окружающую среду, а также, что сам товар подвергся минимальному вредному воздействию. Экомаркировка «ЭКО» присваивается той продукции, которая прошла 3-хступенчатую экспертизу по специальной процедуре, на определенный срок с обязательной систематической проверкой выполнения поставленных экспертизой условий. Такая система присвоения товарного знака «ЭКО» исключает как покупку, так и подделку этой маркировки [3]. Но он не известен и не является знаком доверия у населения. Возможно из-за его непримечательности и неширокой известности среди населения.

Казахстанский экологический стандарт, принятый в 2007 году, не соответствует международным установленным требованиям органического производства и практически не отличается от общих экологических требований, установленных законодательством для защиты здоровья, жизни и окружающей среды. «Экологически чистые» продукты воспринимаются как «органические», хотя не прошли надлежащего органического контроля и сертификации, которые в стране отсутствуют. Чтобы сейчас экспортировать свою продукцию в страны Евросоюза, необходимо пройти сертификацию с привлечением европейской компании. Стране необходимо сделать все для того, чтобы стать глобальным игроком в области экологически чистого производства.

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UDK 126.441

ECOHYDROLOGICAL REHABILITATION OF RECREATIONAL RESERVOIRS
ARTUROWEK (LODZ)

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Reservoirs in Arturowek represent one of the key recreational areas for Lodz residents. Similarly to a majority of waterbodies in urban areas, they are severely impacted by anthropopressure, which affects their water quality, and as a result limits their functionality. Attempts to improve this condition were made in the past, however they did not result in permanent improvement of the situation. Therefore it was necessary to reduce the inflow of pollution which affected the reservoirs’ recreational function.

An attempt to implement comprehensive rehabilitation-focused solutions in order to improve the quality of the Bzura River and eliminate cyanobacteria which form a bloom in the reservoirs was made under a European Project LIFE +2 ‘Ecohydrology’s rehabilitation of recreational reservoirs Arturowek (Lodz) as a model approach to rehabilitation of urban reservoirs (EH-REK)’ (LIFEOB ENV/PU000517).

An innovative aspect of the proposed solutions under the EH-REK Project is related to the application of technologies which combine the knowledge in the fields of biology, hydrology and engineering. Solutions of this type are referred to as ECOHYDROLOGY.
According to this concept, hydrotechnical infrastructure enables to control hydrological parameters of a river or a reservoir to improve quality of its water and ecological status. In turn, proper shaping of the biological elements allows to modify some of the processes dependent on the watercourse hydrology. Such an approach is not typically applied in urban areas, where traditionally only engineering solutions are used, while their usefulness in controlling natural cycles in cities are often severely limited due to huge anthropopressure on the environment.

The project was subdivided into 5 stages. An analysis of threats and opportunities (stage 1) and developed mathematical models were used to elaborate a concept and designs (stage 2) of this areas’ rehabilitation. The implemented investments (stage 3) were to reduce the inflow of pollution to the rivers and reservoirs in Arturowek, and optimisation of their functioning (stage 4) increased efficiency of water treatment. Delivery of training (stage 5) based on the solutions proposed under the project was the final element of the EH-REK.

Demonstration site Arturowek recreational complex is situated in the northern part of Lodz in Baluty District. Within Lagiewnicki Forest, the largest, i.e. over 1200 ha, forest complex in Europe. which is situated within the City borders, in 1996. Lagiewnicki Forest, a nature reserve with the area of 69.85 ha, was designated from a part of the forest. A complex of natural plant communities in the form of oak-hombeam forest and oak forest are subject of the preservation. It only takes a quarter at an hour to drive from Lagiewnicki Forest to the city center. 'Arturowek' is situated in the Bzura river basin, which begins its course at the base of Lagiewnickie Hills. The Bzura flows in the western direction and its initial section, which is composed of several kilometers, creates a cascade of 17 small reservoirs, and then additional three recreational reservoirs in Arturowek, which hold the space of several hectares. Numerous walking paths and cycling lanes, as well as many other attractions, such as a beach, playgrounds, picnic sates, and an accommodation and catering base are located around the reservoirs.

'Arturowek' and Lagiewnicki Forest are unique places for the city population, where residents can rest and get familiar with the most beautiful nature resources in Lodz. The retention reservoirs, which perform recreational functions, are located in the upper catchment of the Bzura near Arturowek, and represent one of the key values in this region. Inflow of storm water from city impermeable surfaces such as roads, pavements, cycling lanes, carparks, etc to the Bzura contributed to deterioration of the water quality status and formation of cyanobacterial blooms in Arturowek reservoirs every year. In the conditions of intensive use of the bathing site, other factors, such as feeding water birds, angling and an unfavorable structure of the aquatic organism’s communities were also of importance.

Arturowek reservoirs are an important site for recreation, and for less wealthy residents of the city and the surrounding areas, they are also the main place of leisure during summer vacation. In this context, maintaining the good water quality status required by the EU Directive 2006/7/50 concerning the management of water quality in bathing sites is very important.

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