Financial-economic instruments of environmental regulation of the agricultural sector of Ukraine

Finansowo-ekonomiczne instrumenty regulacji sektora rolniczego w gospodarce Ukrainy

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Summary
The article deals with the financial – economic instruments of environmental regulation of the agricultural sector of the economy of Ukraine in the context of rational use and reproduction of natural agriculture’s resources under condition of changing economy. According to the results of the proposed approach the author offers to make some changes in legislative base that determine the distribution policy of the ecology tax.

Keywords: ecological and economic state, ration of arable land, eco-destructive impact, capital investments in environment protection, ecology tax

Streszczenie
Artykuł dotyczy finansowo-ekonomicznych instrumentów regulacji sektora rolniczego w gospodarce Ukrainy, w kontekście racjonalnego wykorzystania i odtwarzania zasobów naturalnych rolnictwa, z uwzględnieniem zmian zachodzących w gospodarce krajowej. Zgodnie z wynikami przeprowadzonego badania, autor sugeruje wprowadzenie pewnych zmian legislacyjnych w sposób naliczania podatku ekologicznego i jego dystrybucji pomiędzy narodowym i lokalnym budżetem.

Słowa kluczowe: stan ekologiczny i ekonomiczny, racja gruntów ornych, eco-destrukcyjny wpływ, inwestycji kapitałowych w ochronie środowiska, ekologia podatkowego
In a rapidly changing economy with the increase of destructive ecological processes at the agricultural sector to ensure its sustainable development is a necessary condition to ensure food security. Thus, the relevance and feasibility of research of economic – financial instruments of environmental regulation of agriculture Ukraine due to importance harmonized functioning of its components: economic, social, environmental and special status of agricultural sector at national economic complex of the country.

The problem of determining the economic – financial instruments of environmental regulation at agricultural sector of the national economy under the conditions of rational usage and reproduction of natural resources has an important role at agricultural economics.

Problems the cooperation between economy and ecology, the formation of scientific principles of sustainable development of the agricultural branch are reflected in the researches of prominent scientists and economists, such as: V. Vernadsky, B. Danylyshyn, M. Dolishny, S. Dorohuntsova, G. Ivanitska, L. Melnik, E. Mishenin, V. Palamarchuk, S. Podolynsky, V. Tregobchuk, G. Cherevko et al.

The questions concerning funding of conservation, rational usage and reproduction of natural resources in agriculture explored by O. Balatskiy, V. Borisova, O. Veklych, S. Illyashenko, O. Kashenko, A. Chupis, P. Sablyk et al [1-6].

Notwithstanding the existing scientific researches it is important to note that there is a necessity for improvement of forms and methods of funding of agricultural branch of Ukrainian economy in order to ensure rational usage of agricultural resources under conditions of sustainable development.

The aim of the article is to identify areas of the improvement of economic – financial instruments of the environmental regulation of Ukrainian agricultural branch in order to form appropriate funding for measures, which reduce an eco-destructive impact on the agricultural environment at changing economy.

The end of the XX-th century is a period of establishment and development of new relationship between humanity and environment. At the end of the 1960s on the initiative of the famous Italian scientist and manager A. Peccei the group of European and American scientists and entrepreneurs joined the informal organization “Club of Rome” to examine the status and prospects of development model “economy-humality-environment”. According to their calculations humanity moves toward catastrophic prediction, making the worst possible scenario realistic and big environment problems should be expected in the middle of the XXI century [2].

The signs of future disasters are reduction of the available resources of soil and water, reduction of food production per capita, environmental pollution, emergence of new viral and bacterial diseases, degradation of individual and collective behavior. Some of these indicators, such as: rate of agricultural production in Ukraine and Dnipropetrovsk region per capita during 1990-2012 years shown in
In Ukraine during this period production of sunflower significantly increased by 3.8 times, whereas the other products had insignificant growth of production volumes, such as: the production of vegetables increased by 1.7 times, potato – by 1.6 times, eggs – by 1.3 times, but some of the categories decreased, especially significant drop we can see in livestock category: milk and meat production which decreased almost by 2 times. From the analysis of data it is obvious that along with an increase there is a reduction of some others agricultural products.

A significant increase of sunflower production can be explained by the relative profitability of this culture, as well as the existence of a stable domestic and international demand. If we compare data from Dnipropetrovsk region with the average data for Ukraine during 1990-2012 years, we can see that Dnipropetrovsk region had higher level of per capita output only by sunflower (391.4%), potatoes (218.0%), vegetables (173.5%) and fruits (116%), and worse in other products, especially milk (31.8%) and sugar beet (14.4%). Partially the level of specialization area can explain this. But in the context of sustainable development this dramatic increase of sunflower production will aggravate eco-destructive effects of agricultural activity, such as: denial of crop rotation and fallow land, narrowing specialization of agricultural production, providing the benefits for growing the business cultures and displacement fodder crops, expanding the usage of agrochemicals; increasing concentration of land, enlargement of farms, strengthening of regionalization and formation of environmentally harmful agricultural landscapes, where its essential natural elements are eliminated.

Regarding food consumption in Ukraine and Dnipropetrovsk region the statistical analysis of the data shows us that current situation can be described as threatening for public, because the actual consumption of important kinds of food per
capita in both the state and the region are below the level, which was recommended by Nutrition Institute of the Ukrainian Ministry of Health (Table 1).

**Table 1.** Dynamics of food consumption per capita in Ukraine and Dnipropetrovsk region during 1990-2012 years, kg *

<table>
<thead>
<tr>
<th>Name of the product</th>
<th>Rational norm</th>
<th>1990</th>
<th>2010</th>
<th>2012</th>
<th>1990, at % compare to norms</th>
<th>2010, at % compare to norms</th>
<th>2012, at % compare to 1990 norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat and by-products</td>
<td>80</td>
<td>68</td>
<td>52</td>
<td>51,0</td>
<td>75,0</td>
<td>63,8</td>
<td>56,5</td>
</tr>
<tr>
<td>Milk and dairy products</td>
<td>380</td>
<td>373</td>
<td>214</td>
<td>205,0</td>
<td>55,0</td>
<td>53,9</td>
<td>366,2</td>
</tr>
<tr>
<td>Eggs, pieces.</td>
<td>290</td>
<td>272</td>
<td>260</td>
<td>310,0</td>
<td>114,0</td>
<td>106,9</td>
<td>257</td>
</tr>
<tr>
<td>Fish and fish products</td>
<td>20</td>
<td>175</td>
<td>17,5</td>
<td>13,4</td>
<td>7,7</td>
<td>67,0</td>
<td>17,2</td>
</tr>
<tr>
<td>Sugar</td>
<td>38</td>
<td>50</td>
<td>41</td>
<td>39,0</td>
<td>78,0</td>
<td>102,6</td>
<td>47,3</td>
</tr>
<tr>
<td>All types of oil</td>
<td>13</td>
<td>11,6</td>
<td>15</td>
<td>13,7</td>
<td>118,1</td>
<td>105,4</td>
<td>11,5</td>
</tr>
<tr>
<td>Potato</td>
<td>124</td>
<td>131</td>
<td>132</td>
<td>139,0</td>
<td>106,1</td>
<td>112,1</td>
<td>91,3</td>
</tr>
<tr>
<td>Vegetables and melons</td>
<td>161</td>
<td>102</td>
<td>129</td>
<td>163,0</td>
<td>159,8</td>
<td>101,2</td>
<td>110,3</td>
</tr>
<tr>
<td>Fruits and berries</td>
<td>90</td>
<td>47</td>
<td>44</td>
<td>53,0</td>
<td>112,8</td>
<td>58,9</td>
<td>44,9</td>
</tr>
<tr>
<td>Bread and bakery products</td>
<td>101</td>
<td>141</td>
<td>115</td>
<td>110,0</td>
<td>78,0</td>
<td>108,9</td>
<td>157,9</td>
</tr>
</tbody>
</table>

* Sources: [9, p. 392; 10, p. 417].

According to Figure 1 we can make conclusion about development and trends of agriculture production and Table 1 provides information about the nutrition habits of average Ukrainian citizen. The diet of the average Ukrainian citizen in 2012 primarily consists of grains products, potatoes, vegetables, sugar, eggs and oil. These products are consumed according to the recommended amount or even exceed it. Instead, the vital meat, milk, fish and berries Ukrainian consume less than recommended – 36.6%, 46.1%, 33.0% and 41.1% respectively. We can conclude that consumer basket of most Dnipropetrovsk region citizen is smaller, because it includes only grain products, vegetables, oil and eggs, since only these four types of product were consumed in the recommended amounts. Thus, both in Ukraine and in Dnipropetrovsk region for four food groups, the “bread and bakery products”, “vegetables”, “oil”, “eggs” actual consumption exceeded rational norm.

Such excess is evidence of unbalanced nutrition of population, which is trying to satisfy their own needs through the economically affordable plant source fo-
ods. Compare to 1990 the situation with rational consumption of these foods has deteriorated. No wonder that with such poor nutritional Ukraine's population is declining. In 1990 it amounted to 51.94 million, and in 2012 – 45.6 million (reduced by 12.2%) [10, p.20].

Thus, we can say that Ukraine is already feeling the negative effects of unbalanced system “economy-human-environment”.

One the one hand it is a result of eco-destructive factors that occur in agricultural production and on the other – there is a significant reduction of financial resources, like capital investments, which can be used for funding the conservation of environmental conservation activity. These are two major factors that threaten further development of agriculture with resource depletion and ecological disaster (Table 2).

**Table 2.** Dynamics of the volume and structure of capital investments in the conservation and rational usage of natural resources by the type of environmental activities in Ukraine and Dnipropetrovsk region *

<table>
<thead>
<tr>
<th>Index</th>
<th>Ukraine</th>
<th>Changes in 2011</th>
<th>Dnipropetrovsk region</th>
<th>Changes in 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital investments, total, mln. UAH.</td>
<td>520,6</td>
<td>2761,5</td>
<td>5930,4</td>
<td>170,3</td>
</tr>
<tr>
<td>including, at %</td>
<td>2010</td>
<td>2012</td>
<td>3689,5</td>
<td>950,9</td>
</tr>
<tr>
<td>- the protection of ambient air and climate</td>
<td>17</td>
<td>41,3</td>
<td>49,3</td>
<td>13,5</td>
</tr>
<tr>
<td>- return water purification</td>
<td>52,3</td>
<td>26,5</td>
<td>-41,1</td>
<td>31,3</td>
</tr>
<tr>
<td>- waste management</td>
<td>2,8</td>
<td>17,2</td>
<td>18,4</td>
<td>0,1</td>
</tr>
<tr>
<td>- protection and rehabilitation of soil, groundwater and surface water</td>
<td>26,6</td>
<td>11,6</td>
<td>-16,7</td>
<td>3,3</td>
</tr>
<tr>
<td>- reduction of noise and vibration impact</td>
<td>…</td>
<td>0,4</td>
<td>0,6</td>
<td>0,1</td>
</tr>
<tr>
<td>- conservation of biodiversity and habitat</td>
<td>0,5</td>
<td>0,7</td>
<td>-0,3</td>
<td>0,5</td>
</tr>
<tr>
<td>- radiation safety</td>
<td>…</td>
<td>0,1</td>
<td>19,8</td>
<td>19,7</td>
</tr>
<tr>
<td>- scientific research of nature conservation</td>
<td>…</td>
<td>0,3</td>
<td>0,2</td>
<td>0,1</td>
</tr>
<tr>
<td>- other areas of environmental activity</td>
<td>0,8</td>
<td>1,9</td>
<td>0,4</td>
<td>51,8</td>
</tr>
</tbody>
</table>

*Sources: [9, p. 508, 509; 10, p. 524].

In Ukraine during the studied period it was spent 6 451 mln. UAH, for the Environmental Protection in 2012, which is 3 689.5 mln. UAH or 133.6% more
than in 2010. Whereas in the Dnipropetrovsk region with an increase in funding in absolute values by 558.9 mln. UAH, the rate of growth is 58.8%, which reflects lower growth of financial resources in comparison to the state growth rate due to the lack of sufficient additional funding of the environmental activities in the area.

In 2012 investments in the protection of ambient air and climate occupy the biggest share, which is 39.3%, in the structure of investments in conservation and rational usage of natural resources in Ukraine, meanwhile in the Dnipropetrovsk region, there was an increase of the cost for waste management (58.3%) and the protection and rehabilitation of soil, groundwater and surface water (20.7%), this can be explained by the presence of powerful mining companies in the region. It should be noted that in the Dnipropetrovsk region these two direction have constant control and attention, as evidence we can see the increase of their share in total capital expenditures for environmental activities (by 25.8 and 7.4 percentage points).

We analyzed structure of capital investment in Dnipropetrovsk region and found out that local economic agents spend major part of theirs funds to cover the damages and losses, which they made to the environment. Meanwhile the funds for conservation and scientific researches are formed from the remaining part of their investments. Since the volume of their funding decreased almost to zero, which lead to a slow and weak recovery of farming and soil conservation measures, which could be used for improvement agricultural lands and environmental sustainability.

In our opinion, under conditions of sustainable development it is necessary to encourage agricultural producers: to pay more attention and spend more funds for the economically usage of resources; to rationalize structure of lands, which they utilize for agricultural production, maintain efficient ratio of arable land, meadows, pastures, perennial plants, maintenance of soil fertility, etc. Suggested activities can be implemented with funds which were mobilized through financial instruments of environmental finance.

In Ukraine widely implemented economic – financial instruments of environmental regulation, the main instruments among them are: environmental charges / payments for the usage of natural resources and environmental pollution, fines for violations and claims for damages caused by violation of environmental laws and exemptions in the system pollution charges. However, the agricultural sector only slightly covered by this mechanism especially it is concerned environmental charges that include:

- payments for the right of natural resources usage (land, mineral, special timber and water utilization);
- environmental tax (before adoption of the Tax Code of Ukraine was called fee for environmental pollution);
- payments for inefficient usage of natural resources and deterioration of their quality [7].
After introduction of the Tax Code of Ukraine for fixed agricultural taxpayers (FAT), the only kind of environmental charges remains environmental tax (fee for polluting the environment) [10]. The main disadvantage of the current legislation is that the taxpayers pay it regardless of the outcome of their economic activity; hence it does not encourage businesses to invest in the technological trajectory of sustainable development, ecological chain.

During 2003-2012 years total environmental fees paid by agricultural enterprises of Dnipropetrovsk region had been increased [9, s.492]. In 2012 compared to 2003, it grew by 1,632.0 mln. UAH or by 4.7 times, the highest growth was observed in the sizes of environmental tax proceeds (by 205.3 mln. UAH, or by 123 times) and land tax proceeds (by 1174.1 mln. UAH, or by 4.6 times), while the fixed agricultural tax proceeds for that period decreased by 0.6 mln. UAH or by 7.2% [9, p. 511].

The structure of paid environmental charge took place significant changes: before the global financial crisis of 2008, the largest share was occupied by land fee (71.6% in 2007), but since 2008 the largest share within the environmental charges is held by environmental tax (56.1% in 2012).

Increasing of environmental tax in the composition and structure of environmental fees proceeds confirms that fact of increasing of environmental pollution by agricultural enterprises, that the current system of environmental taxation of agricultural enterprises does not encourage them to rational usage of natural resources.

In order to increase financial support of local measures in agro-ecological direction, namely, the protection and rational usage of land, water and mineral resources, conservation of natural reserve fund, instead of proposed in 2013 distribution proportions of environmental tax: to the state budget enroll 53% of tax proceeds and to the local budget – 47%, including in rural, town and city budgets – 33.5%, the regional budget – 13.5%, we suggest to use following scheme: do not transfer environmental tax to the state budget and therefore make changes the Budget Code of Ukraine with regard to admission environmental tax, namely the village, town and city budgets enroll 70% of environmental tax revenues and 30% – to the regional budget.

We believe this order of environmental tax distribution would increase the financial resources of local budgets and give necessary funds for capital investments in the protection and rational usage of natural agricultural resources.

In addition, in a rapidly changing economy we must distinguish environmental taxes and economic sanctions for environmental damage. Last used in cases of violation of environmental standards. They should include full compensation for environmental damage and be an instrument of economic penalties for improper usage of natural resources.

As a conclusion, the economic-financial instruments, which can make agricultural production environment friendly, reduce eco-destructive impact on agri-
cultural environment and stimulate rational usage of natural resources, should be formed taking into account the imperative of sustainable development through: improving of tax policy that needs to be ecologically oriented, reforming tax laws, namely, the administration of environmental charges and their distribution between the corresponding level.

References


