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COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

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INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Ninth Session

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DRAFT EXPLANATORY NOTES DESCRIBING, WITHIN THE CONTEXT OF THE ABS ELEMENTS,* THE DISTINCTIVE FEATURES OF PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

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*) The *Elements to Facilitate Domestic Implementation of Access and Benefit-sharing for Different Subsectors of Genetic Resources for Food and Agriculture* (ABS Elements) are available in all official UN languages at: http://www.fao.org/nr/cgrfa/cross-sectorial/abs/

I. INTRODUCTION

1. Sustainable Development Goal (SDG) Target 2.5 and SDG Target 15.6 require countries to "*promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed*".

2. In 2015, at its Fifteenth Regular Session, the Commission on Genetic Resources for Food and Agriculture (Commission), welcomed the *Elements to Facilitate Domestic Implementation of Access and Benefit-sharing for Different Subsectors of Genetic Resources for Food and Agriculture* (ABS Elements) and invited the Director-General of FAO to bring them to the attention of the Conference.[1] The FAO Conference, at its Thirty-Ninth Session in June 2015, welcomed the ABS Elements and invited Members to consider and, as appropriate, make use of them. The Conference also noted the complementarity between the work of the Commission and the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (Nagoya Protocol) in regard to access and benefit-sharing (ABS) for genetic resources.[2]

3. In 2017, at its last session, the Commission "*agreed to produce non-prescriptive explanatory notes describing, within the context of the ABS Elements, the distinctive features and specific practices of different subsectors of genetic resources for food and agriculture (GRFA), to complement the ABS Elements*".[3]

4. The Commission invited Members, observers and other stakeholders to provide relevant inputs for such explanatory notes by electronic means, including on their practical experiences in implementing national ABS measures related to GRFA, and the distinctive features and the specific practices of different subsectors of GRFA.[4]

5. The Commission also requested the Secretariat to convene, in collaboration with the Secretariats of the International Treaty on Plant Genetic Resources for Food and Agriculture (Treaty) and the Convention on Biological Diversity (CBD), an international workshop to assist countries to raise awareness of distinctive features and specific practices of subsectors of GRFA in the context of the ABS Elements. It requested that the open-ended workshop be attended by at least one representative per region of each of the Commission's intergovernmental technical working groups on plant, animal, forest and aquatic genetic resources and seven regionally representative experts from the subsectors of micro-organism and invertebrate GRFA.[5]

6. The International Workshop on Access and Benefit-Sharing for Genetic Resources for Food and Agriculture (Workshop) was held in Rome, Italy, from 10 to 12 January 2018. The Workshop considered inputs received from Members, observers and other stakeholders and provided a forum for participants to exchange information, experiences and views. As requested by the Commission, the Workshop provided outputs for subsequent elaboration into non-prescriptive explanatory notes describing, within the context of the ABS Elements, the distinctive features and specific practices of different subsectors of GRFA.[6] More information on the workshop, including submissions received from Members, observers and other stakeholders, is available on the Commission's website. The outputs of the workshop as well as the Proceedings have been made available to the Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (Working Group).[7]

7. This document proposes draft non-prescriptive explanatory notes describing, within the context of the ABS Elements, the distinctive features and specific practices of plant genetic resources for food and agriculture (PGRFA). It briefly introduces the ABS Elements (II) and presents the distinctive features of PGRFA (III). It further identifies, taking into account the outputs of the workshop, areas where explanatory notes could further the aim of the ABS Elements to assist governments in taking into

[1] CGRFA-15/15/Report, paragraph 22(ii).
[2] C 2015/REP, paragraph 52.
[3] CGRFA-16/17/Report, paragraph 25 (iii).
[4] CGRFA-16/17/Report, paragraph 25 (iv).
[5] CGRFA-16/17/Report, paragraph 25 (v).
[6] CGRFA-16/17/Report, paragraph 25(v), e–g.
[7] CGRFA/WG-PGR-9/18/Inf.11; CGRFA/WG-PGR-9/18/Inf.12.

account, in the development, adaptation or implementation of ABS measures, the importance of PGRFA, their special role for food security and the distinctive features of PGRFA, while complying, as applicable, with international ABS instruments (IV).

II. ELEMENTS TO FACILITATE DOMESTIC IMPLEMENTATION OF ACCESS AND BENEFIT-SHARING FOR DIFFERENT SUBSECTORS OF GENETIC RESOURCES FOR FOOD AND AGRICULTURE

8. The Nagoya Protocol has been hailed as a giant step towards the implementation of the third objective of the Convention on Biological Diversity (CBD): the fair and equitable sharing of benefits arising out of the utilization of genetic resources, including by appropriate access to them. Implementing this third objective should contribute to the conservation of biological diversity and the sustainable use of its components, the other two objectives of the CBD.

9. The Nagoya Protocol requires its Contracting Parties to consider, in the development and implementation of ABS measures, the importance of GRFA and their special role for food security.[8] It also explicitly recognizes the importance of genetic resources for food security, the special nature of agricultural biodiversity, its distinctive features and problems needing distinctive solutions, the interdependence of all countries with regard to GRFA as well as their special nature and importance for achieving food security worldwide and for sustainable development of agriculture in the context of poverty alleviation and climate change, and acknowledges in this regard the fundamental role of the Treaty.[9]

10. In 2011, the Commission initiated a process that ultimately led to the preparation of the ABS Elements. The Commission established an Ad Hoc Technical Working Group on Access and Benefit-sharing for Genetic Resources for Food and Agriculture that, *inter alia*, identified "relevant distinctive features of the different sectors and subsectors of genetic resources for food and agriculture".[10]

11. In 2013, the Commission replaced the Ad Hoc Working Group by the Team of Technical and Legal Experts on Access and Benefit-Sharing (ABS Expert Team) and mandated the latter to prepare, in collaboration with the Commission's Working Groups on plant, animal and forest genetic resources, draft ABS Elements, which would be "*voluntary tools to assist national governments, not new international access and benefit-sharing instruments*".[11] On this occasion, the Working Group provided specific recommendations on PGRFA for the ABS Elements.[12]

12. In 2015, at its Fifteenth Regular Session, the Commission welcomed the ABS Elements. Subsequently, the FAO Conference, the highest Governing Body of FAO, at its Thirty-Ninth Session, welcomed the ABS Elements and invited Members to consider and, as appropriate, make use of them.[13]

13. The ABS Elements aim to assist governments considering developing, adapting or implementing ABS measures to take into account the importance of GRFA, their special role for food security and the distinctive features of the different subsectors of GRFA, while complying, as applicable, with international ABS instruments.

[8] Nagoya Protocol, Article 8(c).
[9] Nagoya Protocol, Preamble.
[10] CGRFA-14/13/6.
[11] CGRFA-14/13/Report, paragraph 40(xv).
[12] CGRFA/WG-PGR-7/14/REPORT, paragraph 44.
[13] C 2015/REP, paragraph 52(c) & (d).

14. The ABS Elements recommend, in particular, to:

- Consider, in the development, adaptation or implementation of ABS measures, the distinctive features of the subsector of GRFA concerned, including its activities, socio-economic environment and use and exchange practices;
- identify and consult relevant governmental entities and non-governmental stakeholders holding, providing or using GRFA;
- integrate ABS measures with broader food security and sustainable agricultural development policies and strategies;
- consider and evaluate available options for ABS measures;
- integrate the implementation of ABS measures into the (existing) institutional landscape;
- communicate and raise awareness of ABS measures; and
- assess *ex ante* and monitor the effectiveness and impact of ABS measures for GRFA.

15. The ABS Elements also provide guidance with regard to issues of particular relevance to ABS for GRFA, including PGRFA:

- They point out, for example, that in the case of many GRFA, it may be difficult to determine with certainty their "country of origin". ABS measures usually require that the providing country that is the country of origin has given its prior informed consent (PIC) to the use of a genetic resource for research and development. But GRFA have often been widely exchanged across regions, countries and communities, often over long periods of time, and many different stakeholders have contributed to their development, in different places and at different points in time.[14] PGRFA have been distributed widely, among many communities, across various regions, over long periods of time and far beyond their centres of origin. While it is widely acknowledged that specific geographical regions around the world have been of particular importance to the development of agricultural crops, it is estimated that the degree to which countries use crops from regions of diversity other than their own ('foreign crops') is 68.7 percent of national food supplies as a global mean.[15] It will therefore be often very difficult to determine the "country of origin" of PGRFA.
- The ABS Elements, in pointing out that some subsectors of GRFA have developed specific practices for the use and exchange of genetic resources, explicitly refer to the Treaty's Multilateral System of Access and Benefit-sharing (MLS). They conclude in this context that "analysing existing commercial and research practices, as well as regulatory measures addressing the use and exchange of GRFA for research and development, will assist governments in the preparation of ABS measures that make use of and are in line with existing practices and thus avoid, to the extent possible and appropriate, the creation of additional administrative procedures."[16]
- The ABS Elements further discuss the types of uses of GRFA that could trigger the application of ABS measures. ABS measures usually require PIC and MAT for access to genetic resources "for their utilization". "Utilization", according to the Nagoya Protocol, means "to conduct research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology".[17] With regard to PGRFA, the ABS Elements raise the question "whether selection and reproduction of plant genetic resources by a farmer or farming community based on phenotypic traits and not entailing any genetic methods, qualify as 'utilization'".

[14] ABS Elements, paragraph 35; see also M. Schloen *et al*. 2011. *Access and benefit-sharing for genetic resources for food and agriculture – current use and exchange practices, commonalities, differences and user community needs*. Background Study Paper No. 59.
[15] Khoury, Colin K. *et al*.. 2016. Origins of food crops connect countries worldwide. Proceedings of the Royal Society B - Biological Sciences 283: 2060792.
[16] ABS Elements, paragraph 15.I.c.
[17] Nagoya Protocol, Article 2.

- The ABS Elements also address various options policy-makers may wish to consider in designing ABS authorization procedures and benefit-sharing modalities. They mention the possibility of standardizing procedures and conditions for the granting of access to genetic resources and to the possibility of facilitating benefit-sharing through partnership agreements.

16. While the ABS Elements thus address issues of particular relevance to GRFA, including PGRFA, the Commission, at its last session, concluded that there is a need for more detailed explanatory notes describing, within the context of the ABS Elements, the distinctive features of GRFA.

III. DISTINCTIVE FEATURES OF PLANT GENETIC RESOURCES FOR FOOD AND ARGICULTURE

17. Starting in 2012, the Commission, in collaboration with its intergovernmental technical working groups on plant, animal and forest genetic resources, identified a list of distinctive features of genetic resources for food and agriculture, which is annexed to the ABS Elements. While these distinctive features aim to reflect an equilibrium between all subsectors of food and agriculture, not every feature is necessarily applicable to each and every GRFA. Moreover, the features are distinctive, but not necessarily unique to GRFA. Table 1 presents the distinctive features and highlights those features that are considered particularly relevant (marked in the table by plus signs [+]) or less (or not) relevant (marked in the table by minus signs [–]) to PGRFA. Features marked in the table by grey shades are considered neutral or relevant only to parts of the sector. Table 1 provides a rating on the relevance of the distinctive features to PGRFA, as contained in the ABS Elements (left-hand column) and changes proposed in the light of the outcomes of the Workshop, inputs received from Members and observers as well as comments received following the workshop (right-hand column).

IV. DRAFT EXPLANATORY NOTES DESCRIBING, WITHIN THE CONTEXT OF THE ABS ELEMENTS, THE DISTINCTIVE FEATURES OF PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

18. The following draft explanatory notes aim to (i) provide relevant background information on the plant sector to policy-makers developing, adapting or implementing ABS measures and (ii) clarify some of the issues raised in the ABS Elements as they are relevant to PGRFA.

Background information on plant genetic resources for food and agriculture

19. ABS policy-makers may find it useful to receive some background information on the use and exchange of PGRFA.[18] Explanatory notes could therefore explain that:

> PGRFA have been used and exchanged since the beginnings of agriculture, some 10000 years ago. Farmers and farming communities have planted, selected and exchanged seeds and vegetative propagating material, and a combination of natural and artificial selection has domesticated plant species and adapted them to the changing needs of farming and consumption. Migration, trade and colonization spread many species beyond their regions of origin, which spurred further selective pressures. Since the mid-nineteenth century, professional seed suppliers, followed by specialized plant breeders and biotechnologists, have developed advanced methods for selecting PGRFA at the phenotypic, genotypic and molecular levels to further shape crops and contribute to advanced agricultural systems and the production and supply of agricultural products with distinctive characteristics.
>
> PGRFA are maintained both *in situ* and *ex situ*. A considerable amount of crop genetic diversity is held in farmers' fields and in the breeding pools of specialized plant breeders. Many wild relatives of today's crops are conserved in protected areas or within agricultural ecosystems. In addition, much of the diversity originally found *in situ* has been collected and stored in *ex situ* facilities. The constitution of these collections started many decades ago and they are mainly held by public genebanks at national level and by international research centres, with some of the most relevant collections being managed by the centres of the Consultative Group on International Agricultural Research (CGIAR). Overall, it is estimated that approximately 7

[18] See also Background Study Paper No. 45.

million accessions of PGR are stored *ex situ*, and it can be said that these collections play an important role in the functioning of the sector. Apart from the public genebanks, PGR are also held *ex situ* in the breeding collections of private companies. However, the extent of these private collections is mostly unknown and the stored genetic material is not publicly available.

The sector using PGRFA for breeding purposes is quite diverse and its organization is highly dependent on the crops bred and on the geographic area and type of user group targeted. Large private corporations increasingly dominate the commercial seed market for some of the major and high-value crops, such as maize and major vegetables. Medium- and smaller-sized breeding companies continue to operate in smaller seed markets for commercially less attractive crops, such as some self-pollinating staple crops. Public-sector institutions at national and international levels continue to play an important role in breeding and variety development both for crops not served sufficiently by the private sector and for crops grown in marginal environments or by resource-poor farmers who are not likely to be reached by the commercial sector. At the level of research for breeding, including rather fundamental research as well as pre-breeding, both large and small biotechnology companies, sometimes integrated with plant breeding and seed production, and universities are the main players. Other users of PGRFA for breeding include farmer groups and civil society organizations supporting them. They may contribute to the reintroduction of PGRFA from genebanks into farming systems, sometimes combined with participatory plant breeding or participatory variety selection activities involving both farmers and trained breeders.

Different types of PGRFA may be used in plant breeding and variety development. The development of new varieties is usually based upon the use of advanced genetic material, as it is a costly and time-consuming process to bring less-advanced material to the same performance levels. However, old varieties, landraces and crop wild relatives may be used to introduce particular traits into breeding populations. The genetic diversity contained in landraces and traditional varieties may also be used for base-broadening activities and for the development of varieties adapted to less-favourable environmental conditions and low-input production systems.

Historically, crops and PGRFA have been widely exchanged throughout the world, and many people in many different places have contributed in one way or another to the development of today's crop genetic diversity. As a consequence, an important part of current crop production relies on the use of exotic species, and all countries depend to some extent on genetic diversity that originated elsewhere.

The current international flow of PGRFA takes place in many different forms, including for example, through the exchange of germplasm samples from *ex situ* collections, the sale of commercial seed and vegetative propagating material, or intercompany transfers of genetic material under development. The international exchange of genebank accessions amounts to several tens of thousands of transfers annually and plays an important role in conservation, research and development both in developing and developed countries. At the same time, it has to be noted that the majority of genetic material used directly in breeding and variety development comes from the breeding pools within one region and new "exotic" material is only occasionally accessed.

The modalities for the exchange of PGRFA depend on the crop in question and on the type of exchange partners. Generally speaking, the trend is towards more formalized exchange practices, mainly through material transfer agreements (MTAs). Transfers of germplasm samples from genebanks are, for instance, increasingly regulated by MTAs. Contracting Parties to the International Treaty on Plant Genetic Resources for Food and Agriculture have agreed to use a standard contract, the SMTA, for each transfer of material belonging to the Multilateral System of Access and Benefit Sharing under the Treaty.

TABLE 1: DISTINCTIVE FEATURES OF PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

		ABS Elements[19]	2018[20]
A. Role of GRFA for food security	A.1 GRFA are an integral part of agricultural and food production systems and play an essential role for achieving food security and the sustainable development of the food and agriculture sector.	+	+
	A.2 Plant, animal, invertebrate and micro-organism GRFA form an interdependent network of genetic diversity in agricultural and aquatic ecosystems respectively.		+
B. Role of human management	B.1 (a) The existence of most GRFA is closely linked to human activity. (b) Many GRFA can be regarded as human-modified forms of genetic resources.		+
	B.2 The maintenance and evolution of many GRFA depend on continued human intervention, and their sustainable utilization in research, development and production is an important instrument to ensure conservation.		+
C. International exchange and interdependence	C.1 Historically, GRFA have been widely exchanged across communities, countries and regions over often long periods of time, and a relevant part of the genetic diversity used in food and agriculture today is of exotic origin.	+	+
	C.2 Countries are interdependent with regard to GRFA and act both as providers of some GRFA and as recipients of others.		+
	C.3 The international exchange of GRFA is essential to the functioning of the sector, and its importance is likely to increase in future.	+	+
D. Nature of the innovation process	D.1 The innovation process for GRFA is usually of incremental nature and the result of contributions made by many different people, including indigenous and local communities, farmers, researchers and breeders, in different places and at different points in time.	+	+
	D.2 Many GRFA products are not developed out of an individual genetic resource, but with the contributions of several GRFA at different stages in the innovation process.	+	+
	D.3 Most products developed with the use of GRFA can in turn be used as genetic resources for further research and development, which makes it difficult to draw a clear line between providers and recipients of GRFA.	+	+
	D.4 Many agricultural products reach the market place in a form in which they may be used both as biological resources and as genetic resources.		+
E. Holders and users of GRFA	E.1 (a) GRFA are held and used by a broad range of very diverse stakeholders. (b) There are distinct communities of providers and users with respect to the different subsectors of GRFA.	+	+
	E.2 The different stakeholders managing and using GRFA are interdependent.		
	E.3 A significant amount of GRFA is privately held.		
	E.4 An important part of GRFA is held and can be accessed *ex situ*.		+
	E.5 An important part of GRFA is conserved *in situ* and on farm under different financial, technical and legal conditions.		+
F. GRFA exchange practices	F.1 The exchange of GRFA takes place in the context of customary practices and existing communities of providers and users.	+	+
	F.2 An extensive transfer of genetic material between different stakeholders along the value chain occurs in research and development.		+
G. Benefits generated with the use of GRFA	G.1 (a) While the overall benefits of GRFA are very high, (b) it is difficult to estimate at the time of the transaction the expected benefits of an individual sample of GRFA.	+	+
	G.2 The use of GRFA may also generate important non-monetary benefits.		+
	G.3 The use of GRFA may lead to external effects going far beyond the individual provider and recipient.		+

[19] As identified by the ITWG FGR, see CGRFA-14/13/20, *Table 2*.
[20] As identified by the ITWG FGR, see CGRFA-14/13/20, *Table 2*.

> This Multilateral System includes "all PGRFA listed in Annex I of the Treaty [64 crops and forages] that are under the management and control of the Contracting Parties and in the public domain" (Article 11.2). In accordance with the same conditions, PGRFA held by the International Agricultural Research Centres of the CGIAR (Article 15) and of other institutions (Article 16) are made available. Exchange among commercial breeders is either free (in the case of the use of commercial varieties for further breeding) or regulated by commercial material transfer agreements. Exchange among farmers is limited by distance and social factors, but is generally free.

The legal landscape

The ABS Elements point out that the Nagoya Protocol "leaves room for other international agreements in the field of ABS […], including other specialized ABS agreements, provided that they are supportive of and do not run counter to the objectives of the CBD and the Protocol."[21] Explanatory notes could explain that:

> The Treaty is a "specialized international access and benefit-sharing instrument" as referred to in Article 4.4 of the Nagoya Protocol. Therefore, the Nagoya Protocol does not apply for the Parties to the Treaty in respect of the PGR covered by and for the purpose of the Treaty. The Nagoya Protocol applies, on other hand, where PGR are concerned which are not covered by the Treaty or which accessed purposes are not covered by the Treaty (e.g. PGRFA that are not under the management and control of the Parties of the Treaty or not in the public domain or which are accessed for purposes other than "utilisation and conservation for research, breeding and training for food and agriculture"). It should be noted that the Treaty "relates to plant genetic plant genetic resources for food and agriculture" and, thus, covers all PGRFA.[22] However, the Treaty's Multilateral System of Access and Benefit-Sharing covers "plant genetic resources for food and agriculture listed in Annex I, established according to criteria of food security and interdependence."[23]

Identification and consultation of relevant governmental entities and non-governmental stakeholders holding, providing or using GRFA

20. The ABS Elements recommend consulting government entities and non-governmental stakeholders holding, providing or using GRFA.[24] Explanatory notes could explain that:

> The responsibility for the Treaty may often lie with the agriculture authorities, the responsibility for the Nagoya Protocol with environmental authorities. It is therefore possible that certain (uses of) of certain PGR fall in the competence of one authority, whereas (other uses of) other PGR fall in the responsibility of a different authority. Direct consultations among relevant governmental entities and non-governmental stakeholders are therefore critical and should possibly also seek to clarify the allocation of responsibilities among different competent authorities.

Integration of ABS measures with broader food security and sustainable agricultural development policies and strategies

21. The ABS Elements recommend considering ABS for GRFA in the wider context of sustainable agricultural development and food security.[25] Explanatory notes could therefore explicitly refer to policies and legislation in the areas of food security and plant production, which could either integrate or refer to relevant provisions for ABS for PGRFA:

> Plant genetic resources play a key role in providing food, feed and fibre. PGRFA play multiple roles in helping ensure food security, for example: producing more and better food

[21] ABS Elements, paragraph 9.
[22] Treaty, Article 3.
[23] Treaty, Article 11.1.
[24] ABS Elements, paragraph 15.II.
[25] ABS Elements, paragraph 15.III.

> for rural and urban consumers; providing healthy and more nutritious food; and enhancing income generation and rural development.
>
> In many countries ABS measures have been or are being developed as stand-alone legislation or policy. It is, however, important to develop ABS measures in harmony with other related policies and to integrate them with these policies, such as agricultural development or poverty reduction strategies. It is likewise important to involve the plant breeding and production sectors from the outset in the development and implementation of ABS measures to ensure that policy-makers have full understanding of the plant sector, current gene flows and potential implications of ABS measures on plant production.

Integration of implementation of ABS measures into the institutional landscape

22. The ABS Elements recommend identifying existing institutional arrangements that may be used to address ABS.[26] Explanatory notes could explain that:

> Responsibility for the national ABS framework is often with one single competent authority. In fact, national interim reports on the implementation of the Nagoya Protocol show that many countries have chosen to select a single competent authority for ABS, rather than taking a sector or subsector-specific approach to ABS. However, several authorities within one country may share the responsibility for ABS and thus ABS for PGR could fall in the competence of a specialized authority dealing with plant production. Whether such sharing of ABS competences is useful will depend on the institutional landscape and other country-specific circumstances.

Communication of, and awareness-raising regarding, ABS measures for potential providers and users of GRFA

23. The ABS Elements stress the importance of communicating ABS measures to potential providers, holders and users of GRFA.[27] Explanatory notes could explain that:

> Awareness-raising measures at national level should target breeders and farmers, indigenous peoples and local communities, scientists, taxonomists, private sector, botanical gardens and genebanks. Events such as relevant scientific conferences and meetings of plant breeder associations and seed fairs provide excellent opportunities to provide information on ABS to relevant stakeholders and information multipliers.

Access and benefit-sharing for genetic resources for food and agriculture: the international legal framework

24. The ABS Elements refer to three international instruments, which are part of the global framework for ABS for genetic resources: the CBD, the Nagoya Protocol and the Treaty. Explanatory notes could provide information on the status of "specialized instruments" under the Nagoya Protocol.[28] Explanatory notes could explain that:

> The Treaty, although often quoted as a model for access and benefit-sharing for genetic resources in general, plays a particularly important role for PGRFA. The Treaty provides a comprehensive international agreement in harmony with the CBD, which standardizes conditions of access and the modalities of benefit-sharing. It also recognises Farmers' Rights. Countries that have not yet done so should seriously consider becoming Contracting Parties to the Treaty.

Rationale of access and benefit-sharing measures for genetic resources for food and agriculture

25. According to the ABS Elements, "ABS measures may be instrumental in furthering the achievement of food security and improving nutrition. (…) Therefore, ABS measures aimed at achieving food security and the conservation of GRFA should aim to facilitate and actively encourage the

[26] ABS Elements, paragraph 30.
[27] ABS Elements, 3.VI.
[28] ABS Elements, Chapter IV.

continued use and exchange of GRFA for research and development and benefit-sharing".[29] Explanatory notes could explain that:

> Continuous availability of PGRFA for research and development is indispensable for the improvement of crops. PGRFA offer the potential to provide traits that can help meet future challenges, such as the need to adapt crops to changing climatic conditions or disease outbreaks. Continued access to PGRFA is therefore important to meet the rising food demand of a growing population with higher incomes and to meet the challenges of predicted environmental changes.

Flows of germplasm, including international flows and possible gaps in ABS measures

26. The ABS Elements recommend that in developing, adapting and implementing ABS measures, the relevance of germplasm flows should be considered.[30] Explanatory notes could explain that:

> Today, the agriculture of virtually all countries is heavily dependent on a supply of PGRFA from other parts of the world. Crops such as cassava, maize, groundnut and beans, which originated in Latin America but have become staple food crops in many countries in Africa south of the Sahara, demonstrate the interdependence of crop species between developing countries; the same applies for vegetables, for example tomatoes. Even though many countries hold a significant amount of plant genetic diversity for food and agriculture in their genebanks and farmers' fields, in the long-term, they are likely to require access to additional diversity from the crop species' centres of diversity or varieties bred elsewhere. There is a continued need for exchange of plant genetic resources therefore.

Categories of genetic resources use covered by ABS measures

27. The ABS Elements stress that ABS measures need to be clear as to which GRFA are covered by relevant access provisions and which are not.[31] This consideration applies likewise to the temporal and the subject-matter scope of ABS measures. Explanatory notes could explain that:

> PGRFA made available for direct use, e.g. for consumption, or multiplication, can often also be used for research and development, including breeding. There is a concern that genetic resources that have been originally accessed for direct use could end up being used for research and development. Some laws therefore require PIC and MAT for access to genetic resources for both research and development and direct use.
>
> However, regulating access to PGRFA for direct use may have a significant impact on trade of seeds and even foods and therefore on food security. If ABS measures refrain from regulating regulate access to PGR for direct use, they could still require PIC and benefit-sharing when the intention changes and seeds or foods originally intended for direct use are suddenly being used for research and development.

PGRFA provided by countries of origin/ countries that acquired them in accordance with the CBD

28. Under the Nagoya Protocol, "[…] access to genetic resources for their utilization shall be subject to the prior informed consent of the Party providing such resources that is the country of origin of such resources or a Party that has acquired the genetic resources in accordance with the Convention […]." The ABS Elements refer to difficulties "to determine with certainty the country of origin" of GRFA as many GRFA have been widely exchanged across regions countries and communities and often over long period of time.[32] Explanatory notes could suggest:

> The "country of origin" of PGRFA is not necessarily the "centre of origin" of crop plant. ABS measures could provide guidance as to the circumstances under which domesticated crops are considered to have developed their "distinctive properties" within or outside the area of jurisdiction to which the ABS measures applies.

[29] ABS Elements, Chapter 5.
[30] ABS Elements. paragraph 15 I.e.
[31] ABS Elements, paragraph 36.
[32] ABS Elements, pargraph 35.

> ABS measures could also provide guidance as to whether or to what extent "distinctive properties" (CBD, Article 2) are those properties that make a plant variety "clearly distinguishable from any other variety", as provided in Article 7 of the 1991 UPOV Act.

Development of PGRFA in the course of farming

29. Access to genetic resources for their "utilization", as defined by the Nagoya Protocol, will usually trigger the application of ABS measures. According to the Nagoya Protocol, "utilization" means "to conduct research and development on the genetic and/or biochemical composition of genetic resources".[33] The ABS Elements point out that it may be difficult in some cases to decide whether a GRFA is utilized within the meaning of the Nagoya Protocol as there are activities that may serve several purposes, including research and development, at the same time.[34] Explanatory notes could explain that:

> There is a need to clearly identify activities related to PGRFA that are considered "utilization" and those which are not. Plant breeding is generally considered "utilization". However, it is less clear whether farmer-breeding or activities like mass or pure line selection of seeds or the creation and selection of spontaneous crosses or mutations are considered "utilization".
>
> On the other hand, trade in PGRFA for direct use as seeds or food/feed will usually clearly not qualify as "utilization", and therefore, dependent on the applicable laws, not trigger the application of ABS measures.
>
> Policy-makers may also wish to address the "re-utilization" of PGRA previously generated through "utilization" with PIC and MAT. If "re-utilization" requires PIC and MAT just like the first utilization of PGRFA, this could lead to complex stacking obligations and complicate the future "utilization" of PGRFA. Plant breeders could choose to avoid, rather than use, conserve and further improve PGRFA, creating a situation which would be in striking contradiction with the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture which encourages breeders to pursue base-broadening strategies that seek to widen the genetic diversity in plant breeding programmes and in the products of such programmes. The ABS Expert Team suggested that governments consider distinctive solutions to this issue, including through supporting the development of subsector standards building on current best practices, such as the breeders' exemption in plant variety protection legislation, or putting in place multilateral solutions.[35]

Research and development for food and agriculture

30. The ABS Elements refer to Article 8(c) of the Nagoya Protocol, which calls upon Parties to consider the importance of GRFA and their special role for food security in the development of ABS legislation or regulatory requirements. Explanatory notes could explain that:

> To acknowledge the special role of GRFA for food security, governments could consider treating access to and utilization of genetic resources differently if they are intended to contribute to food and agricultural research and development. In the area of PGRFA, the Treaty provides a comprehensive ABS regime policy makers may wish to opt for. In fact, a steadily growing group of countries have chosen the Treaty as special regime for the most important PGRFA. For PGRFA currently not covered by the Treaty's Multilateral System of Access and Benefit-sharing, policy-makers could provide for simplifications or even waive the PIC and MAT requirements.

Commercial/non-commercial research and development

31. ABS measures sometimes distinguish between commercial and non-commercial utilization of genetic resources.[36] Explanatory notes could explain that:

> Many activities in the plant breeding sector ultimately aim at the development of a product and might therefore be considered "commercial". The plant breeding sector might therefore

[33] Nagoya Protocol, Article 2.
[34] ABS Elements, paragraph 46–48.
[35] CGRFA/TTLE-ABS-3/16/Report 5, paragraph 20.
[36] ABS Elements paragraph 50.

> not greatly benefit from a distinction between commercial and non-commercial activities and a simplifications granted by ABS measures for the latter. However, policymakers could consider to exclude pre-competitive plant breeding research from the application of their ABS measures which, however, would require a clear definition or specification of activities falling under such an exemption.

Standardization of PIC and MAT

32. The ABS Elements encourage governments to consider the different options of authorization procedures, including the option of standardizing procedures, terms and conditions. The ABS Elements explicitly refer to the Standard Material Transfer Agreement of the Treaty, as a "fully functioning precedent" for standardization of PIC and MAT.[37] Explanatory notes could explain that:

> The SMTA offers a ready-made and tailor-made solution for a large and extremely important group of crops, including those contained in Annex I to the Treaty. For PGRFA that are not exchanged by using the SMTA, bi-lateral case-by-case arrangements should not be considered as only possible alternative. Instead, ABS measures could allow for the conclusion of framework agreements covering a whole range or type of accessions and providing for modalities for the sharing of benefits derived from the utilization of all these accessions.

Access to traditional knowledge associated with GRFA

33. The ABS Elements refer to the obligation of Parties to the Nagoya Protocol to take measures, in accordance with domestic law and as appropriate, with the aim of ensuring that traditional knowledge associated with genetic resources is accessed with the PIC or approval and involvement of the indigenous and local communities holding such traditional knowledge, and that MAT have been established.[38] Explanatory notes could explain that:

> Procedures for involving indigenous peoples and local communities (IPLC) in granting traditional knowledge (TK) to PGRFA are diverse, and under development in many countries. IPLC should be involved in decisions that concern their TK associated with PGRFA, and the domestic ABS regulatory measures should respect Bio-cultural Community Protocols and specific institutional arrangements developed by these communities. In cases where several communities share TK associated with PGRFA, and only one has granted PIC, a mechanism for benefit-sharing involving all relevant IPLCs might be considered.

Fair and equitable sharing of benefits for pre-existing PGRFA

34. The ABS Elements note that many GRFA have been collected long before the application of national ABS measures. Therefore, national ABS measures should be clear as to whether they require the sharing of benefits arising from new or continued uses of genetic resources or associated TK accessed prior to the ABS measures having been put into place.[39] Explanatory notes could explain that:

> PGRFA have been widely exchanged throughout the world, and many people in many different places have contributed in one way or another to the development of today's crop genetic diversity. As a consequence, an important part of current crop production relies on the use of exotic species, and all countries depend to some extent on genetic diversity that originated elsewhere.
>
> If ABS measures require benefit-sharing for the utilization of PGRFA accessed prior to the entry into force of the ABS measures, it will be important to provide guidance as to which country should be considered the "country of origin" where PGRFA have been further developed by a range of countries/stakeholders. In the absence of such guidance, it may be difficult to regulate benefit-sharing for genetic resources accessed prior to the entry into force of the ABS measure.

[37] ABS Elements, paragraph 57.
[38] ABS Elements, paragraph 63.
[39] ABS Elements, paragraph 66.

Benefit-sharing through cooperation agreements

35. The ABS Elements stress the importance of sharing monetary and non-monetary benefits and note that the terms and conditions of such benefit-sharing will often depend on the particularities and specificities of the subsector, the species, the concrete intended use, etc.[40] The ABS Elements note that GRFA are often exchanged in the framework of working collaborations and partnerships. ABS measures could therefore allow for benefit-sharing arrangements tailor-made to the subsector's collaboration and partnership practices.[41] Explanatory notes could explain that:

> With respect to PGRFA which are not exchanged under the SMTA, ABS measures could encourage stakeholder to address ABS issues, where possible and appropriate, as part of scientific partnership agreements. Partnership agreements could make individual ABS permits on a case-by-case basis for single transfers unnecessary and, at the same time, encourage joint research activities going beyond the exchange of PGRFA.

V. GUIDANCE SOUGHT

36. The Working Group is invited to:

- review and revise, as appropriate, the distinctive features of PGRFA, as identified in Table 1 of this document; and
- review and revise, as appropriate, the explanatory notes contained in this document, and suggest additional explanatory notes, for submission to the Commission.

[40] ABS Elements, paragraph 73.
[41] ABS Elements, paragraph 74.