HTTPS://WWW.BIOVALUE-PROJECT.EU/

CONTACT: INFO@BIOVALUE-PROJECT.EU

BioValue

Practice Abstract

Advancing Climate-Resilient Agriculture through Underutilized Crops

The BIOVALUE project addresses climate change and biodiversity loss in agriculture by exploring the potential of underutilized, genetically diverse crops. It aims to enhance the resilience and sustainability of agroecosystems while meeting the growing demand for nutritious, environmentally friendly food options. The project investigates climate projections, crop adaptability, and innovative breeding techniques to develop strategies for integrating these crops into modern farming practices.

BIOVALUE has produced high-resolution climate projections for European pilot sites, revealing region-specific trends in temperature and precipitation patterns. These projections, extending to 2050, indicate varying degrees of warming and changes in rainfall across different regions, highlighting the need for localized adaptation strategies. The project has also identified several underutilized crops with significant potential for climate resilience and nutritional value, such as buckwheat, grass pea, and specific varieties of lentils and tomatoes.

Practitioners and end-users should give special attention to the following key findings and recommendations identified, which include:

1.Climate-adaptive breeding: Utilize advanced techniques like marker-assisted selection and participatory plant breeding to develop climate-resilient crop varieties.
2.Crop diversification: Integrate underutilized crops into existing farming systems to enhance biodiversity and reduce vulnerability to climate extremes.
3.Localized strategies: Tailor agricultural practices to regional climate projections, focusing on water management and heat stress mitigation.
4.Genetic resource conservation: Prioritize the preservation and study of diverse plant genetic resources as a foundation for future breeding efforts.
5.Policy support: Develop policies incentivizing underutilized crops' cultivation and market integration.
6.Research investment: Increase funding for research on underutilized crops to close the knowledge gap with major staples.
7.Consumer awareness: Educate consumers about underutilized crops' nutritional and environmental benefits to stimulate market demand.

By implementing these findings, stakeholders can contribute to a more diverse, resilient, and sustainable agricultural system capable of adapting to climate change while preserving biodiversity and ensuring food security.

.