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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE
COUNCIL AND THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE**

Agricultural Genetic Resources - from conservation to sustainable use

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REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL AND THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE

Agricultural Genetic Resources - from conservation to sustainable use

1. GENETIC RESOURCES – A PILLAR OF OUR NATURAL CAPITAL AND THE BASIS FOR FOOD SECURITY

With the prospect of an increasing world population, food security has become a challenge of paramount importance. Attention must be given to how to ensure a sustainable supply of food under changing environmental and climatic conditions as well as changing needs. Productivity, adaptability and resilience of agro-ecosystems depend *inter alia* on the availability of a rich genetic pool of farmed breeds and crop varieties. Genetic diversity in agriculture is associated with a wide range of environmental and economic benefits which are essential for the sustainable agricultural production, but correspond also to a wider range of societal interests. These benefits include varied traditional agricultural landscapes with rich flora and fauna, the production of foodstuffs with high organoleptic qualities, products which meet the specific needs of the agri-food industry, being of high relevance for new concepts of economic developments in agriculture like short supply chains and alternative tourism. It is also associated with a growing appreciation of local and traditional practices and their value in terms of cultural heritage.

Conserving Genetic Resources in agriculture is a long-term need that goes beyond national interests. Union Heads of State agreed in 2010 to *inter alia* halt biodiversity loss in the Union by 2020¹ and the Union took commitments under the Convention on Biodiversity and pledged to working towards these commitments in the Union Biodiversity Strategy adopted in 2011.

This Report highlights the opportunities arising from agricultural biodiversity and using its potential to address a wide range of environmental and economic challenges and opportunities referred to in the Europe 2020 strategy.

With this Report, the Commission intends to move ahead on the conservation of European's agricultural genetic diversity building on past experiences. It aims at recalling the need to conserve and sustainably use genetic resources and at ensuring that this objective is properly catered for in the ongoing development of relevant policies and programmes, notably:

- the Rural Development Policy, via its agri-environmental measures to target the level of practical farming and via the European Innovation Partnership to bridge practice needs with research activities and foster interaction between relevant actors;

¹ European Council Conclusions

- the Research & Innovation Policy with its Framework Programme Horizon 2020 to build up the knowledge base on genetic diversity in agriculture.

2. CHALLENGES AND NEEDS

Maintaining access to safe and affordable food of a high quality and securing sustainable agricultural production are challenges that have to be met in the context of increasing demand for agricultural products. The conservation and sustainable use of genetic resources in agriculture contributes to the provision of public goods and eco-system services, being of key importance for sustainable agricultural production, which includes pollination, improved pest control, more resilient agro-ecosystems, and soil stability. Accordingly, agricultural biodiversity contributes to food security by mitigating the risks associated with intensive and highly specialised production systems

Modern conventional agriculture tends to use mainstream varieties and breeds, and monocultures and mono-variety crops largely prevail in agricultural landscapes. Preserving and further developing the diversity of genetic resources in agricultural breeds and varieties represents a safety-net to adapt to changing conditions and facilitating innovative solutions. This will also generate economic opportunities for the agricultural sector, building on quality schemes and diversity in the supply of food, to the benefit of consumers.

Economic viability is one of the main critical factors that influence farmers in choosing breeds and crops. In order to safeguard genetic resources, it is necessary to improve the economic benefit farmers can derive from using underutilized species, varieties and breeds. This includes promoting new products and encouraging increasing demand by consumers.

Counteracting the abandonment of traditional, locally adapted breeds and crops, requires for farmers to recover the know-how linked to selecting and breeding and other traditional agricultural practices. To encourage farmers to engage in those activities and to incentivate knowledge exchange, a fair economic return must be ensured, and advice and support should be directed towards modern, innovative economic opportunities building on traditional knowledge and practices.

The conservation and sustainable use of genetic resources need to be underpinned by systematic science-based efforts to genotype and phenotype genetic resources also in view of identifying specific characteristics under specific (natural) conditions and/or specific uses. Beyond the conservation and sustainable use of plant and animal varieties, experts underline the importance of giving attention to microorganisms, still largely unexplored, linked to soil fertility and resilience, and sustainable pest control. Cooperation and interaction between the research sector and all interested parties will ensure that agricultural genetic resources are valorised.

3. THE GLOBAL CONTEXT

The Rio+20 declaration on "The future we want" reaffirmed the need to improve food security, based on sustainable agricultural practices that preserve natural resources, including genetic diversity, by building on enhanced agricultural research and stronger international cooperation.

As a party to the Convention on Biological Diversity, the Union agreed that by 2020 the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

So far, the only specialised international instrument in place would be the International Treaty on Plant Genetic Resources for Food and Agriculture² (the Treaty), negotiated by FAO Commission on Genetic Resources for Food and Agriculture, where the Union is an active player. The Treaty, a specialised agreement on access and benefit sharing in the context of the Nagoya Protocol, engages parties to conserve plant agricultural biodiversity both inside (including on farm) and outside ecosystems and natural habitats and to sustainably use genetic resources. The Parties agree to engage in measures covering agriculture, research and breeding and to facilitate access to plant genetic resources. The Treaty recognises the role and rights of farmers in conserving, using and improving agricultural genetic resources and sharing the related benefits.

4. THE UNION POLICY CONTEXT

To achieve the Europe 2020 Strategy's headline target to halt biodiversity loss, the Union has adopted a strategy on biodiversity conservation³. This strategy invites all sectoral policies to integrate biodiversity concerns. Target 3 specifically addresses agriculture and forests, underlining the requirement to conserve the Union's agricultural genetic variability, notably through Rural Development Policy by proposing to encourage the uptake of agri-environment measures to conserve genetic diversity and by exploring the scope for developing a strategy for the conservation of agricultural genetic diversity.

The agri-environment measures, forming part of Rural Development, offer Member States the opportunity to target the level of practical farming to perform on-farm conservation of genetic resources. Agri-environment measures include the possibility to compensate farmers for additional costs and income foregone resulting from conservation activities aiming to preserve endangered breeds and crops under threat of genetic erosion. Support for the conservation and sustainable use of genetic resources forms part also of the Common Agricultural Policy reform package and the

² <http://www.planttreaty.org/>
³ COM(2011)244

Commission is keen to encourage Member States and regions to put a strong emphasis on these matters in future programmes.

The Union developed also legislation on 'conservation and amateur varieties' (Directive 2008/62/EC and 2009/145/EC) and grass mixtures with wild plants (Directive 2010/60/EU) with a view to support biodiversity and protect the natural environment. In 2012, the Common plant variety Catalogues contained 656 conservation or amateur varieties, 158 of agricultural and 498 of vegetable species.

The Community programme⁴ on the conservation, characterisation, evaluation and use of genetic resources in agriculture established conservation activities, both *in-situ* and *ex-situ*. These enhanced the knowledge of plant genetic resources and the dissemination of results. Other actions targeted the establishment of strategies and guidelines and the creation of a European database for farm animal species and breeds. This programme has come to an end in 2012 and continuation of this type of actions must be further pursued under the Union's Research & Innovation Programme which will allow more practice oriented multi-actor formats in the future.

The Union Research & Innovation Policy with its ongoing 7th Framework Programme has provided support to medium to large-scale, multi-actor research projects on the characterisation and use of genetic resources in agriculture, forestry and fisheries.

The proposal for the Union Research & Innovation Policy Horizon 2020 for the budget period 2014-2020 emphasises sustainable food security and gives renewed attention to practice-oriented activities, including actions on investigating and investing in agricultural genetic resources-related research. The proposal also includes actions to foster genetic resources diversity by promoting its potential end-products, i.e. high quality, diversified products. Such actions involve research on providing healthy and safe foods, developing a sustainable and competitive agri-food sector and promoting informed consumer choices.

5. STATE OF PLAY

Though the continued loss of agricultural biodiversity at farm level remains a matter of serious concern, the measures undertaken on the conservation and sustainable use of genetic resources have shown that there is a clear perspective for building on and expanding the conservation approach. However, fostering the sustainable use of genetic resources, has received insufficient attention so far.

Rural development programmes contributed to genetic resources conservation at farm level and encouraged farmers to preserve local breeds and crops by rewarding

⁴ Council Regulation (EC) 870/2004

farmers and other beneficiaries (non-governmental organisations and other relevant stakeholders) who engage in conserving agricultural genetic resources or undertake dissemination and advisory actions. Genetic resources-related actions were programmed in 21 Member States, with 59,000 contracts and some EUR 143 million paid out in the period 2007-2011.

The Community programme⁴ on the conservation of genetic resources in agriculture provided co-funding for 17 conservation actions, both *in-situ* and *ex-situ*, concerning various farm animals, plants, and forest trees. Those actions were implemented by some 180 partners in 25 Member States and 12 non-EU-countries with a budget of EUR 8.9 million⁵. The programme resulted in the collection and characterisation of several thousands of new accessions and the establishment of conservation infrastructures, databases, core collections, gene-banks, and accession catalogues. Furthermore, actions included the formulation of guidelines and the exchange of genetic material between programme participants and end-users (farmers, breeders, gardeners). As underlined by the evaluation report, the programme was helpful in improving the scientific knowledge of the nature, management and potential of various agricultural genetic resources, and advanced the understanding of local practices and needs. It also helped to build effective cross-border cooperation, to stimulate contacts and active networking, and to attract attention of stakeholders concerning the importance of conservation activities. However, a gap remained in the form of limited involvement of end-users with direct consequences on the "use" of genetic resources and insufficient cooperation and exchange of information and knowledge among the relevant actors.

Research policy covers the entire spectrum of genetic resources-related activities: characterisation (genomics, phenotyping, molecular biology), improved breeding approaches, and *ex-situ* conservation. Under the 7th framework programme, research on plant and animal genetic resources received funding of some EUR 44 million during the period of 2009-2012. The 2013 work programme provides for dedicated appropriations of EUR 19 million for plant genetic resources, EUR 15 million for animal genetic resources, and EUR 6 million for fish genetic resources. However, more attention must be given to foster interaction between researchers and end-users, in particular farmers and breeders, in order to valorise research outcomes in terms of innovation and their practical use.

Effective conservation and enhancement of agro biodiversity and variability needs a legal framework in the Union that takes into account genetic resources-related issues to facilitate conservation activities and sustainable use of genetic resources. To this extent, the Commission has recently proposed a major revision of the legislation on plant reproductive material that would bring about a substantial enhancement of the

⁵ For a detailed description of the programme and its evaluation see the Staff working document annexed to this Report.

conservation of genetic resources as it facilitates considerably the access to the markets of traditional varieties and provides for openings to less uniform varieties.

Whilst the active involvement of farmers has been achieved by rural development measures, the thrust of the other above-mentioned actions is targeted towards the research community. As concluded in the evaluation report on the Community Programme, much more needs to be done to reach end-users in view of stimulating and expanding the sustainable use of genetic resources in agriculture. The vast scientific knowledge gathered has to find its way into breeding and farming practice, where it needs to be adapted to practice needs and joined with traditional knowledge existing at farm level. In order to encourage the co-creation and sharing of knowledge among all actors involved, active networking and facilitation of communication needs to fill the gap between the science-based work, including the characterisation and evaluation of genetic resources and the development of more diverse varieties to expand the sustainable use of genetic resources.

6. PRIORITY AREAS OF ACTION

The conservation of agricultural biodiversity and the sustainable use of genetic resources in agriculture require actions expanding beyond the established framework. Particular emphasis must be given to an **integrated and holistic approach** that ensures a better coordination of genetic resources conservation efforts through sustainable use and an effective interplay among the relevant actors.

The **sustainable use of genetic resources** must be developed alongside improving the economic viability of the agricultural systems involved in genetic resources conservation. Breeding activities are required that focus at farm level on underutilised species, traditional and local breeds and crops. This requires the setting-up of UNION-wide networks to valorise such material so as to promote the role of agriculture in the development of rural areas, maintenance of traditions and traditional farming practices, and the provision of environmental public goods. Action is needed to enable farmers to recover traditional knowledge and to provide them with the necessary skills and know-how needed to work with local breeds and crops, while taking account of changing climatic conditions. In order to provide an economically viable basis for genetic resources conservation and use, the involvement of specialized small-scale food processing industry, locally oriented restaurants and alternative forms of tourism can play an active role in valorising agricultural genetic resources and contribute to revitalize local economies.

Research should continue to engage to further harness **scientific and technological developments** to advance in genomic and phenotypic characterisation, preferably oriented to detect and evaluate relevant traits associated with, *i.a.* productivity, robustness, health, welfare, resource utilisation and product quality. Evaluation results on genetic resources, varieties and breeds should be made available to farmers by competent authorities and/or extension services. Research activities should

correspond to practice needs, be prioritised and coordinated to take into account existing gaps and overlaps, and provide solutions to end-users. Scientifically sound analysis must be expanded to cover also crop relatives as they can provide useful information on the robustness of individual species. Studies on landscape genetics would help to obtain information on gene flow, selection and dynamic adaptation of breeds and crops to local and potentially changing climate conditions. Soil biodiversity, other microbial and invertebrates genetic resources (*e.g.* for pest management, agri-food industry, pollination,...) need further investigation and so do the analysis of interactions between microbiota and other species (*e.g.*, in ruminants).

Researchers and national competent authorities have developed a wide range of collections and related databases on genetic resources, breeds and plant varieties. While this information is generally accessible, more needs to be done towards **better coordination and harmonisation** to ensure the inter-operability of these collections, data bases, and information systems.

Active networking and steady exchange of information and knowledge between science, breeding and farming practices play a key role in creating synergies and achieving economies of scale, while avoiding overlaps and making outcomes more accessible to end-users. Such networks lead to better coordination and offer opportunities for innovation, while building on shared needs.

7. KEY ACTORS

The active involvement of all relevant stakeholders and national competent authorities is key to the successful conservation and sustainable use of genetic resources in agriculture. Farmers, researchers, breeders and agri-food and other processing industries, and consumers have vested interests as they can potentially benefit from opportunities offered by genetic resources. And they play decisive roles in the value chain.

As a contribution to *ex-situ* conservation and accompanying *in-situ* conservation and use, **scientists** and competent authorities undertake activities to characterise and evaluate animal, plant, and microbial/invertebrate genetic material, and to select beneficial traits. They also engage in improving methodologies and tools in order to enhance the effectiveness of genetic resources characterisation and testing and to optimise breeding techniques. Furthermore, they play an essential role in synthesising and disseminating results and ensuring that genetic material and related information are accessible for practical uses, including for industry, breeders and farmers.

Farmers engage in on-farm conservation and sustainable use. In some cases, farmers' motivations to engage may go beyond the principles and logic of immediate economic gains resulting from food production or higher and more sustainable yield. However, mainstreaming the sustainable use of genetic resources would require an

economically viable basis. This viability can be derived from improved capacity to adapt to biotic and abiotic stress, diseases and pests, or from increased production efficiency and management; it would also arise from the quality and uniqueness they offer, in particular in the context of local markets and corresponding cultural values and traditions.

Breeders, including farmer breeders, rely on genetic resources to develop healthy animal breeds/phenotypes and plants varieties with increased agronomic value (e.g. productivity, higher resistance to disease), while offering safe products with high organoleptic and nutritional qualities, and/or different characteristics. To become economically competitive, local and underutilised breeds and crops have to respond to needs and require dedicated breeding activities to improve their productivity or to select outstanding characteristics and valuable agronomic traits. Breeders need to satisfy both farmers' needs and consumers' expectations while supplying agri-food industry with products adapted to the production chain.

Consumers' choices determine decisions across the whole supply chain, and hence influence general agri-food production patterns, notably at the level of primary production. Commercial (and educational) strategies can drive this process: over the past decade more and more consumers changed their attitude and put emphasis on quality, diversity, sustainability, fair trade concerns, animal welfare, pleasure and conviviality linked to food. Supporting and promoting products derived from traditional and diversified breeds and varieties will help to expand these markets and encourage farmers to engage in an economically viable use of neglected species or under risk of genetic erosion. Those activities cannot be developed in a top-down manner but require interaction and cooperation among all actors, including farmers, processors, retailers, and consumers.

In view of ensuring enabling conditions, **decision makers** and **administrations** have to carry their share and to ensure coordination at all levels, including with relevant international standard setting organisations and international networks, and to make efficient use of existing structures in place. Furthermore they need to engage in developing the institutional and legal framework in a manner that is consistent with the conservation and sustainable use of genetic resources in agriculture while enhancing their economic viability.

The Rural Development Policy established under the Common Agricultural Policy provides for conservation of relevant breeds and plant genetic resources, for targeted actions to characterise and evaluate these resources and also for quality schemes for agri-products and foodstuffs. It is necessary to promote activities aimed at supporting the transfer of research on conservation, characterisation and evaluation of genetic resources to farmers and breeders. Furthermore, knowledge sharing among all relevant actors, including end-users needs to be fostered.

8. FROM RESEARCH TO CONSERVATION AND ACTIVE SUSTAINABLE USE

The best prospect to recover, maintain, and unleash the potential of agricultural biodiversity will be provided by an integrated and holistic strategy.

Meanwhile, it is of utmost importance that the ongoing development of the Rural Development programmes and the European Innovation Partnership as well as Horizon 2020 combine conservation activities with end-user-oriented approaches, based on unlocking the economic potential of genetic resources into the value chain. This must be supported by interaction and co-operation among all actors involved in genetic resources conservation as well as by scientific activities and dissemination of results to farmers and end-users. This approach should achieve in particular the following:

Sustainable use of genetic resources:

- Using the possibilities offered by Rural Development Policy, member states should sensitize farmers and potentially interested actors to commit to increasing *in-situ*/on farm conservation activities;
- All actors in the food chain should invest to unlock the potential of agricultural genetic richness along the whole production chain and capitalize on existing EU instruments and processes to make conservation and sustainable use cost-effective and profitable businesses, in particular by encouraging consumers' demand for products derived from traditional and local varieties;
- Scientists and Operational Groups under the European Innovation Partnership "Agricultural productivity and sustainability" should cooperate to increase the economic relevance and highlight the economic opportunities of genetic resources. This can be achieved, *i.a.*, by promoting the intrinsic value of genetic resources-derived products, developing products for quality schemes, or through dedicated breeding activities.

Scientific and technological development

- Scientists should harness scientific and technological developments to advance a more comprehensive characterisation, evaluation and documentation of agriculturally and industrially relevant traits. New scientific and technological insights should allow all types of actors to engage in genetic resources-related activities at all relevant levels by providing them with the necessary skills and know-how;
- Scientist and other actors should build an enabling framework allowing multi-actor approaches and active knowledge exchange on genetic resources issues among all actors;

- Scientists and other relevant actors can contribute to the sustainable use of genetic resources by supporting the adaptation of existing practices to the entry into force of the Nagoya Protocol and the respective legislation and regulatory requirements.

Co-ordination, harmonisation and networking

- All actors should engage to better coordinate genetic resources conservation activities in order to achieve economies of scale, avoid overlaps, create synergies, and make efficient use of existing structures to render outcomes relevant for and accessible to end-users. The European Innovation Partnership network offers a good tool for such co-ordination;
- The European Innovation Partnership network should ensure an active and continuous flow of information between the different actors, notably scientists and genetic resources end-users in order to effectively interlink cutting-edge and applied research with practical end-user-oriented activities and make the results available to the farmers.

Institutional and legal framework

- The Commission will promote a wider policy that includes the protection of neglected and local genetic resources accompanied by an effective use of funding available under the Common Agricultural Policy as well as the Union Research & Innovation Framework;
- The Commission will ensure that conservation and use of genetic resources in agriculture is backed by a consistent legal framework at Union level;
- The Commission will ensure that the conservation and sustainable use of agricultural genetic resources is well flanked at the level of international commitments.

Concerted Union actions are needed to honour the Union's international commitments, in particular as regards the Treaty, as well as the obligations deriving from the Nagoya Protocol on access to genetic resources and the fair and equitable sharing of benefits arising from their utilisation with particular emphasis on the recognition of the rights of local and indigenous communities. To engage in the implementation of the Nagoya Protocol, the Union and its Member States must ensure that all users in the Union comply with applicable legislation or regulatory requirements in term of access to and utilisation of genetic resources and associated traditional knowledge, and have legal certainty that benefits arising from their utilisation are fairly and equitably shared upon mutually agreed terms. The revised legislation on plant reproductive material will have a role to play in providing enabling conditions for the production and the marketing of plant reproductive material, including landraces and traditional varieties.

As an important building block for Union policies supporting *in situ* and on-farm conservation, agro-environmental measures included in the Common Agricultural Policy would continue to provide support to farmers who rear and use traditional, endangered local breeds and/or preserve local plant genetic resources under threat of genetic erosion. Rural Development can also provide support to beneficiaries who perform actions targeted towards the characterisation and collection of genetic resources. Rural development measures helping the transition from genetic resources conservation towards an effective, sustainable use and further development include knowledge transfer, cooperation, and advisory services. In the upcoming programming for the budget period 2014-2020, Member States should give more emphasis to measures that have the potential to foster the conservation and sustainable use of traditional breeds and varieties, notably in combination with marketing strategies promoting the economic viability of local and diversified quality products and short supply chains. Those actions would be complemented by the "greening" requirements for direct payments under the 1st pillar, in particular the requirement to ensure a certain level of crop diversity and to preserve permanent grassland, including highly bio-diverse grasslands being used for extensive animal production systems.

The conservation and sustainable use of agricultural genetic resources and their integration into the value chain should get a reinforced knowledge base complementing the co-creation of knowledge by breeders and farmers through a comprehensive work programme established under the Union's Research & Innovation Framework Horizon 2020. This work programme must cover a wide range of genetic resources-linked activities, including cutting-edge research as well as types of actions such as formerly included in the Community programme established under Regulation (EC) 870/2004. It must cover innovative uses of agricultural genetic resources, capacity building (e.g. bio-repositories for *ex-situ* conservation, knowledge pools, and guidelines), the development of practice-oriented methods of characterisation, evaluation, the selection of traits for improved breeding, and demonstration projects that foster sustainable use of genetic resources. Addressing these matters through Horizon 2020 rather than through an alone-standing programme, will offers scope for administrative simplification. It will require trans-national participation and, in combination with the function of the European Innovation Partnership to facilitate Union-wide exchange among all relevant actors, ensure EU-added value, including effective coordination and interaction among the different activities.

Within the work programme for Societal Challenge 2 of Horizon 2020, particular emphasis should be given to multi-actor approaches, where researchers and end-users from various sectors can interact with agricultural advisory services and innovation brokers, so as to foster knowledge exchange and the dissemination of new scientific insights while having the opportunity of performing on-farm experimentation and the validation of laboratory testing.

The need for enhancing the exchange among all relevant actors is one of the key lessons drawn from past experience. As an effective framework facilitating the interaction between research and practices, the European Innovation Partnership "Agricultural productivity and sustainability" offers important opportunities to integrate genetic resources-related activities. The European Innovation Partnership is being built to mobilise actors, to raise awareness, to ensure a better flow of information, and to facilitate knowledge sharing and cooperation.

The mechanisms of the European Innovation Partnership would be particularly well placed to integrate the activities targeting the recovery and maintenance as well as the sustainable use and further development of agricultural genetic diversity. Practically, the European Innovation Partnership would provide relevant information to stakeholders about the opportunities offered by Union legislation and policies and possible cooperation partners. By establishing project databases, organising seminars and establishing a dedicated genetic resources focus group, the European Innovation Partnership would foster knowledge sharing and interaction among stakeholders. Thus, it would enhance the complementarity between research supporting genetic resources conservation and practical actions targeted towards farming practices. Better integration of conservation activities and use of endangered crops and breeds in breeding and in the production chain could benefit from mutual learning among all actors involved and bottom-up initiative, notably in view of adapting genetic resources activities to the local context and needs.

In order to mobilise expertise and improve co-ordination at Union level, the activities of the European Innovation Partnership would be supported by a strong involvement of the Committee on Genetic Resources that has been established by Regulation (EC) 870/2004 and that will stay in place.

9. CONCLUSIONS

In accordance with the commitment taken under the Union Biodiversity Strategy, by facilitating and integrating the transition from research and conservation towards sustainable use in the farm, the Union is engaging into a strategic process to reverse agricultural biodiversity loss.

By establishing a sound framework in line with the above key orientations, the Union promotes a consequent change of policy orientation encouraging relevant stakeholders to engage in the conservation of genetic resources and to move beyond conservation to their active, sustainable use. This change is reflected in the coherent and complementary approach established by different (new) Union policy instruments and tools toward a more powerful and effective protection of agricultural biodiversity.

Towards 2020, genetic resources can rely on greater financial resources and a wider range of funding opportunities as provided under Rural Development and Horizon 2020 as well as under other Union policies. The reinforced efforts, going beyond conservation, will benefit, i.a., agricultural production, research and innovation results, climate change, environment, employment. These beneficial effects will be at the advantage of society at large, while having particular benefits in rural areas with strong links to traditional practices and related cultural and territorial values.

The conservation and sustainable use of genetic resources in agriculture forms part of a wider effort to promote innovative practices and to contribute to smart, sustainable growth in line with the Europe 2020 Strategy. Making genetic resources conservation a success within Rural Development Policy as well as the Research & Innovation Policy requires actions taken at all levels, EU, Member States and regions as well as a strong commitment taken by relevant stakeholders to get actively involved. Putting in place a comprehensive and holistic approach on agricultural genetic resources would provide a considerable contribution to enhance sustainability and economic viability across different agricultural systems as well as the whole food chain.