

CONDITIONS AND PROSPECTS OF UTILIZATION OF LAND BELONGING TO RECLAIMED FUND OF LVIV REGION UNDER CONDITIONS OF LAND RELATIONS' REFORMING

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Abstract

In the Western region of Ukraine, melioration is both of economic and social importance. The area of reclaimed lands constitutes 2.2 million ha or 24 % of the total agricultural lands in the region. Thus, melioration is of great importance for social-economic development of agro-industrial complex of the territory. Under conditions of the land reform in Ukraine, reclaimed lands were subjected to sharing and privatization causing a negative impact on efficiency of its utilization and technical conditions of the reclaimed land infrastructure. The aim of the research is to analyze conditions and suggest practical recommendations as to rise of productivity of reclaimed lands, peculiarities of land organization on privatized reclaimed areas, consolidation of shared lands within the boundaries of acting drainage systems. Timeliness of the research is connected with the issues of improvement of agricultural utilization and protection of drained lands of the region. The authors used economic-statistical, monographic and logistic methods in the research. The example of Lviv region was used to analyse conditions and problems of reclaimed lands of western regions of Ukraine under conditions of land relations' transformation. It is mentioned that only 70 % of drained areas feature satisfactory water-air regime of soil for cultivation of agricultural crops. Prospects of an increase of their utilization efficiency are connected with reconstruction of the systems consolidating common technological melioration complexes, support of both-side regulation of soil humidity.

Key words: Reclaimed lands, farm drainage system, water regime of soil, land utilization, consolidation of lands.

Introduction

The area of drained lands in Ukraine constitutes 3,307 thou. ha, including agricultural land – 90.8 %. Agricultural lands include arable land taking 55.0 % (1818.3 thou. ha), hay making area taking 17.2 % (567.1 thou. ha), pastures – 16.7 % (517.4 thou. ha). The largest area of reclaimed lands in the western regions of Ukraine, i.e. 2,200 thou. ha, accounting for 24 % of the total agricultural lands in Lviv region, takes 21.8 thou.km² or 3.6 % of the territory of Ukraine. The area of agricultural lands in the region makes up 1.2 million ha; it is 0.48 ha of agricultural land per one resident that is by 50% less than on average in Ukraine (Kozlovskiy, 2005).

Almost 856 thou. ha (about 86%) of the total area of agricultural lands belong to the reclaimed fund, i.e., over-moistened and water-logged lands. At the end of 80s of the previous century, the area of drained lands in the region amounted to 513.2 thou. ha, or 60 % of reclaimed fund. They included 490.3 thou. ha of agricultural land and 390.1 thou. ha (79 %) were drained by tile drainage (Kozlovskiy, 2005; Vashchyk, 2011).

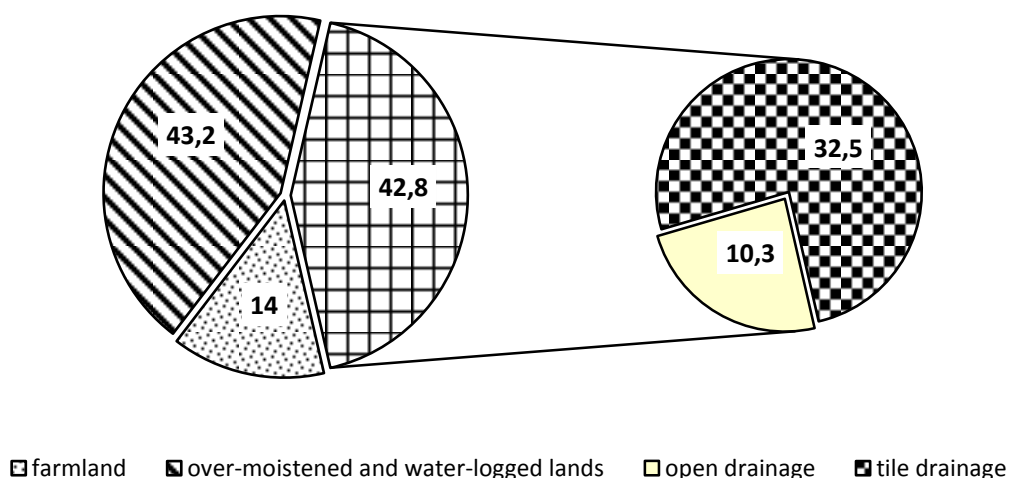


Fig 1. The proportion of land reclamation fund consisting of agricultural land in Lviv region (%)

Recently the area of arable land has decreased to 32.5 % in the structure of reclaimed lands of the region. The area under weeded layland has increased to 31.8 %, all other drained areas (35.7 %) are used as poor productive pastures and hay-making lands. Both-side regulation of water-air regime of soil is carried only in 6.4 % of reclaimed lands. Nowadays, the region calculates almost 12 thou. ha of lands with technically broken systems, which do not secure control of water regime and require complete reconstruction (Vashchuk, 2011).

According to Enactment of the Cabinet of Ministers of Ukraine № 1253, Lviv region has got above 337 thou. ha of farm melioration systems into communal property of village and settlement councils. Their worth is evaluated to be 832.1 mln UAH. Inspection of their conditions shows that reclaimed land was transferred to the balance of territorial communities, in fact formally and farm reclaimed funds have stayed without a manager and adequate maintenance. Melioration systems were not exploited in a proper way: channels are overgrown with weeds, drainage has not been cleaned from mud for 15 years, metal and concrete elements of hydrotechnical constructions are demounted and broken. One observes a considerable fall of efficiency of drained agricultural lands under such conditions.

Nowadays, technical conditions of drainage systems largely do not secure regulation of water-air regime of soil decreasing efficiency of agricultural land utilization. Obsolescence of fixed assets being on the balance of Lviv department of water economy amounts to 56 %. It proves that practically all water economic objects need to be repaired. In fact, regional office of water economy has satisfied 50-60 % of needs from the state budget only in the recent years.

That is why the average yield capacity of agricultural crops on reclaimed land of the region has decreased in the last 15 years, i.e. cereals – by 15-20 %, vegetables – by 10-17 %, technical – by 25-35 %, annual and perennial herbs – by 17-25 %.

It is necessary to support optimal water-air balance for the plants to obtain high yields of agricultural crops on drained fields. Norm of draining is a characteristic of water-air regime of soil, i.e., depth of soil waters level (SWL) optimal for a certain crop in different phases of its vegetation. According to [4], average values of draining norms are: 0.9 – 1.1 m for cereals, fodder, vegetables, pastures; 0.6 – 0.8 m for hay-making land.

Under conditions of land relations' reforming, problems of efficiency increase of utilization of reclaimed agricultural lands of Ukraine are developed in scientific works of B.I. Kozlovskiy, M.S. Bohira, A.M. Rokochynskiy, L.F. Kozhushko, M.O. Lazarchuk (Kozlovskiy, 2005; Vashchuk, 2011; Bohira, 2008; Lazarchuk, 2006). The scientists described problems of establishment of market of drained lands with consideration of technical conditions of melioration infrastructure, peculiarities of land management on reclaimed areas, increase of efficiency of agricultural melioration. At the same time there are still unsolved problems of technical exploitation of farm systems, financing of their maintenance and reconstruction. Consolidation of shared lands within the acting melioration systems is a topical issue.

Methodology of the research and materials

Rational utilization of land of the reclaimed fund of Lviv region – regions – is a planned problem, the solution of which is possible to be done under conditions of complex consideration of legal, organizational and ecologically economic issues.

The tasks of the research are to analyze current conditions of drained land utilization under conditions of reformation of an agro-industrial complex, to find out problematic issues and develop scientifically grounded ways of their solution.

The authors used materials of the State Agency of Land Resources of Ukraine, the regional department of water resources, statistical data of the State Office of Statistics of Ukraine, normative-legal acts in the research.

Economic-statistical, analytical, monographic and statistical methods were applied in the research.

Discussion and results

Water-economic and melioration complex of Lviv region covers the area of 513.2 ha of reclaimed lands, including 102 drainage systems: 98 inter-economic being in the state ownership and 4 farm ones being in communal ownership. Total number of landowners and land-users amount to 207,154 units, including:

- state agricultural enterprises - 28 units (8.8 thou. ha);
- non-state agricultural enterprises – 273 units (92.5 thou. ha);

- citizens – 206,811 units (337 thou. ha);
- among them: farming economies – 447 units (18.9 thou. ha),
- others – 42 units (74.9 thou. ha).

Technical characteristics of drainage systems in terms of districts of Lviv region are presented in Table 1.

Table 1.

Technical characteristics of drainage systems in terms of districts of Lviv region
(as of 2014, according to the data of Regional Department of Water Resources)

Districts	Area of melioration, thou. ha	Tile drainage, thou. ha	Systems with both-side regulation, thou. ha	Length of channels, km	Presence of hydrotechnical constructions, units	Protective dams, km	Pump stations
Busk	39.1	26.7	6.9	1,579.3	869	18.2	0
Horodok	27.9	23.4	1.5	805.1	644	55.2	2
Drogobych	30.0	24.6	2.3	716.6	662	123.0	3
Zhydachiv	22.4	21.1	0.2	615	502	29.8	1
Zholkva	50.3	35.4	3.4	2,025.4	1,377	38.9	0
Zolochiv	28.0	22.4	0.3	1,248.6	1,017	0.3	0
Kam'yanka-Buzka	32.7	31.2	2.0	1,409.4	882	0.0	0
Mostyska	21.4	20.4	0.0	501.2	444	12.1	0
Mykolaiv	21.9	13.9	2.0	856.8	669	123.4	2
Peremyshlyany	14.7	13.0	0.0	505.9	402	0.0	0
Pustomyty	32.9	27.1	0.0	1,199.3	647	64.2	0
Radekhiv	23.8	15.1	0.6	1,110.7	808	0.0	0
Sambir	42.1	29.2	4.6	1,310.2	758	169.5	5
Skole	0.3	0.3	0.0	6.2	15	7.6	0
Sokal	52.0	29.7	3.4	1,933.1	1,481	47.0	1
Starosambir	11.7	11.2	0.0	303.7	240	1.2	0
Stryi	25.4	22.0	0.2	706.4	637	49.9	0
Turka	0.1	0.1	0.0	12.7	12	2.4	0
Yavoriv	18.2	15.1	1.3	749.8	566	28.3	0
In Lviv region	494.9	381.9	28.7	18,444.8	13,257	771.0	14

The analysis of Table 1 shows that Lviv regional department of water resources has 18,444.8 km of channels and 4,869 km of hydrotechnical constructions on them, 14 pump stations, 771 km of dams and barrels. The balanced value of fixed melioration assets of the department amounts to 435.1 million UAH.

To utilize melioration systems in Lviv region they established ten offices of drainage systems (ODS): Buske, Drohobyske, Zhydachivske, Zhovkivske, Zolochivske, Kamianka – Buzke, Lvivske, Mostyske, Sambirskе and Sokalske. The largest are among them are: Zhovkivske, maintaining area of 68.5 thou. ha; Sambirskе – 59.9 thou. ha; Kamianka – Buzke – 56.5 thou. ha; Drohobyske – 55.8 thou. ha.

Nowadays, melioration systems are listed in the balance of two subjects of farming: inter-economy part – in the balance of regional department of water resources, farm part – in the balance of local councils. Costs required for exploitation of the farm part are absent, because financing sources required for their exploitation have not been determined. Expenses for maintenance of inter-economy part of the systems are financed from the state budget in the volume necessary for fulfillment of required repair-exploitation works.

To obtain high yields from reclaimed lands, it is necessary to make substantial capital investment for recovery of sustainable work of the farm net. Financing of the works should be made by means of regional budgets and other sources (owners and leasers of drained lands, village and settlement councils). The coordination of fulfillment of repair-exploitation works will be made by the regional department of water resources by means of district ODS.

One should note that the cooperation between local councils and district ODS is getting better. Thus, 1,080.9 thou. UAH were directed by local budgets and agricultural entrepreneurs at fulfillment of repair-exploitation works in 2013. In particular, in Sokal district – 416.1 thou. UAH, Zhovkva – 222.2 thou. UAH, Busk – 123.8 thou. UAH. Agreements were completed and melioration was carried on the area of 18.8 thou. ha.

Reformation of AIC resulted in the break of organization of territory of drained lands. Peculiarities of reclaimed lands are revealed in positioning of open drainage channels on them dividing area into separate land plots. It is necessary to organize the lands in the way that boundaries of crop rotations, fields and working plots neighbor the open channels. It is required to cultivate one or several agricultural crops in each field with almost similar requirements to water-air regime of soil. In the fields, where cultivated crops have different requirements as to water regime, soil humidity should be regulated individually, depending on the needs of crops.

It is necessary to introduce a system of measures directed at improvement of ecology-melioration conditions of drained soils, including:

- withdrawal of degraded and poor productive lands out of agriculture and conservation of them;
- utilization of peat soil in grass rotation applying annual and perennial herbs;
- decrease of intensity of principal soil cultivation;
- renaturing of former drained lands according to early developed projects and required financing (Lviv Main Department of Land Resources 2003).

Nowadays, agricultural producers on reclaimed lands are differentiated and financially weak. According to the article 26 of the Land Code of Ukraine, land plots obtained by citizens due to land privatization which contain operating melioration systems should be used commonly on the basis of agreements. A way out of the situation is to establish societies (unities) of owners of reclaimed lands. The foreign experience of cooperation of small producers envisages establishment of agricultural cooperatives, associations of land-users to carry common construction and exploitation of melioration systems. Such organization of work helps to join costs of landowners for financing of exploitation works and measures of farm systems.

The principal document regulating utilization and protection of lands at the level of village and district councils for the prospect of 15 years include schemes of land organization and technical-economic argumentation and protection of land. On the basis of the approved schemes of land organization, they complete documents of land management, planning and financing, which cover:

- projects of land organization as to establishment and arrangement of the existing land economies;
- projects of reconstruction of the existing drainage systems with consideration of land economies (cooperatives, communities), established on reclaimed lands as well as new melioration construction;
- working projects as to conservation of degraded and poor productive lands, recultivation of deteriorated lands, protection of soil from dumping, underflood and water erosion.

Projects of land organization should be developed on landscape-ecological basis planning measures as to liquidation of drawbacks in land organization, including the ones of reclaimed lands, secure rational utilization and protection of land and water resources.

To solve a problem of improvement of technical conditions, security of sustainable performance of farm melioration systems, it is urgent to develop a regional program of renovation and maintenance of farm melioration net, being in communal ownership of territorial communities of Lviv region.

The priority tasks of the program are the following:

- security of persistent regulation of water-air regime of land with farm melioration systems;
- restarting of operation of melioration systems, being in unsatisfactory conditions, but still possessing resources' potential;
- protection and recovery of soil fertility on melioration systems by means of agro-melioration measures (input of organic and mineral fertilizers, liming);
- consolidation of lands within the boundaries of farm melioration systems, arrangements of land relations at reformed agricultural enterprises and farms;
- improvement of ecological-melioration conditions of lands;
- protection of settlements and agricultural lands from harmful effect of water.

At the first stage of the program fulfillment it is necessary to cut out trees, bushes and water vegetation in melioration channels and clean them from mud. The works will secure operative export of excess water in case of floods to avoid dumping and underflood of reclaimed lands.

The repair of hydrotechnical constructions in channels and close drainage makes conditions for spring field works optimal, regulate water-air regime of soil and moisten agricultural crops in dry periods of vegetation.

Along with the above mentioned works, it is necessary to carry out organizational measures as to consolidation of drained lands. Melioration systems make a joined complex, which is not able to operate if divided into separate parts. Thus, landowners and land-users should cooperate within the boundaries of farm melioration systems.

Conclusions

To improve utilization of land with farm melioration net one should immediately:

- develop and approve the program of renovation and maintenance of farm melioration net being in communal ownership of territorial communities of villages and towns of Lviv region. The department of agro-industrial development of district state administrations, district and inter-district departments of water economy should be attracted to development of the program;
- attract funding of regional and district budgets, village and settlement councils as well as funding of land-users and landowners of reclaimed lands for financing of the regional program;
- carry out inventory procedures of farm melioration systems, determine the degree of obsolescence and resource potential of each system;
- make reconstruction and re-equipment of working systems, supply conditions for both-side regulation of water regime of soils;
- carry out in terms of the program, annual deep hoeing of lands in the area of 60 thou. ha, liming of acid soil in the area of 5.5 thou. ha;
- supply conditions for consolidation of drained lands to achieve more effective utilization of land and water resources within the boundaries of melioration systems.

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