PROSPECTS AND OPPORTUNITIES OF NON-GOVERNMENTAL ORGANIZATIONS IN UKRAINIAN IRRIGATED AGRICULTURE

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ABSTRACT

The article deals with the problem of modernization of irrigation management at the level of intra-economic network, as one of major factors of renovation of effective management of irrigated cropping in Ukraine. The main cause of low efficiency of irrigated agriculture in Ukraine is the producers’ exclusion from the participation in irrigation water sharing and formation of pricing policy for water management services. At the same time, world experience shows that bureaucratic services, financed from the centre, lose their ability to effectively carry out irrigation service in a large number of small agricultural producers. This leads to the rapid infrastructure collapse, reduction of the irrigated area, improper sharing and losses of irrigation water, increasing soil flooding and salinization.

Modernization of irrigating systems management should begin with the creation of non-governmental organizations of water users. Management transfer process is rather lingering and requires legislatively supported political will and consolidation of the efforts of all stakeholders. In the initial phase, which should last no more than 2 years, it is necessary to transfer management of networks to newly-formed water users associations (WUA) or other NGOs. It is necessary to actively carry out stepwise, small-scale repairs and restoration works at the same time. All this is, mainly, at the expenses of international financial donors.

It is necessary for Ukraine to establish private ownerships and irrigated systems management at the level of intra-economic network. They will reduce the financial burden on budgets and attract investment by international donors.

Keywords: management transfer, rehabilitation, irrigation modernization, Water Users Association, Water Services Provider, consolidation, Ukraine.

1. INTRODUCTION

Along with the global challenges to irrigated agriculture, which were discussed in the First World Forum, in Ukraine there are problems caused by internal political reforms and economic crisis. These are: ill-conceived sharing of large irrigation areas into land parcels of average size of 12-13 ha; permanently increasing non-transparent cost of water management services and electricity, which makes the production of grains and oilseeds unprofitable; mostly depreciated, and sometimes completely dismantled irrigation infrastructure; archaic system of water management in general and irrigation in particular; lack of funds to improve the threatening situation for the industry. The only possibility to respond to these challenges is to start the reform of management and ownership relations on irrigation networks at the local level, based on international experience.
2. METHODS

The total irrigated farm land in Ukraine in 1994 was 2.6 million hectares (Mha), which came down to 2.2 Mha in 2014. The organizations of farmers, which in 1994 made 1971 collective farms and 1261 of state enterprises, kept only 1348.5 x 10^3 ha and 1203.0 x 10^3 ha land. At the beginning of 2014, there were 2336 newly registered agricultural enterprises, and only 163 of them were state-run. And also, 2542 farms, which, together with auxiliary facilities (21.9 x 10^3 ha), use 2165.4 x 10^3 ha of irrigated lands, including: ploughland 2105.9 x 10^3 ha (97.3%), perennial plants 48.9 x 10^3 ha (2.3%) and pastures 7.4 x 10^3 ha (0.3%). Since 2004 irrigated lands has remained almost unchanged and is very insignificant: 218.1 x 10^3 ha. At the beginning of 2014 the average size of "irrigated" farm was about 86 ha. It is important to say, that agricultural enterprises are not using a very significant part of the irrigated lands, given to them for the intended purpose. Every year 1.2 Mha of meliorated lands stay non-irrigated. Producers grow crops, which are less dependent on irrigation.

Private enterprises reach higher yielding capacity, than farming ones. This confirms the fact, that farmers, because of their low solvency, are not able to hold to project and, moreover, to advanced technologies of cultivation and irrigation.

The conviction is: in current economical condition in Ukraine it is possible to improve the situation only by uniting the efforts of all the stakeholders. This refers to the creation of cooperative associations (eg., Water Users Associations (WUAs) (ESCWA 2003; Comprehensive Assessment of Water Management in Agriculture 2007; Garces-Restrepo et ol. 2007; Vermillion & Sagardoy 1999). Formation of these organizational and legal structures can become the basis for the resumption and modernization of irrigated agriculture. For a very long time, there’s been necessity for partial irrigation management transfer /IMT/ from public sector to the local level (producers associations). This is due, primarily, to the lack of a common and consolidated responsibility for renovation and development of irrigated agriculture. Thus, WSPs, held by the state budget, employing low-paid employees and getting the lowest possible funding for O&M’s actions, don’t have necessary incentives and sufficient responsibility to ensure proper functioning of irrigation networks (Figure 1). In their turn, the producers either use irrigated lands improperly or do not want to pay high non-transparent tariffs for water supply.

![Figure 1. Financing of main Hydroeconomic funds renewal in Ukraine, million USD](image-url)
An important factor in reforming irrigated agriculture in Ukraine is its high engineering and technical saturation. More than 80% of irrigated areas employ sprinkler system, and almost 15% use micro irrigation, which requires compliance with institutional requirements when using field irrigation infrastructure as joint resource.

Under elaboration of new strategies for the development of irrigated agriculture, Ukrainian experts must consider one of the main management principles, which provide direct dependence of entity’s profitable activity on achievement of agreed standards of operation, which will stimulate the desire to use effective domestic responsibility methods. That is why it is very important for the organizations, which will manage the local units of irrigation systems, to hold the responsibility to water users. At the same time, this responsibility should ensure the ability of these organizations or their associations to coordinate the strategy and tactics of irrigation management with goals and tasks of main producers’ regulatory authority - Ministry of Agrarian Policy of Ukraine.

To achieve a common, consolidated responsibility of all stakeholders in Ukraine, it is necessary to observe the proposals of international irrigation practices, following the availability of basic institutional rules:

(a) Government regulation (legislative support, monitoring, legal liability);
(b) Intra-sector hierarchical control (regulatory framework, human resource policies, incentives and sanctions);
(c) Competitive environment in the supply of water management and other services;
(d) Regulated interdependency between the major participants of irrigated agriculture management process (tariff policy, obligatory and full services payment);
(e) The right to own or manage local resources (especially land and water).

It is also necessary to estimate the factors, required for the establishment of water users associations (WUA), which, in turn, is a prerequisite for further development of investment and innovation process of irrigation management transfer. Our studies suggest that the formation of stable unions of Water Users in Ukraine is possible, as required conditions, listed below, are present (Figure 2).

**Irrigation is:**
- The factor of productivity growth and production profitability;
- An important component of securing producers activity and rural region development;
- Possible under existing infrastructure or after urgent routine maintenance;
- Attractive for investment.

**Water users are:**
- Subjects of Land and Water Law;
- Landowners or users under long-term lease;
- Unsatisfied with current Public Service of Irrigation Systems Management;
- Nearly socially equal for communications and joint problem-solving;
- Mentally and potentially ready for cooperation;
- Assured, that:
  - Management quality improvement will increase productivity and profitability of production;
  - Controlling of hydroeconomic services management is necessary.
  - WUA will cut down or fully stop the rising cost of irrigation for them;
  - Benefits of control transfer will be bigger than it’s cost and this would be tangible for everyone.

*Figure 2. Factors, influencing the formation of stable WUA in Ukraine*
However, in Ukraine, it is not enough just to create WUA and hope that they will perform the functions of management and control. Integrated associations, which combine the functions of management and control, usually are agricultural cooperatives of water users. The success of their work depends on compliance with a number of legislative and regulatory requirements (Figure 3).

![Figure 3. Conditions of stable WUA’s functioning in Ukraine.](image)

There are no officially registered WUAs in Ukraine yet, but in southern steppes zone, there are informal WUAs. The activities of these associations were studied as part of WATERMUK, joint Ukrainian-Dutch project “Improvement of water management in Ukraine”, and also by scientists from the Institute of Water Problems and Land Reclamation of Ukrainian Academy of Agrarian Sciences. Experts’ conclusions confirmed the practicability of WUAs establishing, as their activities ensure stable functioning of field irrigation network, reduce operating and maintenance costs, promote the use of energy-saving technologies. However, certain shortages of legal support for the establishment and stable functioning of legal entity of this type made it impossible to fully meet the economic interests of agricultural producers.

Experience shows, that small WUAs often become multifunctional. However, in Ukraine, in large irrigation systems, because of management complicacy, it’ll be appropriate to divide the service sectors to those, specializing only on carrying water management services, while others provide agronomic and, if possible, various maintaining services. So IMT does not mean that farmers will manage water services by themselves. Producers, after receiving the right to manage water resources at a certain level, will be able to hire competent technical staff, or to sign the contract with the supplier of water management services, who has necessary experience.

The practice of managing irrigation systems at the local level shows that the providers of water management services can perform four basic interrelated functions, which include: irrigation infrastructure operation, maintenance, services financing and dispute resolution.

Special term will be the need for water management services, transferred from state structures, to be measurable (use of resources can be tracked, monitored and reported) and understandable for both: providers and water users.
Surely, the main water management service is supply, distribution and accounting of water. In addition, in the definition of service can be included the tasks for electricity accounting (controlled by WUA), resource quality providing, the use of water for household needs, etc.

Under effective strategic planning, in Ukraine, the transfer of irrigation networks management can become an excellent opportunity to upgrade the industry and tasks of water management services, in addition to the transfer of responsibility for their high-quality providing to non-governmental organizations (NGOs).

In world irrigation practice, management transfer may refer to the entire irrigation system along with its individual levels. Also, one system can be controlled by several structures. An example of this irrigation process is jointly managed system, where a government agency manages the main canal and its branches, and farmers' associations manage distribution and field networks. However, under the circumstances in Ukraine, as for distribution network, it is only appropriate to talk about joint coordination of management functions.

In modern irrigated agriculture in Ukraine, the public financed State Water Resources Agency determines and provides main water management services. Thus, the overall economic situation of the Agency depends on consumers' payment for data services only a little, and therefore the level of responsibility for the services quality and Plant production results are low.

In our opinion, it is advisable to switch to a management model, where the organization that provides it locally, will be fully financed by WUA. In this case, the producers will determine the services and pay for them, and this organization will provide these services. Such model may have high potential of managerial responsibility, which will depend on the legal status of the resource consumers' organization and regulated level of responsibility of agricultural producers' representatives to their leaders, which need to be settled legally.

It is also possible to use the model, where consumers will determine, maintain and finance the provision of services by themselves. This model is typical for WUAs, who independently perform the functions of regulation and management, which, in Ukraine, can be a reasonable step in modernizing irrigated agriculture.

Thus, the structure, that will provide the services, can be created directly from representatives of WUAs or subordinate organization. In practice, they are called water service providers (WSP). They usually consist of several experts and technical personnel, who sign the contract for the provision of the above-mentioned main services (Figure 4).

Considering circumstances in Ukraine, it would be appropriate to provide WSPs, by regulatory documents, for realization of additional services, if it does not interfere with their main tasks. In this case, it will be possible to receive additional income from other sources to cover irrigation costs, improve relations with water users and increase the profitability of irrigated agriculture in general.

The main result of management transfer process, at the initial stage, should become obligatory legal registration of newly established WUAs (not yet talking about their joining), as well as organizations of predefined services suppliers. Documents by title and statutory regulations, processed properly, will give reasons and opportunities for approving the organizational structure of new non-governmental organizations, as well as hiring selected, trained and dedicated personnel. Henceforth, WSP, considering the cost of fixed capital and circulating assets acquisition, prior prepared
plan of operation and maintenance of equipment, the cost of organizing and conducting educational process, will form the expense budget and start to create a reserve fund to finance the renovation of irrigation infrastructure.

![Diagram](image.png)

**Figure 4.** The functions of the newly established Water Service Providers (WSP) in Ukraine

As current national practice and international experience show, Water Resources Agency is not very interested in reforming the system of irrigated agriculture. The Agency avoids organizational and functional reconstruction, does not have the appropriate skills and strong incentive for creation of economically active WUAs. In case, if the Agency implements the transfer of control on behalf of the state, the main emphasis will be made on the restoration and modernization of infrastructure, besides, without stimulating the involvement of farmers. This exact conceptual approach was seen recently in Ukraine. The priority of the role of farmers in irrigated agriculture is not taken into account. So there is a high probability that the WUAs, made by force, will not become effective and independent consumers of services and will continue to be controlled by the Agency. Thus, there will be risk of farmers’ disbelief in the irreversibility of management transfer process, and in the future, ownership transfer of reclamation infrastructure.

When transferring the management, only WUAs must determine the necessity and priority of renovation works and funding for these activities. The state Water Resources Agency must only technically facilitate this process (Figure 5), avoiding guiding it into the mainstream of their own departmental interests. The restoration and modernization of infrastructure in Ukraine should become an example of the future transfer to the gradual repair and renovation of field network’s irrigation assets by the agricultural producers, in contrast to the current practice of waiting for financing these measures only at state expense.

With the economic crisis, it is impossible to implement complete rehabilitation of the irrigation infrastructure from the budget before the beginning of irrigation management transfer process. In Ukraine there is a great need to attract investment, both internal and external, under government guarantees and / or pre-defined obligations of producers such as: partial payment with yield, growing socially necessary crops etc.
Ukrainian researchers agree with international experts that rehabilitation of irrigation systems and their repair are pointless without involving the WUAs and mandatory consideration of their economic proposals on the volume and cost of planned activities. Keeping WUAs at a distance can cause farmers’ reluctance to receive water management services. Therefore, an alternative approach, based on joint investment works formula with partial involvement of farmers’ financial possibilities, should be used. Now in Ukraine, an indicator of producers’ own funds in the structure of investments in fixed assets of Agriculture already exceeds 65%. So there is the same possibility in respect of irrigation funds. At the same time, the total cost of the program could be much lower, as water users, considering their difficult economic situation, will approach to the formation of the plan of rehabilitation and modernization of irrigation infrastructure carefully.

![Figure 5. Functions of the State Water Resources Agency of Ukraine after IMT program realization](image)

The intentions of renewal the irrigation systems in Ukraine before the beginning of management transfer process can be impossible because of lack of funds and slow bureaucracy. As a result, it will cause a decrease in activity and interest of local authorities to participate in reformation of irrigated agriculture. Moreover, long-term management transfer will not be successful because of the constant changes in legislation in modern Ukraine.

The actual transfer of state powers to the newly formed units would be valid only after the appropriate legal procedures. This can be Government resolution or joint decision of concerned ministries, or legislative act adopted by Verkhovna Rada of Ukraine. Of course, the preparation and adoption of the new law will take time. But this law will provide a firmer legal basis than resolution. Legislative changes should take into account all the required aspects of creation and further functioning of independent organizations of consumers and providers of water management services.

Starting sector reform, first of all the organizational and economic policies, prevailing in irrigated agriculture must be evaluated for its compliance with the potential possibilities of the state legal base. Also it has to be determined what changes are possible and appropriate on the legislation level to support the forming and fixation of the economic capacity of WUAs and service providers. Thus, legislative and regulatory support of IMT is needed in the following areas of industry modernization: the formal acceptance of management transfer strategy, determining the status of WUAs and WSPs and rights to irrigation infrastructure at various levels, and also, the
change of status, or perhaps only of certain powers of State Water Resources Agency of Ukraine.

An important component of the reform should be the tax exemption of the newly formed structures in the first 2-3 years or setting preferential tax treatment for them. For this purpose it is appropriate to legislatively mark them as non-commercial organizations and/or as those, providing the services in agricultural sector. Proper changes must be made in the law "About State Support of Agriculture in Ukraine", considering operative legal norms on the options of economic stimulation of agricultural producers. It is also necessary, according to the example of best practices, to consider the possibility of releasing WUAs from partial or full payment for irrigation water during first years. This consideration can lead to faster establishment of WUAs.

3. CONCLUSION

It is possible to ensure the increase of the efficiency of irrigated agriculture in Ukraine on the basis of stable, productive management of irrigation systems. All practical, organizational, technical, technological and economic components of the industry must interact simultaneously, with minimum participation of the State. Only mutual, consolidated responsibility of main stakeholders for renovation and modernization of the infrastructure, together with responsibility for the final results of crop irrigation, parity of their economic interests and priority of agricultural producers needs, will enable the creation of strong base for farther development of farming on reclaimed farmlands. As the result of proposed innovative improvements of managing the irrigation systems on local levels by transferring the control to NGOs, the following results are expected: reducing of state expenditure on maintenance and operation; increasing productivity and profitability of irrigated agriculture; growing of financial flows for providing water management services; improving accountability and control, transparency of tariff policy; establishing cooperative enterprises of producers from agribusiness, marketing and others. Moreover, two main goals of the first order will be achieved: beginning of economically prudent resuscitation of aged irrigation infrastructure and consolidation of small irrigated plots (shares) into impressive technological structures.

REFERENCES


