LABOR SEPARATION TRENDS IN GROWING ENVIRONMENTAL DEMANDS

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Abstract. The EU countries, Russia and Ukraine have become participants in the global division of labor in an environment of increasing environmental requirements. In the EU, legislation provides for compliance with the conditions for a harmonious relationship between the number of animals and the size of the land plot. In Ukraine and Russia, every year the number of enterprises is decreasing, and the concentration of animals is concentrated on huge farms, whose activities do not fit into any environmental standards. In terms of the density of the conditional livestock per 1 hectare of agricultural land, in 2017 Ukraine moved to the 183rd place among the countries of the world, and Russia to the 190th place. The countries of the world are divided into those that supply raw materials – cereals and oilseeds and their processing products, and others – engaged in subsequent refinement, re-export or processing, the production of compound feed, livestock products and the export of finished products – meat, dairy products, highly productive animals, etc. In 2019, compared to 1992, grain exports in Ukraine and Russia increased by 39.5 million tons, and 39.8 million tons, respectively. Grain imports in the EU countries increased by 63.5 million tons, or almost 2 times more than exports. The importing countries of grain and oilseed meals increased their livestock, while the exporters reduced or kept them at a relatively low level. As a result of the implementation of the strategy associated with the reduction of the sown areas of labor-intensive crops and the increase in the export of fodder resources, the employment of the rural population compared to 1991 decreased by more than 10 times. In terms of labor costs in animal husbandry per 1 hectare of agricultural land, Ukraine occupied the 187th place in 2017, Russia – 192. Russia and Ukraine are not capable at the present stage of exporting pork of meat high-performance genotypes. It is also worth noting a significant variation in prices for primary producers, a constant rise in food prices, which outstrips the growth rate of the total income of the population. There is no fair distribution of value added among the actors in the food chain.
Materials and methods

A theoretical and methodological basis for the scientific research were the theories, methods, concepts, as well as applied research of domestic and foreign scientists in the field of efficient management of pig industry in the context of greening agricultural. In the process of achieving the goal and solving the designated tasks, the following methods of understanding the labor separation trends in growing environmental demands were applied: synthesis, analysis, comparisons, and also logical, systemic and process approaches.
Table 1. Concentration of pigs on average on one EU farm of different physical size, heads (2016).  

| Country          | Average livestock, head | without agricultural lands | up to 2 | 2-4,9 | 5-9,9 | 10-19,9 | 20-29,9 | 30-49 | 50-99,9 | More than 100 |
|------------------|-------------------------|----------------------------|---------|-------|-------|---------|---------|-------|---------|--------------|
| Belgium          | 1364                    | 1639                       | 1660    | 1628  | 1435  | 1451    | 1310    | 1217  | 1170    | 1613         |
| Czech Republic   | 382                     | 3581                       | 154     | 52    | 208   | 53      | 28      | 52    | 111     | 1083         |
| Denmark          | 3764                    | 7032                       | 4712    | 1865  | 667   | 1121    | 1083    | 1124  | 1562    | 4401         |
| Germany          | 713                     | 2198                       | 396     | 225   | 65    | 128     | 252     | 472   | 825     | 1413         |
| Estonia          | 1866                    | 5731                       | 4       | 158   | 15    | 111     | 1083    | 1464  | 1464    |              |
| Ireland          | 1197                    | 3091                       | 2493    | 2432  | 161   | 677     | 690     | 859   | 2123    |              |
| Spain            | 533                     | 1548                       | 146     | 211   | 277   | 388     | 612     | 631   | 712     | 797          |
| France           | 833                     | 1976                       | 178     | 193   | 175   | 388     | 497     | 834   | 872     | 1044         |
| Italy            | 336                     | 4419                       | 100     | 109   | 150   | 196     | 273     | 240   | 387     | 1706         |
| Latvia           | 31                      | 3846                       | 26      | 3     | 6     | 4       | 13      | 7     | 34      | 274          |
| Lithuania        | 20                      | 4963                       | 48      | 3     | 6     | 4       | 4       | 6     | 186     |              |
| Luxembourg       | 923                     | 0                          | 0       | 0     | 12    | 9       | 51      | 707   | 650     | 1432         |
| Hungary          | 27                      | 19                         | 3       | 6     | 22    | 18      | 19      | 75    | 117     | 1283         |
| Netherlands      | 2767                    | 3893                       | 2390    | 2490  | 2464  | 2638    | 2674    | 2607  | 3070    | 5338         |
| Poland           | 64                      | 2252                       | 8       | 11    | 20    | 47      | 88      | 152   | 286     | 2506         |
| Portugal         | 47                      | 1642                       | 6       | 17    | 22    | 36      | 31      | 24    | 138     | 1028         |
| Slovenia         | 12                      | 0                          | 3       | 4     | 10    | 15      | 23      | 58    | 88      | 1134         |
| Slovakia         | 78                      | 143                        | 7       | 5     | 5     | 18      | 306     | 26    | 200     | 1308         |
| Finland          | 996                     | 3735                       | 3502    | 1893  | 818   | 325     | 475     | 626   | 1201    |              |
| Sweden           | 1083                    | 2685                       | 179     | 277   | 198   | 56      | 252     | 461   | 713     | 1712         |
| United Kingdom   | 457                     | 1700                       | 347     | 279   | 186   | 223     | 245     | 446   | 396     | 934          |
| Average for 28 EU countries | 73 | 295       | 6 | 14 | 38 | 90 | 184 | 319 | 545 | 1365 |

\(^a\) Source: Eurostat (excluding countries with an average number of pigs less than 1000 heads for different physical sizes of farms).
| Indicators                                                                 | EU Countries | Ukraine | Russia |
|---------------------------------------------------------------------------|--------------|---------|--------|
|                                                                          | 1992 2018    | 1992 2018 | 1992 2018 |
| Agricultural land area [million hectares]                                | 123 112     | 42 41   | 222 215 |
| Grain production per 100 hectares of arable land [tons]                   | 247 277     | 107 210 | 79 90   |
| Grain production per 1000 inhabitants [tons]                             | 503 485     | 692 1682 | 700 809 |
| Grain consumption for feed to own production [%]                         | 45 65       | 53 20   | 79 17   |
| Grain import to gross production [%]                                     | 16 41       | 8.1 0.2 | 30.5 0.6 |
| Export of grain to gross production [%]                                  | 36 28       | 3.1 61  | 0.0 50.2 |
| Export by national economy [billion US dollars]                          | 1351 4607   | 3.2 47  | 42.4 443.1 |
| Export by national economy per 1 ha of agricultural land [US dollars]    | 10955 41165 | 76 1146 | 191 2056 |
| Exported by agriculture [billion US dollars]                             | 143.8 416.1 | 0.7 18.5 | 1.0 20.4 |
| Agricultural exports per 1 ha of agricultural land [US dollars]          | 1166 3717   | 17 448  | 4.3 94.6 |
| Share of agricultural exports to the national economy [%]                | 10.6 9.0    | 23.1 39.6 | 2.3 4.8 |
| Export of poultry meat per 100 hectares of agricultural land [kg]        | 1064 3689   | 0.00 801 | 0.1 90.8 |
| Pork export per 100 hectares of agricultural land [kg]                   | 2364 8981   | 27 11   | 0.0 63.9 |
| Export of beef per 100 hectares of agricultural land [kg]                 | 1990 2026   | 327 122 | 0.2 7.4  |
| Export of grain per 100 hectares of agricultural land [tons]             | 49 45       | 2.6 102 | 0.0 25.6 |
| Grain import per 100 hectares of agricultural land [tons]                | 22.0 65.2   | 6.9 0.4 | 14.3 0.3 |
| Import of meat per 100 hectares of agricultural land [tons]              | 4.8 10.5    | 0.0 0.4 | 14.3 3.3 |
| Agricultural imports per 1 ha of agricultural land [US dollars]          | 1291 3542   | 24 105  | 64 128  |
| Agricultural value added per hectare of agricultural land, [US dollars]  | 1367 1808   | - 321   | - 242   |
| GDP per hectare of agricultural land [thousand US dollars]               | 61 135      | 1.9 3.2 | 2.2 7.7  |
| The number of cows per 100 hectares of agricultural land [head]          | 28.4 26.1   | 21.5 6.6 | 12.2 5.3 |
| The number of pigs per 100 hectares of agricultural land [head]          | 130.4 178.6 | 33.7 19.7 | 16.4 19.4 |
| The number of poultry for meat per 100 hectares of agricultural land [head] | 3151 4524 | 897 1639 | 548 1196 |
| The number of laying birds per 100 hectares of agricultural land [head]   | 253 180     | 143 225 | 86 75   |
| The number of cattle per 100 hectares of agricultural land [head]         | 23.5 17.9   | 21.1 5.2 | 9.1 3.7  |
Conclusions.
According to forecasts, Ukraine and Russia will continue to increase the production and export of crop products, that is, raw materials, and continue to reduce the production of livestock products, due to its excess of the normative concentration in several hundred agricultural holdings and the destruction of several thousand enterprises with an environmentally acceptable concentration of animals. With such a structural trend, Ukraine and Russia will lag even faster behind many countries of the world in terms of food exports per hectare of agricultural land. At the same time, in Ukraine, ultra-high and uncontrolled plowing of lands by anyone, forest belts are being destroyed, which, in the absence of development of the livestock industry, will lead to further soil degradation, their erosion and loss of fertility.