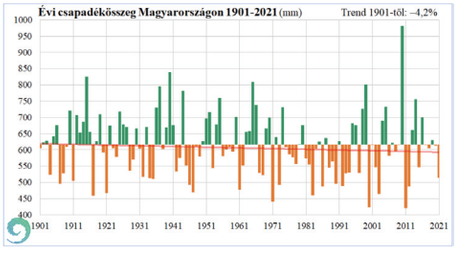
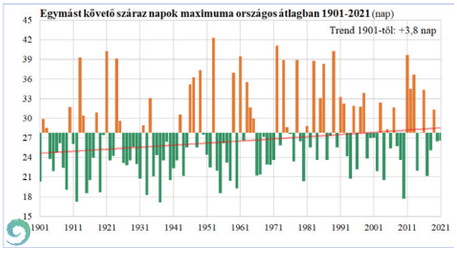
INVESTMENST CONTRACTS FOR CLIMATE ADAPTATION AND WATER USE ENHANCEMENT

The renovation and establishment of new efficient water facilities might improve water quality and its management.



Annual Precipitation Amount 1901-2021 (mm)

Credit: OMSZ – Szárazság Magyarországon 2022-ben és a múltban



National average of maximum consecutive dry days per year between 1901 and 2021

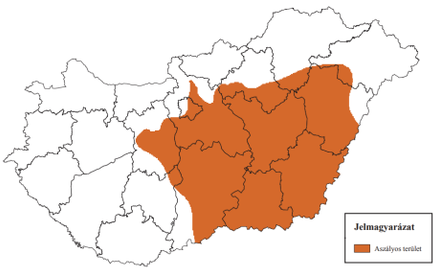
Credit: OMSZ – Szárazság Magyarországon 2022-ben és a múltban.

Climate adaptation policy is an increasingly more urgent issue due to variability in rainfall and natural events that can heavily compromise agriculture and water quality. The Hungarian Rural Development Programme aims to improve effectiveness of irrigation practices and establish new irrigation facilities with specific attention to ecologic-related water quality challenges.

In the Hungarian case study, the project investigates contracts of water management measure by the RDP involving groups of farmers, policy makers, researchers and managing authorities. Farmers are especially called for application although they often face legislative challenges because they are required to prove land ownership and water use permission. Due to technical barriers to water use, only permits for new irrigation practices and water saving technologies can be requested. The call wants to intensify water retention, sustainable practices of irrigation and sustainable land management incentives that preserve quality and combat nutrient leaching. The call provides financial support for rural enterprises, aiming to create a cohesive investment towards sustainable irrigation practices guaranteed by different types of licenses.

EFFECT analyses the criteria for selection of bids, uptake of practices and the effectiveness of the existing contracts, aiming to link data resulting from our Discreet Choice to farm account databases thus facilitating the analysis of both environmental and economic aspects of the schemes' performance. Furthermore, we developed and tested a new contract arrangement for Hungarian agricultural water management sector, which comprises in a single RD measure an investment support part and an agro-environmental support part for further development of the Hungarian Rural Development Programme's irrigation investment support scheme, whereby participating farmers would receive an additional annual subsidy in addition to the investment support in return for environmental commitments.

Outcomes



Drought areas in Hungary calculated with Pálfai drought index

Credit: AKI – Kemény G, Lámfalusi I, Molnár A (2018)

The number of applications for the existing scheme is around 1000, with no spatial restriction. Despite the fact that participating in the scheme generally creates administrative and bureaucratic burdens to applying farmers, it constitutes a high investment support for collective applicants. The main targets are ecosystem services provided by water: its use and management, the risks related to pollution and contamination and those related to imbalances such as floods and droughts. In this regard, the establishment of water retention facilities, reservoirs and new irrigation systems helps avoiding a water crisis, as well as natural filter fields helps preventing key pollutants from agricultural fields from contaminating the water body. The previous RDP evaluations in Hungary showed that the aimed results were partially fulfilled and some of those implementations have been renewed with new improved targets. Most of the funds covered the development of new structures facilities, while a minor part was used to renew existing systems. However, the existing measure defines ambitious objectives for promoting sustainable water management and agricultural production, does not contains the necessary incentives for a good implementation of these.

In the Hungarian case study we examined the possibilities for further development of the Hungarian Rural Development Programme's irrigation investment support scheme whereby participating farmers would receive an additional annual payment when they operating their irrigation system in addition to the investment support in return for environmental commitments.

Our discrete choice experiment investigations revealed the heterogeneity in farmers' preferences for different climate change adaptation and water conservation practices.

- Older farmers or farm managers tend to be more resistant to change and are more likely to maintain the status quo.
- Women are less likely than men to participate in the proposed schemes.
- Farmers with more years of (agricultural or higher) education are more inclined to engage in the proposed irrigation schemes.
- Farmers who have already adopted irrigation technologies, such as sprinkler and drip systems, are more likely to participate in the proposed schemes.
- The proposed schemes are more likely to attract farmers with smaller farm sizes.

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