

BULGARIAN CARTOGRAPHY UNDER THE CONDITIONS OF THE MARKET ECONOMY

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ABSTRACT

In the paper is made short characterization of the contents, the scale, the method of production and the purpose of the different kind of plans and maps. Some questions on the cartographic production are touched and are made recommendations for the further development of this activity in Bulgaria.

1. What give us the cartographic works?

The state badly needs all kinds of information about Land and properties. But this information have to contain the necessary data, to be topical, reliable, easy to use and at acceptable prices.

The creating of that sort of information is very expensive because of this reason it have to ensure economic, social and cultural uses to acquit the great drains.

There are a lot of functions (of state and of private enterprises) which need maps and an information about land. Here are some of them:

- the national security;

- the registration of immovable property and the functioning of the land market;
- protection of the environment;
- the management of properties;
- the education, the science and the archaeology;
- the use of the recreation centres.

2. What is the situation in Bulgaria now?

When there is talk about maps it should have in mind the following:

- **topographic plans and maps of scales from 1:5 000 to 1:200 000.**

For 90% of the territory of Bulgaria there is a largescale map in scale 1:5 000 and for the rest (mountainous regions) - of the scale 1:10 000. The maps are treecoloured and sizes 50/50 *cm*. The bulgarien specialists think that the scale 1:10 000 will be more economical since it will serve for renovation of this map as well as the map of scale 1:25 000 wich is the basic for the smallscale maps.

The smallscale maps (1:25 000, 1:50 000, 1:100 000 and 1:200 000) are made in five colours (black cultural and natural features, brown contours, green vegetation, blue water, red roads) and have basic contour interval 10 *m* or 20 *m*. Those maps are made by photogrammetric mode and are renovated every 8-10 years.

- **cadastre plans of settlements.**

Those plans are made in scale 1:5 000 for bigger towns and on scale 1:1 000 for the smaller ones. Some of the small settlements (vilages) have not such plans and for the rest - those plans have not been renovated for many years due to the lack of funds. The plans are treecolour made at the size of 50/80 *cm* and basic contour intervale 1 *m* (somewhere 0,5 *m*). After the

collectivization of the agricultural land during the period from 1950 to 1960 the needed plans of the nonselement areas dropped.

The final product which is made as a result of the land-reallocation in Bulgaria (the land-allocation project) can serve a purpose to make cadastre plans of agricultural land. Those plans are not made as a result of land surveys but by design and they are digital.

- of all the geography maps and maps of the subjects.

Here can be mentioned National Complex Atlas of Bulgaria; the series of middle scale maps of the subjects; the participation in the production of the World Map in scale 1:2 500 000.

Two departments in Bulgaria make maps: a Department "Kadastre and Geodesy" which manages two cartographic firms ("Cartography" and "Geoplanprojekt") and a Military Department. Those two departments have serious but very old techniques.

In many countries topographic maps are made by state enterprises. The same is the situation in Bulgaria and it is logically to remain the same. This does not mean that consumers will use maps for nothing, i.e. at state expense. Just the contrary, the conditions of the market economy make this obligatory request.

The conception of the marketing about the land and the respective services is not still wide-spread and this clearly after 50 years of strict restrictions of national security. Therefore the Ministry of Defence should define the new national co-ordinates and reference surface which are connected with EUREF89 and WGS84. Along these lines in 1993 are made some steps.

3. Conclusions and recommendations.

3.1. Spatial reference systems.

Bulgaria needs national co-ordinates, reference surface and heigh system which should be public to use from the needy. The maps should be made on this basic.

For military purposes secret systems can be used which do not impude to make smalscale maps to civil use.

The large possibilities of the GPS-receivers are strong arguments to use a new reference surface and new co-ordinates.

3.2. Control networks.

If we will make GPS-network the practice needs only 3-4 category of control points. But it is necessary to make standards for observations and calculations.

3.3. Unique parcel numbers.

Bulgaria needs a suitable numbersystem of all country irrespective the property and the manier of landuse. It should decide the problem about the new numbers.

3.4. Aerial photographs and satellite images.

The satellite images (ER S-1, SPOT, LANDSAT and the Russian photoes) are used in smallscale maps. The aerial photoes are suitable for largescale maps and for the land-information on the basic of single parcels.

3.5. Digital maps.

The digital maps can be used if the users will save time, money and will collect and use data from different sources which are uncary out by tradition. The alternative is the hand-digitalling and scanning of maps.

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