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Item 3.1 of the provisional agenda*

AD HOC OPEN-ENDED INTER-SESSIONAL WORKING GROUP ON ARTICLE 8(j) AND RELATED PROVISIONS OF THE CONVENTION ON BIOLOGICAL DIVERSITY
Third meeting
Montreal, 8-12 December 2003
Item 3.1 of the provisional agenda**

REPORT OF THE AD HOC TECHNICAL EXPERT GROUP MEETING ON THE POTENTIAL IMPACTS OF GENETIC USE RESTRICTION TECHNOLOGIES ON SMALLHOLDER FARMERS, INDIGENOUS AND LOCAL COMMUNITIES AND FARMERS' RIGHTS

Note by the Executive Secretary

The Executive Secretary is circulating herewith, for the information of participants in the ninth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and the third meeting of the Ad Hoc Open-ended Inter-Sessional Working Group on Article 8(j) and Related Provisions of the Convention on Biological Diversity, the report of the Ad Hoc Technical Expert Group meeting on the potential impacts of genetic use restriction technologies on smallholder farmers, indigenous and local communities and Farmers' Rights, which was held in Montreal from 19 to 21 February 2003, in response to paragraph 21 of its decision VI/5 of the Conference of the Parties to the Convention on Biological Diversity.

* UNEP/CBD/SBSTTA/9/1.

** UNEP/CBD/WG8J/3/1.

/…

INTRODUCTION

1. In paragraph 21 of its decision VI/5 on agricultural biological diversity, the Conference of the Parties decided to establish an ad hoc technical expert group (AHTEG) on genetic use restriction technologies (GURTs) to further analyse the potential impacts of GURTs on smallholder farmers, indigenous and local communities and on Farmers' Rights. In preparing its advice for consideration by the seventh meeting of the Conference of the Parties, the expert group is requested to take into account relevant ongoing work being carried out by the Food and Agriculture Organization of the United Nations (FAO), the International Union for the Protection of New Varieties of Plants (UPOV), the Intergovernmental Committee of Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore of the World Intellectual Property Organization (WIPO) and other organizations (paragraphs 23 and 24), as well as comments from Parties, international organizations, and smallholder farmers, indigenous and local communities.

2. In response to this decision, the Executive Secretary constituted an ad hoc technical expert group on the subject (thereafter called "the Group") and has convened its meeting in Montreal from 19 to 21 February 2003. The Executive Secretary also requested from Parties, international organizations, and smallholder farmers, indigenous and local communities their views on the potential impacts of GURTs on smallholder farmers, indigenous and local communities and Farmers' Rights.

3. The Group took into account relevant ongoing work being carried out by the Food and Agriculture Organization of the United Nations (FAO), the International Union for the Protection of New Varieties of Plants (UPOV) and other organizations, as well as comments from Parties, international organizations, and smallholder farmers, indigenous and local communities. The Group also took into consideration the views received by the Secretariat in response to the call for views on the subject. The Secretariat provided a synthesis of these submissions received from 11 respondents: one Party to the Convention on Biological Diversity (Canada), one non-Party (United States of America), one intergovernmental organization (International Union for the Protection of New Varieties of Plants (UPOV)), one indigenous and local communities organization (International Indian Treaty Council (ITTC)), four non-governmental organizations (Austrian Federal Institute for Less-Favoured and Mountainous Areas; International Federation of Organic Agriculture Movements (IFOAM); Intermediate Technology Development Group (ITDG); Sustainable Development Community Foundation from Ecuador), one smallholder farmer (BC Garden from USA), one private sector organization (International Seed Federation – ISF) and one individual (Chela Vasquez from Ecuador).

ITEM 1. OPENING OF THE MEETING

4. The representative of the Executive Secretary opened the meeting at 10 a.m. He welcomed the participants and recalled the objectives of the meeting.

5. Twenty-three participants were present including experts from Governments (Australia, Canada, Colombia, Cuba, Netherlands, Republic of Korea, Russia Federation, Uganda, Ukraine, United States of America), the Food and Agriculture Organization of the United Nations, the International Union for the Protection of New Varieties of Plants, the Canadian International Development Agency, non-governmental organizations (ETC Group, Indigenous Peoples Biodiversity Network, International Indian Treaty Council, Indigenous Peoples Council on Biocolonialism, Institut des Sciences de l'Environnement du Sénégal, Policy Research for Development Alternatives – UBINIG, Umanotera - The Slovenian Foundation for Sustainable Development, and the private sector (International Seed Federation – ISF and the Biotechnology Industry Organization – BIO).

ITEM 2. ORGANIZATIONAL MATTERS

2.1. Election of officers

6. The meeting elected two co-chairs: Mr. Modesto Fernandez Diaz-Silveira from Cuba and Mr. Raymond Obomsawin from Canada.

2.2. Adoption of the agenda

7. The meeting adopted the following agenda on the basis of the provisional agenda proposed by the Executive Secretary (UNEP/CBD/AHTEG-GURTS/1/1):

1. Opening of the meeting.

2. Organizational matters:

   2.1. Election of officers;

   2.2. Adoption of the agenda;

   2.3. Organization of work.

3. Reporting on ongoing initiatives requested by the sixth meeting of the Conference of the Parties in paragraphs 21, 23 and 24 of decision VI/5 on agricultural biodiversity.

4. Further analysis of the potential impacts of genetic use restriction technologies (GURTs).

   4.1. Potential impacts on smallholder farmers, indigenous and local communities.

   4.2. Potential impacts on Farmers' Rights.

5. Advice for consideration by the seventh meeting of the Conference of the Parties.

6. Other matters.

7. Adoption of the report.

8. Closure of the meeting.

2.3. Organization of work

8. The Group agreed to work in two working groups in order to consider the potential impacts of GURTs on (i) smallholder farmers and indigenous and local communities, and (ii) Farmers' Rights. The group findings would be further elaborated and agreed in plenary.

ITEM 3. REPORTING ON ONGOING INITIATIVES REQUESTED BY THE CONFERENCE OF THE PARTIES AT ITS SIXTH MEETING IN PARAGRAPHS 21, 23 AND 24 OF DECISION VI/5 ON AGRICULTURAL BIODIVERSITY

3.1. Keynote presentations

9. A representative of the Secretariat presented the results of the submissions received by the Executive Secretary in response to the call for views from Parties, international organizations, and smallholder farmers, indigenous and local communities. A draft synthesis of these submissions was distributed to the participants for information.

10. A representative of the Food and Agriculture Organization of the United Nations (FAO) presented the process at FAO in relation to GURTs. He described GURTs and their likely effects on breeding, seed supply, farming and agrobiodiversity.

11. The representative of the International Union for the Protection of New Varieties of Plants (UPOV) presented a memorandum on GURTs.*

ITEM 4. FURTHER ANALYSIS OF THE POTENTIAL IMPACTS OF GENETIC USE RESTRICTION TECHNOLOGIES (GURTs)

12. The Group discussed the potential positive and negative impacts of the application of GURTs on indigenous and local communities and Farmers' Rights, in line with paragraphs 21, 23 and 24 of decision VI/5 taking into consideration, *inter alia*, the results of the informal consultation held in Montreal on 3 February 2002.

4.1. Potential impacts on smallholder farmers and indigenous and local communities

13. The Group identified the potential negative and positive impacts on smallholder farmers and indigenous and local communities including those aspects related to geneflow and environmental containment, availability of new varieties, indigenous and local knowledge, practices and innovations, scientific knowledge, unintentional use of GURTs-foodgrain as seed, dependency, intentional misuse and research and development. The list of potential impacts is presented in annex I.

4.2. Potential impacts on Farmers' Rights

14. The Group identified the potential negative and positive impacts on Farmers' Rights as they related to the International Treaty on Plant Genetic Resources for Food and Agriculture, and more specifically, to article 9.2 (a) on the right to protect traditional knowledge relevant to plant genetic resources for food and agriculture; article 9.2(b) on the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture; article 9.2(c) on the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture, and article 9.3 on the right to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate. The list of potential impacts is presented in annex I.

* *Note by the Secretariat.* The memorandum has since been superseded by UPOV's position on GURTs adopted by the Council of UPOV on 11 April 2003.

15. During the meeting and the subsequent inter-sessional period, N. Ragsdale (Government of United States of America), H. B. Collins (ISF) and R. W. Krueger (BIO) expressed the opinion that additional important potential positive impacts could have been identified; and the reference to the Green Revolution in paragraph 4 (b) of annex I is not appropriate. They also disagreed with subparagraphs (a) and (b) of the recommendations to the Conference of the Parties in annex II to the present report.

ITEM 5. ADVICE FOR CONSIDERATION BY THE SEVENTH MEETING OF THE CONFERENCE OF THE PARTIES

16. The Group identified recommendations to the Conference of the Parties to the Convention on Biological Diversity (including the Cartagena Protocol and Article 8(j)), to Parties and other Governments and to international organizations. The recommendations are presented in annex II below.

ITEM 6. OTHER MATTERS

17. No other matters were discussed.

ITEM 7. ADOPTION OF THE REPORT

18. The Group adopted the text on draft potential impacts and recommendations discussed in plenary and requested the co-chairs and the Secretariat to finalize the report on the basis of the results of the working groups and send it to the Group for final revision and approval.

ITEM 8. CLOSURE OF THE MEETING

19. The meeting closed at 9 p.m. on Friday, 21 February 2003.

Annex I

POTENTIAL IMPACTS OF GURTS ON SMALLHOLDER FARMERS, INDIGENOUS AND LOCAL COMMUNITIES AND FARMERS' RIGHTS

A.. Potential impacts of GURTs 1/ on smallholder farmers2/ and indigenous and local communities 3/

1. Even when not specified, all the impacts, negative and positive, are considered only as "potential" impacts and not as something already proven. It would be necessary, in several cases, to develop further research in order to completely define the validity of any assumption.

2. The main negative and positive potential impacts that have been identified by the Group include:

1. Geneflow and environmental containment

3. *Potential negative impacts:*

(a) Because of the perceived biosafety advantages of GURTs (that the second generation V-GURTs sterility renders this technology potentially useful to prevent unwanted escape of genetic material into the wild), this technology might promote increased use of genetically modified crops. Consequently, if GURTs are widely adopted by breeders and developers and farmers, there could be an increased adoption of genetically modified varieties, and possibly an increase in environmental impacts of genetically modified varieties not related to cross-pollination from genetically modified varieties to other crops and species. This issue related to the main arguments that have been put forward against the use of genetically modified organisms (GMOs) in agriculture for their negative impacts on the environment: the escape of genes over generations, the mutation of genes, the accidentally switching on of sleeper genes, the competition or breeding with wild species, and the horizontal flow of genetically modified pollen to non-target organisms (e.g. birds, insects and soil biota).

(b) In case of inadequate functioning of the environmental containment of transgenic seed (V-GURTs) or transgenes (T-GURTs) expected from this technology, genes could "escape" (i.e. geneflow or outcrossing), then passing on to other members of the same species and perhaps other species. Consequently, outcrossing of GURTs could reduce production in neighbouring farmers' crops. The interactions might occur at cell, gene, plant and ecosystem levels. Outcrossing is of particular concern where ecological niches and wild relatives exist locally, particularly in the centres of origin of a crop.

1/ Two types of GURTs can be distinguished: variety-use restriction (V-GURTs), rendering the subsequent generation sterile; and use-restriction of a specific trait (T-GURTs), requiring the external application of inducers to activate the trait's expression. This technology is also known as the "technology protection system", and the V-GURTs as "terminator" technologies.

2/ The working definition of "smallholder farmers" adopted by the Group for the discussions is:

> "Smallholder farmers are those farmers involved in systems that meet most of, but are not limited to, the following characteristics: (i) low external input; (ii) limited resource-base; (iii) limited market access and orientation; (iv) high capacity for local innovation of technologies related to genetic resources; and (v) vulnerable to a range of external pressures as a result of the above criteria".

3/ The working definition of "indigenous and local communities" adopted by the Group for the discussions is the one as applied by Article 8(j) of the Convention on Biological Diversity as follows:

> "[…] indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity […]".

(c) Cross-pollination of GURTs could happen into non-GURTs-neighbouring crops, leading to yield drop in cultivated areas. For open-pollinated species, potential out-crossing of V-GURT varieties could reduce yield in the subsequent year due to occurrence of sterile seeds in neighbouring stands.

(d) The outcrossing of T-GURTs constructs negatively controlling a trait might not only affect domestic species – with potential impacts on yield and quality – but also confer unwanted properties on wild relatives. Outcrossing is of particular concern where ecological niches and wild relative exist locally, particularly in the centres of origin of a crop.

(e) If GURTs are perceived as a reliable and efficient technology for the environmental containment of transgenic seed (V-GURTs) or transgene (T-GURTs), their promotion might prevent and/or reduce further research on gene containment alternatives at a legal and biological level.

(f) The application of GURTs might produce low quantities of autotoxic compounds in seeds or other tissues, which may negatively impact non-target organisms (e.g. birds, insects and soil biota).

(g) GURTs might negatively impact the food chain and affect human health due to the additional traits. This issue relates to broader concerns about GMOs such as the potential transfer of allergenicity genes, the introduction of unauthorized genetically modified products in the food chain, and the transfer of antibiotic resistance.

4. *Potential positive impacts:*

(a) V-GURTs might prevent unwanted geneflow from transgenic (genetically modified) crop varieties to non-transgenic varieties, including landraces and wild relatives because the hybrid formed through cross-pollination (subsequent generation) would be sterile. This may contribute to biosafety.

(b) GURTs might increase agricultural biodiversity through increased activity in the plant-breeding sector.

(c) GURTs might reduce problems with volunteer plants for instance by avoiding volunteer seeds to germinate (V-GURTs) or express certain agronomic characteristics (T-GURTs).

2. Availability of new varieties

5. *Potential negative impacts:*

(a) Whereas GURTs might stimulate plant breeding and as a result increase the number of varieties available to farmers, nonetheless the new varieties might not be useful for local and indigenous communities as experienced with the first generation of genetically modified crops. The final result might be a reduced choice of appropriate seed for the farmers in the local market.

(b) GURTs might displace local varieties of crops, locally-adapted genetic material and wild relative through a process of substitution, thus reducing diversity through, *inter alia*, genetic erosion, as experienced with the Green Revolution.

(c) Because germplasm under the control of V-GURTs produce sterile seeds, V-GURTs would not contribute to enriching local genetic diversity. Traditional and conventional varieties on the other hand, can enrich local diversity through introgression.

(d) GURTs might tend to concentrate breeding efforts in the private sector and result in fewer options for smallholder farmers and indigenous and local communities, rather than widening breeding efforts to broaden the genetic base of crops through the stimulation of participatory crop breeding.

(e) GURTs would reduce the quantity and variability of *in situ* cultivated germplasm from which selection can occur, thus negatively affecting traditional seed exchange, farm-level breeding and improvement of local landraces.

6. *Potential positive impacts:* Genetic trait control (T-GURTs) would offer farmers a menu of traits that could, for instance, enhance environmental safety, disease or stress resistance, yield or quality characteristics not present in conventional varieties. These traits could be turned on or off depending on the farmers' needs and choice.

3. Indigenous and local knowledge, practices and innovations

7. *Potential negative impacts:*

(a) GURTs, and in particular V-GURTs, might not contribute to and might reduce basic knowledge and local innovation capacity of local and indigenous communities for crop improvement by reducing and limiting traditional seed exchange practices; V-GURTs might also undermine the intended and naturally evolving improvements in local landraces by reducing the quantity and variability of *in situ* cultivated germplasm from which selection could occur.

(b) GURTs could precipitate the loss of local knowledge due to dependency on this technology. This would result in a shift in the stability and sustainability of these communities, such as a loss of traditional seeds savings and breeding practices that could threaten local food security.

(c) V-GURTs might reduce or negatively affect local agrobiodiversity as mentioned in the above paragraphs 2 and 4 and consequently result in a deterioration of the indigenous knowledge system.

(d) GURTs might displace traditional farming systems at the indigenous and local community level and all of the social, cultural and spiritual dimension associated with them, including seed saving and exchanging and cultural uses of seed and seed-bearing plants.

(e) GURTs might limit the rights and prerogatives of indigenous and local communities and potentially harm these communities, as these technologies might be contradictory to traditional knowledge and community cultural values, to articles of the Convention on Biological Diversity, particularly Article 8(j) and related provisions and to Article 10(c) on traditional cultural practices that are compatible with conservation and sustainable use requirements.

(f) GURTs might by-pass customary rights and traditional self-sufficiency systems of indigenous and local communities such as saving and exchanging seeds. This would be detrimental to these communities.

8. *Potential positive impacts:* No potential positive impact was identified.

4. Unintentional use of GURTs

9. *Potential negative impacts:*

(a) Farmers might plant V-GURT-foodgrain resulting in reduced plant stand and yield loss (potentially up to 100 per cent) and increased seed and food insecurity because of non-germination of sterile seeds. Indeed, smallholder farmers may use foodgrain as seed for various reasons, for instance when they are unable to save seed and do not have the resources to purchase it. This could be the case in several situations, such as: (i) where commercial farmers and smallholders are located in the same region, where their markets are not separated, and where there is not adequate information on the product; (ii) where food aid, which is often used as seed, would contain GURTs grain; and (iii) where farmers share harvesting equipment, physical admixture of GURTs grain and farm-saved seed may occur.

(b) The misuse of GURTs may create risks of crop failure due to the lack of indigenous and local communities' technical information and awareness of the particularities of GURTs systems.

10. *Potential positive impacts:* No potential positive impact was identified.

5. Intentional misuse

11. *Potential negative impacts:* There is potential for GURTs to be misused to create dependency and undermine food security, for example through intentionally induced crop failure.

12. *Potential positive impacts:* No potential positive impact was identified.

6. Dependency

13. *Potential negative impacts:*

(a) GURTs might lead to a high dependence on technologies, over which smallholder farmers, local and indigenous communities have no influence or control. Increased control by owners of technology can create undesirable dependency. For GURT-systems that use chemical triggers, it will result in increased dependency on and usage of chemicals (e.g. chemical inducers primarily). Because of the horizontal concentration and vertical integration in the seed breeding and agrochemical sectors resulting from GURTs introduction, GURTs could further concentrate market power in the formal seed sectors for some crops and lead to the development of possible monopoly powers. With monopoly concentration, seed supply would become a particular problem, e.g. if farmers become dependent on GURT seed and lose the safety margin of being able to save seed for the next season. Furthermore, V-GURTs might also create dependency on external inputs (seeds and inducers) and undermine the autonomy of local seed and plant breeding practices.

(b) Dependency on external technologies and inducers might increase political and socio-economic vulnerability.

(c) Practices under legal intellectual-property regimes would be undermined (e.g. no time limit, no farmers' research and breeders' exemptions and no compulsory licensing).

14. *Potential positive impacts:* No potential positive impact was identified.

7. Research and development

15. *Potential negative impacts:*

(a) In general, GURTs might tend to move agricultural research and development (R&D) further from public sector into the private sector, and consequently widen the productivity gap between formal and informal sector producer. The public sector is more likely to serve the needs and interests of

smallholder farmers, indigenous and local communities, while V-GURTs restrict access to genetic resources to competing and public breeders. With GURTs, particularly V-GURTs, this could disrupt breeding research, with resultant increased productivity lag, particularly in developing countries and thus further widen the gaps between developed and developing countries.

(b) The proprietary nature of GURTs products and processes might preclude local development and prevent access to public sector research. This might have a stronger negative impact in developing countries where no private research initiatives are in place.

16. *Potential positive impacts:*

(a) GURTs might increase private investments in breeding and seed production of different crops and geographic location not addressed at present.

(b) With the increase of private research on major crops, there might be a shift of public sector investments into research of minor crops.

(c) GURTs might lead to increased breeding research.

(d) GURTs-research might increase knowledge on the functioning of plant genetics, and contribute to biological science and basic knowledge of plant genomes and overall molecular biology.

B. Potential impacts of GURTs on Farmers' Rights

17. The potential impacts of GURTs on Farmers' Rights were considered in the context of how those rights are defined in the FAO resolution 5/89 of the International Undertaking on Plant Genetic Resources for Food and Agriculture, further recognized through the FAO resolution 3/2001 on the International Treaty on Plant Genetic Resources for Food and Agriculture. The Treaty recognizes that the past, present and future contributions of farmers in conserving, improving, and making available plant genetic resources, particularly those in the centres of origin and diversity, are the basis of Farmers' Rights. The objectives of the Treaty are the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use. Such objectives are in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security.

18. In recognition of and response to the enormous contribution of local and indigenous farmers in all regions of the world, Article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture provides measures to protect and promote Farmers' Rights: (i) the protection of traditional knowledge relevant to plant genetic resources for food and agriculture (echoing Article 8(j) of the Convention on Biological Diversity); (ii) the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture; and (iii) the right to participate in making decisions, at national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture. Article 9 further stipulates that it should not be interpreted to limit any rights that farmers have to save, use, exchange and sell farm-saved seed/propagating materials, subject to national law and as appropriate.

19. Additionally, Article 10(c) of the Convention on Biological Diversity stipulates that each Contracting Party shall, as far as possible and as appropriate, protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.

1. Need to protect traditional knowledge relevant to plant genetic resources for food and agriculture (Reference to article 9.2(a) of the International Treaty on Plant Genetic Resources for Food and Agriculture)

20. The main negative and positive potential impacts of GURTs on Farmers' Rights that have been identified by the Group with regard to article 9.2(a) of the International Treaty on Plant Genetic Resources for Food and Agriculture on the need to protect traditional knowledge relevant to plant genetic resources for food and agriculture include the following.

21. *Potential negative impacts:*

(a) GURTs might pose a threat to traditional knowledge relevant to plant genetic resources for food and agriculture, because they could restrict traditional practices like seed saving, farmer breeding and an unhindered exchange of seeds.

(b) GURTs might increase opportunities for appropriation of genetic resources by the developers and owners of the technology, beyond the possibilities of hybridisation, outside of the bounds of patents, other intellectual property rights and regulatory systems.

22. *Potential positive impacts:* V-GURTs might contribute indirectly to the protection of traditional knowledge and varieties in specific conditions by limiting geneflow but only if used with full and informed prior consent and under the capacity of smallholder farmers and indigenous and local communities, and if the geneflow containment is efficient at 100 per cent.

3. Rights to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture (Reference to article 9.2(b) of the International Treaty on Plant Genetic Resources for Food and Agriculture)

23. The main negative and positive potential impacts of GURTs on Farmers' Rights that have been identified by the Group with regard to article 9.2(b) of the International Treaty on Plant Genetic Resources for Food and Agriculture on the rights to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture include:

24. *Potential negative impacts:*

(a) Adoption of GURTs might facilitate the appropriation and enclosure of some elements of indigenous knowledge and genetic resources through the use of a biological form of intellectual property protection of GURTs varieties in a permanent and irreversible manner. Benefits of this appropriation may not necessarily be shared with smallholder farmers, indigenous or local communities.

(b) As an appropriation method ("restriction use"), GURTs might not provide for a balance of societal and individual benefits that legal intellectual property systems do. Contrary to other legal intellectual property-systems such as those derived from the International Convention for the Protection of New Varieties of Plants (UPOV), patent and other rights mechanisms such as provided for in the International Treaty on Plant Genetic Resources for Food and Agriculture and the Convention on Biological Diversity, GURTs do not make available the new varieties or traits for further breeding. Additionally, as technology protection systems, GURTs are not time-limited; there is no user exemption for farmers, researchers or breeders, and no option for compulsory licensing. GURTs might not contribute to benefit sharing and could negatively impact further access to plant genetic resources for food and agriculture.

(c) Varieties that contain V-GURT might obstruct one important aspect of benefit sharing, the access to new varieties that can be used for further development. This is taking into account that plant material of varieties containing GURTs cannot be used as genetic material for further breeding unless provided by the owner and that free access to genetic resources would be hindered.

(d) Considering that local innovation may be hampered by GURTs, future contributions to PGRFA by farmers would be delimited proportional to the use of GURTs by farmers who would normally maintain and further develop plant genetic resources for food and agriculture.

(e) This technology might have a tendency to erode or possibly undermine the requirement of equitable participation in the sharing of benefits of biodiversity components both under the Convention on Biological Diversity and the International Treaty on Plant Genetic Resources for Food and Agriculture.

25. *Potential positive impacts:* no potential positive impact was identified.

4. Right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture (Reference to article 9.2(c) of the International Treaty on Plant Genetic Resources for Food and Agriculture)

26. The main negative and positive potential impacts of GURTs on Farmers' Rights that have been identified by the Group with regard to article 9.2(c) of the International Treaty on Plant Genetic Resources for Food and Agriculture on the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture include:

27. *Potential negative impacts:* Smallholder farmers, and indigenous and local communities might have limited ability to contribute to informed and effective decision-making because of the complex nature and general inaccessibility of the information regarding new biotechnologies such as GURTs and their inherent institutional capacities.

28. *Potential positive impacts:* No potential positive impact was identified.

5. Right to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate (Reference to article 9.3 of the Treaty)

29. The main negative and positive potential impacts of GURTs on Farmers' Rights that have been identified by the Group with regard to article 9.3 of the International Treaty on Plant Genetic Resources for Food and Agriculture on the right to save, use, exchange and sell farm-saved seed/propagating material, subject to national law and as appropriate include the following.

30. *Potential negative impacts:* V-GURTs restrict the production of seed on-farm, because they are designed to produce sterile seed. Thus, V-GURTs prevent farmers from saving, using, exchanging and selling farm-saved seeds.

31. *Potential positive impacts:* No potential positive impact was identified.

Annex II

RECOMMENDATIONS

The Ad Hoc Technical Expert Group on Genetic Use Restriction Technologies,

Recalling decision V/5 of the Conference of the Parties to the Convention on Biological Diversity and, in particular, its paragraphs 23, 24 and 27, 4/

Noting paragraph 23 of decision V/5, 5/

Recognizing the significant contribution that the local and indigenous communities and farmers of all regions of the world, particularly those in the centres of origin and crop diversity, have made and will continue to make for the conservation and development of plant genetic resources which constitute the basis of food and agriculture production throughout the world,

Recognizing also that GURTs might have a wide range of potential impacts on indigenous and local communities and smallholder farmers in particular, as some of which are listed in annex I to the report of the meeting of the Ad Hoc Technical Expert Group, held in Montreal from 19 to 21 February 2003.

Further recognizing that GURTs' potentially create increased levels of dependency on external technology, might reduce local innovation, and might bypass intellectual property systems,

Recognizing further that V-GURTs may restrict the saving and exchange of viable seed for planting and have potential negative impacts on sustainable use of agricultural biodiversity,

R*ecognizing* that environmental safety assessment of GURTs varieties should take into account, *inter alia*, the risks of failure of the GURTs trait, of outcrossing, of production of autotoxic compounds, and on food chain and human health,

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4/ In decision V/5, paragraph 23, the Conference of the Parties recommended that: "in the current absence of reliable data on genetic use restriction technologies, without which there is an inadequate basis on which to assess their potential risks, and in accordance with the precautionary approach, products incorporating such technologies should not be approved by Parties for field testing until appropriate, authorized and strictly controlled scientific assessments with regard to, *inter alia*, their ecological and socio-economic impacts and any adverse effects for biological diversity, food security and human health have been carried out in a transparent manner and the conditions for their safe and beneficial use validated. In order to enhance the capacity of all countries to address these issues, Parties should widely disseminate information on scientific assessments, including through the clearing-house mechanism, and share their expertise in this regard".

In paragraph 24 of the decision, the Conference of the Parties encouraged "Parties and Governments to consider how to address generic concerns regarding such technologies as genetic use restriction technologies under international and national approaches to the safe and sustainable use of germplasm".

In paragraph 27 of the decision, the Conference of the Parties urged "Parties and Governments to assess whether there is a need to develop, and to ensure the application of, effective regulations at national level which take into account, *inter alia*, the specific nature of variety-specific and trait-specific genetic use restriction technologies, in order to ensure the safety of human health, the environment, food security and the conservation and sustainable use of biological diversity and to make this information available through, *inter alia*, the clearing-house mechanism.

5/ In paragraph 23 of decision VI/5, the Conference of the Parties invited "the Food and Agriculture Organization of the United Nations to study the potential impacts of the applications of genetic use restriction technologies in the framework of the International Treaty on Plant Genetic Resources for Food and Agriculture, and to consider genetic use restriction technologies in the further development of the Code of Conduct on Biotechnology as it relates to genetic resources for food and agriculture".

Recognizing the importance of farm-saved seed for smallholder farmers and indigenous and local communities, and that the sustainability of local seed-systems is central to the integrity of local livelihood, seed security, food security and sustainable agriculture,

Recognizing 6/ the important role the International Treaty on Plant Genetic Resources for Food and Agriculture will have, in harmony with the Convention on Biological Diversity, in protecting and further promoting the realization of Farmers' Rights (article 9), in accordance with their needs and priorities, and subject to national legislation as they relate to plant genetic resources for food and agriculture, in particular with regard to (i) the need to protect traditional knowledge relevant to plant genetic resources for food and agriculture; (ii) the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture; (iii) the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture; and with regard to the rights that farmers have to save, use, exchange and sell farm-saved seed/propagating material; and

Noting the role of the Cartagena Protocol on Biosafety to the Convention on Biological Diversity (Biosafety Protocol) in contributing to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health and specifically focusing on transboundary movements;

Recommends that the Conference of the Parties to the Convention on Biological Diversity:

(a) *Reaffirm* paragraph 23 of its decision V/5, in light of the continued lack of data on the potential negative impacts on indigenous and local communities and Farmers' Rights and in line with the precautionary approach; 7/

(b) In view of the current lack of data, *recommend* that Parties and other Governments consider the development of regulatory frameworks not to approve GURTs for field-testing and commercial use;

(c) *Encourage* Parties, other Governments, relevant private sector entities and other relevant organizations to carry out and disseminate the results of studies on the environmental (e.g. risk assessment), socio-economic and cultural potential impact of GURTs on smallholder farmers, indigenous and local communities and make these studies available in a transparent manner through, *inter alia*, the clearing-house mechanism;

(d) *Encourage* Parties and other Governments, in collaboration with relevant organizations, to urgently create and develop capacity-building programmes including the promotion of information and awareness campaigns, to involve and enable smallholder farmers, indigenous and local communities,

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6/ In paragraph 2 of decision VI/6, the Conference of the Parties recognized "the important role of the International Treaty on Plant Genetic Resources for Food and Agriculture will have, in harmony with the Convention on Biological Diversity, for the conservation and sustainable utilization of this important component of agricultural biological diversity, for facilitated access to plant genetic resources for food and agriculture, and for the fair and equitable sharing of the benefits arising our of their utilization".

7/ Precautionary approach: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradations." (Principle 15 of the Rio Declaration on Environment and Development, adopted at the 1992 United Nations Conference on Environment and Development).

national governments and other stakeholders to effectively participate in decision-making processes related to GURTs;

(e) *Note* the study prepared by the Food and Agriculture Organization of the United Nations (CGRFA-9/02/17, annex) and *invite* the Food and Agriculture Organization of the United Nations and other relevant research institutions such as the international agricultural research centres of the Consultative Group on International Agricultural Research (CGIAR), the International Development Research Centre (IDRC), and the Centre for Information on Low External Input and Sustainable Agriculture (ILEIA) to examine, in the context of their work, to study the potential impacts of GURTs in the framework of International Treaty on Plant Genetic Resources for Food and Agriculture with special consideration to the impacts on indigenous and local communities, smallholder farmers and Farmers' Rights;

(f) *Invite* Parties and other Governments to consult indigenous and local communities and smallholder farmers in relation to Farmers' Rights to sustain traditional knowledge and agricultural systems in matters related to GURTs; and

(g) *Invite* the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety to consider the potential biosafety impacts of GURTs.
