

## **Developing the Extension Services in Uzbekistan**

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In Uzbekistan, the extension services are developing in the frame of Basin Irrigation System Administrations (BISA). A department for supporting WUAs and consulting services for farmers in the field of effective use of water and land resources is established at the BISAs (Fig. 4.25). This department is the central office with district affiliates under WMOs. Different specialists such as irrigation engineer, agronomist, lawyer, entomologist and others are working at the central office and are responsible for the following activities:

- training district specialists by advanced methods to enhance the efficiency of irrigation water use and land productivity;
- assessment and analyzing the existing “bottlenecks” in private farms, water requirements of cultivated crops depending on soil conditions, and the extent of water availability of irrigation canals and WUAs;
- drafting the thematic booklets for farmers and the manuals for district specialists;
- data input into the database and knowledge base;

Two specialists (irrigation engineer and agronomist) are working in each district affiliate. At the district level, consulting activity is conducted based on demonstration sites of the BISA and existing WUAs in which specialists of WUAs form the consulting group. Irrigation engineer and agronomist organize the following activities over the whole district:

- monitoring the indicators of land and water productivity at demonstration sites (so-called “demonstration polygons”) and in private farms neighboring with demonstration sites;
- consulting services to farmers regarding preparation of land for sowing, scheduling irrigations, selection of optimal irrigation pattern, implementing agricultural methods according to the process map of crop growing;
- studying the bottlenecks and shortcomings in agricultural practice and water use;
- dissemination of thematic booklets in national language prior to execution of each farming operation namely before tillage, sowing, arranging irrigation sites (system of water applications), irrigations, fertilizer application etc.
- transferring data collected at demonstration plots and in private farms to the central office for their analyzing and data entry into the information database of the consulting service; and
- methodological assistance to specialists of WUAs in their consulting work with farmers.

WUA's specialists implement the works in private farms within the area serviced by a WUA like activity of district office's specialists at the district level:

- monitoring the indicators of land and water productivity in private farms located within the area serviced by a WUA;
- rendering the consulting services to farmers regarding preparation of land for sowing, scheduling irrigations, selection of optimal furrow irrigation system, implementing agricultural operations according to the process map of crop growing;
- studying the bottlenecks and shortcomings in agricultural practice and water use; and
- dissemination of thematic booklets in national language prior to execution of each farming operation namely before tillage, sowing, arranging irrigation sites (system of water applications), irrigations, fertilizer application etc.

Establishing the advisory schools under WUAs is one of effective methods of the extension service activity. Organizing the training seminars for farmers' groups covering issues of efficient agricultural practice and irrigation water use might be one of directions of their activity. Consulting services to farmers including a key role of advisory schools should be included into WUAs' charter. In cooperation with and under participating of WUA's administration, two specialists can manage all activity of the advisory school including preparation of the seminars' program, invitation of lecturers for specific seminar topics, conducting of the training seminars, preparing the thematic booklets, and assessing current problems in farms related to technical and institutional aspects.

**Basic provisions and principles of extension service's activity:** During the first phase of reforming the agricultural and water sector, extension services should take into consideration interests of all land users, including farmers, and cover the following aspects related to improving water and land productivity:

- Information and legal supporting the farmers and enhancing their knowledge;
- Planning the agricultural practice to provide a maximum profit per a unit area;
- Selection of the most profitable crops for this region and specific time periods;
- Recommendations to reduce production costs;
- Advising the farmers in respect to achieving potential productivity (based on the field passports);
- Assistance in marketing, input supply and output processing;

Activity of extension services should be aimed at satisfying the present and future needs of farmers. An extension service has to study the specific conditions of private farms and provide appropriate recommendations based on new advanced technologies, selecting all the best and demonstrating their adaptability for specified conditions. An extension service communicates with the research institutions and makes orders for investigations in which farmers hold an interest in.

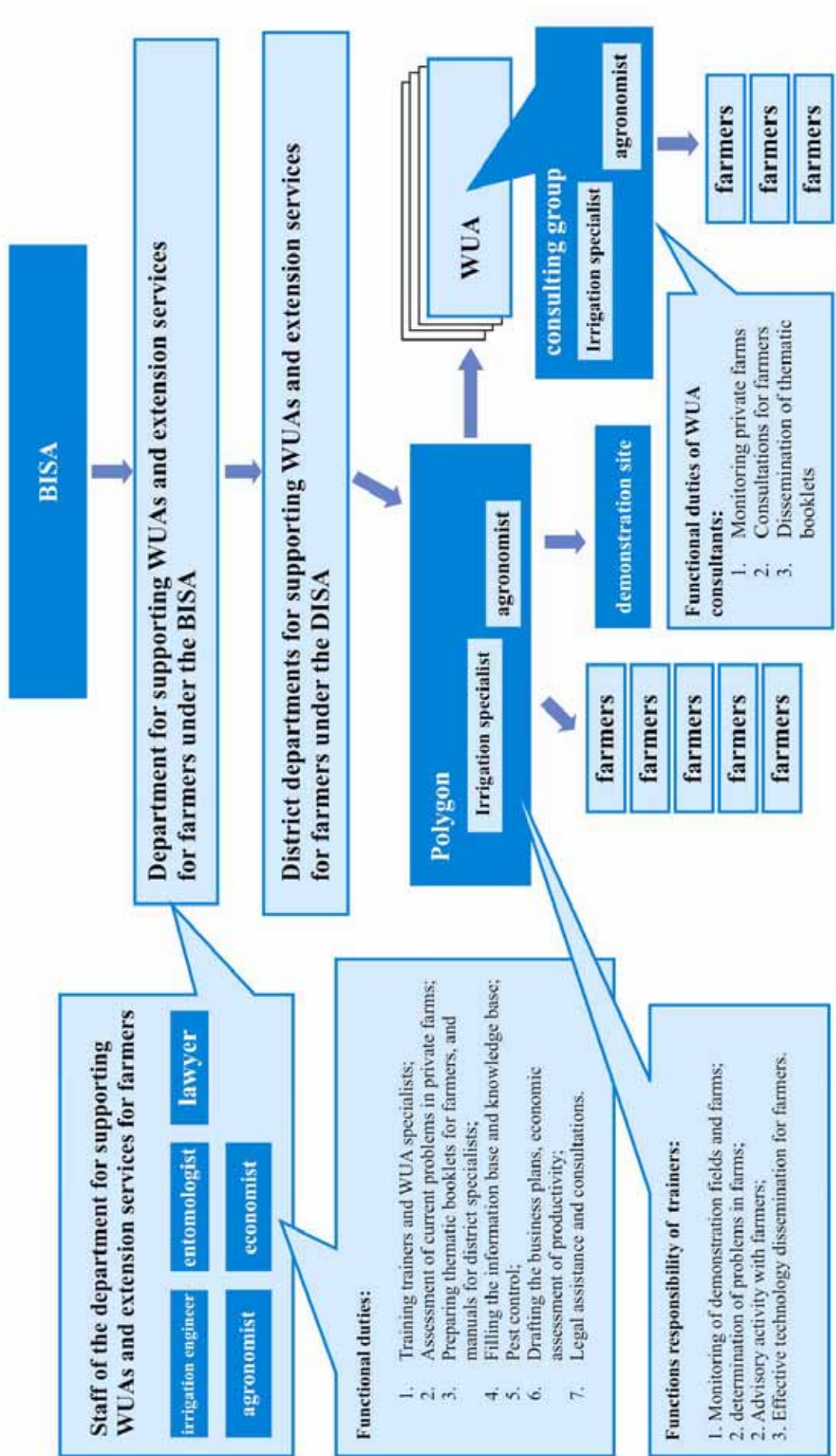


Figure 4.25 Institutional Framework of Extension Services in Uzbeksiatn

**Basic principles guiding activity of an extension service:** Under providing the professional consultations, an extension service is guided by the following principles:

- Consulting activity is aimed at satisfying the present and future needs of farmers-water users;
- An extension service itself has to initiate establishing of contacts with each farmer by the direct or indirect way;
- Comprehensive studying of conditions in private farms and providing appropriate recommendations;
- An extension service shouldn't be satisfied by transferring the recommendations as the need arises. It has to search new technologies, select the best of them and demonstrate their adaptability for specified conditions;
- An extension service communicates with the research institutions and makes orders for investigations in which farmers hold an interest in;
- Experienced farmers have to be involved in activity of extension services.
- To provide a farmer with necessary manuals, recommendations and information without dictating own solutions;
- Focusing on carefully selected top-priority objectives with purpose to save the limited resources;
- Searching an alternative crop pattern for the command area of irrigation canal that will not result in increasing its carrying capacity;
- Planning water use based on the principle of equitable sharing of water among water consumers; and
- Be guided by water saving principles at different levels of the irrigation system;

**Liaisons of an extension service:** An extension service has to encourage liaison with:

- sectoral consulting services under the Ministry of Agriculture and Water Resources at the national, provincial and district level, having the right of free access to necessary information and receiving the assistance in solving relevant issues;
- scientific-research institutions for acquiring new technologies and designs and ordering the research-and-development activities;
- the marketing service to facilitate sale of agricultural output within the country and abroad; and
- legal institutions;

***General: An extension service, as the consulting organization, should also***

*carry out the following works:*

- studying, adoption and introduction of the best centuries-old methods of agricultural practice;
- search and introduction of the best scientific achievements in irrigation and farming techniques;
- detailed studying the conditions in private farms;
- advising farmers how to improve irrigation water and land productivity;
- consultations regarding farming techniques;
- consultations related to choosing crops and crop patterns taking into account the carrying capacity of the main canal and the uniformity of water distribution among water consumers;
- providing information on international and domestic markets and access to them for farmers; and
- consultations regarding water saving and rational use of irrigation water.

**Basic tasks of an extension service:** the following activities should be undertaken for information support of the farmers and rise in their awareness of the existing methods for increasing crop productivity using proper irrigation rates and irrigation methods for different crops on their plots:

**Key actions of an extension service:** Gathering background information on private farms is conducted in each district with assistance of local consultants. As far as possible, private farms are grouped according to their principal activity typical for this district and location.

*Dissemination of project experience and thematic booklets among farmers, and conducting the training seminars on the following topics:*

- Irrigation scheduling in line with the crop water requirement zoning;
- Methods of flow measurement and water-metering devices;
- Irrigation techniques and field irrigation systems in private farms;
- Crop diseases and pest control;
- Zoned stock seeds; and
- Extension services and their activity.

*Gathering background information:*

- Data on private farms: principal activity, gross area and irrigated area, crop pattern, length of irrigation and drainage networks, soil type, groundwater table depth, and soil salinization;
- Data on irrigation water supply to farms for the last three years, if available; when such information is absent then gathering data on the number of water applications and their dates (irrigation duration in hours);
- Data on belonging an area under consideration to any crop water requirement zone;
- Data on fertilizer applications (application rates, terms etc.);
- Data on crop diseases and pests (terms of their appearance);
- Information on all farming operations;
- Data on major crop yields over the last three years; and
- Data on production costs over the last three years;

***Analysis and assessment of:***

- Efficiency of irrigation water use under irrigating crops;
- Farming practice including pest and crop diseases control;
- Soil fertility and soil status as a whole; and
- Economy of agricultural activity.

***Methodological recommendations and their application regarding:***

- Establishing the measuring system and record keeping of irrigation water at the border of private farms;
- Methods of irrigation water use;
- Improving the efficiency and productivity of land and water;
- Types and rates of fertilizer application;
- Pest control;
- Optimal scheduling farming operations; and
- Rising of crop yield.

Assessment of water availability and sustainability of irrigation water supply at different levels of the irrigation system and within WUAs should be made. Demonstration sites for developing and testing methodological approaches to solving formerly revealed problems in private farms are established.