Food and Agriculture Organization of the United Nations

The International Treaty ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Project title: Redesigning the exploitation of small grains genetic resources towards increased sustainability of grain-value chain and improved farmer livelihoods in Serbia and Bulgaria - GRAINEFIT

GRAINs bringing benEFIT

Where will we work?

Negative effects of climate changes on small grains production, food security and nutrition, reduction of genetic diversity on farms, unemployment and mass movement of young people to cities present serious problems in rural areas in Serbia and Bulgaria, especially for small agricultural households. Despite increasing demands for local small grains commercial products with good nutritional value and less food allergens, farmers' awareness of the benefits of local varieties is insufficient. There is little coordination on establishing partnerships among farmer associations, researchers, national authorities and civil societies to develop climate resilient crops and create new business opportunities to improve farmers' livelihoods.

EXECUTING INSTITUTION
Institute of Field and Vegetable Crops, Novi Sad, Serbia

TARGETED COUNTRIES
Serbia and Bulgaria

PROJECT LOCATIONS
Northern and central Serbia, southeast Bulgaria

CROPS ADDRESSED
wheat, barley, oat, rye

CONTRIBUTING DONORS
Directorate for National Reference Laboratories, Ministry of Agriculture, Forestry and Water Management, Republic of Serbia

PARTNERS INVOLVED
1. Institute of Food Technology, Novi Sad, Serbia
2. AgroBioInstitute, Sofia, Bulgaria
3. Institute of Plant Genetic Resources, Sadovo, Bulgaria

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LINKS TO DEDICATED WEB SITES
www.ifvcns.rs
https://twitter.com/grainefit
www.linkedin.com/in/grainefit-bsf-4-project-a06b60184

KEY WORDS
climate resilient crops, conservation, farmer associations, genetic resources, gender equity, molecular markers, nutritional and technological profiling, participatory breeding, small grains, *Triticum,* women farmers

What will we do?

Landraces and locally adapted varieties of small grains will be collected from farms, gene banks and national institutes and multiplied. The seeds will be disseminated to most vulnerable farmers for conservation and reintroduction of local landraces and varieties, diversification of on farm production and breeding climate resilient crops with man and women farmer participation. Scientific support, training and know-how will be provided to local farmers to facilitate decision making. Field days at a community level will be organised with national extension services and research institutes to promote on farm use of small grains genetic resources, acknowledging traditional agricultural practices. Local small grains will be evaluated for agronomical traits, resistance to diseases and drought and their molecular, nutritional and technological profiles. Research and institutional cooperation will be strengthened through workshops based on complementary skills, expertise and experiences. To help vulnerable farmers to generate additional income and tackle poverty, find their market niche, access services and funds, make partnerships, produce and sell a range of different traditional cereal products with distinctive

label, a workshop on labelling of the novel designed products, a roundtable and a business-to-business meeting will be organised, and a comprehensive guide to small grains stakeholders will be distributed.

What is expected to be achieved?

This project will bring direct benefit to 40 women and men farmers by building their capacities to reintroduce, conserve, sustainably use and manage small grains genetic resources through participatory breeding for climate resilient crop varieties. At least 20 farmers in the vulnerable rural communities, including younger generations, will be supported to create additional income and improve their livelihoods through trainings on adding value to local varieties and marketing traditional cereal products with distinctive label. The farmers will be helped to join cooperatives and farmer organisations, strengthen their cooperation with research institutions, agriculture extension agents, civil services and other stakeholders across the seed value chain. To provide farmers with an access to varieties of enhanced performance, good adaptability and quality in adverse climate conditions, 90 bread and durum wheat varieties will be evaluated on experimental fields for important agronomical traits and resistance to diseases and analysed with molecular markers, 50 varieties will be tested for drought tolerance in laboratory and field conditions, 20 varieties will be analysed for technological quality and nutritional value and 10 best performing genotypes will be selected for pre-breeding for further improving. The project is also expected to bring benefit to 1000 farmers from the availability of seeds of evaluated genetic resources that will be promoted at a community level on demonstrations fields and field days at extension services and research institutions. Innovative approaches and food technologies will be applied to improve the performance of two end-products based on local small grains varieties. The information about the nutritional profiles, technological quality of diverse local varieties, as well as their agronomic properties and suitability for growing in a certain region, will contribute to a substantially improved nutrition of vulnerable communities and farmers. The project will positively affect poverty alleviation by enhancing equity and inclusion, and empowering rural communities to meet constantly increasing demands, especially from the urban population, for quality food with good nutritional properties made on local farms and in a traditional way. The project will contribute to the development of human capacities, building up knowledge and skills to take forward the Treaty implementation, especially of young scientists and female researchers, through trainings, transfer of knowledge and experience. The multidisciplinary consortium is expected to establish long-term regional partnerships between leading research institutions in Serbia and Bulgaria, based on complementary expertise, in order to identify and deliver climate resilient crops, nutrient-rich and of good technological properties, emphasising food safety. Four national institutions are supported to strengthen plant genetic resources information systems and contribute to Global Information System, making available germplasm and all phenotypic and genotypic data to the Multilateral System. The project results will raise awareness of the importance of the International Treaty on Plant Genetic Resources for Food and Agriculture among researchers, national authorities, civil societies and farmers, amplify its implementation activities, visibility and increased funding available for the sustainability of project interventions.

Who will benefit?

Direct beneficiaries during the project implementation will be 40 small-scale vulnerable farmers, with 50% women participation, 5 local farmer associations, 5 civil society organisations supporting sustainable agriculture, ethnic and gender equality, 2 organisations preserving local customs, traditions and foods, 3 small-scale processing entrepreneurs, 5 agricultural extension services, 25 scientists involved in characterisation genotyping, technological quality analyses, supporting farmers and linking them with other stakeholders and 2 national gene banks. Indirect beneficiaries include 1000 farmers through trainings, workshops and field demonstrations, 10 young women scientists, 5 policy makers at regional and national level, 2 chambers of commerce and the wide public.