



AGROBIODIVERSITY CONSERVATION IN BALKAN COUNTRIES – STATE OF ART
PARTICIPATORY COMMUNITY BASED ACTIVITIES
THE ROLE OF BALKAN SEED NETWORK ASSOCIATION

A. INTRODUCTION

The Balkan Peninsula is a European hotspot of biodiversity both for cultivated and wild plant species.¹ It is located at the crossroads of Europe and Asia, and its rugged terrain consisting of many rather isolated mountains, valleys and basins strongly influenced flora and fauna. Not only geography and topography, but also a high diversity of people and cultures, and partly political isolation during parts of the twentieth century contributed to a high richness of agrobiodiversity in all Balkan countries. However, the population's drift of young inhabitants to urban areas in all countries consists a threat to the continuation of the conservation and cultivation of local and traditional varieties. Additionally, climate change, modern tentative agriculture, abandonment of rural areas and the lack of marketing opportunities for farmers cultivating local varieties are main driving factors for the existing genetic erosion taking place across the agricultural landscape of all countries.

B. BALKAN PENINSULA - THREATS FOR AGROBIODIVERSITY

I. GENETIC EROSION - MODERN AGRICULTURE

Farming systems in Balkan and Southeast European (SEE) countries are built on a broad range of local and autochthonous plant varieties and animal breeds of international importance. In times of ecological and economic pressure the treasure of diversity is at risk, distinction is irreversible and hinders today's and tomorrow's welfare, resilience and adaptive capacity. Strong links between agrobiodiversity, traditional knowledge, cultural diversity and local innovations are evident in the region and are part of its unique and rich character. Conservation and sustainable use of genetic resources in agriculture are essential for the sustainable development of agricultural production, food security, adaptation to climate change, as well as for the socio-economic development and welfare of rural areas (SWG Agrobiodiversity Report, 2017).²

II. RURAL AREA ABANDONMENT

The latest FAO Report on Monitoring Schemes and data collection on biodiversity for food and agriculture in Eastern Europe and Central Asia (2021)³ summarizes common challenges that all Balkan countries are

¹ [Vavilov, N.I. \(1992\) Origin and geography of cultivated plants. V.F. Dorofeyev \(ed.\), translated by D. Löve. Cambridge University Press, Great Britain](#)

² [Regional Rural Development Standing Working Group \(SWG\) in South-East Europe annual report, 2017.](#)

³ FAO. 2021. Report on monitoring schemes and data collection on biodiversity for food and agriculture in Eastern Europe and Central Asia. Rome. <https://doi.org/10.4060/cb6959en>



facing. In Balkan region agriculture is the main source of employment, among which is a large number of people informally employed in the sector. Some general characteristics of the rural region are small farms, with low average arable area, and high level of abandonment of rural areas and migration of people from villages to cities. This agricultural production has low competitiveness on the global market. In combination with pressures from coming industrial agriculture, this leads to loss of traditional knowledge and practices, and also plant genetic resources, consequently. Population decline and internal migration from rural to other areas are common problems faced by most countries. This constitutes a problem for the continuation of preservation and utilization of local varieties and breeds in agricultural holdings and semi-subsistence farms, even though measures have been put in place in some countries and entities to promote these activities (SWG Agrobiodiversity Report, 2017).

III. CLIMATE CHANGE AND FOOD SECURITY CHALLENGES

The atmosphere is warming and the climate is changing every year. The main reasons for climate change in the region are: industry, energy, and heating sector based on coal exploitation, low energy efficiency, etc. Droughts in the Balkans have been identified as a key risk for agricultural production. Future projections of climate change and their impact on agriculture at the European level indicate that there will be more losses in the southern areas, including the Balkans. Key risks include reduced and increased yield variability, as well as reduced areas suitable for growing traditional crops (Olsens et al, 2002)⁴. Additionally, as identified by the World Bank Report of Natural Disaster Hotspots: A Global Risk Analysis, the Balkans is particularly susceptible to earthquakes, hydrological hazards (droughts and floods), and wildfires in forest regions. As climate change continues to alter the frequency and intensity of many types of events, these acute shocks can be expected to worsen in the future (Dilley et al, 2005)⁵. The EC has encouraged all member states to develop adaptation strategies in line with national plans to reduce the risk of climate change, including cross-border issues. It also supports the efforts of European cities to prepare local adaptation strategies and plans. Local adaptation strategies and plans will increase support for local activities, providing a platform for greater engagement and networking of municipalities, and raising public awareness of adaptation to climate change and food systems' resilience and security.

C. AGROBIODIVERSITY CONSERVATION

I. ON FARM AND EX SITU CONSERVATION

In all Balkan countries farmers and home gardeners around rural areas (often old people), especially women, are the main custodians of local varieties. Urban citizens have also begun cultivating local varieties in private gardens. Farmers and gardeners exchange seeds between themselves. They often select their seeds from best robust varieties and so contribute to the evolution of agrobiodiversity. Local varieties are still cultivated because of their adaptation capacity to certain or adverse climate conditions (e.g. drought) and resistance to pest and diseases in remote and mountain areas particularly

⁴ [Olesen JE, Bindi M \(2002\) Consequences of climate change for European agricultural productivity, land use and policy. Eur J Agron 6:239–262.](#)

⁵ [Dilley M, Chen RS, Deichmann U, Lerner-Lam AL, Arnold M, Agwe J, Buys P, Kjekstad O, Lyon B, Yetman G \(2005\) Natural disaster hotspots: a global risk analysis. The World Bank Hazard Management Unit, Washington, D.C](#)



for culinary self-consumption, or to meet demand in the market for healthy, organic or slow food products due to their nutritional quality and special taste. Gene banks hold ex situ collections (from expeditions) of local varieties or crop wild relatives either in cold, storage units (especially cereals and vegetables) or in conservation nurseries (e.g. fruits, such as apples and pears). Gene banks often lack resources to maintain their accessions, because regular regeneration is cost demanding (e.g. staff salaries, equipment, experimental fields) and requires regular and appropriate funding.

II.LEGISLATION AND POLICY

On a national level, all Balkan countries have lack of legislation in the field of plant genetic resources conservation or even if the legislation is present, implementation is not fully developed or monitored. There is a lack of awareness of decision makers about the critical contribution of agrobiodiversity to security and resilience of agrifood systems. On the other hand, farmer's role as a custodian of agrobiodiversity is not recognized and programs that support rural development related to agrobiodiversity are not sufficient to make a long-standing change. Also, there is no multi-actor approach and cooperation between all stakeholders is non-existing. International institutions, such as the Convention on Biological Diversity ([CBD](#)) or the International Treaty for Plant Genetic Resources ([ITPGRFA](#)) play a double role in ensuring an efficient approach towards agrobiodiversity protection and its sustainable use. On the one hand, they can serve as a basis for national legislation and actions for these purposes. On the other, EU strategies generally follow the premises formulated in international instruments and encourage Member States to implement guidance according to the documents approved in multilateral conventions like the CBD. Farmers and Community based organizations initiatives of citizens are pushing governments for implementation of international Treaties on farmers rights and biodiversity conservation.

The following list contains conventions, treaties and working groups dealing with issues related to agrobiodiversity (e.g. climate change adaptation strategies or genetic resources protection) and where most of Balkan countries are already members:

- Convention on Biological Diversity ([CBD](#))
- International Convention for the Protection of New Varieties of Plants ([UPOV](#)).
- United Nations Framework Convention on Climate Change ([UNFCCC](#)).
- International Plants Protection Convention ([IPPC](#)).

Bosnia and Herzegovina (BIH) is only one country in the region not a party in International Treaty on Plant Genetic Resources for Food and Agriculture ([ITPGRFA](#)), while North Macedonia (MKD) signed but still not ratified this Treaty. These two countries and Greece (GRC) are not a member in current (XI) phase of [ECPGR](#)- European Cooperative Program for Plant Genetic Resources, although there were in previous phase (BIH in VII, VIII and IX; MKD in VI, VIII, IX and X; GRC from I to X) (SWG Agrobiodiversity Report, 2018).

D. COMMUNITY SEED BANKS IN BALKAN COUNTRIES

Community Seed Banks (CSBs) play a crucial role in preserving agricultural biodiversity, ensuring food security, and promoting sustainable farming practices. In the Balkan region, CSBs have been established



as grassroots initiatives to conserve local plant varieties and traditional knowledge, empowering communities and fostering resilience against climate change and industrial agriculture. This section provides an overview of the current state of CSBs in Balkan countries, highlighting their objectives, structure and impact.

I. GENERAL CHARACTERISTICS AND PARTICIPATORY APPROACH

Objectives of Community Seed Banks :

The primary objectives of CSBs in the Balkan region include Conservation of Biodiversity, Food Security, Cultural Heritage, Sustainable Agriculture and contribution addressing climate change impact and adaptation. CSBs in the Balkans typically operate at the community level and are often initiated by local farmers, NGOs, or cooperative groups. Their structure and functioning can vary, but common elements include Seed Collection and Storage, Seed Exchange and Distribution, Community Involvement, Documentation and Research (participatory, community-based science)

The impact of CSBs in the Balkan countries has been significant in several areas:

- **Biodiversity Conservation:** CSBs have successfully conserved numerous local plant varieties that might otherwise have been lost. This conservation helps maintain a gene pool that is crucial for adapting to changing environmental conditions.
- **Enhanced Resilience:** By promoting the use of diverse crops, CSBs contribute to the resilience of local farming systems against pests, diseases, and climate change.
- **Empowerment of Farmers:** CSBs empower farmers by giving them control over their seeds and reducing reliance on commercial seed companies. This empowerment fosters a sense of community and mutual support.

E. BALKAN SEED NETWORK ASSOCIATION

I. HISTORY, GOALS AND ACTIVITIES

The Balkan Seed Network Association (BSNA) was initiated in 2020. During 2021 and 2022 interested stakeholders took a several meeting, phase-to-phase and online, and in May 2022 16 organizations from 9 Balkan countries agreed to signed Memorandum of Understanding (MoU). October 2023. The network is registered in the Ministry of Justice of BIH with headquarters in Banja Luka. Currently, BSNA is consisted by 12 members from 8 countries.

The main goal of the network is improving and strengthening the preservation and sustainable use of agrobiodiversity in agriculture through organic production and agroecology. The activities are aimed at stimulating resilient food systems and establishing a paradigm of cooperation, within the rich biodiversity and agricultural heritage of the Balkans. As a network of seed savers, breeders, scientists, farmers, gardeners, research institutes and educational institutions, BSNA members believe in working together to support local communities of farmers, women and young people in protecting our common traditional farming and culinary tradition. The focus is on community-based science as the key for the conservation of plant genetic resources that are well adapted to low input, sustainable agriculture especially in organic farming and agroecology to face the current environmental challenges/crisis (as climate change) and also to preserve and enrich biodiversity for the coming generations.



The main activities of the Association are:

- Exchange of information and materials (such as exchange platforms, shared databases, seed saving festivals, meetings, websites).
- Cooperation on research programs relevant to the achievement of goals and activities of the association at the national, regional and international level.
- Work and support in finding information about opportunities for training, mentoring and monitoring experiences.
- Translating science into practice through special trainings of association members.
- Strengthening the connection between ex-situ, in-situ and PGR conservation on the farm.
- Encouragement of participatory organic breeding and selection for adaptation to low inputs and organic conditions, whereby genetically modified organisms (GMO) and new genomic technologies (GNT) in cultivation are outside the work of the association and will not be promoted, and life patents are also not accepted.
- Promotion of organic agriculture, agroecology and sustainable use of PGR.
- Help and support in the marketing of farmers' seeds and support for the rights of farmers and peasants through work at the national level in public consultations and the legislative process at the national level.
- Encouraging participative work, that is, participation of farmers in decision-making and raising public awareness of the importance of the same.
- Organizing gatherings, seminars and conferences for the purpose of achieving the goals and activities of the Association.
- Preparation and publication of publications in the area of goals and activities of the Association.
- Cooperation with the same and similar associations as governmental and non-governmental organizations in the country and abroad.

II.MEMBERS

a. Organizations and entities

1. Organic Agriculture Association (Albania)
2. AEGILOPS (Greece)
3. Foundation "Alica" (Bosnia and Herzgovina)
4. Arche Noah (Austria)
5. Green Network of Activist Groups (ZMAG) (Croatia)
6. Ecological movement "Frame of life" (Serbia)
7. Institute of Plant Genetic Resources "Konstantin Malkov" (Bulgaria)
8. FABIA CSB – Bogdanci (N. Macedonia)
9. Association for Plant Genetic Resources (APGR) (Albania)
10. Asociatia Romania in Tranzitie (ART) (Romania)
11. ZZ Eko – Ilinden (N. Macedonia)

b. Individual:

12. Anastasia Vasiliadou (SITO SEEDS, Greece)



III.FUTURE ROLE AND CONTRIBUTION

- a. Acknowledgement of BSNA as a key agrobiodiversity actor and stakeholder in Balkan area
- b. Promotion of participatory community-based conservation and management of PGR (multi stakeholder, bottom-up approaches)
- c. Enhancement of regional and European cooperation and synergy on PGR technical, scientific, educational, professional, cultural and social level)
- d. Contribution to sustainable use of PGR, mitigating climate change and other systemic crises impacts and enhancing resilience of food systems
- e. Making bridges between formal and informal seed systems, scientists and peasants, farmers and citizens to promote non inclusive decision making and free and equal access to benefits from agrobiodiversity conservation and use.

F. CONCLUSION REMARKS

Agrobiodiversity, although still rich in Balkan region, faces diverse threats of erosion affecting resilience of food systems, survival of farmers, especially small or family scaled in rural areas, and health of citizens. Community based participatory initiatives on agrobiodiversity (community seed banks) and on farm conservation can play a crucial role and support governments and institutions in their related conservation missions. Balkan Seed Network Association, as a bottom up community based initiative can become key actor for cooperation on agrobiodiversity conservation between Balkan countries and entities and facilitate interaction and synergy in many fields including research and training, sustainable use of PGR, climate change, farmers rights on seeds and agrobiodiversity benefit sharing.

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