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**PROJECT OF «INTEGRATED WATER RESOURCES MANAGEMENT
IN FERGANA VALLEY»**

**GUIDELINE ON INTEGRATED WATER RESOURCES
MANAGEMENT
(water users' activity)**

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PRINCIPAL INVESTIGATORS

- | | | |
|-----|---|------------------|
| 1. | Director of “IWRM-Fergana” Project, prof. | V.A. Dukhovny |
| 2. | Regional Project Manager | V.I. Sokolov |
| 3. | WUA Task Leader | M.A. Pinkhasov |
| 4. | Project Technician | A.A. Alimjanov |
| 5. | Project Technician | D.K. Abasova |
| 6. | National Investigator from Uzbekistan | U.A. Azimov |
| 7. | National Investigator from Tajikistan | A.A. Akhrorov |
| 8. | National Investigator from Kyrgyzstan | A.Sh. Jayloobaev |
| 9. | Consultant on WUA | A. Ibraymov |
| 10. | Research officer, IWMI | M. Yakubov |

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INTRODUCTION

The purpose of the establishment and operation of water users' association in the framework of Integrated Water Resources Management (IWRM) is involvement and participation of different land users in the process of water resources management for obtaining optimal results in water allocation and delivery. In addition, land users will be able to participate in improvement of technical conditions of irrigation and collector-drainage network and improvement of meliorative conditions of irrigated lands that will increase land productivity and profits in agricultural production.

The «Guidelines» reviews experience of establishing and operation of WUA in pilot WUA projects in Fergana valley over three neighboring countries.

We have omitted and haven't included in these "Guidelines" a special large part titled «Guidelines for correction of water allocation on WUA level» (principal investigator Alimjanov A.A.), which was written as a separate report. That report describes methods, development and execution procedure of water use scheduling, water metering and notification of water users about scheduled and actual water allocation amounts from irrigation canals of WUA with illustrations and concrete examples.

Chapter «Approach and strategies on social involvement in development of WUA» of these "Guidelines" has been prepared by IWMI.

Organizational principles of WUA

WUA in IWRM must replace the existing operation structure of interfarm irrigation system accordingly with agriculture reforms in countries of Central Asia. Thus WUA extends its activities over the zone of former interfarm network.

WUA can be organized based on areal principle – within contours of former kolkhozes, sovkhozes or cooperative farms and other large agricultural entities. On the other hand, WUA can be organized based on a hydraulic system principle – along the lines of irrigation canals.

In the project «IWRM-Fergana» hydrographic principle has been used for the organization of water users' association (WUA) that incorporates water delivery and allocation services for territories adjacent to irrigation canals of secondary and subsequent orders that has single water supply source and uses internal water resources. Examples of such institutions have been establishments of WUA in Uzbekistan, Tajikistan and Kyrgyzstan in the framework of project «IWRM-Fergana». For example, in particular for Uzbekistan, in Kuva district of Fergana province there has been established WUA named “Akbarabad” along the secondary canals «RP-1», «Akbarabad-1» and «Akbarabad-2», fed by the South-Fergana (Ujno-Fergana) canal.

The following entities became a part of irrigation system: part of «Otkormochniy enterprise», shirkat «Navoi» with associated private farms, and a part of shirkat «Al Fargoniy».

Integrated water resources management here involves the territory starting from the main South-Fergana canal through the WUA areas to irrigated fields.

The important concern in the process of organization of WUA is the transfer conditions of secondary canals that function as interfarm systems and financed by Ministries of Agriculture and Water Resources of Central Asian countries. This concern could be treated in two options.

First option. The 1st option is transfer of such irrigation canals for temporary use for the period of 5 years from the beginning of WUA establishment. This time lag will enable WUA to become economically feasible entity that will pay annually for operation and maintenance of such interfarm irrigation canals. WUA signs contract with governments and bears full responsibility to cover expenses of maintenance and operation of above mentioned irrigation systems.

Transfer of water objects for temporary and permanent operation and use is ratified in legislature of Republic of Uzbekistan (Article 31 Law on «Water and water use»), Republic of Tajikistan (Article 35 Water Code).

Second option. State water management organization becomes one of co-founders of WUA. Its share in WUA is water engineering structures that are transferred to use by WUA. Furthermore, state, as a co-founder is obliged to finance maintenance and operation of irrigation systems within framework of contract specifics.

Water users and responsible key representatives of Ministry of Agriculture and Water Resources confirm final decision on choosing above mentioned options.

Objectives of WUA

WUA objectives are:

1. Development of water allocation and distribution among water users of WUA within service territory and agreement of those water quotas with state water management organizations because WUA signed agreement with state on water deliveries;

2. Operation and maintenance of interfarm irrigation and collector-drainage network that is WUA competence;
3. Repair and rehabilitation works on interfarm irrigation and collector-drainage network;
4. Equitable water allocation between all members of WUA both quantitatively and on time according to water use schedule;
5. Provide melioration service and drainage;
6. Observation and monitoring of water measuring devices for accuracy and proper functioning on irrigation and collector-drainage networks;
7. Record and control after water delivery amounts in irrigation canals and intake structures and in collector-drainage systems under WUA authority;
8. Represent interests and protect rights of WUA members in dispute area with state, public and other form organizations.
9. Economical and operational relations between WUA and water management organizations and WUA and its members and non-members.

Social mobilization of water users for organization and functioning of WUA must be carried out with the involvement of initiative group, which will be composed of active, educated water users, representatives of water management organizations who directly work with water users, local authorities, environmental NGOs that deal with rational water resources use and finally with participation of mass media sources.

In order to create WUA, water users must be a united into initiative group that shows to the public about WUA. The next step is become members of association and start thinking about registration and organization of water users' association.

WUA is registered as non-commercial non-profit organization. Its founders are water users: farmers (dekhans), cooperative (shirkat) farms, joint-stock companies and different associations. The founders can be either legal entities or individuals.

Status of WUA as non-government organization enables them to independently function and operates, establish system of members' interaction and exempts direct intervention from state organizations. WUA cooperates with state water management organizations in the form of contract agreements and disputes are negotiated on legal basis.

Legalization of WUA is one of key aspects. One should understand the term legalization as an entity has a right to conduct economic, financial, legislative activities. In Tajikistan this aspect is looked at level of local district authorities- "khukumat".

Right of WUA to own irrigation and collector-drainage system is a principal aspect in its functioning. There is no concrete legislature or normative regulations that talk about right to own irrigation and collector-drainage systems in Central Asian countries In addition, there is no such document or legislative base that confirms about rights to use on-farm water facilities.

Approach and strategies of social mobilization in development of WUA

Social mobilization is required whenever the state, due to some reasons (financial etc.), decides to devolve or decentralize some management responsibilities and functions to the local level. Thus, the efficiency and success of such devolution will greatly depend on some certain preparatory actions taken and aimed at involving all the stakeholder parties concerned in the process. Social mobilization for water management is a gradual and continuous process through which the stakeholders in the service area of an irrigation system are involved to a maximum extent as key decision-makers for effective system management. Social mobilization is undertaken through understanding the stakeholders' needs and problems in water management and assisting them

through specifically dedicated and trained staff to mobilize and engage them in a regular dialogue to agree on collective action for improving water resources management. It builds an internal demand among the key stakeholders for participatory organizations (such as water users associations (WUAs), federations of water users associations (FWUAs), and canal water committees (CWCs) managing water along hydrologic boundaries at their level. The participatory organizations crafted through such a process should be self-governing (the organizations are accountable to their members), partially or fully self managing (stakeholders define the rules of business and follow these rules, e.g. by-laws/internal rules), and as much as self-sustaining as possible (the members finance full or the major part of the costs involved in managing the organization and have full control over the finances and the resources it manages).

It is worth noting that social mobilization is not a one-time activity, where the mobilization staff meets the community, explains the role that community has to perform, explain the organizational structures and procedures for registration etc. In essence, social mobilization is a continuous, complex process of two-way dialogue, where new ideas from the stakeholders are well received, examples from elsewhere are presented to communities and the communities are encouraged to think and put forth ideas that will generate truly users owned, managed and governed organizations, which are self-sustaining to the maximum possible extent

As a rule, implementing SMID requires an institutional development team in place to provide conceptual guidance and leadership to the whole process and field teams of 2-3 people in each to mobilize entire water community and other stakeholders in the service area of an irrigation system. Besides, of a great help to the field teams can be local volunteers or activists which should be identified and, and if possible, involved from the very beginning of the SMID process. Nevertheless, it is the field teams who are the key staff responsible for motivating the farmers to form the WUAs, impart training to WUA office bearers and staff, and interact as the channels of communication. They are also responsible for recording the proceedings of the meetings, events, and carry out special observations, and providing the feedback to the institutional development team. Therefore, it is important when recruiting the field team staff that they possess the following characteristics:

- Honesty;
- Respect as a member of the local community;
- Understanding of the value of collective action for the common good;
- Thorough understanding of local conditions in irrigated agriculture;
- Thorough understanding of the needs and wants of all water users within the designated hydraulic boundaries of the proposed WUA
- Ability to communicate effectively with both local farmers, other water users (industrial, religious, educational, etc.) and authorities; and
- Willing to devote significant time to the process of WUA formation.

After consulting with local authorities, the field team should consider the hydrological unit to be served by the proposed WUA and an appropriate size for it. This must be done before other baseline data within this area can be collected and water users supplied by water within the hydrological unit can be consulted. In order to create a WUA that conforms to a hydrological unit, it is imperative that the local farm structures within the WUA be reconciled with the hydrological unit. There are different farm systems in the countries of the Ferghana valley which among others might include huge kolkhozes, shirkats, middle-size and small production cooperatives, small private farms and tiny peasant or dehqan farms. The field team should acquire or create a map indicating the configuration of the irrigation and drainage system and its relationship with farm boundaries. The local government and the local MAWR department will possess such a map, and they must be consulted in this matter. If the boundaries of the former (or present) shirkat do not constitute a hydrological unit, then the field team should negotiate with the local government and District MAWR Department until a unified hydrological unit is agreed upon.

Social mobilization needs a series of building-block dialogic processes of this report, whereby each step leads to the next step and the results of the earlier steps are carefully evaluated and course corrections are taken for the next steps.

Social mobilization is a stage-by-stage process whereby all stakeholders are involved in a regular 2-way dialogue and normally includes the following phases:

1-2. Identification of all stakeholders and building rapport and awareness. At the initial phases the field teams should identify all the water use stakeholders in the service area of a proposed WUA including farmers, local activists, representatives of local governments and water managing organizations (WMOs), *aksakals* and other key actors; build friendly relationships and create wide awareness about WUA, its benefits, structure, roles, functions and how it is organized. The mobilizers should meet farmers in small informal groups at the village, farm or watercourse level to identify and analyze any problems related to irrigated agriculture and irrigation water management and the ways for solving such problems; clarify irrigated areas by watercourse and identify essential components of irrigation service etc.

3. Consultation meetings. During this stage, the field teams at the village, farm or watercourse level, as may be appropriate, meet farmers to discuss and consult on the structure and organs of WUA, membership criteria, tenure of representatives, election procedure, rules and by-laws for effective functioning of the WUAs at different level of the system. The mobilizers should present different examples of structures, by-laws, and membership systems to the participants of the consultation meetings.

4. Selection meetings. After all organizational issues as above haven been discussed and coordinated, water users of each watercourse should meet and select their representatives to the WUA General Assembly. During these meetings water users may select also those who will oversee the internal affairs and collection action at the watercourse.

5. Introductory meeting of selected representatives. After the WUG members and watercourse representatives for the general assembly of the WUA are elected, they should then be invited to attend an introductory meeting. This will give them the opportunity to meet and get to know one another well. The agenda for discussion in these introductory meetings should be to refresh the minds of the representatives about the purpose of the WUA, to consult on the selection procedure for the WUA Council, Dispute and Auditing Commissions, and date, time and venue of the founding assembly meeting. The participants of introductory meetings should also be briefed again about the basic objectives of an organized and participatory effort in irrigation and drainage management, decentralization of management responsibilities and authority to WUA level; greater equity in distribution of irrigation water; reliable water supply; better access to government and private sector facilities/inputs and other services as organized group; self-governance and self-reliance. The selected representatives are also supposed to discuss and prepare a package of draft founding documents to be reviewed by the Founding Assembly (Founding Agreement, Charter, model agreements etc.)

6. WUA Founding meeting and registration. This is an important event of the entire organizational process, when WUA's governing bodies including its Council, Chairman, Auditing and Arbitration Commissions are selected on a general consensus, equal opportunities and fair basis, including fair representation of all watercourses in the WUA Council. The general body thoroughly reviews the founding documents package (Founding Agreement, Charter, model agreements between WUA and WMO and between WUA and water users) required for the registration with justice bodies, adjusts it and instructs the WUA Council to finalize it taking into account all amendments and comments made and apply for and obtain formal registration of the WUA on behalf of all its members.

7. Capacity-building. The main objective of this step is to prepare the WUA for its essential tasks, as an independent self-managing autonomous organization. . The training methodology should be practical and involve many on-the-job components, as during this phase the stakeholders would be carrying out their new tasks and practicing their new skills. Emphasis should be placed on solving the real problems arising in the context of irrigation management. Though the elected WUA Council might not have to perform all of these tasks themselves, it is useful for the members to know the broader principles so that they can supervise their staff better.

The training program should be focused on subjects like flow measurement, water accounting, water distribution and monitoring, preparing and implementing water use plans, O&M plans, preparing and implementing business plans, organizational management, financial management, record keeping, framing of by-laws, and methods of mobilizing resources for the system operation and maintenance.

8. Management transfer. The process of a stage-by-stage dialogue as presented above brings about the required pre-conditions enabling the WUA to take up the irrigation management responsibility and start negotiating the arrangements with the government.

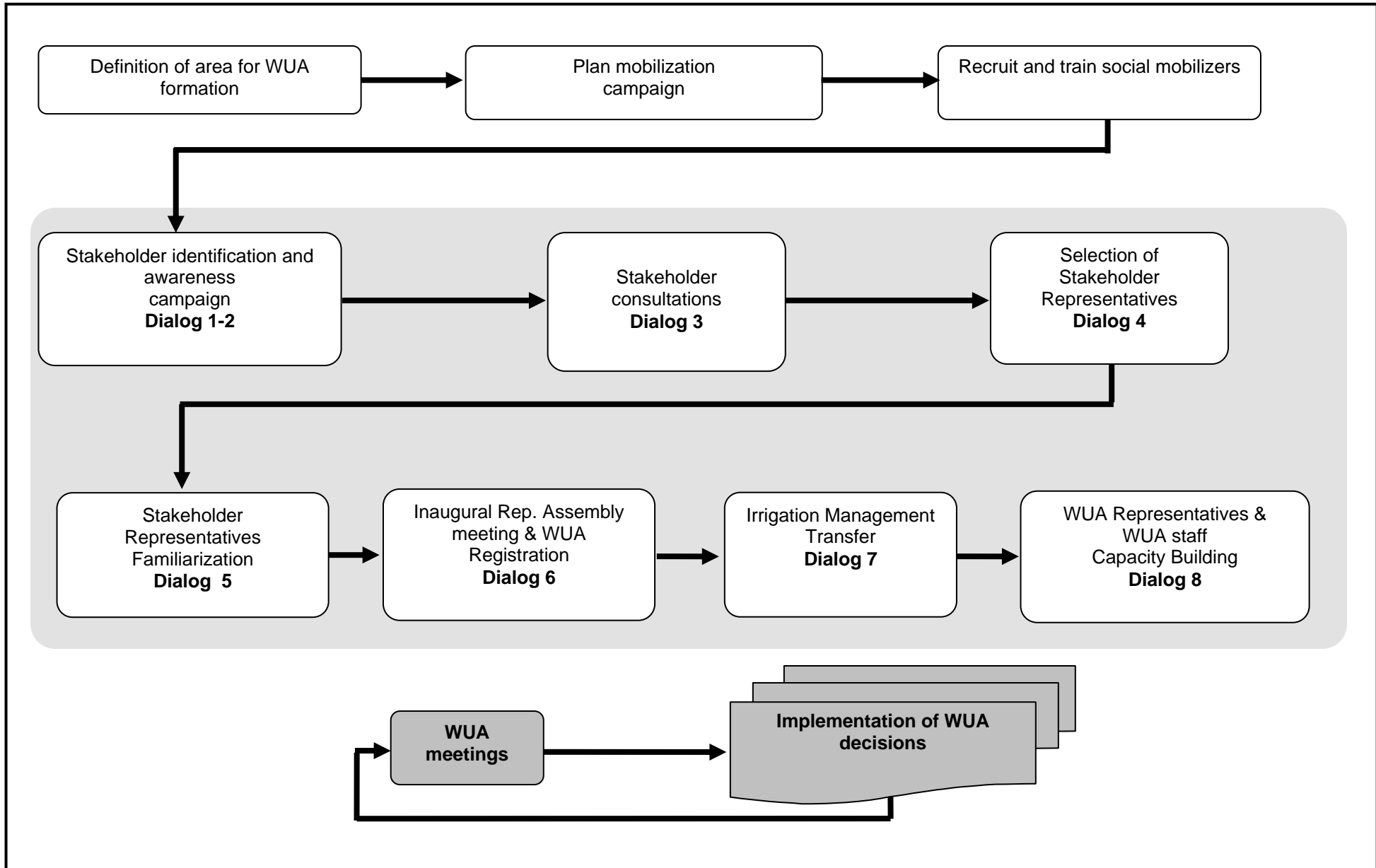
Below is the schematic of WUA formation process within the IWRM-Ferghana Project.

Lessons Learnt from SMID

The disbandment of the two WUAs, and then successful reformation of the Kerme-Too Akburasi WUA in Kyrgyzstan, clearly demonstrates that unless the water users themselves actively participate in the process details, the feeling of ownership and belonging amongst the farmers may not emerge. In the WUAs created using a top-down approach, the water users perceive WUA as an annexure of the WMOs, designed to deliver water as and when it can, and collect water charges. While the same water users did not care who was managing their water when the WUAs were imposed on them, many of them did actively participate in designing their own WUA, once they were explained that they would be better-off with a WUA rather than without.

In the situations such as in Uzbekistan, where a number of farms having different property rights to land and water do exist, the main reason that seemed to convince all types of water users to form, finance, and manage a WUA was the equitable distribution of water to all users regardless of type of property rights to land. In the local context, property rights do matter so far as the access to water is concerned. The relatively larger cooperative farms are regarded as the primary water users, and the relatively smaller private farms are the secondary water users, implying that the primary water users can be the water delivery organizations for the secondary water users, and many times the primary water users serve their own water interests first at the cost of the secondary ones. Thus, for private farms, water delivery becomes unreliable and inequitable. The mobilization process guaranteed access of all property rights types to the WUAs, which otherwise might not be the case.

Schematic of WUA formation process – IWRM-Ferghana project



In Tajikistan, where the private farms are organized into ADFs, who also manage water on member's behalf, the reasons for establishment of WUAs seemed to manage this crucial input by specialists in a more professional way, as the ADFs have other functions of dealing with more complex issues of production system, marketing and taxation. As the water prices in Tajikistan have been recently doubled, the farmers and their associations are becoming more concerned about conserving their water and using it as efficiently as possible. While forming and managing a WUA might have additional financial implications for farmers, it might be able to reduce farmer's water bill by more than what a WUA costs to the farmer. Besides, water distribution amongst the ADF members becomes more transparent and equitable through a WUA than otherwise. Through the mobilization process, the water users got a chance to identify their critical water-related problems, which otherwise might only be in the knowledge of individuals facing those problems, or the management.

In the economies in transition, which were managed through a command and control system, there is general tendency of following top-down methodologies of institutional re-organization, such as establishing WUAs to take over parts of the irrigation system O&M. The potential risks include creation of superficial "paper" organizations, repressive organizations dealing with their clients and members as "lowers", and organizations failing to meet their objectives of effective and sustainable water management, because users lack ownership and do not feel responsible for actively in the collective efforts initiated by such organizations.

Since WUAs are designed to manage water on behalf of their members, they need to be democratic in nature. This requires the fullest possible participation of members in conceiving, structuring, organizing and managing the WUAs for their own benefit.

The users and stakeholders can only be involved fully and willingly by helping them understand the context, helping them understand that they are an essential, as a matter of fact the key part of the organization, and providing them with the information on the anticipated roles and responsibilities of members, WUAs and the service providers. They deserve detailed explanations and discussions on how they would benefit from being the members, and what will be the implications of the re-organization for them.

While legal establishment of WUAs is an essential step while establishing WUAs, it is not the entire process. Unfortunately, many initiatives aimed at establishing WUAs target WUA registration documents as the means of verification for accomplishing the target, which is not enough and can mostly be symbolic. In addition, creating sustainable WUAs on the sound basis needs a considerable time of years and not months, and concerted efforts and processes than planned in most development or technical assistance projects.

Scheme of mutual responsibilities of WUA and water users

Water users' associations:

- Assure reliable water allocation and delivery for all water users- members of WUA;
- Assure and control equal water distribution to all members of WUA;
- Build capacities within WUA for maintenance and operation activities;
- Carry out maintenance and repair of irrigation-meliorative network;
- Maintain technical conditions of irrigation and drainage system, equipment and machinery;
- Control and monitor water measuring devices for their proper functioning and accuracy;
- Contribute to improvement of meliorative conditions of irrigated lands;
- Create schedule of water use and participate in imposing water use limits;

- Fix tariffs for providing water services based on climatic and water use conditions and present the tariffs at WUA General Assembly;
- Assure conditions of information transparency under the water allocation and distribution between water users, using operational water measure devices on irrigation canals and intake structures;
- Carry out measures for rehabilitation of interfarm irrigation and collector-drainage network.

Water users assure:

- Water intake from their respected allocation points of irrigation network;
- Diversion of drainage waters from their territories;
- Payment of their current membership fees and other fees to WUA on timely basis;
- Payment for water delivery and meliorative services in accordance with approved tariffs to WUA (under the conditions of charged water use);
- Fulfillment of WUA regulations, regulatory acts of appropriate use of water and land resources;
- Fulfill maintenance and operation of interfarm irrigation and drainage network.

Members of WUA have right:

- Participate in the decision making process of WUA;
- Participate in stakeholders meeting in decision making issues that are related to WUA;
- Put on the agenda concerns and issues for discussion at stakeholders meeting;
- Recommend candidates for election to management body of WUA and be elected as a candidate;
- Equitable share of irrigation water provided by WUA;
- Have access to accounting documents and reports;
- Use services provided by WUA;
- For compensation in a case of damage during execution of tasks and objectives of WUA.

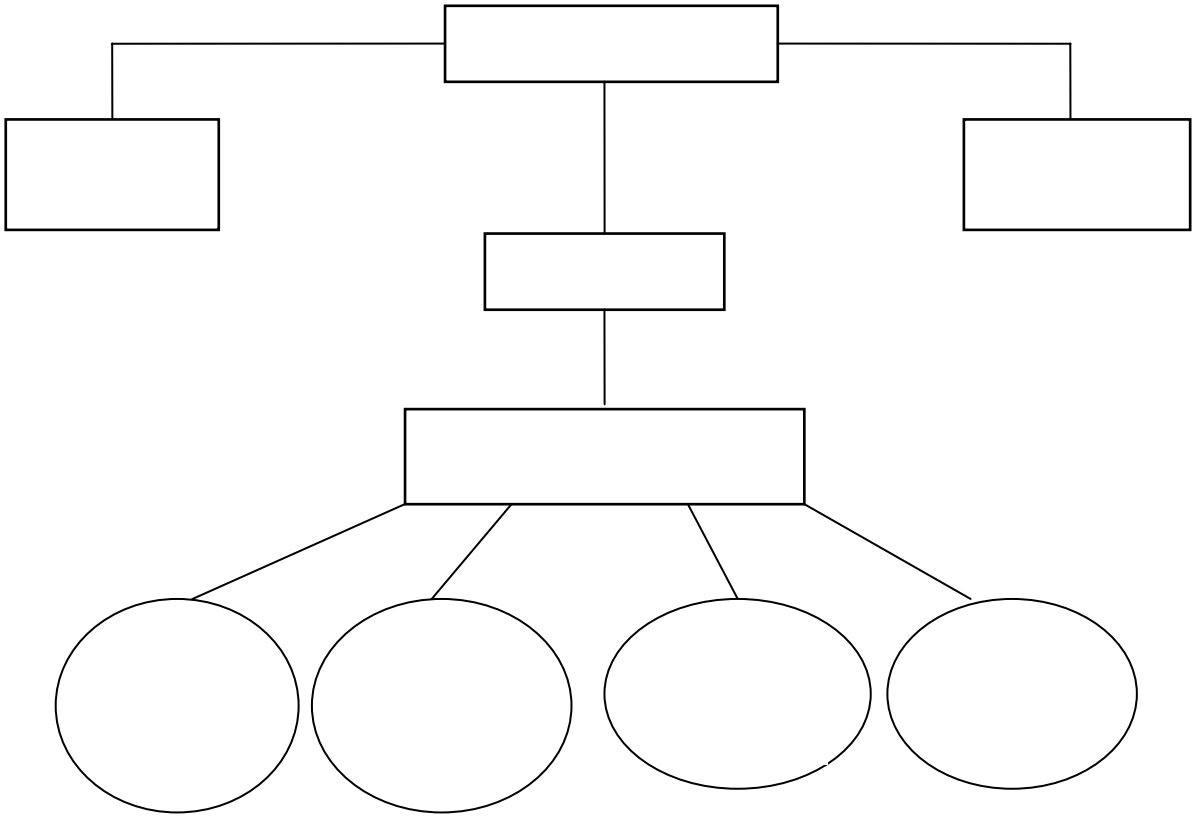
Organizational management structure of WUA

Organizational structure of WUA depends mainly on the area size and financial status of WUA members and possibilities of WUA to carry out repair and rehabilitation works.

Under the conditions of sufficient funds and resources of WUA, specialized sub-contractors on agreement basis could carry out a portion of repair and rehabilitation works. On the other hand, under the conditions of poor financial availability of WUA, members could carry out those activities by themselves.

Draft of organizational management structure of WUA is depicted in Figure 1.

Representatives in upper part of the structure, in particular: General Assembly, WUA Council and its Chairperson, Arbitration Commission, Auditing Commission operates on voluntary basis without pay. (If there is no accountant among members of WUA then it is possible to invite with pay such professional once a year in order to complete this task).



Representatives of lower part of management structure in particular: technical director (principal engineer), workers of repair and rehabilitation sub-unit, of irrigation-meliorative service, of operation of pumping stations service, and accounting office work with pay.

The WUA General Assembly:

- Determines and outlines main directions and areas of WUA;
- Amends and modifies WUA By-laws;
- Ratifies WUA Council regulation;
- Ratifies Auditing Commission regulation;
- Elects Auditing Commission;
- Elects Arbitration Commission ;
- Approves annual membership fees for members of WUA and non members;
- Approves annual reports and budget balance;
- Approves annual WUA budget and service tariffs;
- Approves annual O & M loads of WUA and irrigation schedule;
- Elects and releases from duties members WUA Board;
- Approves penalties and fines for members of WUA;
- Makes decision about reorganization and liquidation of WUA and elects liquidation commission;
- Other issues of WUA.

WUA Council:

- General management of WUA;
- Controls Executive body of WUA;
- Elects from its members the WUA Chairperson;
- Appoints date for a General Assembly meeting;
- Prepares agenda for a WUA General Assembly meeting;
- Examines annual report and balance sheet, which is presented and prepared by executive body and presents its for approval of WUA's general body;
- Examines other issues those are defined by WUA General Assembly in accordance with Law on «Water Users' Associations».

Executive Body of WUA Council:

- Keeps record on members list of WUA with description of size and location of land plots within zone of WUA service, records delivered water to WUA and takes claims from water users about quantity of delivered water;
- Prepares budget project of WUA, plans measures on operation and maintenance of irrigation systems;
- Assures maintenance and technical support of irrigation systems;
- Controls amount of delivered water to water users and equitable appropriate distribution among water users, members of WUA;
- Prepares contracts for WUA Council approval;
- Hires and dismisses staff and personnel of WUA management;
- Publishes orders and decrees that are related to WUA;
- Keeps record on budget and statistics of WUA;
- Resolves issues and concerns, which are defined by WUA Council.

Stakeholders meeting of WUA elects **Auditing Commission** and its main task are to document, control financial and inventory resources of WUA. On the request of Auditing Commission, WUA Council and directorate of WUA must present all inquired materials and documents.

Auditing Commission reports about audit results at WUA General Assembly, which in turn takes appropriate actions against.

Arbitration Commission of WUA is elected by stakeholders during General Assembly meeting and deals with disputes between and among members of WUA about specific concerns and issues such as violations of WUA by-laws, violations of water allocation and delivery schedule between water users and other related issues and disputes that might occur.

Arbitration Commission must look at the inquiry within 10 days from the date of inquiry acceptance.

List of specialists: WUA is being formed in accordance with recommended norms of «Instructions on planning and organization, execution of repair-rehabilitation works on interfarm meliorative systems» (APK Uzbek Soviet Socialist Republic, Tashkent, 1989)

Regardless of the service area, WUA staff would normally include:

Technical director	- 1 person
Accountant	- 1 person
Security	- 2 persons
Cleaning personnel	- 1 person

It would have Irrigation and Drainage subunit consisting of:

Engineer (Team leader)	- 1 person;
Hydrotechnician	- 1 person for 300-500 ha of irrigated lands;
Ditch rider	- 1 person for 300-500 ha of irrigated lands;
Gate Regulator	- 1 person for 15-20 points of regulation.

Repairs-and-rehabilitation subunit would consist of:

Senior engineer (Team leader)	- 1 person;
Mechanic engineer	- 1 person for each 20 physical pieces of equipment;
Electrician	- 1 person for each 150-200 units of electrical equipment;
Seasonal crew-repairman	- 1 person for 300 thousand Uzbek sums of work load.

If lands are irrigated by pumps then water delivery to water users is carried out by operation of pumping stations. 1 operator on duty for 2 pumps.

Irrigation-and-drainage subunit:

- Provides water;
- Monitors and controls drainage systems and conditions of irrigated lands under drainage;
- Carries out technical inspection and maintains irrigation-and-drainage systems.

Group of repair and rehabilitation works:

- Based on documented maintenance needs and current inspection of irrigation-and-drainage systems plans and organizes repair-rehabilitation works;
- Provides technical service and provides repair-rehabilitation equipment and machinery.

Group for pumps oversees continuous operation of pumps for water delivery to irrigated lands in appropriate amounts and regime. In addition, the group repairs malfunction of pumps and engines, and provide full service to pumps and their engines.

For organization and development of WUA, the vital role plays resources such as appropriate machinery and equipment.

Water accounting in WUA is obligatory condition of its function and has significant technological, economic and legal importance. The measuring devices are constituent components of irrigation and collector-drainage network. Those measuring devices must comply with standards and supplied with appropriate certificates. State water resources management organizations and agencies must carry out attestation of such water measuring devices after their installment on irrigation systems. Each water-measuring device must have technical protocol with its last date of calibration.

Water consumption measure enables to control volumes and amounts of delivered water to water users and control its actual use. Measuring data are the main indicators of water payment between WUA and sub-contractors. In low-water years in cases of water allocation discrepancies, water-measuring devices play important technical solutions in disputes between different water users and entities that delivery water. Thus it is very important that each water user must know and master how to use properly water-measuring devices and this aspect must become an important attribute of WUA.

Organizational measures for establishment and operation of WUA

It has been early mentioned that for organization of WUA, initiative group must be established first from representatives of local authorities, water management organizations and water users. The following WUA “Akbarabad” of Kuva district of Fergana province will be discussed for illustration purposes.

The following objectives of initiative group for organization of WUA include:

- Define area sizes of WUA adjacent to irrigation canal of 2nd order and list of preliminary participants and interested parties who will in turn might become future founders and members of WUA in accordance with the system principle;
- Initiate social mobilization activities of water users for organization and establishment of WUA;
- Prepare inventory report of irrigation resources that will be transferred to WUA use;
- Prepare drafts of Association Charter-by-laws, Constituent Agreement and agreements for providing water management services by WUA to water users-members of WUA;
- Define draft of organizational structure and number of personnel of WUA;
- Define preliminary technical operation costs of interfarm irrigation network of WUA;
- Define one-off and recurrent membership fees of founders of WUA and its authorized capital stock and its content;
- Prepare and carry out preliminary General Assembly of potential members of WUA.

In the process of preparing to the preliminary General Assembly of WUA establishment, initiative group prepares the following document drafts:

- Inventory document of on-farm irrigation resources of farms that are transferred to WUA (Appendix № 1);
- Inventory document of irrigation resources of water management organizations that are transferred to WUA authority for temporary use (Appendix № 2);
- Drafts of Constitutive agreement, Charter (by-laws) of Association , contract agreement between WUA and water users for water management services (Appendix № 3,4,5);
- Budget of annual expenditures of WUA and service tariffs of WUA per 1 ha of WUA member water users’ irrigated lands (Appendix № 6);

- List of equipment and machinery that are transferred to WUA for carrying out of repair-rehabilitation works (Appendix № 7);
- Staffing schedule of WUA personnel (Appendix № 8);
- Job descriptions of WUA staff (Appendix № 9);
- Draft agreement between WUA and water management organization on financing the current expenditures for operation and maintenance of the inter-farm secondary canals transferred to WUA (Appendix № 10).

Economical measures for establishment and functioning of WUA

When establishing a WUA the fixed assets of on-farm irrigation and collector-drainage network with its engineering structures are transferred to the WUA balance.

In addition, founders of WUA transfer to the balance of association all types of fixed assets such as buildings, maintenance equipment, machinery etc. as a one-off contribution for effective functioning and operation of newly established WUA. The size of founders' contribution depends on the area size of irrigated lands within the WUA service area.

Members of WUA must pay their annual membership fees for covering the following expenditures:

- Salary of operation crew of WUA, pension deduction, social security deposits and labor funds;
- Dredging of irrigation and drainage system from sediments;
- Current and capital rehabilitation, repair of canals, drainage, collectors, pumping stations, engines of pumps and others;
- Purchase of spare parts and materials for irrigation and drainage systems;
- Payment for electricity;
- Transportation costs;
- Amortization costs of main and other expenditures categories.

The significant part of expenses in current costs of WUA is considered to be the cost category «amortization allocation expenses of main WUA funds».

In connection to the weak economic status of newly established water users' association, it is recommended not to cover category "current expenditures" with membership fees for the first 3-5 years. However, it is suggested to cover this category after WUA has established itself as self-supporting entity based on the overall economic wellbeing of water users of WUA. The alternatives can be state support or reduced interest credits from external financial institutions.

In the process of determining tariffs for services provided by WUA, members must keep in mind that tariffs must be differentiated based on different natural and economic conditions. For instance, lands with the worst meliorative conditions need more labor, resource-intensive meliorative measures and thus more input.

Thus, lands that need water delivery by machinery lift need more input and more tariffs for services provided by WUA. It is crucial to find an answer to this question at the beginning phases of WUA establishment. It is of very important dilemma to determine how these supplemental expenses should be covered and who will take charge-state subsidies, external donors or WUA members.

In order to determine current expenditures of WUA, it is necessary to define calculation base that clearly states what are continual expenses and on the other hand, definition of defect acts, that must be prepared by WUA commission. WUA Board defines volume of repair and rehabilitation works that should be carried out for the specified period. Executive body of WUA prepares annual budget of WUA expenses based on continual expenses and planned measures, this budget is considered to be the main document for determination of service tariffs of WUA to its members.

Possible service tariffs of WUA:

1. *One-part tariff, 1-hectare tariff* that is calculated by relation of current expenses that is total sum of WUA membership fees to total area under the service (current expenses are generated by current membership fees of WUA) by formula:

$$T_3 = \frac{\sum E}{\omega} \text{ , Uzbek sums/ha, where:}$$

- $\sum E$ - sum of annual current expenses of WUA (this sum is accumulated from total membership fees of all WUA members), in Uzbek sums;
- ω - total area of WUA service, ha.

It must be pointed out that if there is another co-founder of WUA, for instance water management organization, its share is not included in the total sum, but included in input part of the budget.

2. *One-part tariff, 1-cubic meter of water* is determined by ratio of sum of current expenses of WUA to total water extraction points of water users with taking into account interfarm water conveyance efficiency by formula:

$$T = \frac{\sum E_{total}}{W_b / \eta_{ex}} \text{ , Uzbek sums/1000 m}^3 \text{ , where:}$$

- $\sum E_{total}$ - sum of annual current expenses of WUA (this sum is accumulated from total membership fees of all WUA members), in Uzbek sums;
- W_b - volume of water delivered in points to water users;
- η_{ex} - water conveyance efficiency of interfarm network of 0.7.

3. *Two-part tariff* accounts water conveyance and hectare of irrigated land with land productivity (bonitet) of farms.

For *1-cubic meter of water part tariff*, we calculate annual salary of WUA personnel in nominator (administration and repair) plus social security deposits (33% from wages), and in denominator the volume of water delivered in extraction point within WUA.

This part of tariff can be expressed as following:

$$T = \frac{\sum LW + \sum SS}{W_b / \eta_{ex}} \text{ , where:}$$

- $\sum LW$ - fund of labor wages to administration and repair personnel of WUA;
- $\sum SS$ - social security deposits (33%);
- W_b, η_{ex} - volume of water delivered in points to water users.

-water conveyance efficiency of interfarm network of 0.7.

For 1-hectare part of tariff with consideration of land productivity of a farm it is necessary to determine numerator of equation, the numerator is calculated as a difference between total current expenses of WUA, that are accumulated from membership fees of all WUA members and costs for 1-cubic meters of water of two-tariff equation. Denominator stands for areas of land under WUA service that considers land productivity.

Thus, numerator of 1-hectare tariff part can be expressed in the following form:

$$\sum E_{total} - (\sum LW + \sum SS)$$

Now we calculate coefficient of land productivity of irrigated land taking into account the following fact, for example a land user with higher land productivity pays more per unit area than that of lower land productivity coefficient. In order to estimate, first we need to determine mean weighted land productivity of lands under WUA service area Look at the example.

Let's assume there are three-land plot with different land productivity coefficients in WUA:

500 ha	Land productivity coefficient	- 0,3
400 ha	- « -	- 0,6
200 ha	- « -	- 0,9

The total area is 1100 ha.

Determine mean weighted land productivity (\bar{B}) in WUA:

$$\bar{B} = \frac{500 * 0,3}{1100} + \frac{400 * 0,6}{1100} + \frac{200 * 0,9}{1100} = 0,518$$

Let's assume, we have 2400 thousand Uzbek sums as total sum of WUA membership fees, mean 1-hectare fee would be equal to without land productivity:

$$\frac{2400000 \text{sums}}{1100 \text{ha}} = 2181,8 \text{sum} / \text{ha} ,$$

but with land productivity

Payment of 1 ha of 1st plot would be equal to: $\frac{0,3}{0,518} * 2181,8 = 1263,6$ sums/ha,

The total payment of whole 1st plot would be equal to - 1263,6 sums/ha * 500 ha = 631 thousand sums.

Payment of 1 ha of 2nd plot would be equal to: $\frac{0,6}{0,518} * 2181,8 = 2527,2$ sums/ha,

The total payment of whole 2nd plot would be equal to - 2527,2 sums/ha * 400 ha = 1011 thousand sums.

Payment of 1 ha of 3rd plot would be equal to: $\frac{0,9}{0,518} * 2181,8 = 3790,8$ sums/ha

The total payment of whole 3rd plot would be equal to - 3790,8 sums/ha * 200 ha = 758 thousand sums.

Total sum of 1-hectare tariff of WUA equals to 2400 thousand sums

Budgeting of WUA

The budget of WUA is composed of two parts – revenues and expenditures. The revenue part of the budget is generated from current membership fees of WUA members and supplemental payments from individuals and legal entities or state organizations that support WUA or crediting sources. In the expenditure part of the budget the expenses for the current year are reflected.

The volume of planned works and associated expenses are discussed at the General Assembly of WUA.

WUA is non-profit and non-commercial organization and cannot make profits (this is very important aspect because the organization that does not have profits is free from paying taxes) and all the non-spent financial resources remain in the WUA's budget, e.g. resources might be used in subsequent period and added to revenue part of the budget.

One of the supplemental sources of funding of WUA can be resources of the local and international sponsor institutions. The state plays an important role in strengthening of the established WUAs. The example of sound contribution by the state can be recent actions of the government of Kyrgyz Republic for appropriation of credit resources from International Development Association of World Bank for 2 years. These funds were directed for reconstruction of interfarm irrigation network of WUA “Japalak” and support totaled to \$197240. Government will cover 75% of the amount and remaining 25% of the funds will be covered by WUA after 4 year of the completion of reconstruction of interfarm irrigation systems in 7 years.

Irrigation and drainage service for water users

Collector-drainage network belongs to different management structures - management organizations.

WUA extends and will cover its service and operation zone over former interfarm irrigation network. Currently WUA extends its operation zone to on-farm irrigation and drainage system. The activities of WUAs in operating and maintaining of on-farm collector drainage network should be extended till the interfarm level.

Operation service of on-farm and interfarm irrigation and as well as drainage system of each WUA member is determined by the member's physical area of land, which is further shapes the principles of economical relations between WUA and its members.

WUA jointly with farmers, on the basis of melioration conditions of irrigated lands (results of water-salt balance calculations in 1 meter depth, assessment of water availability of irrigated lands, water quality analysis and drainage network reliability) develop a number of activities on irrigation, melioration, and maintenance measures, e.g.

- Develop the irrigation and water distribution schedule (plan) among the water users;
- Make revision of water distribution among the users in accordance with water use quotas;
- Develop measures on cleaning, repair and maintenance works of irrigation and drainage systems;
- Agree on dates of winter-spring leaching and moisture supply irrigation of each member of WUA;

- Agree upon dates of agrotechnical activities of repair works of irrigation systems.

The activities on cleaning and repair works of the irrigation and drainage systems are determined after the field measurement results. Upon inspection and determination of violations and damages on irrigation and drainage systems – counteractions act is issues by WUA and its members. They also jointly make a decision on load and methods of work implementation (self implementation by WUA or partially self implementation and partially employment of external contractor).

All mentioned activities are distributed between WUA and its members and approved at the General Assembly of WUA. While implementing the measures, if the violations were observed then WUA jointly with members determine the responsible individuals. After the joint inspection, the decision is made on the degree of delinquency of WUA or individual member and the damages are calculated in accordance to which the amount of administrative fines are defined.

The membership fees collected from the water users are the main source of expense planning. In addition to implementation of scheduled activities the funds of external international and local sponsors could be used. There are cases when the works were financed through the transactions and credits of the banks.

To assess the efficiency of drainage network and its elements and serviceable implementation of appropriate technical and agromelioration measures the Melioration Service sub-unit of WUA must have the following information:

- Meteorological data from weather stations (precipitation, evaporation, moisture deficit, air temperature and others);
- Data of field measurements and observations of technical conditions of collector-drainage systems;
- Volume of discharge in collector-drainage system and mineralization of drainage waters;
- Volume of water conveyed and mineralization of irrigation water;
- Volume of drainage water used for irrigation and leaching;
- Amounts of infiltration losses in canals;
- Data on soil salinity concentrations;
- Volume of irrigation water discharge;
- Information on areas of arable and non arable lands;
- Information on agricultural productivity of crops.

Conditions under which collector-drainage system and other engineering structures properly function:

- Low water table in drains is essential for effective work of collector drainage system;
- Depth of drains and water tables are appropriate to the design standards;
- The streams of open drains and bridges are not demolished, free from plants and sediments and sustain water flow without retarding the velocities;
- The ground faults and slumps are not observed over the length of the tile drains, collectors and structures;
- Inlets of tile drains should be not defected and full of sediments.
- The pipes of tile drains should not be affected by the plant roots;
- Observation wells of tile drain system should be clean, and supplied with leads;
- Erosion must be absent beyond the drainage structures;
- Concrete and iron-concrete must be faultless;
- Drive-ins, walk-ins, roads and communication and electricity lines, drainage pump stations must sustain the effective operation of drainage system;

The Melioration Service sub-unit of WUA must consider the following maintenance measures over collector-drainage system:

- Timely implementation of water table and discharge measures by the gauging stations;
- Discovering the damaged places and prevent the small faults. In cases when the melioration service sub-unit staff is not able to avert, the administration of WUA has to foresee additional measures;
- Align the drainage lines with precaution signs in dangerous zones (falling and eroded zones, zones of suffusion belts, ground collapsing and tunnels);
- Maintain the esthetical shape and view of collector drainage system devices, structures and the zones of canal sides.

In operation process of tile drainage systems the important attention has to be made to the safety of observation wells, inlets and protection of above-drain lines during the agricultural works.

The basic assessment criteria WUA's melioration activities are consist of the following conditions:

- Depth of groundwater table. For effective work of drains the water table must be appropriate to the design standards or be comparable to design standards of the given territory;
- Direction of water-salt balance;
- Degree of land salinization;
- Degree of groundwater mineralization;
- Maintaining of designed (calculated) drainage module of water diversion that must sustain the optimal groundwater table and possible degrees of soil salinization in 1-meter depth.

Sustaining the positive ranges of given system of criteria must lead to the appropriate melioration conditions of irrigated lands and persuade to the high yields of agricultural crops.

At present the functions of operation and maintenance of interfarm drainage systems in basin irrigation management units are granted to Hydrogeology-Melioration Expeditions (HME) that operates the entire interfarm drainage network.

HME must retain the policy of interfarm drainage networks in operational condition. For this HME must support WUA in:

- Passportization of structures on drainage systems, including location, and technical characteristics;
- Determining the technical conditions of drainage systems;
- Determining the repair-reconstruction work load and developing the plans for their implementation;
- Equipping with gauging stations and with measuring devices and picket signs;
- Training of WUA staff on drainage systems operation through holding seminars and developing memos;

HME must maintain the free drainage flows from the boundaries of water users as well.

Such technology of management of operation and maintenance drainage systems will permit the synchronic work of interfarm and on-farm network using the principle of *free drainage flow from drains to on-farm collector and further to interfarm network*.

Organization of service and maintenance of interfarm irrigation and drainage systems of WUA

The main activities of maintaining the on-farm irrigation and drainage systems of WUA are consist of:

- Development and realization of the plan of water use of WUA;
- Technical monitoring and treatment of on-farm irrigation and drainage systems (IHMS).

Development and execution of the plan of water use is specially considered in “Manual on adjustments of the water distribution on WUA level”.

Technical monitoring and treatment is implemented with the aim of timely carrying out the prophylactic measures to prevent the defects at IHMS.

Current and complete repair works are carried out in cases of deterioration or defects of IHMS and implemented basically between the vegetation period.

To organize the technical monitoring and treatment of IHMS the WUA must have the following order of documentation:

- The map of irrigation-melioration network over WUA land use framework with indication of hydrological engineering structures, gauging stations, wells, local sources of irrigation and pumping devices on it with 1:25000 scale;
- Technical passports of IHMS;
- Registrar of the constant and temporary reference points;
- The soil-melioration map with the scale of 1:25000 with indication of soil characteristics, observation wells, groundwater table and mineralization on it.

The maintenance of IHMS could be carried out by:

- WUA staff;
- WUA staff jointly with water users;
- WUA staff in conjunction with water management organizations.

Selection of the maintenance options of IHMS depend on availability of sufficient labor forces, material-technical and financial resources to carry out the repair and restoration works.

Generally, the huge and labor intense repair and restoration works are implemented through contract with the water management or specialized organization.

Current monitoring and maintenance of interfarm irrigation and drainage system

The technical staff of WUA carries out the current monitoring and treatment works of IHMS (interfarm scale); the similar works at IHMS that are located in the farm are carried out by the farmer himself.

For the current monitoring and treatment the following elements of IHMS are exposed:

- Irrigation and drainage canals;
- Engineering structures on irrigation and drainage canals (water regulators, water outlets, baffling, water falling, speeding devices, bridges and crossing ways);

- Open and tile collector drainage network;
- Engineering structures on collector drainage network (observation wells, drain inlets, water intakes);
- Above drain line of tile drains;
- Observation wells;
- Gauging station bridges;
- Inspection roads along the irrigation and collector drainage networks and drive-ins to them.

Technical monitoring consists of visual, instrumental and periodic (once in every 5-10 day) observations of the IHMS's working condition.

During the monitoring the following are observed:

- Structure and device safety, discovering damage and their reasons;
- Damage characteristics or defect elements of the IHMS;
- Emergency cases on IHMS.

During realization of technical monitoring the staff must pay attention on following prohibitions:

- transit through canals with the transport in places that are not designed for this purpose;
- releasing to the canals untreated and sewage water;
- pasturing the livestock along the canals and on the canal sides;
- plowing the land at least 0,5 m from canal edges;
- placing an earthen dam on open drainage canals;
- irrigate with water from collector-drainage system without recommendation of WUA;
- demolish the encapsulate links of observation wells of tile drainage system, fabricating holes for water outflow;
- taking the leads out without any necessity of observation wells;
- impurity of the observation wells with objects/items and garbage, congestion in the pipes of drainage system;
- carrying out any mechanization works with tractors in the radius less than 2 m from well;
- planting of trees, bushes with deep root system on given drainage lines;
- impurity of estuary of the drains with various objects and garbage;
- discharging surface water on inlets of the tile drain;
- Extraction of drainage pipe links from estuary structures.

All the mentioned defects must be recorded/written to a special journal of the technical monitoring of IHMS conditions (appendix #11).

About any detection of defects, which may bring to emergency cases on IHMS, the administration of WUA must be immediately informed.

Generally the technical treatment is carried out in conjunction with technical monitoring and is adequate removal of emerging defects of IHMS, provoking descents on its efficiency.

Regular types of work on technical treatment are:

- cleaning the channel streams from plants, garbage, odd objects;
- retaining of slopes and verges of the canals, protection dams, road mounds and ditches;
- liquidation of separated creeps and failures of slopes, depressions and scours of ground in structures, amending the defected structures;
- cleaning the water intake structures of the bridges and pipe passages, sluice regulators;
- liquidation in self made canal weirs, bridges, passages and other structures, built without permission of WUA

- removal in dams and slopes the animal habitations, filling the small crackles that were developed by atmospheric influence;
- filling of small crackles in places of concrete and flume canal links;

Plan of the repair-rehabilitation works on objects of on-farm irrigation and drainage network

The ground for planning repair-rehabilitation works are:

- journal of the technical monitoring of the condition of IHMS(appendix #11);
- planned survey of technical condition of IHMS.

Planned survey of technical condition of IHMS is held after the main irrigation events (October-November) and realized with commission, which is composed of lead specialists of WUA. Council is appointed by the decision of the General Assembly where members, dates of work implementation and documentation are approved.

Commission, on the basis of generalization of materials from the technical monitoring journal (annex 11), identifies objects of its further survey, in which it clarifies types of defects, technical decisions, types and amount of works for their repairing. For difficult and huge technical decisions on restoration of objects of IHMS there is collected necessary information for technical tasks on forming project-estimate documentation.

Survey of IHMS technical condition shows us the following most frequent types of defects:

In open irrigation and collector-drainage network:

- silting and vegetal invasion of system;
- slump of dams, collapse or erosion in cross-section of canals;
- development of ground digging animals, scours of slopes from atmosphere depression;
- fissures, cavity and chuck hole of concrete lining of canals;
- self made weir, temporary dams and water outlets that do not meet the requirements of IHMS operation;
- depressurization of junctions and appearance of fissure on reinforced concrete flumes;
- displacement and crushing of reinforced concrete plates of canal facing.

In the facilities of open irrigation and collector-drainage network:

- displacement of separated blocks and sections from normal position;
- fissures, cavity and chuck holes of concrete facing of the canals;
- collapsing of water apron and binding of slopes on the entrance and exit;
- corrosion of metal construction;
- silting on entrance and exit;
- wreck of the elevating paddles;
- clogging and deformation of zones in trash screen;
- depressurization of paddle consolidation;
- inefficiency of elevating mechanisms and their keys;
- cavity, depressions and disintegration of water-outlet pipes, silting and clogging of their holes;
- silting and clogging of rotation wells and pipe canals in the flume network.

In tile collector-drainage network and structures on it:

- full or partial silting of drainage pipes;
- noticeable deformation of over-drain zones;
- clearance in junctions of rings of the drainage wells (beaten or defected the up section), absence of leads of the well of drainage;

- silting or blockage of drainage wells, horizon of the water lies on the upper sides of the drainage pipes, movement of the water is not watchable or weakly noticeable;
- estuary structure is destructed or blocked with ground.

In inspectorial roads and porches to structures:

- deformation of the road linen and bridge crossings;
- failures of embankment and excavation slopes.

Moreover, by demand of farmers the condition of the IHMS on their balance as well as irrigation plots in zones of local depressions and elevations is surveyed for evaluating the necessity of their current planning.

The largest works on IHMS are cleaning of irrigation and collector-drainage network, which is recommended to be carried out in following conditions:

- bottom and canal slope silting in comparison with the normal condition on 35 cm and more;
- vegetal and seaweeds invasion in whole depth of the canals;
- horizon of the water in intake collector is higher than bottom of catching drain estuary (in the absence of dams and failure of slopes);
- silting or trash accumulation in drainage well in the bottom and above of drainage pipe exit;
- lack or low water flow in drainage well.

According to results of survey there is drafted a Document of survey of IHMS technical condition (annex № 12), which Council of association and on its basis certifies the project-estimate documentation is made.

Project-estimate documentation should consist of:

- financial estimates on realization of repair works on IHMS objects;
- longitudinal section and cross-sections on canals, road network and irrigated plots with identified amount of land works;
- sketches, schemes, diameters and other necessary drafts with identified amount of works on other objects (constructions, tile and flume network, etc.);
- needs in main construction materials and construction products (concrete, wood, inert metal constructions, flumes, pipes, reinforced concrete plates and etc.);
- needs in construction machines, mechanisms and motor transport;
- needs in labor forces.

On the basis of project-estimate documentation and taking into account available financial, material-technical and labor resources, repair-construction capacities the IHMS objects are selected, that should be repaired, the plan of repair-construction works is made (annex № 13). It contains the following parameters:

- IHMS objects (irrigation canals, collectors and drainage with their facilities, roads, irrigated lands and other facilities that should be repaired),with reference to their location;
- types, capacity and cost of repair and renewal works;
- need in mechanisms, materials and supplementary labor forces;
- deadlines of repair and renewal works;
- executors of repair and renewal works.

If external organizations are involved in the realization of repair and rehabilitation works the amount and deadline of realization of such works is discussed with them in advance.

Plan of repair-rehabilitation works is discussed on General WUA General Assembly and realized after its validation.

Organization and execution of repair-rehabilitation works on objects of on-farm irrigation and drainage system

The current control of accomplished works is realized on the basis of the following documents:

- statement of confidential works;
- cumulative list of repair-rehabilitation works realization (annex № 14).

In the listed documents there is established actual realization of amounts and cost of repair-rehabilitation works, deviation from planned parameters and estimate documentation, quality of realization, amount of construction materials and products used.

The listed actual parameters of repair-rehabilitation works realization are established on the basis of visual and instrumental studies of IHMS objects condition (annex № 12) and enclosed technical documentation.

Particularly, during clearing of open irrigation and collector-drainage systems, land leveling their area conducted control instrumental survey on the individual plots. Amount and quality of implemented works on facilities are evaluated by measuring linear sizes of restoration plots, testing movement of paddles and visual inspection of other elements.

Efficiency of tile horizontal drainage is established by lack of head in intermediate inspection pits and free water flow in drainage estuary. Quality of flume network rehabilitation is tested by instrumental survey of restoration plots and visual inspection of junctions, bearing and water outlets.

Statements on intermediate acceptances serve as the basis for payment of implemented works and writing off of used materials and products.

Cumulative list of repair-rehabilitation works execution is used for reporting and taking actions on plan accomplishment in case of work realization delay.

Before beginning of large vegetation irrigation there is made complex acceptance of implementation of repair-rehabilitation works by commission that directly on-place assesses amount and quality of implemented repair-rehabilitation works.

Commission accepts only complete repair-rehabilitation works on IHMS objects, implemented in accordance with approved technical documentation.

On results of acceptance the Statement of acceptance of implemented repair-rehabilitation works on IHMS objects is drafted (annex № 15), where there is given actual amount and cost of works, supplements or modifications to the initial work plan, list of objects and unaccomplished repair-rehabilitation works, planned deadlines of their accomplishment.

Statement of acceptance is approved by Council of WUA and is a basis for payment of realized works and completion of unaccomplished works.

Relation of WUA with water organization

After establishment of WUA – water users members of WUA delegate their rights after water allocation from water service provider to WUA. WUA, joining all water users, negotiates with water service providers on behalf of its member water users by signing contracts.

The order of establishing WUA water use plan, its correction in accordance with given limit, regime and metering of water supply is considered in a special «Guidelines on correction of water allocation in WUA». Hence, these issues are not considered in the given guideline. Let's only note that in conditions of water use pricing water users – WUA members – pay not only fees for WUA services, but also payment for water services made by water service provider. WUA in its turn transfers on the account of water service provider only fees of water users for actually received amount of water and in accordance with current tariff.

In some cases, if water service provider possesses specialized enterprises on repair-rehabilitation works of water sector objects, WUA can sign contracts with water service provider on realization of some repair and restoration works in WUA.

In many countries of Central Asia water sector organizations create special divisions on WUA maintenance in framework of basin irrigation system management.

In general these divisions do the following:

- maintain WUA's normative-methodological documentation;
- assist WUA in development of perspective plans on technical modernization of on-farm system of WUA;
- delivers training (teaching) of WUA personnel and water users on different areas of their activity (hydrometry, drawing water use schedule, etc.).

Disputes over water and resolution mechanisms

In Ferghana valley, water relations between water users within WUA, between water users and WUA, and WUA and water service providers can encounter the following types of disputes and conflicts in result of:

- breach of contracts between water users and WUA in result of delay of water delivery by due deadlines and in required amount and failure to provide other services by WUA;
- breach of contract between water service provider and WUA;
- breach of settled water use schedule by WUA member (unauthorized water diversion, unauthorized increase of water intake places from canals, etc.);
- deterioration of meliorative condition of irrigated lands owned by WUA members, caused by ineffective or insufficient measures on operation irrigation and drainage systems:
 - WUA;
 - Inter-farm derivation system;
- violation of WUA member rights on reimbursement in case of damage to their agricultural crops or land in result of unpunctual provision of service and operation of on-farm irrigation and drainage system;
- non-observance of responsibilities by WUA member that are specified in WUA By-law requiring to pay in regular fees to WUA by due time; to treat with care the equipment and machinery, owned by WUA; pay expenses on replacement of WUA equipment or machinery components, damaged in result of purposive or careless operation;

- violation of WUA member rights to participate in the decision making process of WUA: vote on WUA General Assembly, to submit offers in Assembly agenda for discussion, to use services provided by WUA, to propose a candidate for election in WUA Board and to be elected in it;
- interpersonal conflicts;
- labor disputes between WUA and its employees;
- breach of contract provisions between water user who is not a member of WUA and WUA on delivery of water and other services provided by WUA, and also reimbursement of losses due to contract violation;
- disputes between water users.

Disputes between WUA and water service providers can appear in result of uncontrolled issues:

- change of amount and regime of water supply to WUA;
- significant water level fluctuation in canal in a daylong and decade scope in comparison with water use plan in WUA;
- invalidated reduction of water supply amount by Canal Authority at WUA water intake points due to involvement of poorly studied high mineralized collector-drainage water formed on WUA territory;
- disputes in consequence of intervention by local administration of different level on the WUA water supply issues (or group of WUA) and individual farms (or group of farms):
 - district administration;
 - province administration.

Disputes and conflicts regarding water allocation and water supply can be only considered in terms of presence of appropriate documentation (log of water supply, availability of statement, etc.).

Disputes and conflicts between WUA members and WUA can be considered in accordance with existing legislation and WUA By-law in WUA Arbitrate Commission, Canal water committee arbitration board, on court of aksakals (organized at khokimiyats, ail akumatu, khukumats) and WUA regulating authority at MAWR (presently such authority is only functioning at divisions of MAWR of Kyrgyz republic).

Arbitration board of WUA can regulate all issues related to WUA and its members activities as well as disputes with non-members of WUA that signed contracts with WUA.

Problems related to relationship between WUA and water service provider can be considered at the Arbitration Board of Water committee having WUA and water service provider as its members. Their collaborative affairs functions as a mechanism for conflict situation prevention.

In case one conflicting party is not agree with decision of Arbitration committee at WUA or Canal Water Committee on damage reimbursement, this case can be considered on the court of general jurisdiction in established legal order.

Aksakals play essential role in resolution of arising disputes. As a rule they evaluate particular incidents, and create public opinion. Their consideration of some particular disputes among members of WUA and between WUA and water service providers, or between water users could result in prevention of social tension between them and stop further dispute.

The proposed ways of conflict or dispute consideration without reference to legal authorities are advantageous due to fast consideration and solution, and do not lead to big financial expenses as in case with reference to legal authorities.

The mechanism of dispute and conflict resolution at different authorities of Ferghana valley is given below.

Recommended mechanisms on resolution of different types of disputes

№№	Types of disputes	Authorities examining disputes			
		Arbitration board of WUA	Arbitration board of Canal Water Committee	Court of Aksakals (at khokimiyats, ail akmatu, khukumats)	WUA Regulating authority at MAWR ^{XX})
1	2	3	4	5	6
1	Breach of contract provisions between water users and WUA on water delivery in due deadline and amount and provision of other services by WUA	+		+	+
2	Breach of contract provisions between water service provider and WUA		+		+
3	Violation of established water use schedule by WUA member (unauthorized water diversion, unauthorized increase of water diversion points from canals, etc.)	+		+	
4	Degradation of meliorative condition of irrigated lands owned by WUA members, due to ineffective or insufficient measures on operation of irrigation and drainage system:				
	• WUA	+			+
	• Inter-farm derivation system		+		+
5	Violation of WUA members rights on reimbursement in case causing of damage to their agricultural crops or land in result of poor service and operation of on-farm irrigation and drainage system	+			+
6	Non-observance of responsibilities by WUA member, specified in WUA By-law that requires to pay in fees for WUA services on-time manner; to carefully use WUA equipment and machinery; pay expenses on replacement of components of WUA equipment or machinery, damaged in result of purposive or careless operation	+			
7	Violation of WUA member rights to participate in decision making process of WUA: vote on General Assemblies of WUA, to highlight issues in Assembly Agenda for further discussion, use services				

№№	Types of disputes	Authorities examining disputes			
		Arbitration board of WUA	Arbitration board of Canal Water Committee	Court of Aksakals (at khokimiyats, ail akmatu, khukumats)	WUA Regulating authority at MAWR ^{xx)}
1	2	3	4	5	6
	provided by WUA, propose for election in WUA board of directors and to be elected	+			+
8	Interpersonal conflicts	+	+	+	
9	Labor disputes between WUA and its employees	+			
10	Non-observance of contract provisions between water user non-member of WUA and WUA on delivery of water and other services by WUA, and also damage reimbursement in result of contract breach.	+			+
11	Change of amount and regime of water supply to WUA		+		+
12	Significant water table fluctuation in canal in a daylong and decade span in comparison with WUA water use plan.		+		+
13	Invalidated reduction of water supply amount by canal authority in points of WUA water intakes due to involvement of insufficiently studied high mineralized collector-drainage water, formed on the territory of WUA		+		+
14	Disputes due to intervention by local administration of different levels on WUA water supply issues (or group of WUA) and individual farms (or group of farms):				
	• district administration		+		+
	• province administration		+ ^{x)}		+
15	Disputes between water users themselves	+		+	

^{x)} with attraction of water irrigation management organization representative

^{xx)} presently it only functions in Kyrgyz republic

Disputes in result of intervention by local administration on the issues of water supply should be considered in Canal Water Committee with participation of representatives of disputing parties and involvement of the Basin Water Resources Management representative.

In case the parties cannot come to unanimous agreement, the case of dispute between contending parties can be transferred to economical court or to the general jurisdiction court.

In order to prevent disputes among water users, between water users and WUA, between WUA and water service provider it is necessary:

- to install water metering devices at water allocation points for water users;
- before irrigation to work out scientifically validated plan of water use as a whole in WUA and in each farm – WUA member;
- to enhance state and public control on water use;
- to create conditions of transparency and disseminate information on works of state water service providers and water user associations;
- to improve and upgrade the technical condition of irrigation and collector-drainage systems of different levels;
- periodically deliver training courses for WUA personnel and farmers on the issues of water use, water, land and civil legislation, integrated water resources management with involvement of water users in the management process.

Analysis of technical and economical parameters of WUA

For assessment of economical activity of WUA it is necessary to possess information on system of interrelated technical-economical parameters of WUA that characterize different aspects of it activity.

Technical and economical parameters of WUA can be grouped according to the following main parameters:

- I. Available land and its use, ha:
Gross area, ha
Including:
 - Irrigated area, total
 - Including under:
 - Farming enterprise
 - dekhkan farms
 - other farms
 - number of farming enterprises
 - number of dekhkan farms
 - number of other farms
- II. Irrigation system, km
Total length of irrigation system in WUA
Including:
 - in earthen channel
 - in concrete facing
 - in pipes
 - in flumes
- III. Total length of on-farm collector-drainage system, km
including:
 - open
 - tile
- IV. Vertical drainage, units
operating
- V. Water intake in WUA, mln.m³
 - according to plan per year
 - according to limit per year
 - actual per year
 - Water intake during vegetation period:
 - according to plan
 - according to limit
 - actual
- VI. Efficiency of on-farm irrigation system, -
- VII. Balance cost of capital assets, thousand soum

- including:
 - On-farm irrigation system
 - On-farm collector-drainage system
 - Machinery and mechanisms
- VIII. Actual costs of WUA, thousand soum
 - including:
 - financed from regular payments of water users
 - including:
 - Personnel salary
 - Assignments to social insurance
 - Salary to operation and maintenance personnel
 - Equipment rent
 - Refund of credit sum
 - Travel expenses
 - Other costs
 - Surplus fund
- IX. Paid personnel size, people
- X. Cost of gross output from crop production by farms, served by WUA, thousand soum
- XI. Current costs on agricultural production by farms, served by WUA, thousand soum
 - Including on:
 - Water services
 - Including cost of WUA services
- XII. Profit of farms from crop production, thousand soum
- XIII. Number of farms – WUA members, units
- XIV. Specific parameters per 1 ha
 - Planned amount of water intake by WUA, thousand m³/ha
 - Factual amount of water intake by WUA, thousand m³/ha
 - Planned amount of water supply to farms, thousand m³/ha
 - Actual amount of water supply to farms, thousand m³/ha
 - Cost of agricultural crop production, thousand soum/ha
 - Expenses on agricultural production, thousand soum/ha
 - including for WUA services, thousand soum/ha
 - Profit from agricultural crop production, thousand soum/ha

The given system of technical and economical parameters provides preliminary assessment of WUA activity during definite period. More thorough analysis identifies existing drawbacks and reserves in WUA activity and allows adequate planning of measures. For example, the parameters of water intake and water supply can be considered in regime of months, decade, in progressive total within vegetation and non-vegetation periods. Or on the basis of comparison of specific parameters of gained profit and paid regular fees for WUA services per 1 ha the conclusion on the potential of increasing regular fees paid by WUA members can be made for realizing of more large-scale cost-intensive measures.

Besides technical and economical parameters, such parameters as collection of fees by due date, presence of receivable and payable accounts, planned amounts of repair and renewal works and their actual realization, specific use of electric power (in case of pumping irrigation) per 1 mln.m³ of water pumping, per 1 meter of water pumping, etc should be used in analysis.

The ration of actual water intake to planned one in water allocation points of WUA for specific period will demonstrate water supply in WUA. The water supply can be tracked in progressive total. Then by means of comparison between water supply in WUA with water supply to individual farms it is possible to identify its deviation and consequently find explanation for some phenomena, and on the other hand, to identify the ways on elimination of negative phenomena.

Presently, following aspects can group all limits and difficulties during establishment and functioning of WUA:

- technical
- financial
- legal
- personnel

The technical issues appear in result of necessity for rehabilitation of on-farm irrigation and drainage system that requires large capital investments. In present, it is unreal to rely on water users for realization of these measures due to they is not economically independent by far.

The opportunity of receiving long-term credits by water users on system rehabilitation is uncertain. For solving this problem first of all the state support is required. On the legislative aspect, common to all WUA in Ferghana valley it is necessary to create water rights and water markets. Presently, establishment of Training Centers can achieve WUA personnel needs training on modern technologies of water conservation, water metering, water supply and allocation that.

Sustainability operation of WUA

The sustainability of WUA operation can be achieved in the following conditions:

- existence of legislation on establishment and operation of WUA;
- surplus of WUA budget income over expenses or in case of their equality;
- presence of WUA production capabilities;
- involvement of professional specialists in irrigation and drainage systems, land reclamation and economics in WUA activity;
- installment of water metering devices in on-farm system for each water user – WUA member;
- organization of sustainable efficient work between water service providers and WUA;
- objective establishment of tariffs that is approved at the General Assembly of WUA members;
- existence of optimal organizational structure of WUA;
- maintenance of motivation for WUA personnel for accomplishment of the following parameters:
 - water supply;
 - equitable water allocation between water users;
 - maintenance of favorable meliorative conditions;
 - increase of agricultural crop production;
- external support (Ministry of Agriculture and Water Resources and its divisions, local administration) and involvement of local resources for provision of normative-methodological documentation, financial and technical resources, WUA personnel and water users training.

Reporting system and control of WUA

Each WUA should consider maintenance of the following documentation:

- transactions of General Assemblies, WUA Council Commission, auditing commission, Dispute Resolution commission;
- WUA members register;
- Log on non-members of WUA receiving water from WUA;
- Map of zone served by WUA;
- WUA water use plan;
- Register of demands for water delivery to members and non-members of WUA;

- Register of water allocation to members and non-members of WUA;
- Annual report on technical condition of irrigation and collector-drainage system of WUA;
- Annual report on meliorative condition of irrigated lands in WUA;
- Report on accomplished repair and renewal works on irrigation and collector-drainage system;
- Files on agreements and contracts, inventory of property;
- On financial activity.

APPENDIXES

"Approved" First
deputy of Fergana Oblvodkhoz¹ _____ A.
Rakhmatullaev
_____ 2003 _____

Inventory of irrigation resources of Kuva rayvodkhoz², that are to be transferred to WUA "Akbarabad"

№	Name of secondary irrigation canals	Areas under command of secondary irrigation canals, ha	Total length of secondary irrigation canals, km	Number of diversion points	Channel characteristics, km			Hydraulic channel characteristics						Engineering structures				Canal technical conditions		Balance costs of canals, thousand in Uzbek sums		Operational expenditures of canal in 2002, thousand Uzbek sums	
					earthen	concrete	flumed	canal capacity			canal depth	bottom width	waterline width	gauging stations	pumping stations and lift machinery	regulation engineering structures	hydraulic observation points	satisfactory	unsatisfactory	Total	for 1 km	Total	for 1 km
								minimum	normal	maximum													
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	RP – 1	832,7	9,385	16		5,8	3,585	0,15	1,5	2,5	1,27	1	4,8	7				5,8	3,585	10791	1169	1684	179,4
2	Akbarabad – 2	810,1	4,744	9		3,456	1,288	0,1	1,3	2	1,1	1	4,3	14		1	1	4,74		3605	760	851	179,4
3	RP-1.continue		2,53	3		1	1,53	0,05	0,3	0,35	1							2,53		7625	3013	454	179,4
4	RP-1-2		0,693			0,693		0,15	1,5	2	1,3	1						0,693		4457	6431	124	197,4
5	Recharge from Collector-drainage system –RP-2		1,79	1			1,79	0,1	1	1,2									1,79	1404	874	321	197
	Total	1642,8	19,142	29		9,95	9,19							21		1	1	11,2	8	28062	1465	3434	179

First deputy of Kuva rayvodkhoz:

A. Elmurodov

¹ Oblvodkhoz – at the provincial level, provincial water management organization² Rayvodkhoz – district water management organization

"Approved"
First deputy of Khokim of
Kuva district
 _____ **Abdullaev**
 _____ **2003**

**Inventory of interfarm irrigation resources of farms: "Navoi", "Al-Fagoniy"
 and JS "otkormochnoe khozaystvo" that are to be transferred to WUA "Akbarabad"**

№	Name of interfarm irrigation canals	Name of tertiary and quaternary irrigation canals	Areas under command of tertiary and quaternary irrigation canals, ha	Total length of tertiary and quaternary irrigation canals, km	Number of diversion points in tertiary and quaternary irrigation canals	Channel characteristics of tertiary and quaternary irrigation canals, km			Engineering structures on tertiary and quaternary irrigation canals				Technical conditions of tertiary and quaternary irrigation canals		Balance cost of canals with engineering structures, Uzbek sums		Operation expenditures of canals in 2002, thousand Uzbek sums		
						earthen	concrete	flumed	gauging stations	pumping stations and lift equipment	regulation structures	hydrometric sites	satisfactory	unsatisfactory	total	for 1 km	total	for 1 km	
1.	Akbarobod-1	Makhalla-1	5	0,3		0,3								0,3					
		Khokimjon-1	7	2,6		2,6									2,6				
		Makhalla-2	13	1		1									1				
		Central	65	1,75		1,75									1,75				
		Otkormochnoe khozaystvo	15	0,4		0,4									0,4				
2.	Akbarobod-2	Nazira	4	0,35		0,35								0,35					
		Pod.khoz yadokhimikat	2	0,25		0,25									0,25				
		Otkor. khoz.	15	0,4		0,4									0,4				
		Dam-aryk	153,7	0,4		0,4									0,4				
		including																	
		shirkat "Navoi"	40	0,7		0,7									0,7				
		Makhalla-1	10	3,65		3,65									3,65				
		Makhalla-2	40	5,15		5,15									5,15				
		Nurmat ota	30,7	1		1									1				
		Malikakhon	13	0,36		0,36									0,36				
Usmon khoji	10	0,3		0,3									0,3						

		Mustakillik	22	0,9	0,9							0,9					
4.	RP-2	Navoi (drain)	90	5,15	3,65		2,1					2,1	3,65				
		Azizbek	14	0,6	0,6							0,6					
		Navoi-1	148	2,45	2,45							2,45					
		Navoi-2	107	1,75	1,75							1,75					
		Navoi-3	2,5	1,5	0,15		1,35					1,35	0,15				
		Navoi-4	8	1,96	1,96							1,96					
		Navoi-5	94	0,95	0,95							0,95					
		Navoi-6	127	0,35	0,35							0,35					
		Navoi-7	55,7	4,8	4,8							4,8					
		Navoi-8	30	4,1	4,1							4,1					
		Navoi-9	110	1,2	1,2		1,3					1,3	1,2				
		Azizbek	10	0,05	0,05							0,05					
		Navoi-10	76	2,75	2,75							2,75					
		Navoi-11	10	2,65	0,15		1,5					1,5	0,15				
		Navoi-12	9	2,7	2,7							2,7					
		Otanazar ota	38,6	1,45	1,45							1,45					
			2820,8	100	88,3	2,7	9					11,7	88,3	4345	43,5	5984	59,8

Chair of shirkat named after Navoi:

O. Usupov

Chair of shikat named after Al-Fargoniy:

Z. Ashurov

Chair of JS Otkormochnoe khozaystvo:

J. Tursunov

DRAFT: “A Model Constituent Agreement on Setting up a WUA”**A Constituent Agreement
of the Water Users Association (WUA)**

“ _____ ”

(Name)

_____, 200_

*(Place where agreement made)*We, **the legal entities**, as mentioned hereinbelow:

(The agreeing parties are indicated in Appendix 1 to this Agreement)

Hereby agree as follows:

1. Subject-Matter of the Agreement

To operate and maintain the irrigation system which obtains its waters from the canals of _____ and the river of _____, deliver irrigation water to the owners and users of agricultural lands and render soil reclamation services to water users, the above parties have decided to set up an Association of water users named _____ (hereinafter referred to as “the WUA”).

2. Name of the WUA

Legal entity’s full name:

The full name of the Association of Water Users shall be “ _____ ”

The shortened name of the WUA shall be “ _____ ”.

3. Location of the WUA: House: ___, Street: _____, Village: _____, District.: _____, Province: _____, Republic: _____.

4. The service area of the WUA shall include agricultural lands owned or used by WUA members with the irrigated area totaling to ___ Ha, which receive water from the canals of _____ and the river of _____. The WUA’s activities shall be limited to the irrigated area of WUA members’ lands.

The WUA’s Legal Status

5. The WUA, being a legal entity of the Republic of _____, shall acquire the status as such starting from the date of its registration with the Ministry of Justice of the Republic of _____.
6. The WUA, being an owner of the assets taken over in a duly manner, including the irrigation systems within its service area, shall have its own independent balance, rectangular stamp and round official seal bearing its name and open its own settlement or other special accounts with banks including foreign exchange accounts.
7. To ensure the WUA’s functionality the shareholders shall set up a share capital totaling to Soums _____, provided that Soums _____ will be put up not later than 10 days after the WUA is registered with the remaining balance of Soums _____ to be made available not later than _____ months. Shares of the parties to the share capital shall be determined as per Appendix 1 to this Agreement.

Goals and Objectives of the WUA

8. The WUA shall be a voluntary non-profit organization. Any body corporate or an individual owning an agricultural land plot or having the right to use such a land plot within the service area of the WUA shall be entitled to be a WUA member.
9. WUA members shall fully retain their existing legal and business status with their relationships with the WUA to be purely businesslike and governed by an irrigation service contract signed with the WUA’s Directorate.
10. The main goal of the WUA shall be developing, maintaining and operating irrigation and drainage systems to ensure equitable water delivery to the areas served by the WUA as per irrigation service plan as well as provide favorable soil reclamation setting for the irrigated areas served and carry out road maintenance.
11. The basic tasks of the WUA shall be as follows:
 - Operate and maintain irrigation and drainage system within the service area of the WUA and distribute water among WUA members based on annual agreements signed;
 - Distribute water on a contract basis among non-WUA-members who own or use irrigated land plots within the service area;
 - Rehabilitate and improve irrigation systems within the service area and carry out civil works whenever the need arises;
 - Obtain irrigation water from water management organizations or independently withdraw water from underground or other natural water sources on a license basis for further distribution thereof within the service area of the WUA;

- Procure, replace, operate and maintain hydraulic equipment;
- Manage water delivery, discharge drained water and prevent from water pollution;
- Take actions to improve the quality of lands;
- Protect interests of WUA member water users when dealing with governmental water management organizations, local governments and other organizations and institutions.

WUA's Lifespan

12. The WUA shall be established for an indefinite time and become effective from _____, 200__.
13. The reporting year shall be a calendar year.

Rights and obligations of WUA members

14. WUA members shall be entitled to:
 - use water as per irrigation service plan;
 - use soil reclamation services to ensure improved quality of lands;
 - take part in WUA's decision making;
 - use WUA services;
 - nominate candidates for elections to the WUA's management bodies or be elected themselves;
 - be compensated for damages to their crops or land plots incurred while WUA's goals and objectives were implemented;
 - get acquainted with book-keeping and accounting information.
15. WUA members shall undertake to:
 - abide by the the WUA's Charter or any other act adopted by the WUA's General Assembly or Council;
 - timely pay their fees envisaged by the Charter;
 - stick to irrigation schedules and receive water in line therewith;
 - meet soil reclamation requirements for irrigated lands;
 - provide the WUA with information on land and water resources in use;
 - give the WUA staff an access to their land plots to enable operation and maintenance of irrigation systems;
 - stick to all irrigation and drainage systems operation rules adopted by the WUA's General Assembly or Council;
 - pay for repairs or other costs related to replacing the parts of the WUA's equipment damaged by a WUA member as a result of an intentional or neglectful action or no action at all.
16. Any WUA member may stop its membership at any time. In any such case, a WUA member must notify the WUA Council Chairman accordingly. The WUA members seeking termination of their WUA membership shall be responsible for their membership fees to be paid by the end of a current fiscal year. Splitting the property of the quitting WUA member shall be settled in line with para.20 hereunder.
17. The WUA members failing to pay their fees within 3 or more sequential years shall be expelled from the WUA. Such a decision shall be made by the General Assembly

WUA's Property and Assets

18. The WUA's property shall comprise of the irrigation systems (canals, hydraulic structures, drainage network, pumping stations, wells and other infrastructural facilities) taken over on an ownership or any other proprietary basis, as well as machines, mechanisms, equipment and other valuables provided by shirkats, individual, dehqan or other farms on a voluntary basis or purchased by the WUA to jointly manage water.
19. WUA's assets shall not be subject to distribution except when the WUA is wound up. A quitting WUA member shall be given back his/her initial contribution to the share capital calculated at its current value when quitting. Should a quitting WUA member have arrears due to the WUA, the value of his/her initial contribution shall be taken into account when repaying the arrears. The remaining arrears can be made payable as per applicable legislation.

WUA's Management and Controlling Bodies

20. The WUA Charter shall define the structure, make-up, powers, tenure, meeting cycle and decision making arrangements of the WUA's management and controlling bodies.

Responsibilities of the WUA and WUA members

21. The WUA shall be held liable for any of its undertakings with all its assets and funds that can be claimed according to legislation of the Republic of _____.
22. The WUA shall not be liable for any undertakings of its members, whereas WUA members shall not be liable for any undertakings of the WUA.

Changing and terminating the Agreement

23. The Agreement shall come into force from the date when signed by the founders or their duly authorized representatives.
24. The life of the Agreement shall be unlimited.

25. The Agreement can be changed or terminated if so decided by the General Assembly of WUA members. The decision to change or terminate the Agreement shall be passed by the General Assembly by a two thirds majority vote of WUA members.
26. The WUA shall be transformed or liquidated following the arrangements set out by legislation of the Republic of _____ and the WUA's Charter.
27. This Agreement has been made in the _____ and Russian languages in ____ copies³ with each one being an equally valid copy.

Signatures

Appendix 1
to the Constituent Agreement
of the Water Users Association

REGISTER
*of the parties to the Constituent Agreement
of the WUA _____ and
amounts contributed to the share capital*

Water User's Name	Full Name and the post of water user's representative	Irrigated Area, Ha Water use category	Amounts contributed by water users, in thousand soums			Signature by water user's representative
			Total	Current installment	Remaining balance	

Note. Current installment shall be paid within 10 days, while the remaining amount – within _____ months from the date of the WUA's registration.

³ One copy to each party/shareholder.

A MODEL CHARTER OF AUTHORITY OF THE WATER USERS ASSOCIATION

(WUA's Name)

CLAUSE 1. GENERAL PROVISIONS

1. The Water Users Association "_____" (WUA's Name) (hereinafter referred to as "the WUA") of the _____ District(s), being a voluntary association of dehqan (private), individual and other farms and owners of home garden plots to jointly operate and maintain the irrigation and drainage system, provide irrigation water and soil reclamation services to owners and users of farmlands shall protect water users' rights, represent their interests in governmental and other bodies and organizations and perform as prescribed in this Charter.
2. The WUA shall be a non-profit organization, and all its incomes are intended to fully cover the cost associated with the execution of its charter.
3. The WUA has been established by No. _____ decision of the Constituent Assembly of the association held on _____ 2003 at _____(place).
4. This Charter, when developed, has taken regard of the provisions of the (such and such) legal acts of the Republic of _____.
5. WUA's registered address shall be: House: ____, Street: _____, Village: _____, District.: _____, Province: _____
6. The WUA, being a legal entity, shall have its own official (round) seal bearing the WUA's name both in the Russian and _____ languages. The WUA shall acquire the status of a legal entity starting from the date of its registration with the Ministry of Justice of the Republic of _____. Being a legal entity, it enjoys all the rights of envisaged for legal entities by the legislation of Republic of _____, can acquire obligations and bear liabilities for their non-execution or non-proper execution.
7. The service area of the WUA shall include the farmlands owned or used by WUA members with the total irrigated area (and non-irrigated area??) of _____ Ha, receiving water from the canals of _____ and the river of _____ as specified in the Layout attached hereto (Appendix ____). The WUA's activities, being constrained by the area of WUA members' irrigated lands shall, however, not be subject to time constraints.
The WUA's service area shall be split into _____ representative zones as depicted in the Layout⁴ attached hereto
8. The WUA shall not be liable for any obligations of its members. The WUA shall be liable against all its assets for any obligations made.

CLAUSE II. WUA'S OBJECTIVES AND FUNCTIONS

9. Main objectives of the WUA shall be:
 - Distributing water among members and non members in as equitable and reliable manner as possible;
 - Operating and maintaining irrigation and drainage system under its control, including any future improvements, rehabilitation, and development/ extension;
 - Obtaining irrigation water at all intake points of the service area;
 - Ensuring water supply management, purposeful and efficient use of waters, prevention of waters pollution, littering, depletion;
 - Ensuring ecological safety, preventing land erosion, salinization, over- moistening, as well as promoting the protection of irrigation system, water take structures;

⁴ This paragraph is included in the Charter if a WUA has too many members which makes it difficult to hold general meetings. In such a case WUA's Representative Assembly shall be established to enjoy all powers of the General Assembly.

- Any other services approved by the membership aimed at enhancing the utility and effective use of water.

10. The Association shall carry out the following functions for implementation of its objectives:

- Make contracts with water management organizations to obtain water for WUA members;
- Obtain a water use license (or special water use permit) in a set order;
- Schedule water delivery as per water use plan;
- Equip and modernize water distribution points with control structures to make irrigation water distribution between water users more equitable;
- Equip gauging stations with water measuring devices and measure water on a regular basis;
- Organize field observations of the reclamation status of irrigated lands and devise measures to improve them;
- Prepare and carry out drainage construction measures for operation and maintenance of irrigation and drainage network;
- Plan, rehabilitate and modernize irrigation and drainage network to make its performance efficient;
- Enforce water saving measures;
- Enforce measures as to enhancing productivity of irrigated lands including controlling salinity of irrigated lands;
- Use the WUA's property as per applicable legislation of the Republic of _____;
- Open bank accounts;
- Collect from WUA members irrigation service fees (for irrigation water delivery to water users, O&M of irrigation and drainage network, equitable water distribution between WUA members etc.);
- Make contracts with other non-member water users in the service area of the WUA and render services to them against appropriate fees;
- Prevent and elicit any breaches of water and land legislation by both WUA members and non-member land users, demanding from the parties at fault to eliminate the consequences of such breaches and reimburse for the damage incurred by the party aggrieved;
- Settle water distribution conflicts arisen between water users;
- Carry out book-keeping as per the Book-Keeping and Accounting Regulation;
- Prepare reports on WUA's water management and soil reclamation activities.

11. To attain its objectives the WUA shall be entitled to:

- Establish subdivisions and affiliated enterprises to ensure and share in productive activities;
- Receive, lease, purchase, build and create movables and immovables as well as write them off;
- Sell, exchange, lease out or give for temporal use its own assets to other legal entities and individuals;
- Sell its works and services based on prices and tariffs set independently and in some cases stipulated by legislation – based on state prices;
- use bank and other loans;
- Keep its funds with banks using settlement or any other special accounts, carry out any settlement, credit and spot transactions;
- Put its activities on record, maintain book-keeping and statistical accounts as prescribed by financial and taxation authorities of the Republic.

CLAUSE III. WUA MEMBERSHIP

12. Persons and legal entities having land by the right of ownership or the right of use of land, as well as persons and legal entities having the right to use water within the service area of the WUA can become its members provided they agree with the Charter of the WUA. WUA membership right shall not be limited to those enjoying the land use right.

The owner and the leaseholder shall not be able to be simultaneously WUA members with regard to the same plot of land.

13. Once the WUA is established/ registered new members shall be admitted subject to approval by the WUA Council provided they comply with all requirements as set out in paras. 12 and 13 under this Charter.

New WUA members shall be normally admitted after irrigation season is completed.

WUA membership can be refused if:

- An applicant seeking WUA membership claims his/her eligibility based on ownership of the land plot received from the former owner who has failed to repay his/her debts to the WUA (unless he/she or the former owner settles all obligations) ;
- An applicant was expelled from the WUA during the last 5 years.
- In case of rejection of the application, the said person can appeal against the decision to the WUA Council.

- In case of the death of a natural person, his/ her obligations and rights with regard to the association are automatically passed on to his/ her legal successor.
14. A WUA membership of those with no longer a land plot owned in the service area of the WUA or who lose their legal right to use it, shall be deemed as terminated.
 15. In case there are any changes in the land use rights, both the previous and the new user will be held responsible for notifying the WUA Council about such changes in writing detailing on who will pay the debts owed to the association. The successor can become a member of the association after the debts are paid.. Any WUA member can terminate their membership at any time. In any such case he or she must notify the WUA Council about such termination at least one month before. The WUA members seeking termination shall be liable to pay their fees before current fiscal year ends, share accordingly in any current long-term loans obtained, as well as contribute a proportionate amount if the WUA has made certain expenses as to constructing, rehabilitating or operating the irrigation and drainage system. They have to redeem such expenses before terminating the WUA membership.
 16. The WUA members, failing to pay their fees for two sequential years, or, found guilty in any other severe offences, or if any other disciplinary action was exercised against them to no avail, shall be subject to expulsion from the WUA. Such an expulsion shall be exercised as the last resort.

CLAUSE IV. WUA MEMBERS' RIGHTS AND OBLIGATIONS

17. WUA members shall be entitled to:
 - Receive water as per the water use plan, which will be prepared on the principles of proportionality and fairness;
 - Use soil reclamation services to ensure improved quality of land;
 - Take part in decision making by the WUA;
 - Use WUA services;
 - Nominate their candidates to WUA management bodies and be elected as such;
 - Personally or by representative vote in the meeting of the association
 - Complain about the decisions of the association and governance and other bodies to the general / representative assembly meeting/ dispute resolution commission
 - Leave the association
 - Compensation if any damage inflicted on their crops or lands while implementing WUA's goals and objectives due to improper handling;
 - Acquainting themselves with book-keeping and accounting information.
 - Access to all information about the WUA and its activities
 - Participate in training and seminars organized by WUA
 - Execute any other rights arising out of this charter.
18. WUA members shall be obliged to:
 - Comply with the provisions of the WUA's Charter or any other rules passed by the WUA's General Assembly and Council;
 - Pay fees envisaged by this Charter in a timely manner;
 - Stick to irrigation schedules and obtain water according thereto;
 - Meet reclamation requirements for irrigated lands;
 - Provide the WUA with information on their land and water resources in use;
 - Give WUA staff an access to their land plots for O&M of irrigation systems;
 - Follow all operation rules for irrigation and drainage systems set by the WUA's General Assembly or Council;
 - Pay for repairs or any other costs related to replacing the equipment parts of the WUA damaged by a WUA member intentionally or as a result of neglectful action or due to no action at all.
 - Demonstrate a conscientious attitude towards the property of the Association and the property, which is used by the Association;
 - inform the Association about the establishment of the rights of third persons towards the irrigated land within 10 days

Other obligations can be envisaged for a member of the association by the decision of the General/ Representative Assembly meeting.
19. Should any violation of the rules set by this Charter or the WUA's other by-laws occur, the WUA Council shall be entitled to exercise sanctions (fines, suspension of voting and water rights).

20. Membership in the Association shall be terminated:

- a) based on the written application of a member willing to leave the Association;
- b) if a member lost the necessary legal basis to be a member;
- c) in case of dismissal from the Association;
- d) in case of death of a member

The WUA Council shall within one month review the application of the member on termination of the membership and adopt decision.

The decision shall contain information on the sizes of the member's debt owed to the Association and the day of the membership termination.

A member can leave the Association only after all debts are paid. If the Association made expenses related to design, construction and operation of the irrigation system for a member, he/she can leave the Association only after reimbursement of the amount spent for him/her.

A member can be dismissed from the Association by the decision of the WUA Council, if he/she:

- a) breaches the requirements of the Association's Charter and internal regulation;
- b) delays payment of fees without justifiable reason;
- c) refuses to pay the fees levied by the Association;
- d) refuses to recover damages caused to the Association by his/her fault;
- e)

The decision of the WUA Council on member's dismissal can be appealed in the Annual General Meeting of the Association.

CLAUSE V. THE WUA'S MANAGEMENT BODIES

21. The WUA's management bodies shall be:

- a General Assembly as the supreme body⁵;
- a Council as the governing body elected by the General Assembly;
- a Directorate as the executive body appointed by the WUA council;
- an Auditing Commission as the controlling body composed of ____members elected by the General Assembly;
- a Dispute Resolution Commission as the arbitration body composed of ____members elected by the General Assembly;
- the WUA's supreme management body shall be the General Assembly.

22. The General Assembly shall comprise all WUA members.

If so decided by the WUA Council, the water users, who are not WUA members, can be invited to take part in the proceedings of the General Assembly. Such non-members can participate in discussions, however, with no voting rights whatsoever.

23. The General Assembly shall make decisions with each WUA member having one vote regardless of the size of their land plots within the WUA's service area⁶.

24. Voting right of a WUA member may depend on their outstanding debt owed to the WUA.

25. The owners of land plots within the WUA's service area who lease out their plots may pass their voting rights to the leaseholders. Such a pass-over should be provided to WUA Council in writing. The passing of a voting right shall not exempt such landowners from their financial obligations before the WUA.

⁵In case a WUA has too many members in it, the Assembly of WUA members' representatives can be set up with all the powers otherwise enjoyed by the General Assembly. In this case the Charter should provide for the WUA service area to be split into representative zones. WUA members of each zone shall select one or several representatives of their own. The tenure for such representatives should not be more than 3 years. Each zonal representative shall either have one vote or proportionate number of votes depending on the size of each such zone represented. All the remaining WUA members shall have the right to attend meetings of the Representative Assembly with no right to vote.

⁶ The WUA Charter may envisage that each WUA member shall enjoy either the number of votes proportionate to the size of his/her land plot within the WUA's service area or the number of votes corresponding to the amount of payments or costs paid to the WUA during the previous year.

26. The exclusive competence of the General Assembly shall include the following:

- Define the basic directions of WUA activities;
- Introduce changes and additions to the WUA Charter;
- Approve regulations on the WUA Council, WUA Directorate, Auditing Commission and Arbitration Commission;
- Select and dismiss members of WUA Council, Auditing Commission and Arbitration Commission;
- Set annual fees to be paid by WUA members and non-members;
- Approve the WUA's financial statements and progress operations reports;
- Approve the WUA's annual budget and expenditure report;
- Approve the WUA's yearly and perspective plan of operations and irrigation schedules;
- Approve annual report on technical conditions of I&D infrastructure of the WUA;
- Approve annual report on the reclamation status of irrigated lands;
- Approve report on repairs and rehabilitation of WUA's I&D network conducted;
- Approve annual report on disputes settlement;
- Set fines to be paid by WUA members;
- Pass decisions suggested by the WUA Council as to expelling WUA members in the following cases:
 - Regular failure to follow provisions of the WUA Charter or any other document adopted by the General Assembly;
 - Refusal to pay fees for WUA services rendered;
 - Unjustified refusal to compensate or pay for damages inflicted on irrigation and drainage systems and equipment of the WUA;
 - Unauthorized water diversion or repeated violation of water distribution schedules.
- Make decisions on liquidation or transformation of the WUA, appoint a liquidating commission, approve mid-term and final liquidation balance sheet.

27. Arrangements for the General Assembly to meet shall be as follows:

- The General Assembly shall meet at least twice a year (before and after vegetation). Unscheduled special meetings may be held, if so requested in writing by one fifth of all the WUA members enjoying voting rights, based on the WUA Council's decision, or if required by the Auditing Commission of the WUA;
- *The General Assembly shall meet only if more than 60% of all the WUA members are present;*
- *Decisions on the issues related to the exclusive powers of the WUA's General Assembly, amendments and additions to the WUA Charter as well as transformation or liquidation of the WUA shall be made by at least a two thirds majority vote of the WUA members attending the meeting. Decisions on all other issues shall be made by a simple majority vote.*
- *Decisions by the General Assembly shall be made based on open/secret ballot procedures and arrangements⁷;*
- To convene the General Assembly the WUA Council shall notify each WUA member accordingly at least 10 days before holding such a meeting and let them get acquainted with all the materials prepared as per agenda. WUA members shall be entitled to make their suggestions on the agenda for inclusion thereto.

28. A governing body of the WUA shall be the WUA Council. The powers of the WUA Council shall include the following:

- Provide general governance to WUA operations;
- Control the WUA Directorate;
- Elect the Chairman of the WUA Council;
- Convene the General Assembly and prepare its agenda;
- Approve irrigation systems O&M contracts in accordance with the budget and work plan;
- Hire and dismiss WUA's Director and Accountant;
- Discuss and make decisions on all vital issues of the WUA in-between general meetings.
- Hear appeals against dismissal of other staff

29. The WUA Council shall comprise of 7 members⁸ including the Chairman, Deputy Chairman, Secretary and 4 members. Each Council member representing a certain area within the WUA's service area shall be selected from the WUA members.

⁷Or the WUA Charter may stipulate secret ballot arrangements.

The WUA members with outstanding debts (including fines) to be paid to the WUA cannot be nominated for Council membership.

In the absence of the WUA Council Chairman the powers thereof shall be exercised by his/her deputy.

30. The Council shall meet at least once a month. A WUA Council meeting shall be deemed valid if attended by at least two thirds of its members. Decisions shall be made by a majority vote of the Council members attending the meeting. Whenever vote is tied the Chairman shall have the casting vote.
The WUA Council Chairman shall be entitled to sign all documents related to WUA activities on WUA's behalf.

31. The WUA Council shall be accountable to the General Assembly.
At least 20 days before convening an annual general meeting the WUA Council shall prepare annual report and balance sheet and make them available for WUA members' consideration. WUA Council shall present annual financial and progress reports for approval by the General Assembly as well as other information if required by WUA members.

32. Should any WUA Council member fail or be not in position to carry out his or her duties, the Council Chairman or Council members shall be authorized to hold a special general meeting following the procedures stipulated in para. 27.

Deputy Chairman of the WUA Council

33. The WUA Council shall select from its members the Council's Deputy-Chairman with the terms of office being normally at least 3 years.

The WUA Directorate

34. The WUA Directorate shall have the following powers:

- Provide O&M of irrigation and drainage systems;
- Prepare draft budget, draft plan for O&M of irrigation and drainage systems as well as other documents to be submitted to the WUA Council;
- Ensure that WUA members pay their fees;
- Prepare contracts for the WUA Council's approval in accordance with approved budgets and work plans as to O&M of irrigation and drainage systems;
- Control water allocation by water management organizations and water distribution among WUA members;
- Hire and dismiss WUA Directorate staff and supervise their performance;
- Control WUA's bank accounts;
- Any other issues as specified by the WUA Council.

WUA's Auditing Commission

35. The WUA's Auditing Commission shall comprise of its Chairman and 2 members. WUA Council members cannot be members of the Auditing Commission at the same time.

36. The Auditing Commission shall examine at least once a year the WUA's book-keeping and accounting documents, inventory in stock and bank accounts. A WUA accountant shall be obliged to present all required documents to the Auditing Commission.

37. The Auditing Commission shall be accountable to the General Assembly of the WUA.

38. The Auditing Commission must present its conclusions and suggestions to the General Assembly at least once a year.

39. If so required by at least one third of all WUA members or by the WUA Council, the Auditing Commission can be reelected ahead of time.

The WUA's Arbitration Commission

40. Disputes arisen between WUA members shall be settled by the WUA's Arbitration Commission. The Arbitration Commission (AC) shall consist of 5 members selected by the General Assembly. AC members shall select from themselves their Chairman.

A WUA Council member cannot be an AC member at the same time.

⁸The number of WUA Council members may differ but with at least 5 persons

41. AC's Chairman and members shall be elected for not more than 3 years.
42. Complaints and applications by WUA members about other WUA members violating the WUA Charter and irrigation schedules shall be forwarded in writing to the Chairman of the Commission.
43. Given such a complaint, the Chairman must within 10 days to gather the Arbitration Commission and parties at odds to settle the dispute.
44. Both parties in dispute must appear at the Commission's session at a time set by the Commission. Should any party in dispute be unable to appear, it can be represented by another WUA member.
In case there are damages, the Commission should evaluate those damages and make sure they are reimbursed. To evaluate the size of damages inflicted the Commission may hire a consultant.
The Commission shall settle the damages reimbursement issue in line with applicable civil and labor legislation.
The Commission shall make decision within 10 days from the date of the hearing of the case.
The Commission's decision can be appealed in a court of law.

CLAUSE VI. RELATIONSHIPS WITH OTHER ECONOMIC ENTITIES WHO ARE NOT WUA MEMBERS

45. The WUA may supply irrigation water to economic entities, who are not WUA members, within the service area, based on contracts signed as well as disconnect them from water supply if such contracts are refused to be signed. WUA services as to using irrigation and drainage infrastructure of the WUA can be rendered on a contract basis.
ISF for non-WUA-members shall be set by agreement, however, it should not exceed ___% of the rate set for WUA members.
46. Disputes between the WUA and non-WUA economic entities shall be resolved in accordance with applicable legislation of the Republic of _____. Non-WUA-member economic entities may agree to settle disputes through the WUA's Dispute Resolution Commission. No any other authorized body but court shall be entitled to intervene with the dispute settlement process.

Hiring the WUA staff

47. To perform its activities the WUA shall be entitled to hire its staff. A WUA-hired staff can by no means be nominated or selected to the Council, Auditing Commission or Dispute Resolution Commission of the WUA.
The order and system of remuneration to the hired staff shall be established by the General Assembly as per labor legislation of the Republic of _____.
The General Assembly may take measures based on performance results to stimulate and encourage the WUA staff.

CLAUSE VII. THE WUA's FINANCIAL MANAGEMENT

WUA Members' Fees

48. WUA members shall pay annual fees to include the following:
 - Water delivery charges based on volumes delivered and rates set by external service providers in accordance with annually signed agreements;
 - WUA charges for delivering water to WUA members based on volumes delivered or irrigated acreages served;
 - Charges for operating and maintaining drainage systems in the service area of the WUA;
 - Other charges for additional services by the WUA requested or agreed by a WUA member;
 - Payments to the WUA's Reserves Fund.
49. Water entitlement of any WUA member shall be subject to proper payment by them of required WUA charges. Sanctions shall be exercised against those WUA members who fail to timely pay WUA fees in the amount set by the General Assembly.

WUA Assets

50. WUA assets shall consist of the irrigation systems (canals, hydraulic structures, drainage network, pumping stations, wells and other infrastructural facilities) owned or otherwise possessed by the WUA, as well as machines, mechanisms, equipment and other valuables provided on a voluntary basis by shirkat, individual, dehqan or other farms or handed over to or purchased by the WUA for water management purposes.
51. A quitting WUA member shall be paid back their initial contribution fee to the share capital calculated at its current value when quitting. Should a quitting WUA member have arrears to the WUA, the value of his/her

initial contribution shall be taken into account when repaying the arrears. The remaining arrears can be made payable as per applicable legislation.

WUA's Reserve Funds

52. The WUA shall have its reserve funds at a separate bank account. Reserve funds shall be used only to repair irrigation systems within the service area of the WUA and to cover costs during unforeseen events.
53. The reserves shall be made up by contribution fees of WUA members set in accordance with para. 48 hereunder. Revenues accrued at the end of a fiscal year shall not subject to distribution and shall be added to the reserves.

CLAUSE VIII. TRANSFORMATION AND LIQUIDATION OF THE WUA

54. WUA's activities can be wound up either by transformation or liquidation.
55. The WUA shall be transformed or liquidated by the decision of the General Assembly.
56. When in transformation, all rights and obligations of the WUA shall go to a newly established legal entity.
57. When in liquidation, the powers to manage WUA's affairs shall be vested with the Liquidating Commission to be formed from WUA members and representatives of a state body authorized to control WUA's activities. In cases as specified by legislation of the Republic of _____, the WUA can be liquidated by court decision. In this case, a court shall appoint the representative.
58. The remaining assets and funds of the WUA in liquidation after all claims have been met shall be subject to distribution between WUA members based on the decision by the Liquidating Commission or by a body that made the liquidation decision.
59. Documents of the WUA issued while operating, when in liquidation shall be kept and used in accordance with archival legislation of the Republic of _____.

MODEL AGREEMENT

on waterworks and services rendered against payment
between the WUA and individual (dehqan)
farms, shirkats or other water users

City _____

Date _____

The Association of Water Users

(Name)

hereinafter referred to as 'the WUA', represented by

(full name, position)

acting in accordance with the WUA's Charter of Authority, on the one hand, and

a WUA member, hereinafter referred to as "the Customer" represented by

(full name, position)

, on the other hand,

have made this agreement as on rendering water works and services against payment.

1. Obligations and rights of the WUA:

The WUA shall undertake to:

- Ensure water delivery to the Customer as per quota set and irrigation schedule (Appendix No ___ to this Agreement);
- In case that water is under-delivered to the Customer at one particular scheduled irrigation against a quota set, make up for such an under-delivery during another particular irrigation scheduled;
- Ensure diversion of waters discharged or drained from irrigated lands of the Customer;
- Control reclamation status of irrigated lands of the Customer (level and mineralization of underground waters, soil salinity);
- Maintain irrigation and drainage network on the Customer's lands as per Appendix No ___ to this Agreement;
- Equip field turnouts of the Customer with water measurement devices, conduct attestation, repairs and recurrent verification thereof.

The WUA shall be entitled to:

- Adjust, as the situation might evolve, earlier set water quotas of the Customer depending on water year status and available water resources, with the notice to be given to him/her beforehand (within 10 days) or, if required, consulting with him/her;
- In case that water was overused beyond the limit set for one particular irrigation by the Customer's fault, reduce accordingly the helping of water set for another particular irrigation scheduled;
- Introduce water rotation, i.e. water delivery by turns, whenever there is a severe shortage of water.

2. Rights and obligations of the Customer

The Customer shall be entitled to:

- Control that actual water delivered to the Customer comply with the quotas set;
- Suggest on his/her needs in works and services of the WUA;
- Lay proprietary claims to the WUA if the latter fails to fulfill its obligations under this Agreement;
- Control the scope and quality of works and services accomplished by the WUA against the Customer's orders.

The Customer shall undertake to:

- Timely pay for the works and services specified hereunder;
- Stick to water delivery quotas assigned thereto;
- Properly maintain irrigation and drainage facilities which are on the books of the WUA;
- Create additional water diversion points, dams and passageways on irrigation and drainage network only upon agreement with the WUA;
- Inform the WUA beforehand (5 days before) on any changes in his/her water consumption or when deciding not to use water for a certain period.

3. Proprietary relationship between the WUA and the Customer

The Customer shall be sanctioned or fined for:

- Water diversion in the excess of the quotas set due to the Customer's fault;
- Unauthorized water diversion from any water sources;
- Building dams or passageways on inter-farm irrigation and drainage network with no prior agreement secured from the WUA;
- Inflicting damages on structures and measurement devices on inter-farm irrigation and drainage network;
- Untimely payment for works and services of the WUA;
- Other failures to perform its obligations.

Should there be any excessive use of water occurred due to the Customer's fault, the Customer shall be fined at a rate of _____ Soums per each cubic meter of water overused. If such abuses repeatedly continue, the fine shall accordingly increase up to _____ Soums per cubic meter. In any such event, if occurred, a WUA representative shall invite the Customer or its representative to issue a corresponding act of abuse. If the latter fails or refuses to appear, such an act shall be issued unilaterally to constitute a legally valid document.

Water delivered to the Customer's field outlets shall be measured on a daily basis by a WUA representative in the presence of a Customer representative. If the latter is absent, the WUA shall be entitled to measure water on its own with the results to be deemed undisputable.

The Customer shall pay for the services rendered by the WUA on a quarterly basis by the 10th of the month following the end of a quarter as per Appendix No ___ to this Agreement. In the beginning of a year the Customer shall prepay to the WUA 25% of the cost of its services to be currently rendered.

4. Additional terms

The lifespan of this Agreement shall be three years from _____, 200__ to _____, 200__.

If so agreed by the both parties hereto, the Agreement may be either terminated, or extended. To do so the soliciting party shall notify accordingly the other party one month before such a termination or extension of the Agreement.

Should any party with no grounds whatsoever refuse to stick to the terms of the Agreement or change, break or terminate it, the party at fault, besides the sanctions specified in this Agreement, shall compensate to the other party for damages incurred and benefits foregone.

In case that any party fails to perform or improperly performs their obligations hereunder the party at fault shall compensate to the other party for damages inflicted and benefits lost. Any changes to obligations hereunder shall be possible if so mutually agreed by the both parties.

All disputes arisen because of this Agreement shall be settled through mutual agreement, or arbitration, or, if failing so, by a court decision in accordance with an applicable legislation at the place where the WUA is located.

Attached hereto is the list and the cost estimate of the WUA's works and services for the incumbent period subject to annual update.

Registered addresses of the parties:

The WUA

The Customer

1. The list of water works and services rendered against payment and the time schedule

Water works and services	Unit	Timeframe												Total	Cost estim. in '000 Soums
		January	February	March	April	May	June	July	August	September	October	November	December		
1. Water delivery to the Customer's border	l/sec '000 m ³														
2. Irrigation network cleaning	route/m m ³														
3. Drainage network cleaning	route/m m ³														
4. Repairing canals' dams	route/m m ³														
5. Repairing canallets	pieces														
6. Replacing canallets	pieces														
7. Repairing hydraulic structures	pieces														
8. Surface leveling	Ha														
9. Defining the level and mineralization of underground waters	No. of points, sampl. and measur.														
10. Defining soil salinity	No. of points, sampl. and measur.														
Other works and services															

2. Payment terms for water works and services rendered.

- a) The tentative costs has been estimated based on tariffs and per-unit rates approved by the WUA's Council (General Assembly) (Protocol No __ as of _____, 200__);
- b) Should the factors influencing the cost of waterworks and services (fuel, various material and technical inputs etc.) change, the tariffs and rates shall be accordingly adjusted.
- c) Payment for waterworks and services rendered shall be made upon actual completion thereof;
- d) Water delivery services currently rendered by the WUA amount to:
Soums _____,
including Soums _____ in the 1st quarter, Soums _____ in the 2nd quarter,
Soums _____ in the 3rd quarter, Soums _____ in the 4th quarter.
The Customer shall have to prepay by January 10, 200__ the cost of services to be currently rendered in the amount of Soums _____.
The remaining payments shall be made on a quarterly basis by the 10th of the next month following the completion of a quarter.

Registered addresses of the Parties:

The WUA

The Customer

**Budget of
Annual expenditures of WUA “Akbarabad”**

№	Expenditures	Annual expenditures, thousand Uzbek sums	Note
1	Salary including: a) wages б) bonuses in amount of 40 % from wages в) Financial aid in amount of one monthly wage	4940 3331 1332 277,6	Staff members of WUA Based on decision of General Assembly of WUA Based on decision of General Assembly of WUA
2	Social security deposit, 40 % from wages 4663*0,4	1865	According to current regulations
3	Total operation costs of pumping station and lift machinery including: a) expenses for electricity of pumps SNP 350/10, PG-35 $E = 0,004 * M * N * C$ b) expenses for fuel, for operation of pumps SNP 500/10 c) expenses for fuel for operation of transportation (bulldozer, tractor, excavator)	1875 300 525 1050	Estimate based on actual expenses in 2002 Estimate based on actual expenses in 2002.
4	Administrative expenses (without salary of staff) including: a) office supplies б) telephone, repair of office equipment	200 100 100	Based on actual expenses in 2002
	Subtotal	8880	
5	Maintenance and cleaning of collector-drainage systems, using own resources, total including: a) operational expenses of collector-drainage systems b) manual cleaning load of tertiary and quaternary irrigation canals that were carried out in 2002	8485 2505 5980	According to expenses in 2002 According to expenses in 2002
	Subtotal	8485	
6	Expenses covered by rayselvodkhoz for operation and maintenance of secondary irrigation canals	3434	Estimates by Rayselvodkhoz
	Total	20799	

Note: Expenses of 5-6 categories are widely discussed at General Assembly of WUA for information and could be excluded from budget of annual expenses because those activities could be carried out by WUA members themselves, and for category 6 Rayselvodkhoz could take responsibility.

With consideration of notes, WUA fines water users for service provided:

$$20799 - (8485 + 3434) = 8880 \text{ thousand Uzbek sums,}$$

or annual costs for 1 ha of land that is charged by WUA to its members-water users:

$$C_{1ca} = \frac{8880 \text{ тыс. сум}}{2820 \text{ га}} = \underline{3150 \text{ Uzbek sums /ha}}$$

This number is presented for discussion at General Assembly of WUA

Machinery that are transferred to WUA «Akbarabad» by shirkat «Navoi»

№	Machinery	Number	Balance cost, thousand Uzbek sums
1	Excavator E-652	1	10590
2	Bulldozer S-100	1	741
3	Automobile Gaz-51	1	571

Draft of staff schedule of WUA «Akbarabad» for a year

№	Position	Number of persons	Rank	Monthly wage, Uzbek sums	Monthly salary amount, Uzbek sums	Bonuses, thousand Uzbek sums	Annual salary, thousand Uzbek sums	Note
1	2	3	4	5	6	7	8	9
I. Administrative personnel								
1	WUA Director	1	12	17057	17057			
2	Principal engineer-irrigator	1	11	15994	15994			
3	Principal hydrometrician	1	10	14958	14958			
4	Accountant	1	10	14958	14958			Specialists for personnel department
5	Principal technician	1	10	14958	14958			
6	Security	1	2	9622	9622			
7	Custodian	1	2	9622	9622			
8	Driver	1	3	10273	10273			
	Total	8	-		107442			
II. Production-linear personnel of Hydro divisions								
	Hydrodivision № 1 canals Akbarabad -1, 2							
1	Hydrometrician	1	6	12644	12644			
2	Hydrotechnician	1	6	12644	12644			
3	Observers	2	4	10581	21162			
	Total	4	-		46450			
	Hydrodivision № 2 canal PR-1							
1	Hydrometrician	1	6	12644	12644			
2	Hydrotechnician	1	6	12644	12644			
3	Observers	2	4	10581	21162			
4	Technicians of pumping stations	3	3	10273	30819			
	Total	7	-		77269			
	Hydrodivision № 3 canal PR – 2							
1	Hydrometrician	1	6	12644	12644			
2	Hydrotechnician	1	6	12644	12644			
3	Observers	2	4	10581	21162			
	Total	4	-		46450			
	Total of I + II	23	-		277611	1332	3331	

Staff responsibilities of WUA

WUA Director

Responsibilities of WUA director are:

- Direct and coordinate operation and maintenance activities and development of on-farm irrigation systems;
- Management of various issues related to other personnel of WUA work performance;
- Control for on time water delivery according to schedules;
- Define and determine required WUA services for water users and assure equitable and on time water allocation among users;
- Development of organizational structure and staff schedule of WUA;
- Issue orders and instructions that are related to WUA activity for all staff of executive body of WUA;
- Hire and dismissal of WUA staff;
- Control execution and implementation of decisions that were approved at General Assembly of WUA;
- Development of tariffs and prices on WUA service;
- In emergency situations, decide and approve decisions that are function of WUA Council and then later get approval at General Assembly;
- Prepare proposals on amounts of membership fees and other dues of WUA.

Qualification:

- Higher education degree (in exceptional circumstances secondary education);
- at least 5-year working experience on management positions in water management system;
- Able work in team, plan water management activities, organizes activities.

Principal engineer – irrigator must:

- manage water resources on the territory of WUA;
- Master with techniques on preparing plan of water use (with taking into account distribution of agricultural crop structure);
- Establish water quotas on water use for specific water users with approved water quotas of WUA;
- Organize water conveyance successive schedule and assure control for rational water resources use;
- Assess technical conditions of irrigation and drainage systems with guaranteed water supply to WUA water users and diversion of collector-drainage waters out from WUA irrigation area.

Qualification:

Principal engineer-irrigator must have higher education and has rich experience and knowledge in water resources management and planning, improvement of meliorative conditions of irrigated lands and operation of hydromelioration systems. At least 5 years of work experience in water management organization.

Principal Hydrometrician

- Oversees provision of water from interfarm irrigation canals and water conveyance to water users of WUA;
- Develops schedule of amounts to water consumers from diversion points of interfarm irrigation canals;
- Define borders of WUA (brigades of shirkats, farmers and dekhans, populated settlements, industries and other water users);

- Functions as hydrometrician and responsible for observance of approved water use limits;
- Responsible for accuracy and operation of water measuring devices on diversion points in irrigation canals and repair and maintenance of those devices.

Qualification:

Principal hydrometrician must have rich experience and knowledge of operation of various water measuring devices. Work experience in operation of water management organization at least for 3 years.

Principal mechanic

- Provides effective use of melioration machinery and equipment, operation of pumping stations and wells;
- Assesses technical conditions of pumping stations, machinery and lift equipment;
- Organizes technical maintenance and repair machinery of WUA.

Qualification

Principal mechanic must have experience and knowledge in operation of pumping station, dredging equipment and automobiles. Working experience at least 3 years.

Accountant

- responsible for accounting conditions of WUA;
- monitors for collection of current membership fees and dues and provides for rational use of those resources;
- Works as economist, accountant and inspector of personnel.

Qualification:

Economist –accountant must have experience and knowledge in agricultural economics. Working experience at least 5 years.

Responsibilities of divisional hydrotechnician:

- Technical monitoring and maintenance of canals, engineering structures on his division;
- Informs WUA governing body about technical discrepancies of engineering structures, organizes repair of those structures, and compiles acts of necessary rehabilitation works;
- Participates in water allocation and distribution between water users;
- Keep records on repair-rehabilitation works.

Qualification:

Divisional hydrotechnician must have working experience and knowledge in operation and maintenance of hydro engineering systems. Working experience at least of 3 years.

Responsibilities of divisional hydrometrician:

- Keep records and controls regulated flow in tertiary and quaternary irrigation canals;
- Develops water conveyance schedule on his/her divisional area;
- Allocates water among water users;
- Keeps records and controls right use of water resources by water users;
- Monitors technical and operational conditions of water measuring devices;
- Prepares preliminary information for development of water user schedule;
- Keep records on actual distribution of agricultural crops on irrigated lands of water users.

Qualification:

Divisional hydrometrician must have working experience and knowledge in operation of water measurement and water allocation and keeping record of water use and allocation.

Agreement

between Water Users' Association «Akbarabad» and Kuva Rayselvodkhoz on mutual operation of interfarm canals of «RP - 1» and «Akbarabad - 2» that flow through territories of shirkats «Gulistan», «Navoi» and «Al-Fargoniy»

Kuva

«_____» 2003

Head of Kuva's Rayselvodkhoz _____ and Chair of WUA «Akbarabad» _____ concluded this agreement about mutual operation of interfarm irrigation canals «RP-1», «Akbarabad-2» that are located on the territories of shirkats «Gulistan», «Navoi», «Al-Fargoniy», and agrees upon:

1. Kuva Rayselvodkhoz transfers interfarm irrigation canals «RP-1» and «Akbarabad-2» for temporary use with all engineering structures on them to the WUA «Akbarabad» on the basis of inventory act with right to finance operational costs of those canals from budget of Kuva Rayselvodkhoz within of normative expenses.
2. Kuva Rayselvodkhoz bears to transfer funds for on time operation and maintenance of those above-mentioned canals, which were transferred to temporary use by WUA «Akbarabad».
3. WUA «Akbarabad» bears to use transferred funds for operation and maintenance of irrigation canals.
4. The basis for expenditures of necessary funds for canals «RP-1» and «Akbarabad-2» are canal characteristics and parameters and normative regulations on these types of services.
5. Kuva Rayselvodkhoz and WUA «Akbarabad» agrees to compare their expenses on monthly basis of actual expenses for operation and maintenance work.
6. The period of this agreement is 5 years.

Deputy of Kuva Rayselvodkhoz

A. Elmuradov

(signature)_____
name

Chair of WUA «Akbarabad»

O. Usupov

(signature)_____
name

District _____ (name) WUA _____ (name)

**Records
of current monitoring of technical conditions of structures on on-farm
irrigation systems**

Start date _____ (day, month, year)

Closing date _____ (day, month, year)

Person _____ (name)

Continue of appendix № 11

Date of visit	Name of structure, location	Description of disrepair of structure or violations of operation regulations	Actions and preventive measures for repair and maintenance	Date of intervention and implementation
1	2	3	4	5

Approve
Decree of WUA General Assembly
Protocol № _____ from «___» _____ 200__.
Chair of WUA Council
 _____ «___» _____ 200__.
 (name) (signature)

«___» _____ 200__.

ACT

of inspection for technical conditions of structures on on-farm irrigation systems of WUA

 (name)

Commission that was appointed based on degree of WUA Council (protocol №___ from «___» _____ 200__) with total number of attendees:

chair _____
 (name, position)

and members of commission _____
 (name, position)

in the period from «___» _____ 200__ to «___» _____ 200__.

has carried out inspection of technical conditions of irrigation structures and has found the following disrepair and damages:

Name of structure	Location of structure	Parameters of disrepair and damages	Necessary repair works and preventive measures
1	2	3	4
	1. Irrigation canals 2. Structures on irrigation canals 3. Open collector-drainage network 4. Structures on open collector-drainage network 5. Closed collector-drainage network with structures 6. Gauging stations on irrigation and collector-drainage networks 7. Inspection roads and access roads 8. Melioration pumping lifts 9. Schedule of irrigated areas.		

Chair of commission _____
 (signature)

Members of commission _____
 (signature)

 (signature)

Approve

On WUA General Assembly
Protocol № _____ from « _____ » _____ 200 ____.
Chair WUA Council _____
(name) (signature)
« _____ » _____ 200 ____.

Plan of repair-rehabilitation works on structures of on-farm irrigation systems in 200 ____.

District _____ WUA _____

Name of structure	Location	Types of repair and rehabilitation works	Quantity	Work loads	Service costs, thousand Uzbek sums	Dates of execution (day, month)		Executors
						Starting	Closing	
1	2	3	4	5	6	7	8	9

Chair of WUA Board _____
(name, signature)

**Implementation document
of repair-rehabilitation works of structures on on-farm irrigation systems in 200__ .**

District _____ WUA _____

Name of structures	Location	Types of repair-rehabilitation works	Quantity	By plan			Executors	Actual execution works				
				Load	Execution dates (day, month)			January		...	December	
					Cost	Start		End	Load		in % to plan	Load
1	2	3	4	5	6	7	8	9	10	...	31	32

Approve

Decree of WUA Council
 Protocol № ____ from « ____ » _____ 200__.

Chair of WUA Council
 _____ « ____ » _____ 200__.

(name) (signature)

« ____ » _____ 200__ г

ACT

of inspection of technical conditions on structures of on-farm irrigation network of WUA _____

(name)

Commission that is appointed by Council WUA (protocol № ____ from « ____ » _____ 200__) with participation of:

Chair _____
 (name, position)

and members of commission _____
 (name, position)

has conducted inspection of structures of irrigation systems that are needed to be repaired and rehabilitated and concluded:

1. Operate the following structures of irrigation systems and repair-rehabilitation works:

Name	Types of repair-rehabilitation works	Work load			Costs, thousand Uzbek sums		Note
		Quantity	Planned	Actual	Planned	Actual	
1	2	3	4	5	6	7	8

Total costs of repair-rehabilitation work _____ (objects)
 thousand Uzbek sums.

2. Technical conditions of objects on irrigation systems assure irrigation of area _____ ha.

3. The following repair-rehabilitation works haven't been finished due to poor quality performance on following structures of irrigation on-farm systems:

Name	Types of repair-rehabilitation works	Work loads			Costs, thousand Uzbek sums		Note
		Quantity	Planned	Actual	1	2	
1	2	3	4	5	1	2	3

4. The total costs of unfinished repair-rehabilitation work _____ thousand Uzbek sums.

Scheduled date for repair-rehabilitation work is « _____ » _____ 200 ____.

5. Unfinished repair-rehabilitation work of structures on on-farm irrigation systems hasn't delivered water for irrigation of area of _____ ha.

Chair of Commission

(signature)

Members of Commission

(signature)

(signature)

(signature)