

Evaluation of dams constructed on the rivers of the North Development Region of the Republic of Moldova

Ana Jeleapov 

Institute of Ecology and Geography, Moldova State University, 1 Academiei Street, MD-2028, Republic of Moldova;
anajeleapov@gmail.com

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ABSTRACT: Main aim of the present research is mapping as well as general evaluation of the state of the dams built on the streams and rivers of the North Development region of the Republic of Moldova. Dams' mapping was performed from actual satellite images connected to Google Earth, using geoinformational techniques. In total 2,523 dams were identified and mapped. In comparison in official statistic the number is by 2.2 times higher. Dams' average length is about 134, ranging from 8 to 626 m. From the total number, 86% of dams' are estimated to be generally in satisfactory condition, the other 14% being partially demolished. In case of the dams' upstream part, only for 49% of them reservoirs and ponds are in good condition, those in eutrophic condition and semi-dry accumulations are of 13%, the upstream of other 30% is characterized by dry territory and 8% by wetland. Dams' density is considered very high in case of streams, the average being 0.57 dams/ river km or about 1 dam on every 1.77 km of river, and much lower on medium rivers, being only 0.15 dams/river km or one dam is constructed on almost every 7 km of river. Dams' density in the limits of river basins and districts, calculated as dam per km², is on average 0.25 dams/km². In general, the highest density is established for the southern part of NDR and the lowest – for its eastern part, values for the central part are similar to the average for the whole region, while those from the western part are slightly lower than the medium. Further studies, including those in the field, should be performed in order to improve actual dams' knowledge and finalize the development of the comprehensive database of dams. Also, dams' mapping and evaluation should be extended for the whole country which further would facilitate decision makers to identify and apply measures for river restoration.

KEYWORDS: dams, density, conditions, spatial database, Republic of Moldova

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