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CREATION OF ECOLOGICALLY BALANCED AGRICULTURAL LANDSCAPES IN REGIONS OF ENVIRONMENTAL CONFLICTS
(a case study of the Bryansk Region)

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Agricultural landscapes (AL) are an essential resource towards a food-secure world. If their structure is ecologically balanced, the agro-industrial complex will be able to operate for a long time, even in regions of environmental conflicts (REC). The analysis found that, territories of intensive agricultural production are often placed close to the areas of mining, forestry, and sites of biodiversity conservation. In view of a rapid harmful effect of mining and timber industries on agricultural lands and surrounding territories, research is needed that can generate tools aimed to reducing negative effect on landscapes. This paper is focused on the elaboration of an actual tool directed at achieving environmental sustainability without economic losses in REC. The aim of the research is to propose an algorithm of optimizing the structure of AL in REC and test it on the example of one of the most representative territories in the Non-Black Earth zone, such as the Bryansk Region. The research is based on scientific literary review, geospatial, and statistical data, annual reports on environmental situation, and personal studies carried out previously. Also, statistical analysis was applied. One of the main stages of the proposed algorithm is defining of a balanced ratio of elements with protective properties and elements with destabilizing features in the structure of AL. The ratio is calculated by means of a structural technique. The results have shown that in regions where agricultural activity competes with mining, logging, and environmental protection resolving environmental conflicts can be achieved through increasing of protective areas. Also, disturbed lands have to be converted to reserve sites and remediated. The size of converted areas is calculated, according to their location in typological groups of natural landscapes. The algorithm is universal and can be applied in territories facing the problem of choosing between economic growth and nature conservation.

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