

# Adding value to agrobiodiversity

At a time when a growing world population needs to be fed on limited resources in a changing climate, the conservation and sustainable use of agricultural biological diversity gains utmost importance. Agrobiodiversity plays a crucial role in food security and nutrition, as well as in the provision of environmental services and livelihoods. It is critical to the sustainability, resilience and adaptability of agricultural production systems. To promote awareness and share knowledge on conservation and the sustainable use of agrobiodiversity, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), has published this series of agrobiodiversity factsheets.

The present factsheet introduces the topic of market incentives for the conservation and sustainable use of agrobiodiversity. Adding value to agrobiodiversity products through the development of value chains and niche markets, partnerships with the private sector, and certification – for example, according to geographical designation – can motivate farmers to continue cultivating traditional crop varieties or keep rare local livestock breeds and conserve agrobiodiversity by using it.

## Market incentives for agrobiodiversity conservation

Throughout the world and over centuries, small-scale farmers and livestock keepers have developed crops and animal breeds that are well suited to their local conditions. These crops and breeds are hardy and disease-resistant. They can survive in hostile environments and continue producing reliable yields where modern, often imported crop varieties and breeds fail without significant external inputs. They enable people to earn a living in otherwise inhospitable areas. These crop varieties and breeds are in danger of disappearing, pushed away by modern plant varieties, livestock breeds and production techniques. Valuable genetics for future breeding efforts are being

### What is agrobiodiversity?

Agricultural biodiversity includes all components of biological diversity of relevance to food and agriculture, and all components of biological diversity that constitute the agricultural ecosystems: the variety and variability of animals, plants and micro-organisms, at the genetic, species and ecosystem levels, which are necessary to sustain key functions of the agro-ecosystem. Agrobiodiversity is the outcome of the interactions among genetic resources, the environment and the management systems and practices used by farmers and herders. It has developed over millennia, as a result of both natural selection and human interventions.

lost. Incentives for farmers are needed so that they maintain important agrobiodiversity on farm. For further information on incentives for agrobiodiversity conservation, see box next page, [Thies \(2000\)](#): Incentive measures appropriate to enhance conservation and sustainable use of agrobiodiversity, and the GIZ factsheet (in the present text, GIZ factsheets, hyperlinked, are marked with ►):

► [GIZ, 2015: Incentives for agrobiodiversity conservation](#)

Market incentives are one way to support farmers in their efforts of conservation and sustainable use of agrobiodiversity. To add value to so-far underutilized crops and livestock breeds and derived products will generate income for producers. This income, in turn, makes cultivation and conservation of these species more interesting (protection through use). There are many examples of how the diversity of crops and animal breeds could be promoted through market initiatives:

GIZ, 2007: Promoting the diversity of useful plants and animal breeds through marketing:

- [The example of potato diversity in the Andes](#)
- [Example: Fine flavour cocoa from Ecuador](#)
- [The example of argan trees in Morocco](#)
- [The example of the Schwäbisch-Hällisches Landschwein pig](#)



## Incentive measures for conservation and sustainable use of (agro-)biodiversity

- Market incentives: access to markets and differentiation of products in markets
- Social incentives: enhancement of human capital (skills, knowledge and abilities) and social capital (a supportive and cohesive environment that fosters the adoption of sustainable practices throughout a value chain)
- Financial incentives: facilitation of access to finance or financial compensation for sustainable practices
- Physical incentives: enhancement of production facilities, access to equipment and transport
- Property rights: access and rights to own, use or manage biodiversity resources that are defined by public measures
- Fiscal incentives: budgetary measures such as taxes and subsidies.

(Source: [UNCTAD, 2014](#))

## Value chains promoting agrobiodiversity

Products from rare and useful plants and animals whose existence is at risk – so-called agrobiodiversity products – can provide numerous opportunities for value chain development. Successful marketing gives the producers and breeders of such rare plant varieties and animal breeds an incentive to continue conserving them. In order to provide economic returns on agrobiodiversity conservation, suitable agrobiodiversity crops and animal products with economic potential should be identified. Possible steps for strengthening value chains of agrobiodiversity products are listed in the box below.

The most important elements of an agrobiodiversity-supporting value chain are

- **The original product:** The degree to which a value chain contributes to conserving agrobiodiversity depends on the diversity of the original product.
- **The number of producers and suppliers of the original product:** The presence of many small producers in the value chain favours the conservation of agrobiodiversity.
- **The market power of the buyers (individual consumers or large buyers):** If a value chain is dominated by a few large buyers, this may have either a positive or a negative effect on the conservation of diversity, depending on their behaviour.
- **The length of the value chain itself:** Short value chains are more suitable for the conservation of agrobiodiversity than long ones.
- **The number of parallel value chains for an original product:** Several parallel value chains for an original product offer a better opportunity for opening up new markets for agrobiodiversity products than is the case with only one value chain.

## What is a value chain?

A value chain comprises all activities, stakeholders and processes involved from the primary production of a product (producers), the subsequent processing steps (processors), the marketing to wholesalers and retailers (traders, middlemen) and, finally, the consumption of the product (consumers). At each step, the product gains additional value, which on the one hand has to be high enough to satisfy the participants in the value chain and on the other hand low enough to keep the product competitive in the market. The analysis of the value chain allows insights with regard to concerned actors, the processes and division of labour, the involved quantities of products and the distribution of costs, benefits and power.

Understanding the markets, the products and the production systems is part of promoting sustainable agrobiodiversity products. It is useful to differentiate market segments: the market in industrialized and the market in developing countries; the market of the well-to-do and the market of the less-well-off. Product interest of the consumers and their behaviour in these market segments varies, offering different opportunities and requiring different approaches if marketing opportunities are to be utilized and translated into incentives for sustainable use and conservation of agrobiodiversity.

Agrobiodiversity products can attract potential buyers who are interested in cultural diversity and values, novelty, health food, and environment. Producers should focus on the unique qualities of agrobiodiversity products for which consumers

## Possible steps for strengthening value chains of agrobiodiversity products

- Field survey for identification of possible marketable agrobiodiversity products, considering such specifications as: taste, colour, appearance, measurements, weights, level of standardisation, packaging requirements and distribution channels
- Market survey on the demand for high-value speciality products
- Training in value chain analysis and marketing for local farmers (male and female); support of producer networks
- Identification of private businesses interested in marketing agrobiodiversity products
- Introduction of small scale (primary) processing facilities for farmers, e.g. drying facility for fruits and vegetables
- Development of a local brand, or establishment of a national eco-label
- Quality assurance
- Special events like festivals or 'agrobiodiversity-selling days' for product promotion

might be willing to pay more. For unique local products of a low quantity, the primary focus in order to maximise marketability could be the production methods (which can include organically grown products), nutritional value, regional provenance and associated product stories. However, the premium price that the market demands for high product-standards, processing and packaging requires a constant supply, and needs relatively large volumes of uniform quality.

It is important to make use of all the stakeholders involved – producers, governments, international, regional and national trade bodies, the private sector and, most important, consumers. Consumers are the most crucial stakeholder as they determine what sells and what does not, and the price that is paid for the goods. Recent consumer trends such as the increased demand for vegetarian and vegan food or the slow-food movement (see [slowfood.com](http://slowfood.com)) also offer options for agrobiodiversity products. Further information on value chain promotion and (agro-)biodiversity can be found in [Will \(2008\)](#) and

► [GLZ, 2007: Value chains and the conservation of biodiversity](#)

### Value chain development training in China

In a Chinese-German cooperation project on sustainable management of agrobiodiversity in mountain regions in Southern China, farmers have been supported in promoting marketable traditional varieties. They received training on the value chain concept, how to perform a thorough value chain analysis, and marketing strategies and tools, as well as pricing and negotiation skills. Focus was on developing basic business and marketing skills, improving product quality, forming farmer cooperatives to improve their position in negotiations, and generally maximising profit in all areas of production. Farmers analysed the value chains of selected local crop varieties, developed action plans for placing them on the market and identified areas in which external support was needed ([Feng, 2011](#)).

### Impacts of value addition to agrobiodiversity products – cocoa from Ecuador

The impacts of value addition to agrobiodiversity products occur on the social, the economic and the environmental level, as shown in the case of cocoa production in Ecuador. In Ecuador, the local premium cocoa was endangered by being replaced through higher-yielding consumer cocoa varieties. In order to promote premium cocoa, local cocoa producer cooperatives were strengthened and all actors of the cocoa value chain were interlinked as part of the National Cocoa Export Promotion Programme. The quality of the local premium cocoa variety ‘Nacional’ was improved, the producers certified and contacts between premium chocolate producers and cooperatives were established. Within three years, 19,500 ha of ‘Nacional Cocoa’ were certified under Fairtrade and Rainforest Alliance standards. 4,000 farmers received access to the international bio- and fair-trade certified market with an export volume of 1,880 t of cocoa. The farmers receive 30% higher prices for their cocoa, which triggers further positive changes in their livelihoods such as better health, education, housing, and reduced temporary migration. The production of cocoa in traditional intercropping systems with shade trees protects the natural forest ecosystem with its large diversity. Logging has much decreased in the area.

### Niche markets

Finding niche markets for agrobiodiversity products is one possible way of ensuring the survival of locally adapted crop varieties and animal breeds. It enables farmers to earn more with their current production system. A niche market is a market segment that addresses a need for a product or service not being met by mainstream suppliers. It has a narrowly defined group of potential customers. It usually develops when a potential demand for a product or service is not being met by any supply, or when a new demand arises because of changes in society, technology or the environment. Despite the fact that niche markets are by their nature very limited in volume as compared with the mainstream market, they may be very profitable due to specialization and focusing on small and easily identified market segments.



Value chain development training in China: Analysing the value chains of agrobiodiversity products to identify options for action.



## Exploring niche markets for adding value to livestock diversity

- Use existing resources, identify a suitable entry point, start small
- Do the research (on production system, potential product and market/potential customers)
- Identify special characteristics of the breed (create new products, refine existing traditional products, or find new markets for existing products)
- Find a viable business model, focus on quality, build capacity
- Do not put all your eggs in one basket, but address a range of products and markets.

(Source: [FAO, 2010](#))

## Development partnerships with the private sector

Agrobiodiversity products provide numerous opportunities for private sector involvement. Marketing these products and promoting agricultural biological diversity enables companies to gain access to new groups of customers, make more profit and build up an image of being ecologically and socially responsible. Sustainability and the protection of agrobiodiversity is a huge business opportunity. A growing middle-class in developing and transition countries are becoming more aware of environmental issues and are increasingly looking for 'healthy' ecologic products. Companies should consider these issues in their business models, decisions, sourcing and production methods.

Different forms of cooperation are possible between private companies and development initiatives that support the sustainable production, processing and marketing of agrobiodiversity products. Development partnerships with the private sector, also called public-private partnerships (PPP), enable the public and the private partners involved to combine their individual strengths. PPP projects are jointly planned, financed and implemented. For further information, see the [Global Partnership on Business and Biodiversity](#) of the Convention of Biodiversity (CBD) and

- ▶ [GLZ, 2007: Partnerships for agrobiodiversity](#)
- ▶ [GLZ, 2007: Promoting the diversity of crop plants and animal breeds through marketing. Example: Fine flavour cocoa from Ecuador](#)

## BioTrade Initiative

Since its launch by the United Nations Conference on Trade and Development (UNCTAD) in 1996, the BioTrade Initiative has been promoting sustainable bio-trade in support of the objectives of the CBD. The Initiative has developed a number of regional and country programmes. Since 2003, the BioTrade Initiative also hosts the BioTrade Facilitation Programme (BTFP) which promotes contacts between suppliers of biodiversity products in developing countries and buyers in industrialized countries, focussing on enhancing sustainable bio-resource management, product development, value adding processing and marketing (see [BioTrade Initiative](#) and [BTFP](#)).

## Standards and certification schemes

With certification it is possible to achieve a 'recognizable' product, distinct from others, which can point to its additional value (more healthy, better taste, produced/processed in a particular way, by particular people, in a particular region). High quality standards help to differentiate the certified products from the rest of the market segment. Certification, special labels and brand names can make use of the 'distinctiveness' of agrobiodiversity products and help conserve agricultural diversity. Support programmes might promote certification of origin, the production of organic products, and aim to add value to products by other standards such as Fairtrade or Fair-Wild (see boxes next page). However, certification of agrobiodiversity products requires careful planning and organization.

## Organic products

Many small-scale farmers in Africa and elsewhere are producing 'organically' because they just cannot access or afford the use of external inputs. This is also the reason why many farmers prefer to plant local varieties and use local animal breeds: these tend to be better adapted to low input levels. Often, they are also better able to tolerate local pests, diseases and other stresses, which makes it possible to produce without external inputs. Local varieties and animal breeds are usually highly valued by local people for their excellent taste and nutritious value. This makes these products excellent organically produced health food items. Certification as organic product is a means to obtain higher prices; however, there are different certification standards, the certification process is complex, is often expensive, requires time, and product standards have to be guaranteed, especially for export markets.

## Fairtrade

Fairtrade is an alternative approach to conventional trade. It is based on a partnership between producers and consumers. When farmers can sell on Fairtrade terms, it provides them with a better deal and improved terms of trade. Fairtrade standards are designed to support the sustainable development of small producer organizations in developing countries. Fairtrade standards distinguish between core requirements, which producers must meet to be certified, and development requirements that encourage producers to continuously improve and to invest in the development of their organizations. The concept is developed to encourage sustainable, social, economic and environmental development of producers and their organizations (see [Fairtrade](#)).

## FairWild

The FairWild Standard was developed to help ensure that wild medicinal plant products are produced sustainably and ethically. It originated from the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP). The FairWild Standard applies to wild plant collection operations wishing to demonstrate their commitment to sustainable collection, social responsibility and fair trade principles. It allows for traceability and transparency, as well as improved product safety. The FairWild certification is based on a completed species resource assessment, species management plan, established sustainable collecting practices (including collectors' trainings), transparent cost calculation along the supply chain, traceability of goods and finances and documented fair trading practices. On-site annual audit by a third party certification system is compulsory for the certification.

► [GIZ, 2012: Collection of Wild Plants in the Caucasus – FairWild as Alternative Management and Trade Model](#)

by means of geographical indication is intended to benefit a region rather than individual businesses and to promote the economic capacity, special environmental features and cultural identity of that region. A geographic seal of origin should, if possible, cover the marketing of a number of plant varieties or animal breeds; however, the uniqueness of the products must be maintained.

Many countries have their own certification systems and labels to protect geographical indications of origin, such as the 'appellation d'origine contrôlée' (AOC) used in France, and the 'denominazione di origine controllata' (DOC) used in Italy. The EU employs three different protected status schemes to encourage diverse agricultural production, protect product names from misuse and imitation, and help consumers by giving them information concerning the specific character of the products (see box below). Non-EU members can also register their products.

The approach of employing geographical indications of origin has been utilised successfully in development cooperation, for example in marketing the products of the argan tree in Morocco. For further information, see [Larson \(2007\)](#), [CTA \(2013\)](#), and

- [GIZ, 2007: Creating value from products with protected designations to conserve agricultural diversity](#)
- [GIZ, 2011: Intellectual Property Rights and Rural Development: Protection of Geographical Indications of Origin of Agricultural Products](#)

## Geographical indications and traditional specialities in the EU

- **Protected Designation of Origin (PDO):** covers agricultural products which are produced, processed and prepared in a given geographical area using recognised know-how. In September 2015, there were 594 product names registered as PDO, for example Prosciutto di Parma, Gorgonzola, Parmigiano-Reggiano, Camembert, Roquefort and Champagne.
- **Protected Geographical Indication (PGI):** covers agricultural products closely linked to the geographical area. At least one of the stages of production, processing or preparation must take place within a defined geographical area. In September 2015, there were 647 product names registered as PGI, including Gouda Holland and Esrom cheese as well as Darjeeling tea.
- **Traditional Speciality Guaranteed (TSG):** indicates that the product is of traditional composition or produced by a traditional process. In September 2015, 50 product names had been awarded TSG status, including Mozzarella and Pizza Napoletana.

Note: All registered products are listed in the Commission's online database [DOOR](#).

## Geographical indications of origin

Geographical indications of origin provide the consumer with information about quality characteristics of a product that are closely associated with its place of origin, thereby distinguishing it from products of different provenance. Geographical site conditions such as soil quality, vegetation and climate, as well as traditional knowledge on how local plants and animals can be used and processed, provide products with unique selling points. In purchasing the product, the consumer acquires not only quality but a piece of local culture, authenticity and reputation.

In an ideal situation, the protection afforded by geographical indications of origin contributes to the attainment of economic, environmental and social objectives. In contrast to private-sector certification schemes, product differentiation



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## Outlook

Adding economic value to products derived from agrobiodiversity can serve as an incentive for smallholder farmers and livestock keepers to continue growing traditional crops and raising rare local livestock breeds which are threatened with extinction, pushed aside by modern plant varieties and exotic breeds. This can lead to the conservation and sustainable use of agrobiodiversity as well as improved livelihoods. The genetic resources are used and, thus, do not get lost (slogan 'use it or lose it').

The success of adding value to agrobiodiversity products can attract public investments in the development and conservation of the entire stock of neglected and underutilized local species, thereby safeguarding the related agrobiodiversity ecosystem services. There are different opportunities available to add value to agrobiodiversity products – the challenge is to make use of them.

## Important links

- BioTrade Initiative: [www.biotrade.org](http://www.biotrade.org)
- Global Partnership on Business and Biodiversity: [www.cbd.int/business/gp.shtml](http://www.cbd.int/business/gp.shtml)
- Global Platform on Business and Biodiversity: [www.cbd.int/business](http://www.cbd.int/business)
- Sector Project Sustainable Agriculture (NAREN): [www.giz.de/sustainable-agriculture](http://www.giz.de/sustainable-agriculture)

## Further information

- FAO, 2010: Adding value to livestock diversity. [www.fao.org/docrep/012/i1283e/i1283e.pdf](http://www.fao.org/docrep/012/i1283e/i1283e.pdf)
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