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ANALYTICAL ASSESSMENT OF THE FEATURES OF COMPOSING THE THEMATIC MAP ON THE EXAMPLE OF THE MAPPING WORK "AGRICULTURE OF UKRAINE"

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Cartography as a science distinguishes several different concepts that determine the practical scope of application of a cartographic work. One of the main concepts of cartography is language, which characterizes a map as a special text written using conventional signs, while the map conveys real reality, objects and natural environment.

According to our research, the "Agriculture of Ukraine" map was analyzed in the following areas: structural elements of the map; elements of map content; methods of cartographic representation and thematic classification.

The analyzed map has all structural elements: cartographic image, mathematical basis, legend, additional data and auxiliary equipment. During a detailed analysis of such a map element as a cartographic image, all thematic components of the map's content were distributed among the following blocks:

mapping objects; objects by visual perception; nature of distribution of objects; mapping indicators; mapping units. It was also established that the following methods of cartographic representation were used when composing the map, in particular, the method of localized icons, the method of linear icons, the method of areas, and the method of map diagrams. In general, the analytical study of the map "Agriculture of Ukraine" made it possible to fully evaluate this cartographic work from the point of view of the linguistic concept of cartography.

Key words: *map, content, constituent elements of the map, methods of cartographic representation, language concept of the map.*

Relevance of research. Cartography as a science plays an important role in the process of both cognition and reflection of the world around us. The transmission of real reality takes place with the help of various conventional signs and methods of cartographic representation. For a long time, cartography was interpreted as a science that studies the methods of creating maps. However, today the definition of this term is somewhat different, because cartography is the science of research and subsequent reflection of the phenomena of the surrounding world (nature, society, etc.) with the help of cartographic works, based on the mathematical laws of their construction [1, 3, 4].

Cartography as a science corresponds to several different concepts. An important concept is language, which characterizes the map as a special text written using conventional signs [8].

The field of application of cartographic works is quite voluminous and the use of maps in many cases simplifies and speeds up the process of obtaining theoretical and practical information [2, 5, 9]. According to the linguistic concept of cartography as a science, our analytical research was aimed at studying the map from the point of view of linguistics and semiotics.

Analysis of recent research and publications. Cartography as a science has the following sections: general theory of cartography; history of cartography; mathematical cartography, cartographic image methods; compilation and design of maps, etc. [11]. One of the rather important components of cartography, which determines the subject of language concept research, is the methods of cartographic representation. This direction of cartography determines the peculiarities of the selection and construction of conventional signs on maps, the methods of their combined application, and, accordingly, the use of the most optimal methods of cartographic representation in the design of thematic maps [13].

Due to the limited number of graphic symbols available for the construction of a cartographic work, the following graphic variables of the conventional sign are additionally introduced: shape, color, orientation, size, etc. In general, such combinations of different variants of the conventional sign allow a wider use of visual aids to reproduce real reality [12, 13].

The main methods of cartographic representation are the following: the method of linear icons; localized icons; quality background; traffic signs; habitats; isolinium; point method; quantitative background; method of localized diagrams; map diagram; cartograms, etc. [4, 5, 6]. The possibility of practical application of the map in a certain field of science or production depends on the optimality of its layout, including the choice of the method of cartographic representation.

Research materials and methods. Research on the study of features of the composition of a cartographic work was carried out using the example of the "Agriculture of Ukraine" map using an analytical method. To study the versatile characteristics of mapping objects, an empirical-analytical research process, in which the subject of research as a whole (objects of geographical basis and thematic elements, methods of their representation and correctness of

interpretation, etc.) was decomposed into components, each of which was subject to analysis from the point view of certain properties) [9, 10].

Research results and their discussion. The map chosen for the analysis is thematic and has the name "Agricultural Map of Ukraine". It is characterized by the presence of all the main constituent elements: cartographic image, mathematical basis, legend, auxiliary equipment and additional data. The cartographic image shows the structure of the agricultural sector of the economy, its specialization on the territory of our country. According to the thematic direction of the map, the main qualitative and quantitative properties of the subject of research are conveyed in the legend with the help of graphic symbols, in particular, the main branches of plant and animal husbandry, cultivation of technical crops, specialization of processing enterprises and auxiliary links of the agrarian sphere (Fig. 1).

On the map itself, the map projection and scale are not indicated, but there is a map grid. Among the auxiliary equipment there is a legend, a coordinate grid with the indicated numerical values of the longitude of the meridians and the latitude of the parallels. Additional data include graphs of food production by year and pie charts that reflect the structure of agricultural production. They are made on a different scale and more deeply reveal the thematic content (Fig. 1).

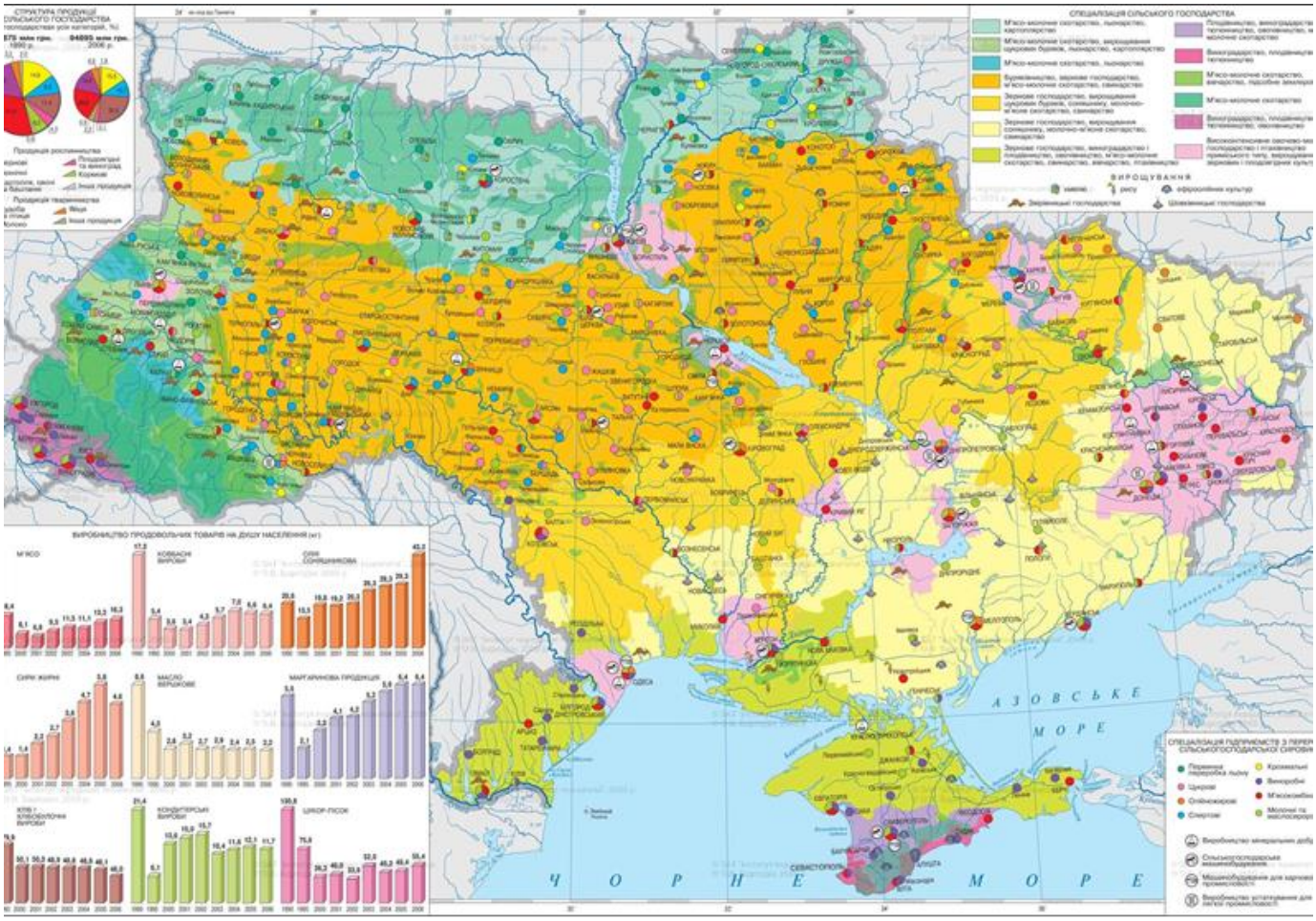

Fig. 1. Map of agriculture of Ukraine [7].

The next stage of our analysis is a detailed consideration of such a map element as a cartographic image that fully conveys the content of the map. The elements of the map's content include the geographical basis and thematic elements. The geographical base is based on the river network, coastline, boundary lines of administrative-territorial units, etc. It is necessary for the binding of thematic elements, therefore it must necessarily be meaningfully connected with them (Table 1, Fig. 1).

According to our research, the thematic map chosen for analysis belongs to the socio-economic group.

Each thematic map has its own mapping objects, which differ in terms of distribution over the territory and visual perception. Also, with this analysis, indicators and mapping units are determined.

The specific objects of the "Agriculture of Ukraine" map, which form the geographical basis, are the river network of Ukraine. The boundaries of the territory with the predominant branches of agriculture can be attributed to the abstract elements of the geographical basis. The chosen geographic basis makes it possible to predict changes in the prevailing specialization in the agricultural sector in the relevant territory of Ukraine.

As for the thematic elements of the content, the specific objects of the mapping of this element are the settlements of the country, the abstract objects are the structure of agricultural products, and the predictable ones are the production of agricultural products (Table 1, Fig. 1).

When analyzing the depicted objects according to visual perception, the following single objects were selected, which belong to the thematic elements of the map and are depicted on the map in the form of visual symbols (schematic representation of the process). This includes agricultural engineering, production of equipment for the light and food industry, production of organic fertilizers.

Among the objects united by generalized concepts into groups, hydrography belongs to the geographical basis of the studied map, and specialization of agricultural raw material processing enterprises belongs to the thematic elements. Regarding the objects of the cartographic image, which cannot actually be seen on the map, but can be predicted with the help of the depicted qualitative and quantitative features of the agriculture of Ukraine, we can include the fertility of the soil as a geographical basis and the yield of the main agricultural crops as a thematic element (Table 1).

1. Structural analysis of map content

№	Map content	Elements of content	
		Geographical basis	**Thematic elements**
Mapping objects			
1	Specific	River network	Settlements of regional and regional importance
	Abstract	Zoning boundaries of the territory of Ukraine by agricultural specialization	The structure of agricultural products
	Anticipated	Dynamics of territorial changes according to belonging to a certain specialization in the agricultural sector	Production of plant and animal products
Objects by visual perception			
2	Single	—	Agricultural engineering, production of equipment for light and food industry, production of organic fertilizers
	United by a generalized concept into groups	Hydrography	Specialization of enterprises in the processing of agricultural raw materials
	Those that cannot be seen directly	Soil fertility	Productivity of the main agricultural crops
The nature of distribution of objects			
3	Point localization	Population centers	Specialization of enterprises in the processing of agricultural raw materials
	On the lines	River network	Limits of zoning according to agricultural specialization
	On the square	Reservoirs, lakes	Agricultural engineering, production of equipment for the light and food

			industry, production of organic fertilizers, cultivation of rice, hops, essential oil crops
Mapping indicators			
4	Quality	Specialization of agriculture of Ukraine	Enterprises processing agricultural products
	Quantitative	Zoning of the territory according to the specialization of the agricultural sector	The structure of the processing industry
Mapping units			
5	Dotted	Population centers	Specialization of enterprises in the processing of agricultural raw materials
	Linear	River network	Limits of zoning according to agricultural specialization
	Spread across the area	Reservoirs, lakes	Agricultural engineering, production of equipment for the light and food industry, production of organic fertilizers, cultivation of rice, hops, essential oil crops

When studying the nature of the distribution of objects, both the geographical basis of the map and its thematic content were analyzed. Localized settlements of district and oblast importance in Ukraine are characterized by point localization, with a territorial reference to the direction of management of operating processing enterprises. With the help of lines, the river network (geographic basis) and the zoning of the territory according to agricultural specialization (thematic elements) are depicted.

The qualitative indicators of the mapping of the studied map include the specialization of agriculture of Ukraine as a geographical basis and agricultural processing enterprises as thematic elements. Quantitative indicators include the zoning of the territory according to the specialization of the agricultural sector (geographic basis) and the structure of the processing industry (thematic element). The quantitative expression of the specified objects is relative, as it does not indicate absolute numerical values, but only makes it possible to roughly determine the quantitative characteristics of the object with the help of visual perception (Table 1).

It is known that the units of mapping on the map are the objects to which the indicators of their displayed qualitative or quantitative properties belong. Therefore, according to our analysis, the units of mapping on the "Agriculture of Ukraine" map are settlements, river networks, reservoirs and lakes, which correspond to their characteristics by location on the map (point, linear, spread over the area). According to the same principle, mapping units were distinguished according to thematic elements (Table 1, Fig. 1).

As mentioned earlier, one of the key stages of map composition is the selection of cartographic image methods, which implement the linguistic concept of cartography as a science. It is the optimal selection of conventional signs, their hierarchical subordination according to the subject that ensures the construction of a map as a figurative and symbolic model of reality.

According to our analysis of the "Agriculture of Ukraine" map, we established the following methods of cartographic representation, which were used during its construction. Also, the main imaging means of each image method were highlighted, considering mapping units (Table 2, Fig. 1).

Thus, four methods of cartographic representation were used during the composition of the map, which is optimal for the construction of the map. Conventional signs are selected according to the characteristics of each type of

image, which has its own specific visual means and signs (Table 2). To reproduce the level of agricultural development on the territory of our country, the following methods were used when creating the map: localized icons, linear icons, the method of areas and map diagrams.

2. Methods of cartographic representation used to compose the "Agriculture of Ukraine" map

Method of cartographic image	The main imaging tool	Mapping units	Characteristics of the mapping object		
			Spread	Characteristic	
				Qualitative	Quantitative
The method of localized icons	Visual conventional sign (schematic representation of the mapping object)	Zones of agricultural specialization	Dispersed (places for growing technical crops, livestock farms, organic fertilizer collection points, etc.)	Directions of agricultural production on the territory of Ukraine	___
Line icon method	Line (out-of-scale conventional sign for depicting the river network); a line that demarcated areas of agricultural specialization	Country	Linear (the entire territory of the country is covered)	River bed; territorial location of the predominant specializations of the agricultural sphere	The width of the river
The method of habitats	Color as an image filler	Country	Solid (territory division by agricultural specialization zones)	Territorial structure of agriculture (branches of crop production, livestock	___

				production)	
The method of card diagrams	Pie chart divided into sectors	Settlement	Solid (linking to settlements throughout the territory of Ukraine)	The structure of agricultural products produced in a certain territory	Production of plant (grain, technical, fruit and berry, vegetable crops) and livestock (meat, milk, eggs) products

Conclusions

1. On the example of the "Agriculture of Ukraine" map, the main elements of the map were studied: cartographic image, mathematical basis, legend, additional data and additional map equipment.

2. Elements of the content of the analyzed map were distributed by geographical basis and thematic elements. Decomposition of content components took place according to the following features: mapping objects, content objects according to visual perception; nature of distribution of objects, mapping indicators, mapping units.

2. An analytical study was carried out regarding the classification of the "Agriculture of Ukraine" map. The content of the selected card belongs to the socio-economic group.

4. An assessment of the map based on the image methods used was carried out. To reproduce the level of agricultural development in the territory of our country, the following methods were used when creating the map: localized icons, linear icons, the method of areas and map diagrams.

5. In general, the analytical study made it possible to fully evaluate the map from the point of view of the linguistic concept of cartography, where the map acts as a linguistic work depicted with the help of certain conventional signs.

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АНАЛІТИЧНА ОЦІНКА ОСОБЛИВОСТЕЙ КОМПОНУВАННЯ ТЕМАТИЧНОЇ КАРТИ НА ПРИКЛАДІ КАРТОГРАФІЧНОГО ТВОРУ “СІЛЬСЬКЕ ГОСПОДАРСТВО УКРАЇНИ”

Картографія як наука виділяє декілька різних концепцій, які і обумовлюють практичну сферу застосування картографічного твору. Однією із основних концепцій картографії є мовна, яка характеризує карту як особливий текст, написаний за допомогою умовних знаків, а карта при цьому передає реальну дійсність, об’єкти та явища природи.

Згідно наших досліджень була проаналізована карта «Сільське господарство України» за такими напрямками: структурні елементи карти; елементи змісту карти; способи картографічного зображення та тематична класифікація.

На проаналізованій карті є всі структурні елементи: картографічне зображення, математична основа, легенда, додаткові дані та допоміжне оснащення. При детальному аналізі такого елементу карти як картографічне зображення всі тематичні складові змісту карти були

розподілені між наступними блоками: об'єкти картографування; об'єкти за зоровим сприйняттям; характер поширення об'єктів; показники картографування; одиниці картографування. Також встановлено, що при компонуванні карти були застосовані наступні способи картографічного зображення, зокрема спосіб локалізованих значків, спосіб лінійних значків, спосіб ареалів, спосіб картодіаграм. Загалом аналітичне дослідження карти «Сільське господарство України» дозволило повністю оцінити цей картографічний твір з точки зору мовної концепції картографії.

Ключові слова: *карта, зміст, складові елементи карти, способи картографічного зображення, мовна концепція карти.*