

AgroBioCom: Availability and cultivation of traditional crops and breeds as nature capital for rural innovation and regional awareness

Workshop report: São Pedro do Sul, Portugal 18. - 20. September 2025

Arno Todt, Klemen Langus, Jana Vilmann, Ângela Abreu, Cristina Amaro da Costa, Sebastian Heynen, Eva Lehmann









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Content

1. Introduction 3
2. Management of seeds and breeds 4
2.1 Community seed banks (CSB) and participatory breeding (PPB) 4
2.1.1 Tools and experiences from practice 5
2.2 Production and dissemination 11
2.2.1 Tools and experiences from practice 12
3. Cultural heritage and local identity 14
3.1 Extensive use and local community 14
3.1.1 Tools and experiences from practice 15
3.2 Local gathering around landraces 17
3.2.1 Tools and experiences from practice 17
4. Public incentives and product market access 21
4.1 Public incentives 21
4.1.1 Tools and experiences from practice 22
4.2 Product market access 23
4.2.1 Tools and experiences from practice 24
5. Managing current rural challenges 28
6. References 28

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1. Introduction

Traditional crop varieties and livestock breeds are important elements of biological and genetic diversity in European rural regions. Genetic resources are a key form of natural capital needed for stability and adaptability in agriculture, rural development and tourism. Unfortunately, cultivation of landraces has been dramatically reduced in the last decades all over Europe. The substitution with high producing varieties and breeds has led to a dramatic reduction of diversity of crop and livestock.

There are different responses to the threat of genetic erosion, including both: a) efforts to strengthen farmers' maintenance of crop diversity on-farm (in situ) and as well as b) the collection and conservation in gene banks (ex situ). Gene bank collections can include increasing availability of and access to crop diversity and related information, creating or promoting markets for neglected/underused varieties, improving local materials through participatory selection or breeding. On-farm approaches aim to promote conservation by addressing key constraints that limit farmers' use of crop diversity. The advantage of on-farm conservation is that varieties circulating in farmers' seed systems continue to be adapted to new conditions (1).

The keeping, inventory and propagation of traditional seeds and breeds are fundamental elements to make traditional landraces available for a preservation through sustainable use.

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2. Management of seeds and breeds

2.1 Community seed banks (CSB) and participatory breeding (PPB)

Farmers' cultivation and innovation are fundamental to maintaining genetic diversity, as well as evolving and adapting crop varieties to new conditions and needs. At the same time, farmers' decisions about what crops and varieties to plant are influenced by agroecological, climatic, demographic, economic and cultural factors. This dynamic nature of farmers' variety management introduces the potential for increases or losses of genetic diversity as well as gene flow into traditional varieties (1). Several of the approaches, most notably PPB, CSB are part of a decentralization and participation agenda in development discourse and practice (2).

Community seed banks (CSB)

The main function of community seed banks is to maintain seeds for local use, often in the context of a community development agenda (2). Different community seed banks serve various functions including: a) conserving and reintroducing germplasm; b) providing access to seeds for members of the community c) enhancing seed and food sovereignty (3).

Community seed banks continue to emerge in different parts of the world in response to concerns about the gradual loss of biological diversity in agricultural systems, the loss of seeds caused by natural disasters and the demands of farmers to participate in locally driven diversity management strategies. Community seed banks can be effective platforms for local collective action and empowerment in terms of the conservation and sustainable use of plant genetic resources for food and agriculture. Seed banking initiatives contribute not only to the conservation and continued use of major crops, but also to the preservation of a number of underused species usually not targeted by formal-sector conservation and plant-breeding initiatives (3).

Recently, the potential of community seed banks to deal with the effects of climate change has come to the fore. Increasing crop and varietal diversity is one strategy farmers can deploy to deal with climate changes that are affecting or expected to affect local production systems. A decentralized seed bank network with well documented collections and flows of material for conducting multi-location trials would allow the evaluation of species' adaptive capacity and exchanges among regions (3).

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Participatory plant breeding (PPB)

Participatory plant breeding means the devolution of variety formation to the level of the local community with some involvement of professionals in one or more of the stages of a breeding program. It refers to breeding for local adaptation by creating highly genetically diverse populations and allowing several cycles of natural selection prior to trait selection, and also continued selection after release by repeated seed saving (2).

Emphasizing intra- and inter-specific genetic diversity is recognized as an important part of systems-based farm management in organic and low-input systems (4). Other cases strive to improve yield stability under heterogeneous environments by developing genetically diverse populations.

The commonly cited idea behind PPB is that it enables development of varieties that are better adapted to local environmental and management conditions, especially for smallholders in developing countries, compared to conventional breeding programs. Thus, decentralization is a central element in addition to farmer participation. A commonly reported benefit is the faster adoption of PPB developed material ensured by the involvement of the farmers in the process (5).

The evolutionary potential of PPB methods is argued as a means to cope with climate change, but additional research to document the evidence would strengthen this breeding approach (6).

2.1.1 Tools and experiences from practice

Participatory maize breeding in Portugal (VASO)

https://liveseeding.eu/the-living-lab-vaso-cultivating-the-future-of-organic-farming-in-portugal/



In the North of Portugal in many villages the old granaries known as canastros or espigueiros still demonstrate the long tradition of maize cultivation and its huge role in nutrition of the population. In a research project in 11 counties a total of 51 different maize landraces and 175 other varieties of associated crops were collected (5). The huge diversity of diverse maize landraces collected in a small geographical region denoted adaptation to the broad range of climate conditions over the terrain in Northern Portugal. These landraces have been selected all over the centuries by man and nature. In general, for traditional Portuguese farmers, grain quality is the first selection criterion,

mostly for food, but also for feed purposes, followed by the plant ability to fit polycroping agricultural systems. The economy was based on small-scale farming with maize for bread (Broa). Each community had its own maize varieties and practices, which were reflected in the composition, shape, size and flavour of local Broa.

A systematic participatory plant breeding (PPB) was initiated with the VASO project in 1984 in the Northern Sousa Valley region with the aim of a higher valuation of these diverse maize populations, contributing to halt the current loss of these unique Portuguese maize landraces.



The VASO project aimed to create a plant breeding, in which the endogenous genetic resources that could respond to marginal agriculture were considered, as well as the local knowledge and needs of the farmers (7). It also encouraged local initiatives, such as the 'Sousa Valley Best Ear Annual Contest' (selection for big ears) by the local Farmers' Cooperative Association (Cooperativa Agrícola de Paredes). Several maize landraces such as "Pigarro" have been selected.

Portuguese association of Arouquesa breeders (ANCRA)

https://www.ancra.pt/

The Arouquesa cattle breed is an autochthonous (native) breed from northern Portugal that is well adapted to the mountainous terrain of northern Portugal. Traditionally, these cattle were used for draught work but are now primarily raised for beef, with some dairy qualities.

The Portuguese association of Arouquesa breeders is officially known as ANCRA (Associação Nacional dos Criadores da Raça Arouquesa). This association represents currently more than 3.000 members spread across 28 municipalities in Portugal. This reflects a significant network of breeders dedicated to the preservation and promotion of the Arouquesa cattle breed. The association supports traditional breeding methods and the promotion of the breed's unique qualities, including its meat, which is marketed under the DOP label

The primary mission of ANCRA is to preserve, promote, and regulate the breeding of the Arouquesa cattle breed:



- Ensuring the quality and authenticity of Arouquesa cattle and their products, especially the "Carne Arouquesa" beef, which has Protected Designation of Origin (DOP) status.
- Supporting breeders in maintaining traditional and sustainable breeding practices adapted to the breed's native mountainous environment.
- Protecting the breed's genetic heritage and promoting its socio-economic importance in northern Portugal.
- Acting as the official representative body recognized by the Portuguese government and the European Commission to oversee the breed's standards and certification processes.

In summary, ANCRA plays a crucial role in preserving the Arouquesa breed, promoting its products, and ensuring quality standards through official recognition and certification schemes.

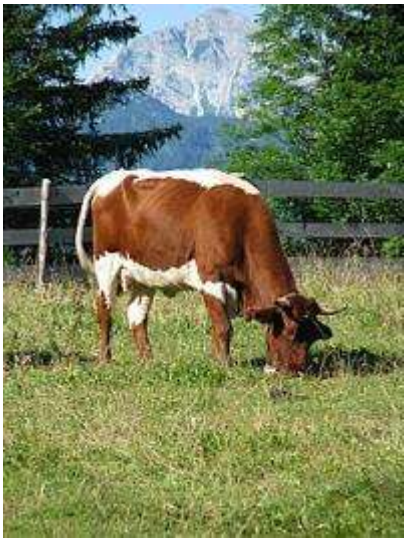
Association of Indigenous Cika Cattle Breeders, Slovenia

https://www.cikastogovedo.si/

Cika cattle, known as "cikasto govedo" in Slovenian, is the only preserved autochthonous Slovenian cattle breed. Originating from the Bohinj region, this breed is closely associated with alpine dairy farming. The group of Cika cattle breeders are organized under the Association of Indigenous Cika Cattle Breeders in Slovenia. This association was formed to preserve and promote the Cika cattle, which is an autochthonous breed important for biodiversity and traditional alpine farming. The Cika cattle are recognized for their hardiness and high milk production, and their grazing plays a key role in maintaining biodiversity in mountainous meadows

The association of breeders of indigenous Cika cattle in Slovenia is a voluntary association of farmers who foster this breed, experts in the field of cattle breeding and lovers of this breed. The fundamental task is to revive, preserve and restore cyclical cattle, improve its quality and increase the economy of herd breeding. The association fulfils its mission through the following activities:

- professional training of its members in preserving Slovenian native animal breeds;
- organisation of exhibitions and professional workshops with breeding animals;
- organise the trade in breeding animals and reproductive goods, by publication of written information and publications, publications in the media;
- promoting measures to protect the environment and animals



Association of Bohinj Flint Producers, Slovenia

The traditional local Trdinka" flint maize is an autochthonous variety from Bohinj that differs from others in appearance, as its kernels are multi-coloured from yellow, orange to dark red and almost black. Once upon a time, Trdinka maize was an important part of the daily diet. Today, the cultivation of Bohinj Trdinka maize is being promoted by Bohinj Tourism. This local variety does not tolerate artificial fertilisers, which is why farmers stopped growing it in the past. It has been preserved only because local people continued planting it for their own needs.



It is most often used as a raw material for preparing the traditional Bohinj žganci (corn mush) or as an addition to modern culinary creations by local chefs.

The Association of Bohinj Flint Producers has just been established with seven farmers and in close coperation with the Bohinj Tourism. The following activities shall follow:

- Preparation of the baseline for the specification,
- Collection of available professional documentation on cultivation (technologies, genetics, history, experiments),
- Making an analysis of market potential,
- Launch of the Geographical Protection Procedure.



Inventories of local bean varieties in S. Pedro do Sul, Portugal



The centre region of Portugal and especially the mountainous area around S. Pedro do Sul, is famous for the huge tradition and variety of beans. With about 25 bean varieties, this territory held this important genetic heritage and has been working to keep it. Two seed inventories were made, one in 2014, “Agriculture and rural development: biodiversity and health promotion” (8), and another in 2023, ”Among beans and other species from the orchards of S. Pedro do Sul” (9), provided information about the varieties produced and production sites. In 2025, five varieties of beans were identified as at risk of not having seeds and five farmers were recruited to produce it and then offer a portion for seed.

Regional breeding competitions

Often regional breeding competitions have a long tradition in rural areas with traditional landraces of crops or livestock breeds. Such competitions are an important instrument for rising awareness for the community breeding activities, indicate best traits for selection and for motivation of the local breeders. These competitions can be associated with local festivals, fairs or parades that contribute to local identity. Sometimes they have become huge events that attract more and more visitors in a sense of tourist attraction.

In Manhouce, Portugal you can find the Arouquesa livestock competition as a highlight of the Manhouce veal festival with its Arouquesa breed parade. It is a kind of ethnographic procession “Chega de Bois” (Oxen's Arrival), that represents roots and flavours of this country site.



The "Best Ear of Sousa Valley" competition is a regional maize competition in Portugal, established in 1992 to find the best maize ears in the Sousa Valley region. It is an active, community-recognized competition that promotes rural development by evaluating maize ears and providing feedback to farmers on traits for selection and breeding.

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Demonstration field "Dubina" in Wartha, Germany

https://www.biosphaerenreservat-oberlausitz.de/de/content/modellacker-dubina

In 2016 the administration of the German Biosphere Reserve Upper Lusatian heath and pond landscape has set up a demonstration field with 14 hectares in total for traditional crop varieties, close to the Biosphere Reserve Centre in Wartha, Saxony. The four parcels allow the Biosphere Reserve team to examine the cultivation of old crop varieties under practical conditions. Currently four varieties are cultivated:



- winter rye "Jägers North German Champagne Rye",
- winter wheat "Old Pomeranian Dickhead",
- winter poppy variety "Zeno morphex",
- winter wheat "Red Saxony Country Wheat".

The demonstration field allows not only the examination of cultivation conditions for traditional crop varieties but the information of famers and other visitors of the Biosphere Reserve Centre. Further they cooperate in things of vocational qualification with the regional school of agriculture in Upper Lusatia.

Beside the Dubina field the Biosphere Reserve runs an educational garden in the village of Friedersdorf with orchard meadow with heirloom fruit varieties: apple, pear, cherry, plum, and quince varieties.

Demonstration field in Covas do Monte, Portugal



In the little mountain village of Covas do Monte the municipality of Sao Pedro do Sul has organised a demonstration field for practices in organic agriculture, taking traditional local varieties of crops maize, beans, potatoes, salad, or pumpkins into account. On an area of 300 m² agricultural practices such as crop rotation, polycroping, composting, and green fertilization are shown. The people of Covas do Monte can find good practice examples how to produce vegetables needed for a family of four people throughout the year organic and in a food self-sustainability.

Conservation and propagation of typical Saxonian livestock breeds in the Upper Lusatian Biosphere Reserve, Germany



The Upper Lusatian Biosphere Reserve, in cooperation with various farms, pursues the conservation and reproduction of regionally typical livestock breeds. Since 2019 the biosphere reserve is working on the breeding and propagation of the Saxony chicken in cooperation with Schubert poultry farm. People from the administration collected eggs for breeding throughout the farm and took care of hatching the eggs and raising the animals. The number of Saxony chicken were increased from 680 in 2016 to more than 1.000 in 2025. Due to that project breeding, the classification of that breeding is now only "endangered", previously it was "critically endangered". The Schubert poultry farm sold some of the Saxony chicken to people in the villages of the biosphere reserve.



The Upper Lusatian Biosphere Reserve is managing a further project with the Red Mountain Cattle in Saxony. Since 2013 they work on the conservation and reproduction of that old domestic breed with focus on landscape conservation and valuation of the meat, in cooperation with the farm "Agricultural production and landscape management Mönau-Uhyst". The herd was increased from four animals in in the beginning till 60 cows in 2025.

2.2 Production and dissemination

Production

Seed production is key to ensuring the availability of sufficient quantities and qualities of seed of diverse crop varieties. Different models for organizing seed production have developed over time, depending on the crop or variety, its use, commercial value, and the quality standards used. These include farmers' own seed production, centralized certified seed production, and different models for decentralized seed production (1).

There are many examples of traditional seed storage technologies as well as norms, and practices to ensure seed quality during the pre- and postharvest seed processing

stage (1). One advantage of on-farm seed production and storage is that seed is readily available for farmers at planting time, and is much less costly than certified seed. Farmers often perceive seed quality differently than formal seed system experts depending on quality attributes and value considered, and may not always prefer or willing to pay the higher price for certified seed. Sometimes embedding local seed enterprises in seed sector networks as key actors is crucial to creating demand and gaining recognition and support (10).

Dissemination

Farm-saved seeds are the primary source of planting material for many smallholder farmers for local varieties. But most of them households do not produce enough seed to meet all of their seed requirements, and use other sources to increase seed volume, replace poor quality seed, acquire seed that they lack knowledge, skill or adequate conditions to produce or store (1).

Seed exchange networks also contribute to seed dissemination and the functioning of seed systems, though their importance varies by crop and context. In these networks seeds are shared among relatives, neighbours and friends either as gifts or exchanged or purchased for cash.

Seed exchange networks, that farmers engage alongside institutional plant breeding systems, help to conserve agricultural and cultural diversity and identity as well as enhance resilience against environmental and economic shocks (11). But, how to move from the innovative but relatively isolated activities of farmers to a scaled-up networked situation on national or international level is a concern.

2.2.1 Tools and experiences from practice

Commercial seed enterprise "Sementes Vivas", Portugal

https://sementesvivas.bio/

Sementes Vivas was founded in Idanha-a-Nova, Portugal 2016 and is recovering traditional varieties and producing and providing organic and biodynamic seeds of vegetables, flowers and aromatic herbs. The enterprise is working basing on a network of around 35 farmers to produce seeds in Portugal. In 2022 Sementes has registered six traditional varieties in the national variety catalogue, after six years of working on selection, description, and seed multiplication. Varieties such as Pau Roxo das Seis Marias (carrot), Murtosa (green bean), de Sabugal (pepper), and Cereja de Inverno (tomato). In 2023 a traditional pumpkin variety "Moganga de Geraz" was added.





Further the company is going to register varieties of heterogeneous organic material that offer greater adaptability to climate change and different soil types: the broad bean varieties “Aurora Violeta” and “Marro”.

Currently Sementes offers a special product line of traditional seed packages with double price than regular organic seeds. In the marketing they are communicating the history and the story of finding on the packages.

Non-commercial network: VERN Association for the Conservation and Recultivation of Crops, Germany

https://vern.de

VERN in Brandenburg is a non-profit association that was founded in 1996 with the support of the LAGS (State Institute for Large Protected Areas) Eberswalde, the Gene Bank in Gatersleben (IPK) and the Federal Information Centre for Biodiversity (IBV).

The goals of the association are to preserve old and rare cultivated plants, to keep old varieties easily accessible, and to impart knowledge about them. VERN carries out educational work on the cultural and cultivation history, use and tradition of old cultivated plants. He is also involved in research, documentation and project work on the cultivation, use and marketing of old crop varieties.

VERN works in the traditional sense of a preservation ring, that offers its members legal access to seeds of old, endangered varieties that are not approved under the Seed Traffic Act. For seed law reasons, the association do not sell the seeds outside of the membership. Therefore, membership in the network is necessary to obtain seeds for these varieties. Members are private individuals, farmers, gardeners and institutions. Currently VERN has around 450 members.

At the location in Greiffenberg, VERN maintains a show and propagation garden, as well as a seed warehouse. In this way, about 1200 vegetable and crop origins, 650 cereal origins and 200 varieties of tomatoes and peppers are preserved.

Commercial seed enterprise and non-commercial network: Dreschflegel, Germany

https://dreschflegel-saatgut.de/

Dreschflegel (flail) seeds and organics seed diversity in Witzenhausen was founded in 1995 and has the status of a commercial seed enterprise and a non-commercial network of 18 gardening farms that are working with organic seed propagation and breeding of old vegetable varieties and other crops.



A core element of the work of Dreschflegel is the breeding of neglected old varieties or unusual new vegetable forms. The

aim is to bring the diversity of earlier centuries back into the gardens. That is why the network is committed to the propagation and breeding of old varieties of plant species known today, such as white beetroot and asparagus salad, as well as old crop species such as chervil beet and oatroot. In addition, new varieties are being created for more crop diversity. This work is to be financed by breeding, propagating and marketing of organic seeds.

ZMAG seed exchange fairs in Croatia

The Zelena Mreža Aktivističkih Grupa (ZMAG) (Green Network of Activist Groups), organizes public seed exchange fairs twice a year in Croatia. These events bring together local organic seed collectors and aim to maintain and enrich collections of traditional Croatian seed varieties, supporting the free movement of these seeds. These fairs focus on traditional Croatian seed varieties and organic seed collectors.

3. Cultural heritage and local identity

Many traditional crop varieties and livestock breeds have a long and interesting rural history and they are a part of rural cultural heritage. The revitalisation and sustainable use can play a valuable role in strengthen regional traditions and rural identity. Local food can be an integral part of a community's heritage, reflecting the lifestyle and cultural essence of the people, passed down through generations. By effectively leveraging local food and traditional landraces, communities can be empowered and supported in preserving their cultural identity.

But often the farmers and inhabitants of the rural communities, that are familiar with breeding and cultivation practices of traditional landraces, were old. Therefore, there is a high risk that these farmers will retire from agriculture and their knowledge about the traditional seeds and breeds will be lost (12). Despite their age many of that rural people are enthusiastic with interaction of use and preservation and on learning how to improve their simple selection procedures in order to do better with their own landraces.

3.1 Extensive use and local community

Traditional extensive use and local community practices are often characterized by their reliance on natural ecological processes, minimal external inputs, and an integration with the surrounding landscape. Community-based management is central to these systems. Local communities act as knowledge holders, resource managers, and cultural stewards, organizing collective activities such as rotational grazing, communal harvesting, and shared processing facilities. This collective action not only ensures the sustainable use of common resources but also strengthens social cohesion and adaptive capacity in the face of environmental and economic change. Far from being relics of the past, such practices can offer contemporary models for

sustainable land management, biodiversity conservation, and the preservation of cultural identity.

3.1.1 Tools and experiences from practice

Traditional management of Arouquesa cattle in Portuguese mountains of Manhouce

https://mapcarta.com/28373498



The traditional management of Arouquesa cattle in the Manhouce mountains involves extensive, free-range grazing where animals are released to the mountains during the day and return home on their own or are gathered by the owner. This practice relies on the cattle's natural adaptability, and owners use bells to help locate and identify them in the rugged terrain. Historically used for draught work, the cattle are now primarily raised for their high-quality meat.

The Arouquesa cattle is well-adapted to the rugged, mountainous terrain of that area, possessing a robust build and strong, muscular hind legs. They are highly resilient and can withstand harsh weather conditions. Today, the breed is primarily raised for its high-quality, tender, and flavourful beef, which can be marketed with a protected designation of origin status (Carne Arouquesa DOP). The village of Manhouce has its own decentralized slaughterhouse.



Traditional management of goat herds in Covas do Monte, Portugal

https://www.cm-spsul.pt/conteudo.asp?idcat=492

Covas de Monte is a typical Portuguese mountain village known for the coexistence of about 300 goats with its 30 inhabitants. Half of the herd is grazed communally, with shepherds taking turns. The village is located in a green mountain landscape and is known for its hiking trails, local gastronomy and traditional slate architecture. The village has the status of a Portuguese “Bio aldeia” (organic village).

The high number of goats that live in the village and have a close relationship with the inhabitants is a remarkable feature. The goat breeds commonly found in Covas do Monte are Serrana and Bravia. Serrana is known as the "Mountain Goat," it is the most widespread of Portugal's native breeds and is well-suited to the landscape of Covas do Monte. Brava breed is known as the "Wild Goat," that is known for its hardiness and is common in mountainous areas of Portugal.

The 'Tepka' pear variety in Zasip, Slovenia

www.bled.si/en/what-to-see-do/bled-local-selection/offer/2023091112461766/dried-pear-flour/

In the 18th century Habsburg Empress Maria Theresa wanted to reduce a famine by planting crops, particularly in poor areas; one of the approaches were planting Tepka pear trees. The area around Bled and Zasip was so poor that all they had, was the harvest of pears, and the innovative locals had to come up with many ways to use them. In this history Zasip became the centre for preparing a huge variety of dishes based on this very special type of pear. These high-stem orchard pears are not consumed fresh but are processed into pear brandy, dried for use as flour or stuffing, or cooked into compotes. The pear orchards also contribute to the preservation of the region's cultural landscape.



When it is dried it becomes “Prga”. As powder it that can be used instead of wheat flour. Bread is baked from it, as are a variety of pastries. Bojana Pipan from Zasip is not only grandmother of cooking with Prga flour, but she organises the collective harvesting and drying of 'Tepka' pear with the still 20 farmers that are owning the old pear orchards.

Traditional maize varieties for Broa in Portugal

The Portuguese maize bread ‘‘Broa’’ manufactured from traditional maize landraces still plays an important economic and social role on Central and Northern rural communities of the country (9). The economy was based on small-scale farming with maize for bread (Broa). Each community had its own maize varieties and practices, which were reflected in the composition, shape, size and flavour of local Broa. In 1984



there was an expedition in the Central region of Portugal with the purpose of collecting maize landraces with technological ability for bread production, among other things. A total of 51 different maize landraces and 175 other varieties of associated crops were collected. The traditional maize landraces agricultural systems are changing. Local maize landraces are in risk of disappearing because of being less productive, leading farmers to favour hybrid maize varieties that are less suitable for baking. Finally, consumers as well as restaurants must recognize the quality of traditional Broa and should be willing to pay a price premium to reward farmers for using traditional varieties (13).

3.2 Local gathering around landraces

Local community gatherings and festivals are far more than lively celebrations. They are the cultural anchors that sustain rural identity, transmit tradition, and knit together generations. Across Europe's countryside, these communal events serve as vital platforms for showcasing local food and crafts. They enable residents to affirm their shared heritage and foster a sense of belonging. Festivals rooted in agricultural cycles, local foods, and regional rituals reflect the profound connection between people and their landscapes. They not only celebrate the fruits of collective labour, beans, cattle, fish, or cheese, but also act as moments of demonstration, where history is performed, values are reaffirmed, and the local community's distinctiveness is made visible to visitors and residents alike.

3.2.1 Tools and experiences from practice

Bean festival in São Pedro do Sul, Portugal

With more than 100 bean varieties, the centre region of Portugal and especially the mountainous area around S. Pedro do Sul is the centre of bean varieties. Since 2014 the municipality of S. Pedro do Sul organizes a yearly beans festival and fair in cooperation with local producers, associations and gastronomy.

For this reason, the municipality collects the beans and sells it at the fair. Before the festival the producers are encouraged to produce the local varieties and receive a monetary support for producing the beans.



During the bean festival, farmers and local people come together and taste the traditional bean dishes and recipes that are presented by the various local associations of the village. The festival has developed as a yearly come together event for the local people that strengthen the local identity and the hold together.



The Cow`s ball, "Cika cattle festival" in Bohinj, Slovenia

https://www.facebook.com/lakebohinj/videos/1052285385203796/



The Cow`s ball or “Cika cattle festival” in Bohinj is originally a festival of the local people with long tradition to celebrate the end of the grazing season in the Alpine pastures. The return of the cattle is celebrated and the autochthonous Cika breed animals are presented. Traditional elements such as the parade of cattle with the shepherds and alpine farmers' wives are the highlight. The main goal was to introduce the life and work on the mountain pastures and to greet the livestock and herdsmen.

Today this event has become a celebration for wider public and more than 10 000 visitors. It’s one of the most recognized tourist events in Slovenia and has been mentioned in the two world’s greatest travel guides. The masses of people bring income to the farmers and the region, but through that touristification the Cika cattle festival has lost its meaning for the local people. Now, the people think about steps to renovate the festival from a stage scenery back to a local culture of the village.

Lusatian fish weeks: celebrating the regional fish tradition, Germany

https://www.biosphaerenreservat-oberlausitz.de/de/content/lausitzer-fischwochen-und-%C3%B6ffnungszeiten-der-hofl%C3%A4den



The ponds of the UNESCO Biosphere Reserve Upper Lusatian Heath and Pond Landscape are a cultural landscape, where the fish has been farmed since the 13th century. The "Lusatian Fish Weeks" are a series of events that traditionally take place in autumn and celebrate the fishing of ponds in Upper Lusatia. There are numerous festivals, fishermen's festivals and events in the region where fish is freshly caught and prepared, complemented by a supporting programme with handicrafts, music and children's activities. Highlights of the fish weeks are the traditional fishing festivals. Visitors experience first-hand how the nets are hauled in and ponds emptied.

Prisnacfest, Zelengrad, Croatia

https://www.lagbura.hr/en/prisnac-fest-zelengrad/



Prisnacfest is a rural cultural festival held in the historic village of Zelengrad near Obrovac, celebrating the traditions, flavours, and identity of the region. Centred around prisnac, a traditional cheese-based dish, the event highlights the deep connection between local people, their land, and their pastoral heritage. Alongside gastronomy, Prisnacfest showcases music, storytelling, and demonstrations of traditional skills, offering an authentic insight into everyday rural life. By gathering families, producers, artisans, and visitors, the festival keeps cultural knowledge alive, strengthens rural identity and helps transmit heritage to younger generations.

Tradition and revitalisation of traditional landraces in Croatia



The Lika Pramenka sheep is part of the "Pramenka" group of indigenous breeds in the Balkan region. The sheep are adapted to the rugged, rocky pastures of Lika and Gorski Kotar region, feeding on a diverse range of aromatic plants. The lambs are known for the unique taste of their meat, which is attributed to their diet of mountain herbs and vegetation during summer pasture grazing. This lamb meat is officially recognized as a protected geographical indication (PGI) product in the EU. Further the milk is basis for “Pag cheese”. Other examples are the local grape varieties of Plavac mali, Pošip and Grk in the northern Zadar region of Croatia.



The branding and reintroduction of products from local landraces in restaurants, gastronomic events and food festivals gave the communities a sense of recognition and reputation that shapes regional identity. In Croatia young farmers and entrepreneurs use such heritage crops to create modern products (craft beers, boutique olive oils, heritage wines). Agro-tourism services bring visitors in contact with rural communities. Gastronomic events with local dishes (soparnik, viška pogača) reintroduced in restaurants boost both tourism and community pride.



Valuing traditional family gardens in Northern Portugal

https://projetoharvest.pt/en/home-en/



Like other European countries, Portugal has a long tradition of self-sufficient family gardens. The Harvest project aims to promote family gardens not only in terms of self-sufficiency but also in terms of healthy sustainable nutrition (Mediterranean diet), social cohesion and preservation of biodiversity and environment.

- Social: it is a space for leisure and family interaction.
- Economic: short supply chains and self-production of food.
- Environmental: agroecological practices without chemicals.







- Nutritional: consumption of healthy and fresh food.

The Harvest project team enhances the use of sustainable practices in family farming across short local value chains, from production to the consumers in urban and peri-urban gardens in Lisbon, Viseu and Bragança. Main beneficiary is the research organisation “Montanhas de Investigação” in Bragança that cooperates with 14 other partners in Portugal.

An important element of the environmental project dimension is the cultivation of traditional crop varieties, such as Vibora onion, Penca cabbage, or Bragançano beans. A part of that conservation work is the collection and drying of the seeds and plants of traditional varieties as well as the distribution.

The developed field notebooks and good practice manuals for seed conservation support the participating project areas.

Co-funded by
the European Union



Here are some important results of the analytics of the traditional varieties and harvested products cultivated in the local project gardens:

- Higher nutritional concentration: The samples from home gardens showed lower water content, resulting in a higher concentration of nutrients per unit of weight. more minerals, higher fibre content (example: lettuce, leek, and green bean / Bragançano).
- Differences in colour: Significant differences in colour parameters between samples collected from home gardens and the commercial surface (example: Oxheart cabbage, turnip).
- Distinct sensory profile: More intense and authentic flavours, due to organic growing conditions and without ripening catalysts (example: cherry tomato and oxheart tomato).

In addition to the demonstration sites, the partner network realises many activities for dissemination of the results, such as technical publications and manuals, conferences and fairs, as well as training sessions and workshops.

4. Public incentives and product market access

The management of seeds and breeds of traditional landraces and the sustainable use is more successful, if there are incentives and benefits for famers and other engaged local rural actors. (7) Support should be provided to the rural communities to promote conservation and participatory breeding to sustain rural development. Breeding with the participation of farmers contributes to the reduction of genetic erosion by improving and sustaining the quality of the enduring landraces.

In particular, high-quality products with added value, in terms of regional tradition, cultural heritage, biodiversity and environmental benefits, can justify higher prices for consumers. Having a good market access this can position them as premium products. Economic or other operational benefits that at least compensate for the extra effort are essential.

4.1 Public incentives

In the countries of the European Union, there is a diverse structure of public funding programmes for traditional landraces at national, regional and sometimes local level. A central common basis is the EU Common Agricultural Policy (CAP) with the two pillars and a total budget of approximately 386.6 billion Euros for the period 2023-2027. Each member state with its own national goals and measures for implementation has developed a national strategic plan. In the field of green measures, including traditional landraces it is basing on:

- Voluntary Eco-Schemes: Incentives for farmers to become more involved in nature and environmental protection for one year (first pillar).

- Voluntary agri-environmental and climate measures (AUKM): Farmers voluntarily comply with certain requirements for five years (second pillar).
- Further instruments of second pilar: E.g. „LEADER“ bottom-up rural development, „European Innovation Partnership“ (EIP-Agri) on innovation in rural development.

4.1.1 Tools and experiences from practice

“Maintenance of endangered native breeds” in Portugal

In Portugal owner of traditional local breeds, that are listed in the following table of autochthonous breeds that are endangered to extinction and registered in the respective herd book, can apply for financial support. The amount of aid depends on the degree of extinction risk that has three classes: a, b and c. Degree A can receive 200€/CN, degree B 140€/CN and degree C 100€/CN. Arouquesa cattle breed, that is important in the partner region of S. Pedro do Sul has the risk class B.

This program for the ‘maintenance of endangered native breeds’ under Action 7.8, ‘Genetic resources’, is part of the CAP second pillar rural development programme for the mainland of Portugal.

Raças Autóctones Ameaçadas de Extinção		
Espécie	Raça Autóctone	Grau de Risco de Extinção
Bovina	Alentejana	Grau C
	Algarvia	Grau A
	Arouquesa	Grau B
	Barrosã	Grau C
	Brava de Lide	Grau C
	Cachena	Grau B
	Garvonesa	Grau A
	Jarmelista	Grau A
	Marinhoa	Grau A
	Maronesa	Grau B
	Mertolenga	Grau C
	Minhota	Grau C
	Mirandesa	Grau B
	Preta	Grau B
Ovina	Bordaleira Entre Douro e Minho	Grau B
	Campaniça	Grau C
	Churra Algarvia	Grau A
	Churra Badana	Grau B
	Churra do Campo	Grau A
	Churra do Minho	Grau B
	Churra Galega Bragançana Branca	Grau C
	Churra Galega Bragançana Preta	Grau A
	Churra Galega Mirandesa	Grau B
	Churra Mondegueira	Grau A
	Churra Terra Quente	Grau C
	Merina Branca	Grau C
	Merina Preta	Grau C
	Merino da Beira Baixa	Grau C
	Saloia	Grau B
	Serra da Estrela	Grau C
Caprina	Algarvia	Grau B
	Bravia	Grau C
	Preta Montesinho	Grau A
	Charnequeira	Grau B
	Serpentina	Grau B
	Serrana	Grau C
Suína	Alentejana	Grau B
	Bísara	Grau A
	Malhado de Alcobaça	Grau A
Equídea	Burro de Miranda	Grau A
	Garrana	Grau A
	Lusitana	Grau B
	Sorraia	Grau A
Avícola	Amarela	Grau A
	Branca	Grau A
	Pedrês Portuguesa	Grau A
	Preta Lusitânica	Grau A

Public programs and payments for traditional landraces in Croatia

With its National Program for the Conservation and Sustainable Use of Plant Genetic Resources Croatia aims to preserve and promote the sustainable use of the countries traditional and locally adapted plant varieties. Coordinated by the Ministry of Agriculture the program focuses on documenting, conserving, and reintroducing native crop species both ex situ (in gene banks) and in situ (on farms). It supports research, education, and sustainable farming practices that enhance biodiversity, strengthen food security, and maintain Croatia’s agricultural heritage.

Aiming on the preservation of the country's genetic livestock heritage, specifically endangered domestic animal breed, Croatia supports the holders and breeders 27 native breeds with annual payments or compensation for maintaining these low-yield but culturally and genetically valuable animals. The measure is part of the Croatian CAP agri-environmental and climate interventions for rural development.

Beyond, Croatia, four native poultry breeds are recognized and bred: the Hrvatica hen, Posavina crested hen, Križevci crested hen, and the Zagorje turkey. There is a national support program for the improvement of breeding of this native poultry breeds for the period 2024-2026.

National programs and federal payments in a complex federal state of Germany



The National Programme for Plant Genetic Resources and the National Programme for the Conservation and Sustainable Use of Lifestock Genetic Resources serve as the basis for the conservation and use, research and development of genetic resources in Germany. The programmes are coordinated and regularly revised by the Federal Ministry of Agriculture.

The implementation of the CAP national strategic plan in practice and funding is mainly carried out by the 16 federal states, including with regard to traditional landraces. All federal states implement the national programmes with their own priorities and promote the conservation and propagation of genetic resources through financial support, advice, networking and public relations. A large number of the federal states offer support programmes for old crop varieties that are part of the CAP agri-environmental and climate schemes.

In this context, the federal states of Brandenburg and Baden-Württemberg are also funding the preservation of the diversity of livestock genetic resources. In both federal states, the average subsidy is €228 per GV, while in Baden-Württemberg it rises to around €340 in 2026. Saxony offers funding for the conservation of animal genetic resources with GAK national funding. The keeping and breeding of rare or endangered native livestock breeds and financial compensation for economic disadvantages caused by the keeping of endangered breeds is supported, in particular.

4.2 Product market access

There are good examples where famers and other local rural communities benefit through valorisation of products and a good market access through local farmers markets, fairs and festivals or rural tourism and gastronomy. Products from landraces

can become particularly lucrative when associated with quality marks or labelling and provided that it is the result of an evaluation of the area's context and the main actors in production chains (14).

In the first AgroBioCom Workshop in June 2025 in Bohinj, Slovenia, the topic of successful market access and communication of traditional landraces was highlighted with discussions and good-practice example of the partner countries. They are documented in the AgroBioCom Bohinj Report. In this chapter some of the examples are briefly touched.

The development of local or regional value chains, from farmers' production through small-scale processing to marketing and purchase by consumers in various forms, is closely linked to market access of products. In many cases quality, logistics and branding of the products depends on efficient cooperation of the value chain partners.

4.2.1 Tools and experiences from practice

Development of value chains of traditional cereals (CERTRA), Portugal

https://esa.ipb.pt/certra/divulgacao.html

In 2023 the Escola Superior Agraria de Bragança in cooperation with eight other organisations in Portugal has started the CERTRA project "Cereais Tradicionais para uma Alimentação Sustentável em Portugal" (Traditional grains for a sustainable food system in Portugal). The project aims to:

- create a value chain to encourage the use of local cereals and promote organic farming;
- have greater knowledge about the characteristics of local cereals and their suitability for processed products, considering the nutritional and organoleptic value and health of consumers;
- increase farmers' accessibility to cereal varieties adapted to the agroecological conditions of the regions, with commercial and processing quality valued by the market;
- create new market opportunities for quality local products by getting to know consumers' tastes and preferences better;
- create networks for the exchange of knowledge and experience between actors in the value chain, from farmers to consumers, covering scientific and practical knowledge;
- promote sustainability and food security, in addition to valuing cultural diversity and local production.



As part of the ongoing project, the traditional wheat variety Trigo Barbela was identified as a promising grain and included in the communication, to promote access to diversified, seasonal and quality food. Further, Alexandra Filipa Teixeira investigated the market potential of wheat barbela oil in cream "cold cream", as an interesting product innovation, as part of CERTRA. In addition to a large number of seminars and webinars, the “Festival do Pão de Ló” (Portuguese sponge cake) and show-cooking with chefs took place on April 12, 2025 in Felgueiras close to Guimarães, Northern Portugal.



Building-up a regional value chain with old crops in the “Upper Lusatian Biosphere Reserve”, Germany

In 2007 the Upper Lusatian Heath and Pond Landscape Biosphere Reserve started with its project of building-up a regional value chain with old grain varieties. In cooperation with the VERN association (see pages before) nine farmers received seeds from the biosphere reserve under the condition of reproduction of grain. Today the farmers cultivate about 500 hectares of old crops, especially Champagne Rye and Waldstauden Rye.

Champagne Rye was a forgotten grain variety since the 1960s and brought back from the gene bank to the field by VERN in 1994. The old variety has proven to be particularly suitable for the dry, barren sandy soils of Upper Lusatia and delivers stable yields even in drought. Today the Champagne rye is still in the “Red List of endangered native crops in Germany”.



A mill and about 20 bakery enterprises are involved in the successful regional value chain. Regional bakery products, beer, spirits and poppy products are currently sold. The biosphere reserve is still in the position of a coordinator and looking for more value chain partners with competences of miller, maltster, baker or brewer.

Territorial brand "BOHINJSKO/FROM BOHINJ", Slovenia

www.bohinj.si/en/from-bohinj/

The regional brand "Bohinjsko / From Bohinj" was created following the "Izvorno slovensko" model (www.izvornoslovensko.si). It was the first collective trademark made using this model and has been working successfully since 2012. The owner of the brand is the Municipality of Bohinj, and it is managed by the Bohinj Tourism Institute. Products and services get the right to use the brand once they receive a certificate of quality and geographical origin. Providers can receive a Bohinjsko/from Bohinj Certificate for culinary products, dishes and drinks served in gastronomy, handcrafted products and products in contemporary design, guided experiences, accommodations, and events.

The Slovenian association of Bohinj flint producers, that fosters the autochthonous local "Trdinka" flint maize, is a partner of the territorial brand and working close together with the Bohinj tourism organisation. "Trdinka" is often used as a raw material for preparing the traditional Bohinj žganci (corn mush) or as an addition to modern culinary creations by local chefs. The voluntary association of breeders of the indigenous Cika cattle is closely associate with the regional brand and the Bohinj tourism organisation, too.



Local farmer market in Municipality S. Pedro do Sul, Portugal



Selling directly to consumers offers very good opportunities to communicate the special history and quality of local products from traditional landraces and their product identity and labelling. Farmer markets, such as the local farmer market in the municipality of São Pedro do Sul provide very good possibilities for face-to-face contact and communication.

Besides that, the direct selling without intermediary trade offers farmers and consumers better prices, at the same time and can creates unforgettable experiences for consumers and visitors at the same time.

At that market, the municipality offers farmers of the district a simple but efficient branding for their products. The label shall contribute to the consumption of local and seasonal products and incentive local economy and also a territorial food identity.



Community restaurant: Os Amigos de Covas do Monte, Portugal

In the traditional mountain village, there is a family restaurant located in the old primary school. It is well known for its traditional dishes including goat kid from the wood-fired oven, homemade sausage and bread made from local rye and corn. The restaurant attracts visitors as well as the beautiful mountainous landscape with hiking trails such as the path to Covas do Monte and Covas do Rio, which is classified as moderate and has a considerable gradient.



"Frika" traditional farmer's festival in Soča Valley, Slovenia

https://www.soca-valley.com/en/in-search-of-adventure/traditional-events/frikafest/



In Tolmin in the Soča Valley of Slovenian Biosphere region the Frika Festival in mid of October marks the symbolic return of shepherds with Cika cattle from the high mountain pastures, where they churned milk in small communities on the mountains all summer, while the cattle munched on the best vegetation between the Alps and the Mediterranean. The people of Tolmin combined the traditional Farmer's Festival with the festival of the Soča Valley culinary delicacy "Frika", and created the "Frika Fest". At the two-day event, where everybody can buy and taste unique cheeses from the Soča Valley, with Tolminc cheese at the forefront.

5. Managing current rural challenges

Managing the change to the younger people

In many rural communities the people, that are carrying the rural life and traditional know-how, are getting old. Younger people need perspectives: income and benefits, public services and cheaper family homes. Support for business ideas and innovation with attractive landscape including traditional crops and breeds can help, as well as rural tourism and a sustainable agriculture. But we are in a hurry and need success and solutions now.

Rural tourism and agriculture – a twinning synergy

Rural tourism and a sustainable agriculture are two main elements that can offer solutions for the younger. The approaches should be individual for each rural community depending on the various potentials, traditions and personalities. But all that is nothing without digital connection. GAP should be a central instrument to boost rural tourism and tourism farming as well as innovation and education. Traditional crops and breeds can help to give rural regions an individual profile and to raise awareness. Restaurant chefs bring local interpretations on the table and setting examples for consumers.

Managing the right balance

Making rural heritage, sound landscape and traditional rural culture attraction points for visitors, can be a fine line to loosing local identity. If it becomes just a stage scenery for masses of tourists in the sense of touristification, then the balance between authenticity and commercialisation has been lost. Coordinating organisations integrating municipalities and regional stakeholder interests, such as biosphere reserves, can be the answer, to manage the right balance.

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