussed the WUA Works Contract, the PIU Construction Team shall request the members of the WUA general Assembly if the content is clear to them and that they could formally approve the WUA Works Contract as presented to them.



A copy of a (Model) WUA Works Contract can be found in Annex 11.1.

11.2.2 Rejection of WUA Works Contract by WUA General Assembly

If the majority of members of the WUA General Assembly do not agree with one or more conditions and/or specifications of the WUA Works Contract, the PIU Construction Team shall discuss with them the main reason(s) for their objection. If possible, the PIU Construction Team shall ask the General Assembly to suggest any alterations to the WUA Works Contract, so that it will be acceptable for them. The proposed alterations to the WUA Works Contract have to be approved by the PIU Director before a final version of the WUA Works Contract with the approved alterations could be prepared by the PIU Construction Team.

However, if the PIU cannot accept the alterations as proposed by the WUA General Assembly, their objections shall be discussed with the WUA General Assembly during another meeting in an attempt to find a consensus, which will be acceptable for both parties.



Exit: If the WUA General Assembly formally decides to reject the WUA Works Contract, the IIP does not have another choice than to cancel the rehabilitation of the concerned spate irrigation system and the transfer of irrigation management to the WUA. The WUA Management Board shall be formally informed in writing about the IIP's decision.

11.2.3 Signing of WUA Works Contract by WUA and PIU Director

After the WUA General Assembly has formally approved the WUA Works Contract, it can be signed by the WUA Chairperson on behalf of the WUA and the PIU Director on behalf of the MAI/IIP.

11.3 Preparation and Approval of Work Plan and Budget

Following the signing of the WUA Works Contract, the WUA Construction Committee shall commence with the preparation of a detailed work plan and budget for the WUA Works that will be undertaken by the WUA in accordance with the provisions in the signed Works and Support Agreement.

As it is unlikely that the newly established WUA Construction Committee has any previous experience with the preparation of a work plan and detailed budget for the execution of construction works, the PIU Construction Team shall provide the necessary technical support to ensure that the construction works will be carried out properly and in a timely manner.


11.3.1 Modalities for Execution of WUA Works

With the assistance of the PIU Construction Team, the WUA Construction Committee shall assess if the WUA shall carry out the construction works itself or to contract them out by evaluating if the WUA and its members and non-members have:

- the technical capacity to undertake the works; and
- sufficient time to execute the works.

If the WUA Works are technically simple, the WUA Construction Committee could propose to the WUA Management Board that the WUA shall undertake these works. However, if the concerned WUA Works are technically complicated and the input of qualified technical staff is required, the WUA Construction Committee could propose that the works shall be (partly) contracted out.

A hybrid formula is also possible whereby the WUA will undertake the technically simple, labour-intensive construction works, whereas a contractor will execute the technically more complicated, capital-intensive WUA Works.

 The PIU Construction Team shall explain to the WUA Construction Committee that contracting out the execution of WUA Works may be more expensive as a contractor wants to make a profit and his overhead costs may also be higher.

11.3.2 Approval of Work Plan and Budget

If the WUA Construction Committee has proposed that the WUA Works could be executed by the WUA itself, the prepared work plan and detailed budget have to be reviewed and approved by the WUA Management Board.


If the WUA Construction Committee has recommended that the execution of the WUA Works shall be contracted out (partly), the prepared work plan and detailed budget shall be reviewed by the WUA Management Board before a contract is prepared. Subsequently, the prepared work plan, detailed budget and contract shall be submitted to the WUA General Assembly for approval.

Rejection of Work Plan and Budget

In case that the prepared work plan and detailed budget proposed by the WUA Construction Committee is rejected by either the WUA Management Board or General Assembly, the members of the WUA Construction Committee shall review their proposed work plan and budget once more with the assistance of the PIU Construction Team. During the review, they shall assess the possibility to incorporate the comments and suggestions from the WUA Management Board or General Assembly in the original work plan and budget.

If the WUA Construction Committee has succeeded to adjust the work plan and budget in accordance with the comments and suggestions of the WUA Management Board or General Assembly, they shall be submitted for a second review and approval.

However, if the WUA Construction Committee has come to the conclusion that not all the comments and suggestions from the Management Board or General Assembly could be incorporated in the work plan and budget, it shall inform the WUA Management Board accordingly. The WUA Management Board shall then decide if it would like to submit the non-revised work plan and budget to the General Assembly for a review and approval once more.

 **Exit:** The final rejection of the work plan and budget by the WUA General Assembly would mean that the IIP does not have another choice than to cancel the Works and Support Agreement and abandon the rehabilitation of the spate irrigation system and the transfer of irrigation management to the WUA. In that case, the IIP shall inform the concerned WUA formally in accordance with the provisions in the signed Works and Support Agreement.

11.4 Preparation of WUA Works

As mentioned in 11.2.1, the WUA has the option to undertake all WUA Works itself or to contract a part or all the works out to a contractor. In the following sections, the requirements of both options are briefly described.

11.4.1 Procurement of Materials and Mobilisation of Labour and Equipment

If the WUA would decide to carry out a part or all the works itself, it would have to procure the necessary materials and mobilise the required amount of skilled and unskilled labour as well as equipment.

With regard to the mobilisation of unskilled labour, the WUA would have the following two options:

- All WUA members and non-members shall provide free labour for a number of days; or
- Unskilled labour is recruited temporarily in the market, whereby WUA members would be given priority.

For the mobilisation of skilled labourers, such as masons, the WUA shall recruit qualified and experienced candidates in the market. If one or more WUA members are qualified as skilled labourers, they shall be given the first choice and hired against prevailing market prices.

Equipment, such as tractors (with blades) and cement mixers, shall also be hired in the market at competitive prices by the WUA.

The procurement of materials, such as cement, gravel and sand, shall be done through competitive bidding, whereby (short-listed) suppliers shall be invited to submit quotations for the supply of the requested materials.

11.4.2 Selection of Contractor

In case that the WUA has decided to contract some or all WUA Works out, a contractor shall be selected through competitive bidding, whereby (short-listed) construction/consulting engineering companies are invited to submit their quotations for the execution of the requested works. For the evaluation of the quotations, the WUA could request the technical assistance of the PIU Construction Team.

11.5 Execution of the WUA Works

11.5.1 Execution of WUA Works by WUA

In case that the WUA undertakes some or all WUA Works, the WUA Construction Committee has the responsibility to coordinate and supervise the implementation of the works, monitor its progress and control the quality of the completed works. If required, the WUA could request the PIU Construction Team to provide technical assistance in accordance with provisions in the signed Works and Support Agreement.

11.5.2 Execution of WUA Works by Contractor

If some or all WUA Works will be carried out by a contractor, one of the main functions of the WUA Construction Committee is progress monitoring and quality control. If necessary, the WUA could request the PIU Construction Team to provide technical assistance in accordance with provisions in the signed Works and Support Agreement.

11.6 Progress Monitoring and Quality Control of WUA Works

During regular (two-weekly) WUA Works Monitoring Meetings, the PIU Construction Team and the WUA Construction Committee shall review the progress and the quality of the construction works and discuss any problems encountered during the execution of the WUA Works.

If necessary, the PIU Construction Team and the WUA Construction Committee shall jointly visit the site(s) where the WUA has encountered problems during the construction of the works. If possible, the problems shall be resolved immediately by both parties. However, it may be necessary that the PIU Construction Team and the WUA Construction Committee have to discuss the matter with the concerned Design Engineer and WUA Management Board respectively before any decision can be made with regard to changes in the design.

If the progress review has revealed that the WUA is behind schedule with the execution of its construction works, the PIU Construction Team and the WUA Construction Committee shall assess the possibilities to adjust the work plan, so that the WUA can catch up with the time schedule as agreed in the signed Works and Support Agreement as well as the WUA Works Contract.

STEP 12 FORMATION AND REGISTRATION OF SCHEME WATER USERS' FEDERATION(S)

Target Group: WUA Representatives.

Field Staff Involved: PIM Support Team.

Timing: Within one month after the formation of the last WUA (PIM Step 8).

Duration: Two to three months.

Main Purposes:

- Review of SWUF Articles of Association and formulation of Internal Rules & Regulations.
- Adoption of SWUF Articles of Association and Internal Rules & Regulations.
- Preparation of SWUF Membership List comprising delegates from WUAs.
- Election of members for SWUF Management Board.
- Opening of bank account in the name of SWUF.
- Preparation and submission of Application for SWUF Registration.

Documents:

- (Model) SWUF Articles of Association.

Visual Aids:

- Flip Chart.

INFORMATION AND GUIDELINES

It is envisaged that WUAs would be federated into a SWUF at the level of the Wadi. As a SWUF would not be responsible for the O&M of any irrigation infrastructure along the Wadi, its main duties and responsibilities are defined as follows:

- monitoring of water distribution between WUAs at Wadi level;
- coordination between WUAs as operators of the primary canal systems and the agencies responsible for the O&M of the headworks;
- resolution of water-related conflicts between WUAs;
- representation of the WUAs in the Irrigation Council;
- provision of support services to WUAs regarding training, financial and/or administrative management (i.e. accounting) and/or procurement/lease of equipment; and
- exploration, development and implementation of additional activities that are not directly related to irrigation management.

In order to establish the SWUF at Wadi level, the PIM Support Team will conduct the following two meetings with delegates of the WUAs:

- SWUF Introduction Meeting;
- SWUF Preparation Meeting; and
- Constitutive General Assembly Meeting.




12.1 SWUF Introduction Meeting

The PIM Support Team shall start the SWUF formation process by planning the SWUF Introduction Meeting in order to introduce and explain:

- purpose for SWUF formation;
- functions of the SWUF;

- organisational structure of the SWUF; and
- main functions and powers of the General Assembly, Management Board and Chairperson of the SWUF.

Delegates from all established WUAs shall be formally invited for the SWUF Introduction Meeting.




-  To ensure that all WUAs are properly informed about the date, time and venue of the SWUF Introduction Meeting, the PIM Support Team shall send written invitation to them at least ten days before the planned meeting.
-  The venue of the SWUF Introduction Meeting shall be at a place that is easily accessible for all invited WUA Delegates.
-  As the SWUF Introduction Meeting could be considered as a Preliminary General Meeting of the General Assembly of the SWUF, it is important that at least 50% of all invited representatives are present. If less than 50% of the invited WUA Delegates are present, the SWUF Introduction Meeting shall be postponed.

12.2 SWUF Preparation Meeting(s)

Before the Constitutive General Assembly Meeting of the SWUF, the WUA Delegates shall review the SWUF Articles of Association during one or more WUA Preparation Meetings. It may also be required to start with the formulation of a number of Internal Rules & Regulations for the WUA during the same meeting(s).

12.2.1 Review of WUA Articles of Association

The SWUF Articles of Association provide the minimum legal requirements concerning the structure, objectives and powers of the SWUF, procedures for the management of the SWUF as well as the rights and responsibilities of its members, General Assembly, Management Board and Chairperson.

-  The PIM Support Team shall introduce the WUA Articles of Association to the WUA Delegates by explaining its main purpose and presenting its main issues.
-  Copies of the SWUF Articles of Association shall be submitted to the WUAs at least one week before the WUA Preparation Meeting.
-  Copy of the (Model) SWUF Articles of Association can be found in Annex 12.1.

12.2.2 Formulation of Internal Rules & Regulations

In addition to the SWUF Articles of Association, it is also essential that the SWUF develops its own Internal Rules & Regulations concerning the management of the SWUF itself and the execution of its specific tasks and responsibilities. The contents of the Internal Rules & Regulations shall be approved by the General Assembly of the SWUF.

The Internal Rules & Regulations of the WUA may at any time be amended by a simple majority of votes cast by the General Assembly of the SWUF unless otherwise specified in the SWUF Internal Rules & Regulations.

12.3 Constitutive General Assembly Meeting

Following the review of the SSWUF Articles of Association and the formulation of a number of Internal Rules & Regulations by the WUA Delegates, the Constitutive General Assembly Meeting shall be conducted in order to establish the SWUF formally by:

- adopting the Articles of Association and Internal Rules & Regulations of the SWUF;
- preparing the List of Delegates to the SWUF General Assembly; and
- electing the Management Board members, including the SWUF Chairperson.

- ☞ The Constitutive General Assembly Meeting is one of the most important meetings. Therefore, it is required that the required quorum as specified in the draft Internal Rules & Regulations, attend this meeting.
- ✘ If the required quorum is not present at the start of the Constitutive General Assembly Meeting, the PIM Support Team shall postpone the meeting. It is recommended that another Constitutive General Assembly Meetings shall be planned within one month.

12.3.1 Adoption of SWUF Articles of Association

The first step to the establishment of the SWUF is the adoption of the SWUF Articles of Association by the WUA Delegates during its Constitutive General Meeting.

- ☞ Although the main subjects of the (Model) SWUF Articles of Association were introduced to the WUA Delegates during the SWUF Preparation Meeting(s), it is recommended that the PIM Support Team shall start the meeting with a brief review of the (Model) SWUF Articles of Association.
- ☞ It is very important to explain to the Representatives to the WUA General Assembly members once more that the articles of (Model) WUA Articles of Association cannot be changed once they have been adopted. However, the WUA General Assembly would always have the authority to formulate and/or amend Internal Rules & Regulations of the WUA within the provisions of the (Model) WUA Articles of Association, so that the management of the WUA can be adapted to the local circumstances as much as possible.

12.3.2 Review and Adoption of Internal Rules & Regulations

Before the first set of Internal Rules & Regulations can be formally adopted, they shall be presented properly to all WUA Delegates that are attending the Constitutive General Assembly Meeting. The best way to present the Internal Rules & Regulations is by reading them article by article. Any approved amendments of the Internal Rules & Regulations shall be correctly recorded.

12.3.3 Preparation of List of WUA Delegates to SWUF General Assembly

Following the adoption of the SWUF Articles of Association and Internal Rules & Regulations but before the election or nomination of the Management Board members, the List of WUA Delegates to the SWUF General Assembly shall be prepared in accordance with the provisions in the adopted SWUF Articles of Association and Internal Rules & Regulations.

- ☞ Only the WUA Delegates, whose names are included in the List of WUA Delegates to the SWUF General Assembly, are eligible to vote and to be elected as a member of the SWUF Management Board.

12.3.4 Election of Management Board Members

With the adoption of the Internal Rules & Regulations, the size and composition of the SWUF Management Board will be known. Although the functions and powers of the Management Board have already been introduced during the SWUF Introduction Meeting(s), it is recommended that the PIM Support Team present them once more before the WUA Delegates to the SWUF General Assembly elect the members of the Management Board of the SWUF.

Prior to the election or nomination of any person for the position of Chairperson, Secretary and Treasurer of the SWUF, the PIM Support Team shall present the functions and powers of these SWUF Office Bearers to the WUA Delegates of the SWUF General Assembly.

- ☞ The election of the Management Board members is an internal affair of the newly established SWUF. Therefore, the PIM Support Team shall limit its role to monitor the election process and assess if the election of the Management Board members was carried out in accordance with the adopted SWUF Articles of Association and Internal Rules & Regulations.

- ☞ The PIM Support Team shall assess, in particular, if the composition of the SWUF Management Board is in accordance with the SWUF Internal Rules & Regulations.

12.3.5 Selection of Name for WUA

The PIM Extensionist and PIM Support Team shall request the General Assembly to select an appropriate name for the newly established WUA.

12.3.6 Signing of WUA Formation Statement

At the end of the Constitutive General Assembly Meeting, all WUA Delegates to the SWUF General Assembly shall sign a statement, in which they endorse the formal establishment of the SWUF, including the adoption of the SWUF Articles of Association and Internal Rules & Regulations as well as the election of the Management Board members and the SWUF Chairperson.

12.3.7 Opening of Bank Account in Name of WUA

If necessary, the newly elected Chairperson and Treasurer of the SWUF Management Board shall open a bank account in the name of the SWUF.

12.4 Preparation and Submission of Application for Registration of SWUF

As the SWUF may be involved in financial transactions (i.e. bank loans), acquire fixed assets and/or has to enter into contracts and agreements with the Government and other institutions, it shall be registered as a legal body with the Government.

12.4.1 Procedures for Registration of SWUF

Following the adoption of the SWUF Articles of Association and Internal Rules & Regulations, election of the Management Board members and opening of bank account in the name of the SWUF, the newly elected Management Board members shall prepare an application for the registration of their newly established SWUF.

- ☞ In accordance with Article 10 of the new Water Law 2002, the procedures for the registration of the SWUF shall be specified in the Executive Procedures, which shall be prepared by the General Authority for Water Resources and issued as a Decree of the Council of Ministers within six months from the date of the adoption of the new Water Law.

12.4.2 Legal Status of Registered SWUF

If the SWUF is duly registered, it shall have the legal status as corporate body by the name under which it is registered and having perpetual succession with the power to hold property, both movable and immovable, and it shall by the said name sue and be sued.

STEP 13 TECHNICAL AND INSTITUTIONAL STRENGTHENING OF WATER USERS' GROUPS, WATER USERS' ASSOCIATIONS AND SCHEME WATER USER'S FEDERATION(S)

Target Group: WUA Management Board members and WUA staff, SWUF Management Board and WUG Leaders.

Field Staff Involved: PIM Support Team, PIM Extensionist and Subject Matter Specialists in the field of O&M and financial management.

Timing: Following the signing of the Works and Support Agreement (PIM Step 9) and before the signing of the Irrigation Management Transfer (IMT) Agreement (PIM Step 19).

Duration: 8 to 12 months.

Main Purposes:

- Establishment of WUA office.
- Employment of WUA staff.
- Training of WUA Management Board members and WUA staff in administrative and financial management, including set-up of financial management system.
- Development of Irrigation Service Fee (ISF) policy for WUA.
- Training of WUA Management Board members and WUA staff in technical skills for O&M of the primary and secondary canal systems, including the preparation of annual O&M plans and budgets.
- Training of WUGs in technical skills for O&M of tertiary canals as well as on-farm water management.
- Training of SWUF Management Board members in administrative management skills, conflict resolution skills as well as technical skills required for the monitoring of water distribution.

Documents:

- Works and Support Agreement.
- O&M Manual.
- WUA Articles of Association and Internal Rules & Regulations.

Visual Aids:

- Map(s) and schematic(s).
- Drawings.
- Flip Charts.

INFORMATION AND GUIDELINES

Before the newly established WUAs can take up the O&M of the rehabilitated spate irrigation system, it has to set up itself properly and acquire the necessary administrative, financial and technical capacities and skills. In addition, the newly formed SWUF(s) also need training and support in order to enhance their skills required for the execution of their specific tasks and responsibilities.

INSTITUTIONAL STRENGTHENING OF WATER USERS' ASSOCIATIONS AND SCHEME WATER USERS' FEDERATION(S)

13.1 Establishment of WUA Office and Recruitment of Staff

Only after the signing of the Works and Support Agreement, the WUA shall start with activities to set itself up properly by:

- establishing an office with furniture, office equipment and communication facilities;

- employment of qualified permanent and temporary staff for the management of the WUA itself and the O&M of the spate irrigation system; and
- procurement and/or lease of means of transport and any equipment required for the O&M of the spate irrigation system.

13.1.1 Establishment of Office

To accommodate its staff and to store its files and equipment, the WUA has to establish an office at a central place that is easily accessible for all its members and non-members.

In order to make its office operational, the WUA shall procure at least the following items:

- Office furniture, including chairs, desks, book shelves and filing cabinet;
- Communication equipment, including telephone connection; and
- Stationary, registers and books.

In addition, the WUA also needs the following equipment and means of transport to ensure the effective management of the WUA itself and the execution of the O&M of the spate irrigation system:

- (Motor)cycles;
- Calculator; and
- O&M equipment, including spades, buckets and torch.

13.1.2 Minimum Staff Requirements

In theory, the administrative and financial management of the WUA and the day-to-day operation of the spate irrigation system could be carried out by the WUA Management Board, including the WUA Chairperson, with the assistance of one or more special committees. However, it is more likely that the WUA members would not have sufficient time and/or necessary skills to carry out all these tasks properly. Therefore, the employment of at least the following skilled staff on a permanent or temporary basis shall be considered by the WUA:

Accountant (part-time) with responsibility for:

- preparation of budgets on the basis of the Annual Work Plan;
- maintenance of all financial records of the WUA;
- preparation and distribution of ISF bills for members and non-members of the WUA;
- collection of ISFs and any other service charges;
- preparation of list of defaulters;
- accounting for fines and late payment charges and follow up on recovery of monies due;
- issue of receipts for all payment made to WUA;
- preparation of (monthly/quarterly) financial report for WUA Management Committee;
- maintenance of inventory of WUA property, both movable and immovable; and
- preparation of accounts and financial statements for audit and assist auditors in completing audit.

O&M Technician with responsibility for:

- preparation of Annual O&M Plan;
- day-to-day operation of spate irrigation system;
- operational maintenance of the system, such as removal of any obstructions;
- preparation of reports on the condition and operation of the irrigation system;
- regular inspection of the entire spate irrigation system; and
- preparation, coordination and supervision of (routine) maintenance and repair works.

The actual number of O&M Technician depends upon the size of the area of jurisdiction of the WUA, including the length of the canal system.

13.2 Financial Management of WUA

13.2.1 Principles of Financial Management

Financial autonomy of the WUA responsible for O&M of the primary and secondary canal system is a prerequisite for improved performance. The WUA budget mainly depends upon collection of ISFs. Therefore, it shall give full and active consideration to what its members need as they shall be able to make a connection between paying for services and the quality of service. The full recovery of the actual O&M cost is important for achieving financial sustainability of O&M of the spate irrigation systems.

13.2.2 Financial Requirements of WUA

A basic requirement of managing the spate irrigation system is that WUA has the authority for assessing and recovering the ISFs and other service charges, including the power to impose any sanctions against defaulters.

O&M Account: The ISFs shall be set by the WUA itself prior to the irrigation season/year to which they apply. They shall be based on an estimate of the expenditures for WUA management and O&M of the spate irrigation system. Variation between actual and estimated expenditure would be carried over and adjusted in the ISF for the following year. Establishment of the amount of ISFs prior to the commencement of the irrigation season/year is intended to provide the WUA with working capital early in the year and also to inform its members of the exact level of ISFs for the coming season/year before it is incurred.

Regarding the setting of ISFs by the WUA, the following principles shall at least be applied:

- ISFs shall cover all operating costs, including salaries, administration, travel, allowances, rents, communication, taxes, duties, insurance, stationary, materials, services, consultancy, office operation, equipment operations; and
- ISFs shall cover all maintenance costs as estimated in the Annual Maintenance Plan.

The collected ISFs shall be deposited in the O&M Account in the name of the WUA.

Development Account: In addition, the WUA shall also raise sufficient financial resources for the development of working capital reserve, which could be used by the WUA to:

- Develop, maintain and operate supplementary water supplies from ground water pumping;
- Pay for emergency repairs to canal system;
- Procure and replace vehicles, machinery and equipment;
- Construct system improvement works; and
- Cover bad and doubtful debts.

One way to mobilise financial resources for such a Development Fund would be an increase of the ISFs by a fixed percentage to be collected as a surcharge for a number of years and then as required. However, the WUA may also generate development funds from sources, such as:

- Annual membership fees;
- Incomes from contracts;
- Lease of land; and/or
- Funds provided by donors.

The generated development funds shall be deposited in a Development Fund Account in the name of the WUA.

13.3 Assessment and Collection of ISFs

The economic effects of low ISFs are negative as users are given inappropriate price signals for the supply of irrigation water. Therefore, water shall be priced so that at least the full O&M costs of supplying water to the end users are covered. It may even be suggested that the true opportunity costs of water shall be charged, which includes all capital development costs and the value of water for other uses (i.e. power, industrial use).

13.3.1 Assessment of ISFs

The basic principle shall be that the WUA itself could decide its own method of charging the users of the delivered services, provided that it is sufficient to recover all its costs. In general, ISFs could be assessed on the basis of:

- Types of crop and total area cultivated;
- Actual volume of water supplied; and/or
- Flat rate for each unit of irrigable area, irrespective of cropping.

Differentiated ISFs

The Project Appraisal Document (World Bank, 2000, p17) suggests that the actual O&M charges shall be weighted towards those farmers deriving the most benefit, in particular towards farmers enjoying perennial flow, so that charges to poorer farmers would be correspondingly less. The actual payment of O&M charges could take into account the following criteria:

- the type of flow with separate fees to cover perennial base flow, whereby farmers receiving base flow would likely to pay at least double the fee for spate flow;
- the actual area cropped shall be accounted for in the charges; and
- the type of crop grown, whereby farmers growing crops with high gross margins shall expect to pay higher fees than those growing subsistence crops alone.

It is fair to charge farmers, who are deriving more benefits from spate irrigation scheme, a higher ISFs than farmers, who are benefiting less in terms of financial returns from irrigated agriculture using spate water. However, it is costly and time-consuming to assess the ISF for each individual farmer using spate water in accordance with above-mentioned criteria. For instance, the crop-area method is very costly and time-consuming exercise as detailed information on types of crops and/or area cultivated for each individual water user has to be collected and cross-checked in the field before the bills/invoices with the actual ISFs for all individual irrigators can be prepared and issued. Volumetric charging requires detailed and verified records of water flows. Both the crop-area method and volumetric charging are less transparent and they could be subject to errors and favouritism. In addition, the incomes of the WUA are less predictable as types of crop, cultivated area and/or volume of supplied water change for every irrigation season.

Assessing ISFs in accordance with the size of the irrigable area, irrespective if all irrigable land is cultivated and irrigated, would have the following advantages:

- Each water user will exactly know how much money (s)he and other water users have to pay as ISF;
- The method is relatively simple, more accountable and transparent and less time-consuming and costly; and
- Stability and predictability of the incomes of the WUA are more or less guaranteed as their expected annual incomes from ISFs could be calculated more exactly as the total irrigable area is more or less constant.

For spate irrigation systems, a flat rate per unit of irrigable land (hectare or *feddan*) is considered to be most appropriate for charging farmers for the service provided by the WUA. If farmers would agree upon different ISFs corresponding with the benefits derived from spate irrigation, it shall be based on one or more simple and transparent criteria, such as access to perennial base flow.

Issue:

The rationale behind the idea that farmers with less access to spate water, who are often situated in the middle and tail reaches of the main canals, shall contribute less to the O&M costs may not be correct. Farmers in the middle and tail reaches of a main canal system will have more access to spate water if the main canal system is properly operated and maintained. Therefore, they may be willing to pay more ISFs than upstream farmers if their access to spate water would be improved due to proper O&M of the main canal system by their WUA.

Differentiated ISFs for Members and Non-Members of WUA

The WUA may also decide to charge non-members a higher ISF than for its members, so that farmers have a financial incentive to become members of the WUA. Each WUA shall decide for itself if it wants to charge a higher ISF for non-members and how much more non-members shall pay for the services provided than WUA members. However, the ISF to be paid by non-members shall not be higher than twice the amount to be paid by members of the WUA.

13.3.2 Collection of ISFs

In order to simplify the collection of ISFs and any other charges, the WUA could decide that WUGs would be made responsible or given the option to become responsible for the collection of the due ISFs and other fees in their respective command areas. The main reasons for considering this option are:

- Experience elsewhere in the world has shown that the recovery rate of ISFs would be higher if the responsibility for collection is as close to the farmers as possible; and
- Possibility to introduce a financial incentive for WUGs to achieve high levels of ISF collection by allowing them to retain a certain proportion of the due ISFs for the O&M of the irrigation facilities in their respective command areas and other purposes.

If the WUA wants to become financially autonomous, it is important that ISFs are paid when they are due and that effective means of sanction in case of default could be applied. Therefore, the WUA shall have the authority to impose at least a penalty interest, which shall be equivalent (or higher) to the prevailing bank borrowing rate to ensure that the WUA is not penalised by late payment and potential defaulters have an incentive to pay when the ISFs are due.

Another effective means of enforcement in case of payment default is the cessation of water supply. The question of stopping supply for non-payment is commonly practised by suppliers of other services in the public sector, notably electricity and telephones, as well as nearly all private sector suppliers of goods and services. Therefore, the WUA shall have the authority to cease the supply of irrigation water in case of non-payment of ISFs.

With regard to the collection of due ISFs and other fees and the application of any sanctions against defaulters, it is recommended that the following principles shall be strictly applied by the WUA:

- No exemptions or ISF reductions will be made for any individual member or group of members;
- Due ISFs and any other service charges shall be tabulated and displayed;
- Collection of ISFs and any other service charges shall be undertaken through payments into the WUA bank account with a designated bank;
- Instalments shall be payable within certain period of time of the invoice being sent;
- Penalty interests at rates equivalent to or higher than prevailing bank borrowing rate;
- Outstanding ISFs and any other service charges shall not be forgiven or written off and will continue to be added to all outstanding amounts;
- List of all defaulters and the amount owed will be displayed at the WUA office(s);
- If legally possible, supply of irrigation water shall be ceased to all defaulters after certain period of time; and
- Defaulters shall be prosecuted through legal process for all outstanding ISFs and any other service fees after certain period of time.

13.3.3 Composition of ISFs

Farmers are more willing to pay their due ISFs and other service charges if they have a good understanding of how much money they pay for which particular services. It is, therefore, required that the composition of the ISF and any other service charge shall be specified, so that each farmer knows which portion of the ISF and any other service charge is allocated for:

- Maintenance of the headworks, distribution system as well as associated structures, such as service road along main canal, bridges and cross-drainage structures;
- Operation costs, including establishment costs, such as salaries and management of WUA office(s);
- Procurement, O&M and replacement of vehicles, machinery and equipment; and
- Surcharges to mobilise financial resources for the development of working capital reserve, required for emergency repair, rehabilitation of existing irrigation structures, development of new irrigation systems.

13.4 Provision of Institutional Training and Support

As specified in the Works and Support Agreement, the PIM Support Team in collaboration with Subject Matter Specialists and PIM Extensionists will be responsible for the provision of training and support to the WUAs and SWUF(s) to ensure that it will have the necessary capacities for the effective management of the WUAs and SWUF(s).

13.4.1 Training and Support in Administrative Management

Training and support for members of the WUA Management Board and WUA staff as well as SWUF Management Board in administrative management shall be aimed at:

- planning and presiding meetings;
- communication and conflict resolution;
- preparation of minutes of meetings;
- maintenance of non-financial records;
- office management;
- personnel management; and
- stock management.

13.4.2 Training and Support in Financial Management

Training and support of WUA staff and WUA Management Board in financial management shall be focused on:

- budgeting and preparation of financing plan;
- establishment of appropriate financial management system;
- development of appropriate ISF policy for the WUA, including a transparent and equitable system for assessment and collection of ISFs;
- resource mobilisation and ISF assessment and collection;
- maintenance of financial records;
- accounting and preparation of financial statements; and
- auditing.



The development and implementation of most training programmes for the Management Board and staff of WUAs as well as SWUF(s) in administrative and financial management would be the responsibility of subject matter specialists in the field of human resources development (HRD) and financial management, including assessment and collection of ISFs.

TECHNICAL STRENGTHENING OF WATER USERS' ASSOCIATIONS AND WATER USERS' GROUPS

13.5 Provision of Technical Training

A comprehensive training and support programme shall be developed and implemented for the WUGs and WUAs to ensure that it will have the necessary technical skills for the effective O&M of the canal systems and associated facilities within their respective areas of jurisdiction.

13.5.1 Training of WUA Management Committees

The training for the WUA Management Committee would be mainly focused on:

- Importance of the preparation of Annual O&M Plans, including detailed budgets to ensure that the following costs would be covered:
 - costs for execution of all O&M activities specified in the Annual O&M Plans;
 - (overhead) costs for the management of the WUA, including salaries, office rent, stationary and transport;
 - investment costs, such as vehicles, office equipment, machinery;
- Employment of qualified staff for the O&M of the canal system and/or the establishment of service level agreements with irrigation service provider or private company for the provision of O&M services.

13.5.2 Training of WUA Staff

If the WUA would employ O&M staff, they shall receive training in the following subject:

Operation:

- Preparation of annual operation plan, including Primary Canal Water Management Plan;
- Water distribution and gate setting;
- Emergency procedures; and

- Communication and reporting.

Maintenance:

- Inspection and assessment of maintenance requirements;
- Preparation of maintenance inventory;
- Preparation of annual maintenance plan and budget;
- Preparation of work plans and coordination of the execution of works;
- Maintenance skills and quality control; and
- Communication and reporting.

13.5.3 Training of WUGs

WUGs shall receive training in the following subjects:

Operation:

- Preparation of operation plan; and
- Water distribution.

Maintenance:

- Inspection and assessment of maintenance requirements;
- Preparation of annual maintenance plan and budget; and
- Maintenance skills.



The development and implementation of most technical training programmes for the WUA Management Committees, WUA staff and WUGs would be the responsibility of subject matter specialists in the field of O&M, including preparation of irrigation schedules, maintenance plans and so on.

13.6 Provision of Technical Support

13.6.1 Technical Support for WUAs

Following the provision of training to the WUA Management Committee and WUA staff in different O&M skills, it is required that they receive support and advice during the implementation of the following activities:

- Preparation of O&M plan for the first irrigation season following completion and commissioning of the rehabilitated spate irrigation systems, including preparation of Primary Canal Water Management Plans;
- Preparation of annual budget based on the prepared O&M plan for first irrigation season; and
- Preparation of ISF policy, including method for assessment, billing and collection as well as collection schedule and sanctions for late and non-payment.

13.6.2 Technical Support for WUGs


WUGs shall receive support and advice during the preparation of an operation plan for the distribution of water within the respective tertiary unit(s) and a maintenance plan for the first irrigation year.

If the WUGs would also be responsible for the collection of ISFs and other service charges among all farmers within their respective tertiary unit(s), it shall receive support during the preparation of an appropriate collection method and schedule, including sanctions for late and non-payment.

13.7 Exchange Visit

During the institutional and technical strengthening of WUAs, it is recommended that Exchange Visits to WUA-managed primary canal systems shall be organised for the WUA Management Board and WUA staff. During the Exchange Visits, they would have the opportunity to observe and exchange information about the following relevant issues:

- set-up and management of financial and administrative management system;
- methods for assessment and collection of ISFs, including sanctions for late and non-payment;
- employment of staff;
- preparation and implementation of annual O&M plans;
- preparation of annual budget and financial statements and maintenance of financial records;
- day-to-day operation of the primary and secondary canal systems, in particular the distribution of water; and
- organisation and execution of (annual) maintenance works.

 Details about the organising and implementing an Exchange Visit can be found in section of PIM Step 2 of this Procedure Manual.

STEP 14 PARTICIPATORY PLANNING AND EXECUTION OF AGRICULTURE EXTENSION PROGRAMME

Target Group: WUG Leaders and WUG members, WUA Management Board.

Field Staff Involved: Contracted Service Provider, PIU Agronomist and PIM Extensionist.

Timing: Within one month after signing of Works and Support Agreement (PIM Step 9).

Duration: 20 to 25 months.

Main Purposes:

- Identification of main constraints and problems with regard to cultivation of (irrigated) crops and assessment of possible solutions in consultation with male and female farmers.
- Preparation of action plans for implementation of one or more identified solutions in consultation with male and female farmers.
- Implementation of any agricultural extension activities as agreed with male and female farmers.

Documents:

- Works and Support Agreement.
- Agro-Economic Screening Survey.
- Agricultural Census, Agricultural Statistics and Revenue Department Records.
- Research Papers.

Visual Aids:

- Flip Chart(s).

INFORMATION AND GUIDELINES

14.1 Preparation of Agricultural Extension Programme


Prior to the development of a scheme-specific agricultural extension programme in collaboration with the WUGs and WUA, the Contracted Service Provider with the support of the PIU Agronomist and PIM Extensionist shall commence with the following activities WUG level:

- assessment of the existing cropping practices;
- irrigation practices using spate and ground water;
- identification of the main constraints and problems with regard to cultivation of (irrigated) crops as encountered by male and female farmers; and
- assessment of possible solutions for the identified constraints and problems in consultation with the farmers and women.

14.1.1 Collection of Information from Secondary Sources

Before starting the collection of data at WUG level, secondary sources shall be consulted by the Contracted Service Provider with support from PIU Agronomist in order to collect detailed information about the existing cropping patterns and yields in and around the scheme village(s). Important secondary sources could be:

- Agricultural Census; and
- Agricultural Statistics prepared by the MAI annually;
- Research reports; and
- Records maintained by the Revenue Department.

 During the Agro-Economic Studies (PIM Step 3), data and information about existing agricultural and irrigation practices as well as livestock have been collected by the PIU Agronomist and PIM Extensionist.

14.1.2 Group and Individual Interviews

In order to collect more detailed information about the existing cropping and irrigation practices, the Contracted Service Provider with the assistance of the PIU Agronomist and PIM Extensionist shall conduct a series of group and individual interviews.



To ensure that all relevant information is gathered during these interviews with male and female farmers, it is recommended that survey forms and/or checklists are utilised.

During interviews with farmer groups and individual farmers, detailed information can be collected on:

- source(s) of irrigation water;
- land preparation;
- crops;
- seed varieties and sowing techniques;
- weeding;
- frequency and method of irrigation;
- pests and diseases;
- utilisation of fertilisers, insecticides and herbicides;
- yields;
- storage and marketing;
- access to agricultural extension services; and
- role and responsibility of women in various agricultural activities.



Group and individual interviews with female farmers shall be conducted to collect information that will allow the Contracted Service Provider and the PIU Agronomist to assess if there are significant differences in the data provided by men and women.

In addition to the collection of data and information on agriculture, it is also very important that data and information are collected about the role and importance of livestock for farming households, who are cultivating land within the command areas of the spate irrigation systems, including:

- type and number of livestock;
- source(s) of fodder;
- diseases;
- access to veterinary services;
- processing and marketing of livestock products (i.e. dairy products and/or meat);
- annual income from sale of livestock products; and
- role and responsibility of women in livestock activities.

14.1.3 Transect Walk

In addition to the group and individual interviews, the Contracted Service Provider together with the PIU Agronomist and PIM Extensionist shall also conduct one or more Transect Walks through the fields together with a group of farmers. During these joint walks, they will have the opportunity to:

- Cross-check information collected from secondary sources and interviews with farmers;
- Observe existing cropping and water management practices;
- Discuss certain cropping and water management practices with the attending farmers;
- Identify alternative cropping and/or water management practices developed and implemented by farmers; and
- Identify trials with new varieties and/or new crops undertaken by farmers.



One or more Transect Walks with female farmers shall be conducted as well.

14.1.4 Focus Group Meetings

Following the assessment of existing cropping and irrigation practices as well as role and importance of livestock during interviews and Transect Walk(s), the Contracted Service Provider with the support of the PIU Agronomist and PIM Extensionist shall conduct one or more focus group meetings to assess:

- the most important problems regarding (irrigated) agriculture and livestock as perceived by male and female farmers; and
- to identify possible solutions for the most important problems in collaboration with the same farmers.

For the successful implementation of these Focus Group Meetings, the following steps shall be followed:

- Presentation of the results of the interviews and transect walks to the farmers by the Contracted Service Provider;
- Self-assessment of all the problems concerning (irrigated) agriculture and livestock by the farmers themselves;
- Ranking of all identified problems according to their importance by the farmers themselves;
- Identification of the main causes of the most important problems by the farmers themselves;
- Identification of possible solutions to solve the most important problems by the farmers themselves;
- Selection of two or three activities to implement self-identified solutions for one or more of the most important problems by the farmers themselves; and
- Preparation of one or more action plans by the farmers and the Contracted Service Provider jointly, which will be implemented by the farmers themselves with the support of Contracted Service Provider together with the PIU Agronomist and PIM Extensionist and, if necessary, in collaboration with other relevant service suppliers, such as research institutes, NGOs and/or the private sector.

It is recommended to conduct these Focus Group Meetings with groups of 10 to 20 farmers in combination with walks through the fields to observe and check the problems mentioned by the farmers during the meetings.



One or more Focus Group Meetings shall be conducted with female farmers to assess their specific constraints and problems as well as possible solutions.

14.2 Implementation of Agricultural Extension Programme


Following the preparation of one or more actions plans at the end of the Focus Group Meeting(s), the Contracted Service Provider together with the PIU Agronomist shall identify and contact possible service suppliers, such as research institutes, NGOs and/or private sector.

Agricultural extension activities could be developed and implemented in the following fields:

- Land development, including precise land levelling;
- Introduction and demonstration of improved land preparation;
- Introduction and demonstration of new (high yield) varieties and new crops;
- Introduction and demonstration of improved crop husbandry techniques, including inter-cropping;
- Appropriate and safe utilisation of fertilisers and chemicals;
- Introduction and demonstration of Integrated Pest Management;
- Introduction and demonstration of organic farming;
- Introduction and demonstration of planting trees (i.e. Tamarix tree) to protect Wadi and/or canal banks and to produce fuelwood;
- Introduction and demonstration of efficient irrigation practices, including improved field layout and utilisation of water-saving technologies, such as gated pipes, sprinkler and drip systems, on ground water irrigated fields; and
- Introduction and demonstration of improved post-harvest technologies, such as processing, treatment and storage of harvested crops.



The basic principle is that what the farmers can do, shall be done by the farmers. The service suppliers shall only be responsible for the provision of technical assistance and the supply of those inputs, such as new seed varieties and/or chemicals, which are not available in the market yet.

-  Where required, the concerned service suppliers shall prepare printed information for distribution among the farmers.

14.2.1 Implementation of Women-Specific Activities

Due to existing division of labour between male and female household members in rural areas, women are involved in certain agricultural activities, such as weeding, harvesting, cleaning and storage of crops, as well as raising livestock and processing dairy products. It is very likely that women would have reported about any problems related to these activities, in which they are predominantly involved. One or more of the following problems could be reported by one or more women during the earlier meetings:

- Physical problems, such as backaches;
- Sickness due to utilisation of agro-chemicals, such as pesticides;
- Less opportunities for wage labour and/or lower wages due to mechanisation, increased utilisation of herbicides and/or increased labour migration from other areas; and/or
- No or limited access to agricultural extension and training services.


In addition to a number of reported positive impacts of irrigation development, such as improved food security, less migration and better education due to improved farm incomes, the development of irrigated agriculture could also have a number of negative impacts on farmers in general and women in particular, such as:


- Increased work load due to higher cropping intensity (more weeding and harvesting) and higher yields (more harvesting, cleaning and storage);
- Increased health problems due to more intensive utilisation of agro-chemicals; and
- Limited access to improved inputs as female-headed households lack sufficient funds.

It is, therefore, required that village women in close collaboration with the Contracted Service Provider develop and implement activities aimed at alleviating existing problems and avoiding future problems, such as health risks and (increasing) workload.

14.2.2 Exchange Visit

During Exchange Visit(s), the visiting male and female farmers will have the opportunity to observe and discuss different irrigated crops, improved crop varieties and husbandry techniques, storage and/or livestock activities.

-  One or more Exchange Visits for village women to other schemes and/or women groups in order to observe and exchange information about initiatives that have successfully resolved certain women-specific problems in the field of (irrigated) agriculture.

-  Details about the preparation and implementation of an Exchange Visit can be found in the section on PIM Step 2 of this Procedure Manual.