INVESTIGATION OF SOCIAL DETERMINANT OF SUSTAINABLE AGRARIAN DEVELOPMENT

1. Introduction

Today, the issue of sustainable development in general and the agrarian sector in particular, is thorny in Ukraine. Among the main determinants of sustainable development, the social one is important, together with the economic and ecological ones it forms the system of sustainable development. Thus, the Strategy for the Development of the Agrarian Sector for the period up to 2020 [1] states that the principles of development of the agrarian sector in the field of organization of agricultural production are the balance of its development by economic, social and environmental criteria. At the same time, the aim of the Strategy is to create organizational and economic conditions for the effective development of the agrarian sector by ensuring the unity of the economic, social and environmental interests of the society in order to ensure the stable provision of high quality, safe and affordable domestic agricultural products and agricultural raw materials to the industry. One of the strategic goals of the development of the agrarian sector identified in the Strategy is to promote the development of rural settlements and the formation of a middle class in rural areas by ensuring employment of the rural population and raising incomes [1]. This proves the importance of the social component of the agrarian sector of the economy of Ukraine. At the same time, the first principle of development of agrarian sector in the field of organization of agricultural production is the balanced development of its economic, social and environmental criteria, which confirms the focus on sustainable development.

In order to improve and effectively increase the level of social determinants of sustainable agrarian development in Ukraine, we consider it expedient to carry out a more detailed analysis.

2. The object of research and its technological audit

The object of the investigation is a set of indicators that reflect the social component of the development of the agrarian sector of the national economy on the basis of sustainability.
Social determinants of sustainable development of the agrarian sector of Ukraine have insufficient social security. This can be determined by the analysis of a number of indicators. In particular, the level of employment in the agrarian sector is quite low, wages in agriculture are much lower than the average in Ukraine. The costs of social measures have the lowest weight in the cost structure of agricultural enterprises. Every year the number of rural population is rapidly decreasing, the situation with the birth rate in the countryside is similar. Today there are many villages in which there is no young generation, and only the population of retirement age is left. Also, the level of development of social infrastructure in the village leaves much to be desired.

3. The aim and objectives of research

The research aim is to study and analyze the main indicators of social determinants of sustainable agrarian development in Ukraine.

To achieve this aim, it is necessary to complete the following tasks:

1. To conduct a comprehensive analysis of social determinants of sustainable agrarian development.
2. To determine the methodology for investigation the social determinants of sustainable development of the agrarian sector, taking into account the integrated approach.
3. To identify the weaknesses and problems of the existing level of development of social determinants.
4. To make recommendations on elimination of identified shortcomings and to improve the balance of determinants of sustainable agrarian development.
5. Outline of the social determinants of sustainable agricultural development through the prism of organic agriculture.

4. Research of existing solutions of the problem

According to Ukrainian scientists, the world community is increasingly guided by the concept of multifunctional agriculture, which provides socially significant benefits, including the provision of opportunities and facilities for rural populations and the restoration of the peasantry [2].

According to some authors [3], the social component is aimed at preserving social stability and cultural diversity on a global scale.

However, in order to achieve sustainable agrarian development, in particular, in its social component, in the world scientific periodicals it is noted that a number of problems need to be resolved, the main ones include:
- insufficient level of education of people who manage agricultural holdings [4];
- low social activity of the rural population and high unemployment [4];
- the need to create an environment that optimizes the use of resources and promotes fair distribution of resources in the community [5].

Among the ways of solving the above problems in ensuring the social sustainability of the agrarian sector, some scientists see the application of state regulation in this area [6, 7]. Other scientists propose to introduce corporate social responsibility, according to which each enterprise carries economic, ecological and social responsibility to society, making a positive contribution to society [8, 9].

Another popularity among the scientific community is the provision of sustainability in the agrarian sector – the introduction of alternative methods of agriculture, the first of which is organic [10, 11]. Thus, the results of the analysis of scientific studies show a significant improvement of works devoted to the social determinant of sustainable agrarian development, but there is a need for a deeper analysis of its main indicators.

5. Methods of research

The methodological basis of the article is the fundamental provisions of the theory of sustainable development; as the basic methodology integrated and systematic approaches are taken that take into account all aspects of the social determinant of the sustainable development of the agricultural sector in the interconnection and interaction with other constituents.

The article uses such general scientific methods as:
- abstract-logical (for determining of the research structure), analysis and synthesis (in the analysis of key indicators);
- dialectical (for the study of patterns of development and correlation of views, as well as phenomena and processes);
- scientific abstraction (for focusing on the most significant aspects of the social development of the agrarian sector);
- theoretical generalization (substantiation of directions of improvement of social determinants of sustainable agrarian development). Comparative and economic-statistical – in the process of analysis of trends in the development of elements of the social component of the agrarian sector and estimation of the level of social welfare of agricultural development in Ukraine.

6. Research results

One of the activities of social determinants is the employment of the population. The largest part of the population is engaged in trade (21.35 % in 2015). Before 2011, the industry was only in second place, but since 2011, the number of people employed in agriculture has exceeded the corresponding indicator in industry, so agriculture has come second. In 2015, the percentage of population employed in agriculture amounted to 17.46 %, that is, the agrarian sector of the economy has a significant part of employment in Ukraine, which determines the sector’s impact on the sustainable development of the country in general.

The number of people employed in Ukraine in 2015 amounted to 16443.2 thousand people, followed by a decline trend since 2011.

We’ll determine the specific weight of the population employed in agriculture in Ukraine in the total number of employed people and present this indicator in Fig. 1.

The largest part of Ukrainian population employed in agriculture was recorded in 2013. During the study period, the level of the index varied from 16.78 % to 17.55 %. Despite this, the part of employed people in agriculture remains rather high, which positively affects the social determinant of sustainable development in rural areas, but negatively characterizes labor productivity and agricultural productivity.
As noted, one of the strategic goals of the development of the agrarian sector, identified in the Strategy for the Development of the Agrarian Sector of the Economy until 2020 [1], is to increase the incomes of employed population in the agricultural sector of Ukraine. One of the targets of the Strategy’s implementation is the growth of the average monthly salary of agricultural workers to the average by sectors of the economy. So, let’s look at the dynamics of wages of agricultural workers and in general in Ukraine (Table 1).

After analyzing Table 1, we see a positive tendency to increase the wages of agricultural workers and reduce the gap between wages in agriculture and the average in Ukraine (for all sectors of the national economy). Thus, from 2011 to 2015 wages in agriculture in nominal terms were 1.83 times higher, while the average wage in Ukraine as a whole increased by only 1.5 times. If in 2011 the average wage in agriculture was 1.5 times lower than the corresponding index on average, then in 2015 it was only 1.2 times. However, despite the growth of the average wage in agriculture, its value in 2015 remains below the average wage in Ukraine as a whole by 21.12 % (Fig. 2). We think that, it still stimulates the departure of labor from rural areas, promotes the depopulation of villages and the outflow of skilled personnel from the agrarian sector, primarily small and medium-sized enterprises, and farms.

On the other hand, the low employment in agricultural holdings is due not to the level of payment, but mostly to the mechanization and automation of agrarian production processes. So, the increase in the level of wages in rural areas remains a target.

So, speaking of the triune stable (balanced, harmonized) agrarian development, we remember the interconnection between social and economic determinants. In accordance with it, the growth of wages should be confirmed by an increase in the faster rates of labor productivity in the sector. Thus, one of the indicators characterizing the conditions for obtaining a high salary, which also fulfills the social function of the agrarian sector of the Ukrainian economy, is the productivity of labor in agrarian enterprises (Fig. 3).

Fig. 3 shows that before 1999 the indicator has a declining dynamics. It can be noted that the index of labor productivity in agrarian enterprises of the country begins to increase gradually with the beginning of reforms (2000), and in 2004 the index exceeds the level of 1990 by 25.8 %. One of the explanations for this, we think, is the formation and development of new organizational and legal forms and conditions of management, the beginning of the use of the latest technologies and gains of science and technology, the growth of wages as a motivation to increase labor productivity and the positive effects of reforming of the agrarian sector of Ukrainian economy in general. The highest level was recorded in 2014, where labor productivity was 4.5 times higher than the corresponding indicator in 1990. This is a positive trend, which creates benefits both for workers and owners of agricultural enterprises, and for the domestic agricultural sector in general, taking into account its importance and prospectivity. However, the absolute values of labor productivity in the domestic agrarian sector are losing to other sectors of the Ukrainian economy, as well as to foreign agrarian enterprises.

Not only the amount of wages, but also deductions for social measures are important for social maintenance of the population. We’ll investigate the level of labor costs, social deductions, as well as other elements of the structure of the costs of agricultural enterprises in Ukraine (Table 2).

### Table 1

<table>
<thead>
<tr>
<th>Indicator</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural workers</td>
<td>1800</td>
<td>2023</td>
<td>2340</td>
<td>2556</td>
<td>3309</td>
</tr>
<tr>
<td>In general in Ukraine</td>
<td>2633</td>
<td>3026</td>
<td>3265</td>
<td>3480</td>
<td>4195</td>
</tr>
</tbody>
</table>

**Note:** built according to the data of the State Statistics Service of Ukraine [12, 13].
The largest specific weight (within 68–74 %) is occupied by material costs, which are included in the net cost of produce. And the part of labor costs decreases during the period under study from 9.10 % to 5.40 %, which potentially worsens the social component of sustainable development. In the structure of costs of agricultural enterprises, deductions for social activities account for a small part, but the positive side is that their percentage has increased, but, unfortunately, until 2012 only. Beginning with 2013 (2.8 %) their volume fell annually and in 2015 it was 1.9 %. Since these expenditures are aimed at improving the financing of social benefits, their volume needs to be increased, as this will improve the level of social protection of peasants in general. Of course, such an increase should not be to the detriment of agrarian enterprises.

Describing the social component of sustainable development of the agrarian sector, it is also necessary to study the situation of rural settlements of Ukraine, since the vast majority of those employed in agrarian enterprises live in rural settlements. To characterize their position, it is necessary to consider the main social parameters, such as demographic situation, living conditions, social infrastructure, housing conditions, employment, etc. [14].

Due to unfavorable living conditions in rural areas migration of rural population to rayon and oblast centers is observed. This leads to the fact that some rural settlements remain without inhabitants. So, if in 2005 these settlements were 215, then as at January 1, 2016 their number has increased to 390. Also as at January 1, 2016 there were 3283 settlements, in which there were no children 0–5 years old. Of them, the largest number is in Poltava, Sumy, Kharkiv and Chernihiv regions (more than 300), and the least one in Zakarpats’ky and Chernivtsi regions (1 settlement each one). There were no children aged 6–17 in 2136 settlements, in 1202 settlements there were no young people aged 18–34 (in the regional context, the tendency is similar to the indicator of the absence of children under the age of 5). 4097 settlements had no children born during 2011–2015 (Fig. 4).
Fig. 4 shows that the number of settlements where they were no born children declined significantly in 1996, compared with 1991, but henceforth this number is increasing again every year. There is also an increasing trend in the absence of children under the age of 5. It is said about the worsening of the demographic situation in rural settlements. According to the statistical data, in Ukraine in 2015 the number of rural settlements has decreased (28,388 in 2015, compared with 28397 in 2014). The number of the villages in Kirovograd (–2), Mykolaiv (–4), Pultava (–1), Rivne (–1), Ternopil (–1) oblasts has decreased.

Considering the employment of the rural population, we can note that of the 3,592,000 employed less than half work at the place of registration, that is, in the village. In particular, agriculture employs 35.3 % of employees, the largest indicator of all types of economic activity (Fig. 5). To compare, in Odesa region, the number of employed in agriculture is the largest, and in Ivano-Frankivsk – the smallest one.

Thus, 54.9 % of the rural population (1970.3 thousand people) work outside the place of residence registration. This percentage is high, indicating a lack of jobs in rural areas and low income of the rural population forced to look for better working conditions. Of them, 1321.6 thousand people (36.8 %) work in urban and urban villages, and 205.2 thousand people (5.7 %) live abroad. Also, 2926.8 thousand people of the rural population aged 16–59 do not work or study. That is, the number of employed people is only 22 % higher than the number of unemployed ones (with the number of employed 230.9 thousand working pensioners).

There are 9232 rural settlements in which there are no subjects of economic activity (i.e., enterprises and organizations). For comparison, the number of settlements with economic actors is 15978, which is 73 % more than the number of localities without such actors. The lack of enterprises and organizations does not contribute to the development of rural infrastructure, reduces money turnover, causes unemployment, etc. To a certain extent, this is a consequence of the low entrepreneurial activity of rural residents.

An important point that characterizes the social determinant are the housing conditions of the rural population, we can note that in 2015, the number of residential buildings almost did not change compared with 2005, but the number of houses used seasonally increased by 32.1 %, and the number of inhabited houses – by 69.1 %. The part of unoccupied houses is increasing every year, which indicates a significant migration of the rural population.

The improvement of housing conditions in rural areas is positive (Fig. 6). Thus, the number of apartments with central heating, sewerage and natural gas has more than doubled, almost 2 times – with water supply. The part of apartments in rural areas, which have certain types of improvement, has also increased. However, the percentage of apartments with improvement remains low.

Central heating in 2015 is in 40.1 % of apartments (16.4 % in 2001), water supply was in 27.4 % (14.8 % in 2001), sewage system was in 23.3 % (10.3 % in 2001), natural gas was in 55.2 % (25.5 % in 2001) of apartments. However, the percentage of apartments with furnishing remains low. There are 755 settlements, the apartments in which haven’t any kinds of furnishing. This is 23 % more than in 2005. The least of these settlements are in the Kyiv region (1 settlement).
The number of settlements that did not have street lighting grew by 8.7 % in comparison with 2001, and in 2015, compared to 2005, the number of such settlements decreased by 32.1 % (12457 settlements in 2015). Urban areas that had no paved streets and street lighting declined by 1.3 % in 2005 (as compared to 2001) and by 23.1 % in 2015 (compared with 2005) having decreased to 3780 settlements. But this decrease is largely due to the additional lighting of the streets, as in 2015, the number of settlements which do not have surfaced road has decreased by only 8.4 % compared to 2005. In 2013, there were 6661 of them (with a population of 21665 thousand people). 7383 settlements (where 901 thousand people live) do not have public transport stops, which is 0.4 % less than in 2005.

Let’s consider the social infrastructure of rural settlements. As at January 1, 2015, there were 17813 settlements, which do not have pre-school educational institutions, but have children under the age of 6. This is 8 % less than in 2005. However, the proportion of such settlements remains high and in 2015 it is 66 % of the total number of settlements. Schools are absent in 15008 settlements with children aged 7–17 years old, which is 55.6 % of the total number of settlements and 7.5 % more than in 2005. Also, 11439 settlements do not have clubs and centers of culture (42.3 % of the total number), 13272 of them have no libraries (49.1 % of the total), 26161 have no cinemas (96.8 % of the total number of settlements). It is important that 7306 settlements (833.2 thousand inhabitants) did not have treatment facilities and mobile services. It is 27 % of the total number of settlements and 6.1 % of the population in them.

It is indicative that 8119 settlements do not have shopping centers (30.1 % of the total number), which is 14 % more than the corresponding activities in 2005. This is a solid foundation for business development in the countryside. 16857 settlements do not have liaison offices (62.4 % of the total number of settlements), 22493 canteens, cafes (83.3 % of the total), 21375 sports facilities (79.1 % of the total number), etc.

In the regional context, Volyn, Zakarpattia, Ivano-Frankivsk and Chernivtsi oblasts show the best activities of social security, while the worst are shown by Zhytomyr, Poltava, Sumy, Kharkiv and Chernivtsi oblasts.

There are 755 settlements, where the flats have no kind of improvements. It is 23 % more than in 2005.

One of the important indicators that characterize the social determinant is also the social infrastructure of rural settlements.

It should be noted that the organic agriculture is also the implementation of the concept of sustainable development in the agricultural sector, it creates the prerequisites for the relatively even development of all three interconnected systems, namely: economic, environmental and social ones.

Domestic scientists believe that the development of the production of organic products will provide certain social advantages [16–18]. Among the main arguments expressed by scientists regarding the importance of organic products for humanity, and the main motives for its consumption, it’s the high quality of such products, which is confirmed by various scientific studies (Table 3).

Table 3
Comparison of the quality of products of organic and conventional (traditional) agriculture

<table>
<thead>
<tr>
<th>Quality aspects</th>
<th>Trend*</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamins</td>
<td>↑</td>
<td>The content of vitamin C in fruits, vegetables, and milk: higher by 5–90 %</td>
</tr>
<tr>
<td>Secondary metabolites</td>
<td>↑</td>
<td>Polyphenol content in fruits, vegetables, wine: higher by 10–50 %</td>
</tr>
<tr>
<td>Sensory quality</td>
<td>↑</td>
<td>Less water content can have a positive effect on satisfying the consumption of organic fruits or vegetables</td>
</tr>
</tbody>
</table>

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<tr>
<th>Compounds with desired properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrites</td>
</tr>
<tr>
<td>Residues of pesticides</td>
</tr>
<tr>
<td>Pathogenic microorganisms</td>
</tr>
</tbody>
</table>

Notes: * built by the author on the basis of data [20]; ↑ – the conclusions are substantiated by the results of seven studies on special literature; ↓ – organic products have a slight advantage over conventional ones.

It should be noted that in a situation where a full-fledged labor market is still not formed in the village, which is a result of unconsidered destruction of collective property, and as a result, there is a reduction in demand for labor and the migration of rural residents in search of work [22], it is advisable to look for new ways to overcome unemployment. Research of the scientists suggests that the development of organic production will provide the opportunity to create additional employment in rural areas [23] because there are 20–30 % more of manual labor and time which are used, which can largely solve the problem of employment of rural population [24], which we agree with.

Consequently, according to the guidelines of the social component of sustainable development, organic production has two main objectives: first, the provision of market in foodstuffs that is beneficial to consumers, and secondly, improving the conditions of production and living in rural areas [25], because the process of growing of organic produce is more labor intensive, and therefore it can provide additional employment for the relatively surplus rural population of the country [26].
7. SWOT analysis of research results

Strengths. Comprehensive approach to the analysis of the social determinants of agrarian development, which gives an understanding of the interconnections and interdependence of the components of sustainable agrarian development, defines a method for indicating the problematic aspects of social determinants.

Weaknesses. The complexity of the calculation and the complexity of providing an economic assessment of social factors.

Opportunities. The possibility of applying a methodology for studying the social determinants of agrarian development, as well as other determinants, and for other spheres of management. Permanent diagnostics of social determinants of agrarian development by the methodology used will enable to respond effectively and solve urgent problems of sustainable development. The introduction of recommendations based on the study will contribute to the sustainable development of the agrarian sector and the development of rural areas.

Threats. The uncertainty of the agrarian sector and the low level of social security of the subjects leads to urbanization and migration, which can threaten the economic development of both the economy as a whole and the agrarian sector, in particular.

8. Conclusions

1. So, with regard to the social determinants of sustainable development of the agrarian sector, it can be noted that both Ukraine in general and all regions have an inadequate level of social security.

2. The methodical approach to investigation of social determinants of sustainable development, which takes into account all aspects of the functioning of the determinants in the relationship and interaction with the economic and environmental determinants, is determined.

3. Problems of the social determinants inherent the present state are revealed. In particular, low wages in the agrarian sector compared to the average in Ukraine, low employment rates in the village as a whole and in agriculture. The costs of social measures have the lowest weight in the cost structure of agricultural enterprises. Every year the number of rural population is rapidly decreasing, the situation with the birth rate in the countryside is similar. Today there are many villages in which there is no young generation, and only the population of retirement age is left. Also, the level of development of social infrastructure and living conditions in the village leave much to be desired.

4. Existing parameters need to be further developed and improved. It is necessary to improve the social climate in agrarian enterprises, in the sector as a whole. It is also necessary to improve the existing one and to develop a new social infrastructure, improvement of professional skills, pay levels and social guarantees of employees. This will enable to reduce social tensions, to stimulate the improvement of the quality of goods and services, and will motivate the further increase of productivity level. The mentioned combination will positively affect not only social but also other determinants of sustainable development of the agrarian sector of Ukrainian economy.

5. It should be noted that the organic agriculture is also the implementation of the concept of sustainable development in the agricultural sector, it creates the prerequisites for the relatively even development of all three interconnected systems, namely: economic, environmental and social ones. We believe that the development of the production of organic products will provide certain social advantages. Among the main arguments expressed by scientists regarding the importance of organic products for humanity, and the main motives for its consumption, it’s the high quality of such products, which is confirmed by various scientific studies.

At the same time, we note a significant imbalance in the development of individual determinants of sustainability: economic, environmental, and social ones.

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Available online at: http://tehnol-monitoring.org/wax/2226-3790-0895-0.pdf


**ІСЛЕДОВАНИЕ СОЦИАЛЬНОЙ ДЕТЕРМИНАНТЫ УСТОЙЧИВОГО АГРАРНОГО РАЗВИТИЯ**

Опубликованы и рассмотрены социальные детерминанты устойчивого аграрного развития. Выделен ряд показателей, которые наиболее точно характеризуют социальную детерминанту устойчивого развития аграрного сектора. Проанализированы статистические данные по определенным показателям. Рассмотрено изменение показателей социальной детерминанты по областям Украины. Результаты исследования показали, что социальная детерминанта устойчивого развития аграрного сектора, как в Украине в целом, так и в каждой области, имеет недостаточный уровень.

**Ключевые слова:** устойчивое развитие, социальные детерминанты, устойчивое аграрное развитие, социальные приоритеты развития, зароботная плата.

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