CASE STUDY

Poland: National programme to improve water balance

In Poland, the original purpose of dams and ditches were to raise the groundwater level and to retain water for agriculture. Later it was recognized that the constructions have also positive impact on flood protection. So called “small water retention measures” were installed to complement “great water reservoirs” to limit rapid runoff from the surface or small water courses.

Background

Climatic conditions of Poland are characterized by small amount of precipitation that is relatively favorable distributed during a year. Most of the precipitation occur during summer, which is the period with the highest demand for water. Despite this fact, in most of the country (except the seaside and the highest mountains) a significant deficit of water can be observed.

Over the last decades, agriculture intensification and unification of plants habitats, including forests, construction of drainage systems as well as urban development and resulting changes in surface character has caused intensification of water and matter cycle in river catchments contributing to occurrence of droughts and floods.

Several attempts to improve the water balance through so called “small water retention measures”. It is in opposition to “great water retention” which is represented by water storage in big reservoirs. The objective is to increase the amount of water resources available for agriculture, to improve the state of the natural environment, and to protect both the rural and urban environment from the detrimental effects of floods. Small water retention measures have been promoted since the 1960s, although in the early days, there was a limited focus on the construction of small water reservoirs. Small retention can store rain or snow melting waters in the place of origin. Hence, it can limit rapid runoff from the surface or small water courses (ditches, streams). At the end of the 70s the Polish government adopted a resolution which recommended the reconstruction of small reservoirs and hydraulic structures for raising water level in rivers.

Actions taken

In 1995, important steps included the establishment of a cooperation between the Ministry of Agriculture and Food Economy, and the Minister of Environmental Protection, Natural Resources and Forestry. The programme later developed into a comprehensive strategy to reconstruct small retention facilities, planting forests and midfield woods, damming lakes in order to retain water for agriculture and other activities, and retain spring water, snowmelt and precipitation in ponds. The projects are of very diverse nature, due to the broad scope

of water retention measures, the information provided, and the costs associated with the different projects.

Financing of small retention measures is secured from diverse funds – the national environmental fund, the soil protection fund, county (voivodship) budgets and municipal budgets. The investments were able to be mobilized due to consultation processes, coordination and full participation of many stakeholders.

Partners grouped in GWP Poland provided an important facilitation and communication role ranging from technical support to national, county and municipal governments; public education among farmers, fishermen, tourist groups, ecologists and public administration; and organization of workshops and dissemination of results of the national program. GWP Poland also contributed to the regional programme on Integrated Drought Management in Central Europe. The Guidelines for small retention measures have also been published.

Outcomes

In the period of 1997 – 2010, more than 4,500 small retention measures were implemented to store about 350 mil m^3 of water. Mostly, these objects have been constructed to retain water for agricultural purposes (irrigation, flood protection). Many reservoirs are, in addition to their hydrological functions, also used for recreation. The implementation of the small retention program has shown that it is a good and effective method to increase the ability to retain water in the small river basins. Construction of small water reservoirs and weirs on ditches and creeks and restoration of drained bogs can limit the fast outflow of precipitation and melting water from the catchment. Despite their low capacity, they can be an important part of the floods protection system, particularly on watercourses experiencing rapid (flash) floods. Apart from the improvement of the water balance of catchments, small retention objects perform also various economic functions, mostly on the local level, such as: small water power engineering, breeding of fish, source of water irrigations in farming and forestry and also in recreation. Overall the outcomes were strong advocacy, high-level commitment of executive leadership, & prevailing norms and stereotypes.

Lessons Learned

By using small water retention measures, the natural retention capacity improves, which contributes to the potential for an increased amount of water that can be naturally stored in the environment, and used for alimentation of water courses during droughts.

The increase of water retention capacity of a catchment can significantly limit unfavourable impact of climate change, as well as the investments accelerating water runoff from the catchment.

Results of long term research were successfully translated into the national policy and backed up with financial support.

Corresponding Author
Mioduszewski, Waldemar

Contributing Authors
Okruszko, Tomasz

Organisation
Country Water Partnership Poland - CWP Poland

Year
2016

Country
Poland

Keywords
Integrated Water Resources Management (IWRM) Floods and Droughts Vistula/Wista

Thematic Tagging
Climate Ecosystems/Nature-based solutions Gender Private Sector Transboundary Urban Water services Youth
Language English

Supporting Materials
GWP Central and Eastern Europe
Poland: National programme to improve water balance

Related IWRM Tools
Policies with Relation to Water Resources
International Water Law
Facilitation and Mediation

Source URL: https://beta.toolbox.venthic.com/case-study/poland-national-programme-improve-water-balance