FNI REPORT 2|2022

REGINE ANDERSEN

Enhancing the functioning of the multilateral system of access and benefit sharing under the ITPGRFA

Results from an international survey

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Abstract
This survey explores options for resuming negotiations on enhancing the functioning of the Multilateral System of Access and Benefit-Sharing (MLS) under the *International Treaty on Plant Genetic Resources for Food and Agriculture* (ITPGRFA) and is targeted at negotiators and observers in this context. Ninety-five individuals and groups from different regions and stakeholder groups responded to the survey, almost all with experience from delegations or as observers at relevant meetings. The respondents provided their reflections on topics such as whether there is a need to resume negotiations; if so, for what purposes; what the elements of a functioning MLS could be, how the difficult questions of 'digital sequence information' (DSI) and expanding the list of crops covered by the MLS could be handled in this context; major stumbling blocks for negotiations; and how, more precisely, negotiation could possibly be resumed. Many respondents made use of opportunities to write free texts and provided insightful suggestions. Studying these proposals may also be useful in finding a way forward.

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The Fridtjof Nansen Institute is a non-profit, independent research institute focusing on international environmental, energy and resource management. The institute has a multi-disciplinary approach, with main emphasis on political science and international law.

Summary

This survey explores options for resuming negotiations on enhancing the functioning of the Multilateral System of Access and Benefit-sharing (MLS) under the *International Treaty on Plant Genetic Resources for Food and Agriculture* (ITPGRFA) and is targeted at negotiators and observers in this context. Ninety-five individuals and groups responded to the survey, almost all with experience from delegations or as observers at relevant meetings.

Survey responses emphasized the need to find solutions to enhance the functioning of the MLS, in particular so as to achieve a system that promotes the sustainable use of PGRFA, generates a fair and equitable level of benefits to be shared according to the relevant provisions of the Treaty, and promotes the conservation of PGRFA. The survey found broad agreement for a subscription system with functional elements of benefit-sharing along with capacity-building and technology transfer related to DSI. There is also much support for a single access system, whereas opinion diverges as to expanding the Treaty's Annex 1 and regarding the inclusion of digital sequence information (DSI) in the MLS.

Most (albeit not all) respondents agreed that exchange of information and technologies is already included in the ITPGRFA and that access to DSI should be regulated by an enhanced MLS. Major stumbling blocks to achieving consensus in the Governing Body on how DSI relates to the ITPGRFA include the uneven capacity to access and use DSI, unequal capacity to analyse DSI, and the technology required to analyse DSI.

The most serious challenges in including DSI in the MLS were identified as difficulties in monitoring the exchange and use of digital sequence information, and lack of consensus on intellectual property rights and DSI. Many respondents also mentioned the lack of involvement of farmers and indigenous and local communities in the negotiation process.

As to how negotiations on enhancing the functioning of the MLS could be resumed, most respondents agreed that the Bureau should be requested to include the item in the agenda of the 9th Session of the Governing Body – provided informal meetings succeed in reaching agreement on a set of elements of an enhanced MLS. Many respondents made use of opportunities to write free texts and provided insightful suggestions. Studying these proposals may also be useful in finding a way forward.

Contents

1. Background

The Multilateral System of Access and Benefit-sharing (MLS) under the *International Treaty on Plant Genetic Resources for Food and Agriculture* (ITPGRFA) has been established to facilitate access to genetic resources for food and agriculture (PGRFA) and safeguard the fair and equitable sharing of the benefits arising from their use. Whereas the other provisions of the ITPGRFA cover PGRFA in general, the MLS covers the PGRFA of 35 food crops and 29 forage plants, listed in Annex 1 to the ITPGRFA, which are in the public domain and under the control of the parties, and in the collections of the Consultative Group for International Agricultural Research (CGIAR). They include major staple crops and a range of other plants widely used for food and agriculture.

In ratifying the ITPGRFA, countries agree to make their relevant genetic resources and related information available to all through the MLS. Access is provided free of charge (or with a small administration fee) according to the terms and conditions of the Standard Material Transfer Agreement (SMTA) adopted by the parties to the ITPGRFA in 2006. These terms and conditions include provisions on the sharing of benefits arising from utilization of the material received from the MLS. Those who receive PGRFA through the Multilateral System agree to freely share any new developments with others for further research, or, if they want to patent their innovations, they agree to pay a percentage of any commercial benefits they derive from that into the Benefit-sharing Fund (BSF). The BSF was established in 2008 as an integral part of the funding strategy of the ITPGRFA, to support farmers in developing countries, directly and indirectly, who conserve and sustainably use PGRFA. The BSF has attracted substantial voluntary contributions, but the mandatory payments have so far been infinitesimal. Also, the sharing of non-monetary benefits (i.e. access to PGRFA, capacity building, technology transfer) is an important part of the MLS.

Whereas the MLS represents a great achievement in terms of facilitating access to PGRFA and the support that has been provided through the BSF for conservation and sustainable use in developing countries, it is not functioning according to expectations. In particular, the levels of payments under the MLS have been slow in coming and not sufficient to provide for the sharing of benefits as envisaged under the ITPGRFA, and many countries have not included their relevant PGRFA and related information in the MLS. Thus, the Governing Body of the ITPGRFA has sought ways and means to expand benefit-sharing under the MLS and the scope of the MLS itself for the past decade. After many years of formal negotiations on how to *enhance the functioning of the MLS*, however, the process came to a halt in November 2019, at the Eighth Session of the Governing Body, due to strongly diverging positions among delegations. No resolution was adopted, and no decision was made regarding any further formal negotiations. The Governing Body (GB) simply took note of the need to take stock and to assess the next steps on further work on the Enhancement of the Multilateral System, and encouraged informal consultations among Contracting Parties – especially national consultations among sectors and relevant stakeholders. Some Parties wanted the GB, at its Ninth Session, to consider how to carry out further work on the Enhancement of the Multilateral System, noting the need to consider outcomes of relevant debates under the CBD. Other Contracting Parties indicated that they wanted to review the best way forward.

The present survey is a response to this situation. It is hoped that the results may help Contracting Parties in taking stock and considering the next steps.

2. About the survey

This survey explores options for resuming negotiations on enhancing the functioning of the MLS. It has been developed after informal consultations with participants from Governing Body delegations in different regions.

The survey has been carried out as part of the research project *Global environmental governance as a tool for poverty alleviation* of the *Fridtjof Nansen Institute (FNI)*. The results also feed into the research project *Pathways to food security, poverty alleviation and livelihoods through the implementation of farmers rights to crop genetic diversity (DIVERSIFARM)*, conducted out by the FNI in collaboration with five partners from three continents. Both projects are funded by the Research Council of Norway.

A questionnaire developed through informal consultations with experts from the said projects and Governing Body delegation participants from various regions was sent out via SurveyMonkey and as a Word file on 9 December 2020. It was distributed in English, Spanish and French to delegates and observers at the Seventh and Eighth Session of the Governing Body of the ITPGRFA and the A*d Hoc* Open-ended *Working Group* to *Enhance the Functioning* of the *Multilateral System* of Access and Benefit Sharing of the ITPGRFA. Recipients were invited to share the questionnaire with colleagues who had participated in regional consultations on the topic. The survey was closed for further submissions in February 2021. Due to unforeseen circumstances, data analysis took longer than expected and the results were not published until August/September 2022. It is hoped, however, that delegates and observers involved in negotiations related to the MLS under the ITPGRFA still find the report useful.

3. Respondents

As of the end of February 2021, a total of 95 responses had been received. Of these, 35 were from government institutions (37%); 20 were from national or regional gene banks (21%); 14 from national/local or international research institutions (15%); 5 were independent consultants/technical advisors (5%); 4 were from non-governmental organizations (4%); 3 were from seed-industry associations (3%); 3 were from multilateral/intergovernmental organizations (3%); 2 from farmer organizations (2%); 1 was from a public or private plant breeding institution (1%); 1 was from a donor organization/funding institution (1%) and 7 had various other affiliations (7%). In addition, one letter on issues addressed in the survey was received from the International Seed Federation (ISF); its contents have been incorporated in this report.

As several of the responses were provided jointly from delegations to the ITPGRFA (and the letter from the ISF represents the Federation), the number of individual respondents involved in the survey is higher than the number for responses received.

We are most grateful to all respondents for taking the time to contribute to this survey!

The regional distribution of responses is presented in Figure 1.

All respondents, except for seven, had participated at relevant meetings under ITPGRFA: the Seventh Session of the Governing Body (57% of the respondents) the Eighth Session of the Governing Body (64% of the respondents) and/or one or more meetings of the Ad Hoc Open-ended Working Group to Enhance the Functioning of the Multilateral System of Access and Benefit Sharing of the ITPGRFA (31% of the respondents). Moreover, 42% of the respondents had participated at regional or national consultations on the topic. Seven per cent of the respondents had not participated in any international negotiations or in regional or national consultations.

The majority of the respondents had been delegation leaders or members of delegations (57%); 34% had been observers at these meetings (and 7% had not participated at international meetings).

As not all respondents replied to all questions, the number of respondents to the various questions is somewhat lower than the total number of respondents, typically varying between 86 and 89 responses for each question.

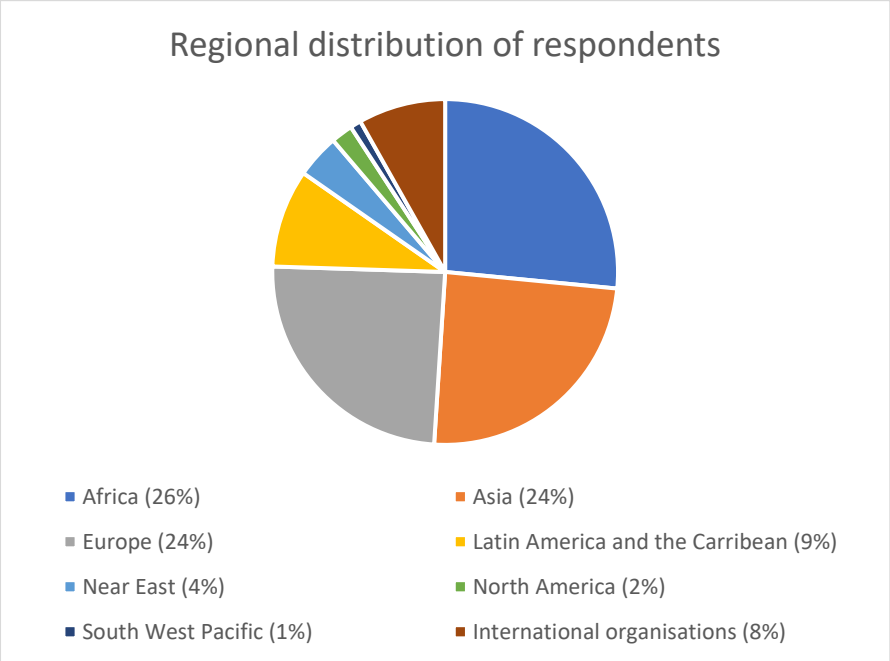

Figure 1: Regional distributions of responses

4. Whether there is a need to resume negotiations on the MLS

We first wished to find out whether our respondents perceive a need to resume negotiations on enhancing of the functioning of the MLS. We tested this with several statements, inviting respondents to give their views on these statements. 87 respondents responded to this question.

Statement 1: There is no need to enhance the functioning of the MLS, as the system is functioning sufficiently well.

This statement did not attract much support: 54% of the respondents disagreed totally, whereas 21% said that they tended to disagree. Another 20% agreed to some extent, whereas only 5% agreed fully with the statement. One respondent agreed to some extent with the first part of the sentence, but was not sure about the last part of the sentence.

Regions	*I totally agree*	*I agree to some extent*	*I tend to disagree*	*I totally disagree*	*Not sure*
Africa (21)	2	3	6	10	0
Asia (20)	1	3	3	13	0
Europe (23)	1	4	5	13	0
L. America/Caribbean (9)	0	2	0	7	0
Near East (4)	0	2	0	1	1
North America	0	2	0	0	0
South-West Pacific	0	0	0	1	0
Others (from int. org.)	0	1	4	2	0
TOTAL (87)	4	17	18	47	1

Table 1: Regional distribution of responses (numbers) for statement 1: There is no need to enhance the functioning of the MLS, as the system is functioning sufficiently well.

Statement 2: There is a need to enhance the functioning of the MLS, as the system is not performing according to expectations.

This statement attracted the broadest support: 62% of our respondents agreed fully, whereas 29% agreed to some extent. Further, 5% tended to disagree and only two respondents disagreed totally. One respondent replied 'not sure', explaining that his/her delegation has a flexible position on this question.

Regions	AI totally agree	I agree to some extent	I tend to disagree	I totally disagree	Not sure
Africa (21)	14	6	1	0	0
Asia (20)	14	5	0	1	0
Europe (23)	14	6	2	0	1
L. America/Caribbean (9)	8	0	0	1	0
Near East (3)	1	2	0	0	0
North America (2)	0	0	2	0	0
South-West Pacific (1)	0	1	0	0	0
Others (from int. org.) (7)	2	5	0	0	0
TOTAL (86)	53	25	5	2	1

Table 2: Regional distribution of responses (numbers) for statement 2: There is a need to enhance the functioning of the MLS, as the system is not performing according to expectations.

Statement 3: There is a great need to enhance the functioning of the MLS, as this is critical to the realization of the objectives of the ITPGRFA.

This statement attracted broad support, but also some hesitation: 62% of our respondents agreed totally, whereas 25% agreed to some extent. Further, 9% tended to disagree, one respondent disagreed totally, and two respondents said they were not sure.

Regions	I totally agree	I agree to some extent	I tend to disagree	I totally disagree	Not sure
Africa (21)	15	5	1	0	0
Asia (20)	15	3	1	0	1
Europe (23)	13	6	3	0	1
L. America/Caribbean (9)	7	1	0	1	0
Near East (4)	1	3	0	0	0
North America (2)	0	0	2	0	0
South-West Pacific (1)	0	1	0	0	0
Others (from int. org.) (7)	3	3	1	0	0
TOTAL (87)	54	22	8	1	2

Table 3: Regional distribution of responses (numbers) for statement 3: There is a great need to enhance the functioning of the MLS, as this is critical to the realization of the objectives of the ITPGRFA.

Conclusion: All in all, 62% of our respondents agree totally that there is a great need to enhance the functioning of the MLS, whereas 25% agree 'to some extent'. However, 5% feel that there is no need to enhance the functioning of the MLS, as do 20%, 'to some extent'. Some respondents have thus indicated partial agreement to the need to enhance the MLS *and* that there is no need to do so – in parallel. All in all, the vast majority of our respondents favour finding solutions to enhance the functioning of the MLS. There are no clear patterns with regard to the regional distribution of responses or between stakeholder categories.

5. What would be important to achieve with an enhanced MLS?

We then wished to know what our respondents think would be important to achieve with an enhanced MLS, if the negotiations were resumed. We presented a range of potential purposes and invited respondents to indicate their views about their importance. 89 respondents responded to this question.

Purpose 1: A system that is conducive to scientific progress and innovation in plant breeding.

The great majority of respondents (67%) considered this to be very important. Further, 21% found this quite important, and 7% found it somewhat important. Only three respondents said that this was not important, and one was not sure.

Regions	*Very important*	*Quite important*	Somewhat important	*Not important*	*Not sure*
Africa (22)	11	7	3	1	0
Asia (21)	19	1	1	0	0
Europe (23)	14	6	1	1	1
L. America/Caribbean (9)	6	3	0	0	0
Near East (4)	3	1	0	0	0
North America (2)	2	0	0	0	0
South-West Pacific (1)	0	0	0	1	0
Others (from int. org.) (7)	5	1	1	0	0
TOTAL	60	19	6	3	1

Table 4: Regional distribution of responses (numbers) for purpose 1: A system that is conducive to scientific progress and innovation in plant breeding.

Purpose 2: A system that generates a fair and equitable level of benefits to be shared according to the relevant provisions of the Treaty

All respondents agreed, fully or to some extent, that achieving this is important: 81% found it very important, 12% found it quite important, and 7% found it somewhat important. No one disagreed.

Regions	*Very important*	*Quite important*	Somewhat important	*Not important*	*Not sure*
Africa (22)	19	3	0	0	0
Asia (20)	15	3	2	0	0
Europe (23)	16	4	3	0	0
L. America/Caribbean (9)	9	0	0	0	0
Near East (4)	4	0	0	0	0
North America (2)	2	0	0	0	0
South-West Pacific (1)	0	1	0	0	0
Others (from int. org.) (7)	6	0	1	0	0
TOTAL (88)	71	11	6	0	0

Table 5: Regional distribution of responses (numbers) for purpose 2: A system that generates a fair and equitable level of benefits to be shared according to the relevant provisions of the Treaty.

Purpose 3: A system that promotes the conservation of PGRFA.

There was considerable consensus here: 75% of our respondents found it very important, and 19% found it quite important, whereas only 3% found it somewhat important, and 2% were not sure.

Regions	*Very important*	*Quite important*	Somewhat important	*Not important*	*Not sure*
Africa (22)	20	2	0	0	0
Asia (21)	15	6	0	0	0
Europe (23)	17	4	2	0	0
L. America/Caribbean (9)	7	1	0	0	1
Near East (4)	3	1	0	0	0
North America (2)	1	0	0	0	1
South-West Pacific (1)	0	1	0	0	0
Others (from int. org.) (7)	4	2	1	0	0
TOTAL (89)	67	17	3	0	2

Table 6: Regional distribution of responses (numbers) for purpose 3: A system that promotes the conservation of PGRFA.

Purpose 4: A system that promotes the sustainable use of PGRFA.

The vast majority of our respondents considered this to be important: 85% found it very important and 10% quite important. Only 3% found it somewhat important, and one was not sure.

Regions	*Very important*	*Quite important*	Somewhat important	*Not important*	*Not sure*
Africa (22)	19	2	1	0	0
Asia (21)	17	4	0	0	0
Europe (23)	20	2	1	0	0
L. America/Caribbean (9)	9	0	0	0	0
Near East (4)	3	0	1	0	0
North America	1	0	0	0	1
South-West Pacific	0	1	0	0	0
Others (from int. org.)	7	0	0	0	0
TOTAL (89)	76	9	3	0	1

Table 7: Regional distribution of responses (numbers) for purpose 4: A system that promotes the sustainable use of PGRFA.

Purpose 5: A system that facilitates farmers' access to PGRFA

Almost all respondents agreed that this is important: 69% found it very important and 17% found it quite important, whereas 9% considered it to be somewhat important. One respondent found this not important, and four respondents were not sure.

Regions	*Very important*	*Quite important*	Somewhat important	*Not important*	*Not sure*
Africa (22)	19	2	1	0	0
Asia (21)	14	5	1	1	0
Europe (23)	11	7	5	0	0
L. America/Caribbean (9)	8	1	0	0	0
Near East (4)	3	0	1	0	0
North America (2)	0	0	0	0	2
South-West Pacific (1)	1	0	0	0	0
Others (from int. org.) (7)	5	0	0	0	2
TOTAL (89)	61	15	8	1	4

Table 8: Regional distribution of responses (numbers) for purpose 5: A system that facilitates farmers' access to PGRFA.

Purpose 6: A system that is simple and requires a minimum of bureaucratic effort for those involved.

Also this attracted broad support: 67% found it very important, 23% quite important and 9% somewhat important. No one saw it as unimportant, although one respondent was not sure.

Regions	*Very important*	*Quite important*	Somewhat important	*Not important*	*Not sure*
Africa (21)	12	7	2	0	0
Asia (21)	15	5	0	0	1
Europe (23)	17	4	2	0	0
L. America/Caribbean (9)	6	2	1	0	0
Near East (4)	2	1	1	0	0
North America (2)	2	0	0	0	0
South-West Pacific (1)	1	0	0	0	0
Others (from int. org.) (7)	4	1	2	0	0
TOTAL (88)	59	20	8	0	1

Table 9: Regional distribution of responses (numbers) for purpose 6: A system that is simple and requires a minimum of bureaucratic effort for those involved.

The International Seed Federation (ISF) did not answer directly concerning the proposed purposes but wrote: 'Our organizations continue to fully support the effective implementation of the Treaty in a way that supports both the conservation and sustainable use of Plant Genetic Resources for Food and Agriculture (PGRFA) and the fair and equitable sharing of benefit resulting from its utilization. We believe that achieving conservation, sustainable use and access and benefit sharing objectives hinge on facilitated access to and utilization of PGRFA in the Multilateral System (MLS).'

Other purposes

Finally, we invited respondents to suggest other objectives that they deemed important to achieve with an enhanced MLS under the ITPGRA. A total of 38 respondents made use of this opportunity.

The ISF wrote: 'Members of our organizations wish to see a practicable MLS for PGRFA that facilitates access to and sustainable use of PGRFA under business-reasonable terms and conditions for any user – whether a frequent or infrequent user, whether from the public or private sector, whether from a large, medium-sized or small country or organization.' They added that they believe that the primary benefit of the MLS is to enable utilization of PGRFA resulting from facilitated access, which is the basis of conservation and benefit-sharing. They stressed that, without effective and facilitated access to PGRFA from the MLS, monetary and non-monetary benefit-sharing could not be realized.

Further, they emphasized that, unlike fossil fuels, plant genetic resources do not disappear when used and that the ISF is concerned that under-use of PGRFA could lead to their disappearance.

An inclusive system

Three responses stressed that the MLS should work for all categories of users, including public- and private-sector plant breeders and researchers, farmers, and others; further, that the system should appeal to as many countries and stakeholders as possible, and all should benefit mutually from the system. This would make the MLS attractive to more countries and could attract more Contracting Parties to the Treaty, and it would ensure wider use of gene bank material for the development of new varieties. Respondents also highlighted the importance of including farmers' communities as knowledge and innovation holders within the governance system of the MLS, that the system be tailored for the needs of poor countries, and that capacity-building be provided, also with regard to DSI. One respondent wrote that the governance structures of the system should go beyond governments to the key stakeholders who are at the centres of origin. Another noted that the system should be very close to the population.

Enable facilitated access

Two respondents emphasized the need for a system that would continue to respect the balance of access and benefit-sharing, and would recognize that facilitated access to PGRFA is a major benefit of the MLS. Two respondents noted the importance of having a low-cost, effective system for international exchange of crop genetic resources to enhance plant breeding. One specified the importance of breeding for diversity; another held that access should be standardized. Two further respondents stressed that MLS coverage should be expanded to all PGRFA. And finally, two respondents emphasized that farmers should have direct access to the MLS.

Ensure benefit-sharing

One respondent suggested that the system should include clauses to ensure that companies receiving genetic resources from the system would be required to contribute to the Benefit-Sharing Fund (BSF). Two other respondents stressed the need for further discussion of benefit-sharing, and that the system should provide clarity on accessible benefits and intended beneficiaries. Another respondent pointed out that progress in research and innovation was important, but could make sense to PGRFA providers only if there were fair and equitable sharing of benefits arising from the utilization of PGRFA. The system should facilitate benefit-sharing directly to contracting parties and their aligned farmers' communities and organizations, one respondent noted. Two respondents stressed that the system should balances all aspects of benefit-sharing, both monetary and non-monetary, including exchange of information. One respondent highlighted the importance of mobilizing adequate resources for the BSF to support conservation and sustainable use of PGRFA by farmers in developing countries. Finally, one respondent emphasized the importance of recognizing and honouring Farmers' Rights in this context.

A system that is transparent and reliable

Seven respondents stressed that the system would need to allow tracking and monitoring of the accessed material; one of them specified that this should apply also to the digital sequence information related to genetic resources, so that the benefit-sharing obligations would not be circumvented through digitalization. Further, noted one respondent, all Parties should be required to fulfil their obligation to place their material in the MLS.

A simple and transparent system

One respondent held that there is no need for a subscription system, as it would add bureaucratic burden to the gene banks.

Other reflections

One respondent warned that a system along the lines of the Nagoya Protocol would involve barriers to accessing crop genetic resources, and even loss of such resources due to restrictions blocking research and utilization. That could reduce the possibilities for plant breeding – particularly important in light of climate change. Another respondent stressed the need to keep in mind that these efforts to revise or amend the MLS are taking place after 15 years of inception. The revised system should be 'future-ready', prepared for technological advances, as well being 'business-ready'.

One respondent explained the answers given to the above questions as follows:

> *The reason why I cannot fully endorse some of the positive statements about returning to negotiations is that I can see little prospect of success if there not a shift in European and other Northern government positions to enable a serious negotiation that properly addresses DSI. Absent such a shift, returning to talks may not be productive. The same can be said about the industry's willingness to pay. If industry does not indicate that it is willing to pay more than the paltry sums on the table when the negotiations failed, the, it again may not be worth the effort of resuming.*

Another respondent stressed the need for a system that recognizes, respects and protects peasant, traditional and Indigenous seed and knowledge systems as autonomous and distinct from plant breeders' rights and other IPRs, and does not seek to homogenize or subsume peasant and Indigenous cultural knowledges and governance systems under neoliberal commodification schemes.

Conclusions

All respondents found 'A system that promotes the sustainable use of PGRFA' very important, important or quite important as a purpose – 85% considered it to be very important. Next in importance was 'A system that generates a fair and equitable level of benefits to be shared according to the relevant provisions of the Treaty'. All respondents found this important, 81% 'very important'. 'A system that promotes the conservation of PGRFA' was also considered important by all (75% found this very important) except for 2%, who were not sure. Almost all respondents found 'A system that facilitates farmers' access to PGRFA' important as a purpose (69% found it very important); one respondent found this not important, and four were not sure. Also the purpose 'A system that is simple and requires a minimum of bureaucratic effort for those involved' attracted broad support, but 'only' 67% found this very important. No one indicated that it was not important, but one respondent was not sure. Finally, the purpose 'A system that is conducive to achieving scientific progress and innovation in plant breeding' received the least support: nevertheless, 67% of the respondents deemed this very important. 21% quite important. Only three respondents felt that this was not important, and one was not sure.

Respondents were also invited to suggest other purposes. The 38 responses here concerned the need for an inclusive governance system for the MLS, the importance of enabling facilitated access and to ensure benefit sharing, and that the system would have to be transparent and reliable. Respondents stressed that the system would have to be 'future-ready' and 'business-ready', and that achieving progress in the negotiations would require a shift in European and Northern government positions and the position of the seed industry.

6. Elements to be part of an enhanced MLS under the ITPGRFA

Next, we focused on those elements proposed at the last session of the Governing Body which our respondents thought could be part of an enhanced MLS under the ITPGRFA, if negotiations were to be resumed. Respondents were invited to state whether these elements must be included, could be included, should preferably not be included, must be excluded – or whether they were not sure. 87 respondents answered this question.

Altogether 59% of our respondents held that a subscription system with functional elements of benefit-sharing must be included in the MLS, and 33% replied that it could be included. Only 1% felt that it should preferably not be included, 1% that it should be excluded, and 6% were not sure. Thus, a subscription system enjoys broad support among our respondents.

Element 1: A subscription system with functional elements of benefit-sharing

Regions	*Must be included*	*Could be included*	Should rather not be included	*Must be excluded*	*Not sure*
Africa (21)	13	5	0	0	3
Asia (21)	15	4	1	0	1
Europe (22)	8	13	0	1	0
L. America/Caribbean (9)	8	1	0	0	0
Near East (4)	1	3	0	0	0
North America (2)	1	1	0	0	0
South-West Pacific	0	0	0	0	1
Others (from int. org.) (7)	5	2	0	0	0
TOTAL (87)	51	29	1	1	5

Table 10: Regional distribution of responses (numbers) for element 1: A subscription system with functional elements of benefit sharing.

The ISF wrote that they support multiple, appropriately flexible mechanisms of access that use a SMTA: a single access mechanism and a subscription system. However, they stressed that Contracting Parties must meet their obligations, if the system is to function. Specifically, countries must deposit material in the MLS and make it readily available upon signing an SMTA or subscription.

Element 2: A single access system with functional elements of benefit-sharing

There was somewhat less certainty regarding a single access system with functional elements of benefit-sharing. Here 47% of the respondents held that it must be included, whereas 30% opined that it could be included. Further, 7% felt that it should preferably not be included – but none felt that it should be excluded. However, 16% of our respondents were not sure about this. As noted, the ISF supports a single access system on the conditions described.

Regions	*Must be included*	*Could be included*	Should rather not be included	*Must be excluded*	*Not sure*
Africa (21)	9	8	1	0	3
Asia (21)	17	2	1	0	1
Europe (22)	5	12	0	0	5
L. America/Caribbean (9)	4	2	1	0	2
Near East (4)	1	1	0	0	2
North America (2)	2	0	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	3	1	3	0	0
TOTAL (87)	41	26	6	0	14

Table 11: Regional distribution of responses (numbers) for element 2: A single access system with functional elements of benefit sharing

Element 3: An expansion of the Annex 1 list of plant species to be placed in the MLS

Concerning an expansion of the Annex 1 list of plant species to be placed in the MLS, 55% of our respondents held that it must be included in an enhanced MLS under the ITPGRFA; 24% that it could be included. However, 9% responded that it should preferably not be included, whereas 7% stated that it must be excluded, and 6% were not sure about this.

One respondent stressed that the question here is about including all plant genetic resources for food and agriculture that are in the public domain and under the control of the parties to the MLS. This was the background for strongly agreeing.

Regions	*Must be included*	*Could be included*	Should rather not be included	*Must be excluded*	*Not sure*
Africa (21)	7	6	1	4	3
Asia (21)	17	2	2	0	0
Europe (23)	16	6	1	0	0
L. America/Caribbean (9)	1	4	3	1	0
Near East (4)	0	3	0	0	1
North America (2)	1	0	0	0	1
South-West Pacific (1)	0	0	0	1	0
Others (from int. org.) (7)	6	0	1	0	0
TOTAL (88)	48	21	8	6	5

Table 12: Regional distribution of responses (numbers) for element 3: An expansion of the Annex 1 list of plant species to be placed in the MLS

The ISF noted in their letter that the coverage of the MLS (Annex 1) is a critical element for enhancing benefit-sharing; they supported the expansion of the coverage of the MLS to reflect the scope of the Treaty. They stressed that the expansion of Annex 1 to all plant genetic resources must occur in a timely manner, to fully enhance the MLS and the potentials for benefit-sharing.

Element 4: Digital sequence information (DSI) about PGRFA to be regulated by the MLS

We then asked whether 'digital sequence information' (DSI) about PGRFA should be regulated by the MLS. DSI is a placeholder term for which consensus on a replacement or precise definition remains to be agreed. Here, 50% of our respondents felt that it must be included in an enhanced MLS; 19% held that it could be included, 5% felt that it

should preferably not be included, 17% stated that it must be excluded, and 9% were not sure.

One respondent felt that this element was more a matter of internalizing DSI into the Treaty's jurisdiction on MLS than having it regulated by the MLS.

Regions	*Must be included*	*Could be included*	Should rather not be included	*Must be excluded*	*Not sure*
Africa (22)	14	5	0	3	0
Asia (21)	14	4	0	2	1
Europe (22)	4	4	3	6	5
L. America/Caribbean (9)	6	1	0	1	1
Near East (4)	3	1	0	0	0
North America (2)	0	0	0	2	0
South-West Pacific (1)	1	0	0	0	0
Others (from int. org.) (7)	2	2	1	1	1
TOTAL	44	17	4	15	8

Table 13: Regional distribution of responses (numbers) for element 4: Digital sequence information (DSI) about PGRFA to be regulated by the MLS

Element 5: Capacity-building and technology transfer related to DSI as additional measures of non-monetary benefit-sharing

Our respondents were more positive to capacity-building and technology transfer related to digital sequence information as additional measures of non-monetary benefit-sharing as an element of the enhanced MLS. A total of 55% stated that it must be included, whereas 34% said that it could be included. Only 3% held that it should preferably be excluded; 2% that it must be excluded, and 5% were not sure about this.

Regions	*Must be included*	*Could be included*	Should rather not be included	*Must be excluded*	*Not sure*
Africa (21)	16	4	1	0	0
Asia (21)	16	4	1	0	0
Europe (22)	5	13	0	1	3
L. America/Caribbean (9)	6	3	0	0	0
Near East (4)	3	1	0	0	0
North America (2)	0	2	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	2	3	1	1	0
TOTAL (87)	48	30	3	2	4

Table 14: Regional distribution of responses (numbers) for element 5: Capacity-building and technology transfer related to DSI as additional measures of non-monetary benefit sharing

Other elements

Finally, we asked whether there were **other elements** that should be included in an enhanced MLS under the ITPGRFA. 16 respondents made use of this opportunity.

Shaping a subscription system

One respondent emphasized that a subscription system would be a more practical and effective way of achieving income for the Benefit-Sharing Fund than the current system – but added that it would be important to take into account the positions of the seed sector, as they would be the ones to con-

tribute and the solution would have to be economically sustainable for them. As noted, the ISF has expressed support to a subscription system. However, they also highlight the importance of ensuring that the enhanced system includes reasonable withdrawal and termination conditions, especially as regards payment and transfer of obligations. Further, the ISF stated that its members cannot sign contracts committing them to perpetual payment obligations. One respondent suggested that there should be exemptions from the subscription payment for research institutions that have gene banks and for smallholder and medium-scale farmers in developing countries. Another respondent wrote that there should be facilitated access to the MLS for farmers and their organizations.

Improving the benefit-sharing mechanism

One respondent wondered whether consideration should be given to creating a financial fund that would serve as an advance for the beneficiary countries but without creating an initial burden on the companies that would use the genetic resources. Another respondent felt that there was a need to define a different triggering point for benefit-sharing obligations that focus on the economic exploitation of products and reproductive material arising from the utilization of PGRFA to be regulated by the MLS, instead of intellectual property rights obtention as the triggering point. One respondent stressed the importance of clear and practical legal provisions on key items in the SMTA, e.g., on termination. Payment rates should be reasonably in line with commercial practice. Another respondent suggested that benefit-sharing should be directed toward the contracting party and its aligned farmers', farmers' communities/organizations.

How to deal with DSI in relation to the MLS

One respondent stated that DSI must be defined and accepted for benefit-sharing purposes. Another respondent wrote that that a subscription system could indirectly cover the sharing of monetary benefits of the utilization of DSI as well. Yet another respondent held that DSI should be treated separately, following the lead of the CBD, and should not give rise to unreasonable financial expectations. A tax or levy or similar system for generating funds would meet the demands of DSI proponents without affecting the current state of DSI utilization. One respondent pointed out that DSI facilitates and encourages leakage of MLS material out of the Treaty, and that there must either be monetary benefit-sharing for the use of DSI, or an effective and legally enforceable way of tying DSI relevant for the MLS to the SMTA. Another respondent suggested that a specific mention including DSI could be inserted in the provisions of the ITPGRFA, Art, 13.2. a), b) c) on benefit-sharing in the multilateral system.

Coverage of the MLS

Two respondents emphasized the importance of expanding Annex 1 of the ITPGRFA to cover all PGRFA for the MLS. Another respondent opined that the system should be expanded to non-food/feed uses. An African respondent made it clear that he/she agrees fully with the position of the African region: that it will consider extending the scope of the MLS only after having observed that a foreseeable flow of benefits ensues to the Benefit-Sharing Fund, following implementation of all the above-mentioned measures. The proposed growth plan would allow African parties to judge whether resources are flowing, before ratifying the amendment extending the scope of the Multilateral System for Access and Benefit-sharing. With regard to DSI, this respondent agreed strongly with the African region that it is essential to address this issue in the Multilateral System and in the revised Standard Material Transfer Agreement. Another respondent stressed this from a different angle, stating that DSI is not a capacity-building issue, but one of monetary benefit-sharing. Any expansion of Annex 1 would have to be contingent on the prior successful functioning of a benefit-sharing system that meets an agreed target for several years running, this respondent stressed. As a solution, a further respondent suggested a system for regular evaluation of the functioning of the system, so that other crops not currently listed in Annex 1 could be progressively incorporated.

Non-monetary benefit sharing

Five respondents suggested that capacity-building and technology transfer should be made available regarding all aspects related to some/all objectives of the Treaty. It should be targeted at broad groups

of stakeholders, including policy-makers, relevant officials and gene-bank managers. Capacity building and technology transfer related to DSI should be taken into consideration as an additional measures of non-monetary benefit sharing. Another respondent stressed that farmers' capacities should be improved and strengthened in developing countries. One respondent suggested that there should be a mechanism that supports the conservation of plant genetic resources effectively, irrespective of where it occurs. Another indicated that other forms of social involvement and assistance to communities could be treated as non-monetary benefit-sharing.

The role of farmers and Indigenous peoples

One respondent stressed that the MLS had never functioned properly. This respondent felt that PGRFA had been inequitably appropriated under the system and that benefits had been derived without free prior informed consent or appropriate compensation. Therefore, peasant and Indigenous food producers should lead the development of a system based on the Treaty, particularly in the provisions related to Farmers' Rights and Traditional Knowledge.

Conclusions

We found broad consensus among our respondents that a subscription system with functional elements of benefit-sharing must (59%) or could (33%) be included in the MLS, whereas one respondent felt it should preferably not be included, and one that it should be excluded. There is also broad support that a single access system must (44%) or could (26%) be included, although six respondents felt that it should preferably not be included. None were against it.

As to the question of expanding the Annex 1 list of crops under the MLS, opinions diverged. Here 48% of our respondent stated that it should be included, 21% that it could be included, 8% that it should preferably not be included, 6% that it should preferably be excluded, and 5% were not sure. Some respondents also stressed that an expansion of Annex 1 should mean the inclusion of all PGRFA, and not be undertaken on a species-by-species basis.

On including DSI in the MLS to enable regulation of access and benefit-sharing in this regard, opinions diverged even more. Here, 50% of our respondents felt that it must be included in an enhanced MLS, whereas 19% indicated that it could be included. Further, 5% felt that it should preferably not be included; 17% stated that it must be excluded, and 9% were not sure.

Respondents were more positive to capacity-building and technology transfer related to DSI as additional measures of non-monetary benefit-sharing as an element of the enhanced MLS. Altogether 55% of our respondents held that it must be included, whereas 34% said that it could be included. Only 3% felt that it should preferably be excluded and 2% that it must be excluded; 5% were not sure about this.

When we invited our respondents to suggest other elements, replies were mostly about how to develop the various potential elements that had already been listed. There were suggestions as to how to shape the subscription system in a realistic way, how to improve the mechanisms of benefit-sharing, how to deal with DSI in the context of the MLS, and whether and how to expand the list of Annex 1 crops under the MLS. Respondents also highlighted the importance of non-monetary benefit-sharing, such as capacity-building and support for conservation and sustainable use for PGRFA. One respondent stressed that farmers and Indigenous Peoples should be in the 'driver's seat' in developing the enhanced MLS.

7. Whether and how DSI relates to the ITPGRFA

The next questions were aimed at deepening the understanding of positions concerning Digital Sequence Information (DSI) – a topic of great concern for many negotiators during the last two sessions of the Governing Body of the ITPGRFA. According to the ITPGRFA, 'plant genetic resources for food and agriculture means any genetic material of plant origin of actual or potential value for food and agriculture' (Article 2). The Contracting Parties to the ITPGRFA have agreed to facilitate access to plant genetic resources for food and agriculture, and to share, in a fair and equitable way, the benefits arising from the utilization of these resources (Article 10.2). We asked respondents how, in their opinion, DSI relates to the ITPGRFA. 87 respondents replied to this question.

The first statement was that digital sequence information is not within the scope of the Treaty and should thus not be part of an enhanced MLS. Here, 17% of our respondents agreed fully with this statement, whereas 15% agreed partly. On the other hand, 16% said that they disagreed partly; 43% disagreed totally this statement, whereas 7% were not sure. One respondent explained that information associated with the material is mentioned in the Treaty and in the existing SMTA and therefore he would agree partly; however, regulation of exchange of information or monetary benefit-sharing for exchange of information was not within the scope of the Treaty, and with that this respondent would fully agree.

Option 1: Digital sequence information is not within the scope of the Treaty.

Regions	*I fully agree*	*I partly agree*	I partly disagree	*I totally disagree*	*Not sure*
Africa (21)	3	3	2	13	0
Asia (21)	5	1	4	10	1
Europe (21)	7	3	4	5	2
L. America/Caribbean (9)	0	3	1	4	1
Near East (4)	0	0	0	2	2
North America (2)	0	1	1	0	0
South-West Pacific (1)	0	0	0	1	0
Others (from int. org.) (7)	1	2	2	2	0
TOTAL (86)	16	13	14	37	6

Table 15: Regional distribution of responses (numbers) for Option 1: DSI is not within the scope of the Treaty.

Option 2: Plant genetic resources for food and agriculture include the genetic material of plant origin as well as associated genetic information. Thus, access to digital sequence information about plant genetic resources for food and agriculture should be regulated by an enhanced MLS.

Nearly half (44%) of our respondents agreed fully with this statement; 32% agreed partly; 5% disagreed partly, whereas 17% disagreed totally, and 2% were not sure. One respondent felt that instead of the expression 'associated genetic information', it would, in reference to Art. 12.3.c, be more accurate to refer to all available passport data and, subject to applicable law, any other associated available non-confidential descriptive information. Thus, this respondent totally disagreed with the statement above.

Regions	*I fully agree*	*I partly agree*	I partly disagree	*I totally disagree*	*Not sure*
Africa (22)	17	5	0	0	0
Asia (21)	8	10	0	3	0
Europe (21)	5	4	3	7	2
L. America/Caribbean (9)	4	4	0	1	0
Near East (4)	2	2	0	0	0
North America (2)	0	0	0	2	0
South-West Pacific (1)	0	1	0	0	0
Others (from int. org.) (7)	2	2	1	2	0
TOTAL (87)	38	28	4	15	2

Table 16: Regional distribution of responses (numbers) for Option 2: Plant genetic resources for food and agriculture include the genetic material of plant origin as well as associated genetic information. Thus, access to DSI about plant genetic resources for food and agriculture should be regulated by an enhanced MLS.

Option 3: Exchange of information and technologies related to plant genetic resources for food and agriculture is included as a benefit in the MLS (Art. 13.2.a), and facilitated access is regarded as a major benefit as well (Art. 13.1). Thus, access to digital sequence information about plant genetic resources for food and agriculture is already included in the Treaty and should be regulated by an enhanced MLS.

A further statement (Option 3) was that exchange of information and technologies related to plant genetic resources for food and agriculture is included as a benefit in the MLS (Art. 13.2.a) and that facilitated access is regarded as a major benefit as well (Art. 13.1). Thus, access to digital sequence information about plant genetic resources for food and agriculture is already included in the Treaty and should be regulated by an enhanced MLS. Here, 44% of our respondents agreed fully, 22% agreed partly; 16% disagreed partly, and 9% disagreed totally, while 8% were not sure.

Regions	*I fully agree*	*I partly agree*	I partly disagree	*I totally disagree*	*Not sure*
Africa (21)	11	3	4	1	2
Asia (21)	15	5	1	0	0
Europe (21)	5	3	4	5	4
L. America/Caribbean (9)	4	1	4	0	0
Near East (4)	1	2	0	0	1
North America (2)	0	0	0	2	0
South-West Pacific (1)	1	0	0	0	0
Others (from int. org.) (7)	1	5	1	0	0
TOTAL (86)	38	19	14	6	7

Table 17: Regional distribution of responses (numbers) for Option 3: Exchange of information and technologies related to plant genetic resources for food and agriculture is included as a benefit in the MLS (Art. 13.2.a) and facilitated access is regarded as a major benefit as well (Art. 13.1). Thus, access to digital sequence information about plant genetic resources for food and agriculture is already included in the Treaty and should be regulated by an enhanced MLS.

Option 4: The ITPGRFA needs to be amended to explicitly include information about plant genetic resources for food and agriculture in its scope. Only if thus amended could access to digital sequence information about plant genetic resources for food and agriculture be regulated by an enhanced MLS.

The next statement was that the ITPGRFA needs to be amended to explicitly include information about plant genetic resources for food and agriculture in its scope: only if amended this way could access to DSI about plant genetic resources for food and agriculture be regulated by an enhanced MLS. Here, 30% agreed fully with this statement, whereas 10% agreed partly. However, 16% disagreed partly, 32% disagreed totally, and 11% were not sure. Two respondents felt that the question could be interpreted in different ways: that agreeing to the question could be interpreted as meaning that the Treaty needed to be amended. For this reason, one of them responded 'not sure', whereas the other held that access to DSI through the MLS would require amending the Treaty, which this respondent would not support.

Regions	*I fully agree*	*I partly agree*	I partly disagree	*I totally disagree*	*Not sure*
Africa (22)	12	3	2	5	0
Asia (21)	7	1	2	9	2
Europe (21)	3	2	4	7	5
L. America/Caribbean (9)	2	3	1	3	0
Near East (4)	1	0	1	1	1
North America (2)	0	0	0	1	1
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	1	0	4	2	0
TOTAL (87)	26	9	14	28	10

Table 18: Regional distribution of responses (numbers) for Option 4: The ITPGRFA needs to be amended to explicitly include information about plant genetic resources for food and agriculture in its scope. Only if amended this way could access to DSI about plant genetic resources for food and agriculture be regulated by an enhanced MLS.

Option 5: Digital sequence information concerns all life on earth and is difficult to compartmentalize within specific multilateral agreements. It should thus be regulated in a new and integrated way, outside of the ITPGRFA.

A total of 17% agreed fully agreed the statement presented in Option 5, and 19% agreed partly. On the other hand, 20% disagreed partly, 33% disagreed totally, and 12% were not sure. One respondent noted that he agreed with the first part of the statement, but not with the last, as he is of the opinion that DSI should not be regulated at all.

Regions	*I fully agree*	*I partly agree*	I partly disagree	*I totally disagree*	*Not sure*
Africa (21)	4	6	2	7	2
Asia (20)	4	1	0	13	2
Europe (21)	2	6	6	4	3
L. America/Caribbean (9)	3	2	1	1	2
Near East (4)	0	0	2	1	1
North America (2)	0	0	1	1	0
South-West Pacific (1)	0	1	0	0	0
Others (from int. org.) (7)	1	0	5	1	0
TOTAL (85)	14	16	17	28	10

Table 19: Regional distribution of responses (numbers) for Option 5: Digital sequence information concerns all life on earth and is difficult to compartmentalize within specific multilateral agreements. It should thus be regulated in a new and integrated way, outside the ITPGRFA.

Option 6: The specificity and the needs of the food and agriculture sector requires a specialized solution to digital sequence information. We cannot wait for an all-encompassing new international regime which may not even fit the specific needs of the sector. A solution has to be found under the ITPGRFA and could then form a part of a more comprehensive solution later.

Pointing in a different direction, the next statement noted that the specificity and the needs of the food and agriculture sector require a specialized solution concerning DSI: we cannot wait for an all-encompassing new international regime which might not even fit the specific needs of the sector. A solution must be found under the ITPGRFA and could then form a part of a more comprehensive solution later. Here, 42% of the respondents agreed fully, whereas 22% agreed partly, 12% disagreed partly, 12% disagreed fully, and 13% were not sure.

Regions	*I fully agree*	*I partly agree*	I partly disagree	*I totally disagree*	*Not sure*
Africa (22)	11	3	2	2	4
Asia (20)	13	3	2	1	1
Europe (21)	5	3	4	5	4
L. America/Caribbean (9)	4	4	1	0	0
Near East (4)	1	1	0	0	2
North America (2)	0	0	1	1	0
South-West Pacific (1)	0	1	0	0	0
Others (from int. org.) (7)	2	4	0	1	0
TOTAL (86)	36	19	10	10	11

Table 20: Regional distribution of responses (numbers) for Option 6: The specificity and the needs of the food and agriculture sector require a specialized solution concerning DSI. We cannot wait for an all-encompassing new international regime on this which might not even fit the specific needs of the sector. A solution has to be found under the ITPGRFA and could then form a part of a more comprehensive solution later.

Other options

Finally, we asked our respondents whether they felt that there were other, important, ways in which DSI could relate to ITPGRFA. 20 respondents used this possibility.

The need for legal guarantees

One respondent stressed that a comprehensive solution should clearly delineate what is meant by 'DSI of plant genetic resources', and that legal guarantees should be provided to contracting parties. If one can benefit from the information derived from PGRFA, a negotiable portion of its befits should be shared accordingly, according to this respondent.

This stand was supported by a respondent who noted that, for at least a decade, FAO has stressed the 'unique characteristics' of agricultural bio-diversity that set it apart from the CBD. If FAO should now abandon such talk in the face of the difficult issues raised by DSI, it would signal a lack of institutional integrity or capacity, this respondent meant. The solution found for DSI by the ITGPGRFA must be consistent with and not contrary to that of the CBD, this respondent emphasised.

Avoiding further regulation of information flow

By contrast, one respondent held that regulating the flow of information should preferably be avoided – except as specified in Treaty Art.12.3 c, which provides that all available passport data and, subject to applicable law, any other associated available non-confidential descriptive information, shall be made available with the plant genetic resources for food and agriculture provided. Best practices should be developed by those involved in the exchange and utilization of genetic sequence data, according to this respondent.

Similarly, another respondent pointed out that information is explicitly addressed in the Treaty, and that this information is associated with phenotypic

characterization of material in the form received. The respondent explained that agreement had almost been reached in the Treaty's Governing Body on including nucleotide sequence information in this characterization data, but then the negotiations broke down for other reasons. This respondent noted how several academic reports have argued that multilateral agreements are not appropriate for regulation of DSI: so perhaps any regulation is inappropriate. Thus, the respondent concluded that instead of regulation, the parties to the Treaty should adopt a funding system unlinked to access and utilization, to accommodate the need for benefit-sharing. Another respondent held that free access (and capacity-building to use such access) should be recognized as an important part of the benefit-sharing component of the Treaty.

The need for simplification
However, one respondent opined that matters were not really so complicated: all that is needed is a dedicated database for MLS material that requires users to accept the terms and conditions of the SMTA before they are granted access.

Processes aimed at reaching a joint understanding
Some respondents suggested processes aimed at reaching a joint understanding. For example, a broad multisector working group or committee could be set up to discuss the specificities of DSI and to prepare proposals that could be taken up in the respective governing bodies (e.g., ITPGRFA, CBD, UNCLOS, PIP). One of these respondents pointed out that the current definition of PGRFA already includes DSI, so an amendment might not be necessary – although a clarification statement by the GB might help. This stand was supported by another further respondent, who noted that DSI is part of the ITPGRFA and that there should be an accompanying explanation on how to handle DSI.

Finding a solution under the ITPGRFA, and coordination with other international processes
Other respondents felt that a solution should be found under the ITPGRFA. One stated that, as a new integrated regulation, a solution should be provided under ITPGRFA. Another held that with regard to digital sequence information, he/she would be convinced and fully agree with the African region that it is essential to address this issue in the Multilateral System of Access and Benefit-Sharing and in the revised model of the Material Transfer Agreement. Another respondent stated that the aim must be limited to including DSI under the ambit of ABS defined by Plant Treaty.

One respondent held that strengthening the cooperation between international research centres, government agencies and the private sector is the only way to foster a better understanding of the phenomenon characterized as 'appropriation of common goods by private actors'. Public resources for research should be put at the service of the community.

The urgency of the matter
One respondent was concerned about the urgency of the issue. DSI is important information for the agriculture sector which deals with food and nutrition security. In the context of climate change, new biotic and abiotic stresses related to plants are evolving, and DSI may play a major role in combating hunger, this respondent pointed out. New varieties would be needed to tackle the challenges, requiring DSI for their development. A proper system for record keeping, tracing back and benefit sharing should be worked out, and there is no time to lose in solving these issues.

Reflections on the options provided in the survey
Some respondents had comments to the options offered under this question. Regarding Option 4, one respondent noted total disagreement with the formulation that the Treaty 'needs' to be amended. Rather they would agree to a formulation that an amendment to the Treaty would be required in order for the MLS to regulate access to DSI. All the same, this respondent would not support such an amendment. This respondent, who represented a group, stressed that DSI describing PGRFA is distinct from genetic material, as it is not used, stored or shared in the same way: thus, DSI cannot and should not be regulated in the same way as genetic resources. Another respondent felt that the expression 'access to digital sequence information' could be somewhat ambiguous. It might refer to (a) access to a PGRFA in the MLS to generate DSI; ore to b) access to DSI which is generated from PGRFA in the MLS. This could affect the understanding of the questions, according to this respondent.

Position of the International Seed Federation (ISF)
The ISF wrote that they recognize that the issue of DSI is complex in many ways. First, there is no agreed definition or defined scope for the term 'digital sequence information'. The ISF agrees with many who have noted that non-material information and data are not equivalent to genetic resources as defined in the Convention on Biological Diversity and the Treaty. Second, many diverse actors in industry and academia are involved in the generation, storage, curation, dissemination, interpretation and use of DSI. These 'users' work in well-functioning systems that have been established for a long time. Many of these systems have operated under the principle of 'open access' to promote information exchange, which the ISF considers a fundamental principle of the Treaty. Third, the types and extent of uses of DSI are equally diverse, ranging from public and private breeding to conservation work. Useful research has been accelerated by public and private actors as sequencing PGRFA has become more common and affordable. Finally, with the wider use of sequencing, DSI has become a critically important tool in food security and nutrition, especially as regards faster breeding cycles and more effective control of agricultural pests in farmers' fields. Within the context of the broader discussion on DSI, the organizations under the ISF support having a constructive debate aimed at enhancing the fairness and equity elements of access and benefit sharing under the Treaty. However, they are concerned that current attempts to create an international DSI regulatory regime may undermine the access and benefit-sharing objectives of the Treaty. Further, the ISF believes that there is a high likelihood that DSI regulation may disrupt on-going conservation, exploration, collection, characterization, evaluation and documentation of PGRFA, and create entry barriers for capacity-building for smaller market segments and for new users. They want to stay engaged in finding workable solutions for DSI and ensuring that the objectives of the Treaty can be fulfilled.

8. Main stumbling blocks towards achieving consensus on how DSI relates to the ITPGRFA

Our next set of questions concerned what the respondents saw as the main stumbling blocks towards achieving consensus in the Governing Body on how digital sequence information relates to the ITPGRFA. We listed possible impediments that emerged from the discussions and literature on the topic and invited respondents to tick all those that apply, indicating how serious they deemed these constraints to be. 87 respondents replied to the question, but not all of them replied to all the suggested constraints (see Tables).

Constraint 1: Reaching consensus on a definition for digital sequence information

A full 28% of our respondents considered reaching consensus on a definition for digital sequence information to be a very serious constraint to achieving consensus on how DSI relates to the ITPGRFA; 33% found it to be a serious constraint, and 29% a minor constraint, whereas 3% felt that it was not a constraint, and 7% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (22)	5	7	8	1	1
Asia (21)	6	6	7	1	1
Europe (21)	6	7	7	0	1
L. America/Caribbean (9)	2	5	1	0	1
Near East (4)	2	1	0	0	1
North America (2)	1	1	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	2	2	2	1	0
TOTAL (87)	24	29	25	3	6

Table 21: Regional distribution of responses (numbers) for constraint 1: Reaching consensus on a definition for digital sequence information

Constraint 2: Understanding the link between physical material and digital sequence information

As for understanding the link between physical material and digital sequence information, 27% of the respondents saw this as a very serious constraint to achieving consensus on how DSI relates to the ITPGRFA. Further, 41% found it to be a serious constraint, 20% considered it to be a minor constraint, whereas 3% felt that it was no constraint and 7% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (22)	6	9	5	1	1
Asia (20)	5	11	2	2	0
Europe (21)	6	6	6	2	1
L. America/Caribbean (9)	2	5	1	1	0
Near East (4)	1	1	1	0	1
North America (2)	1	0	1	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	2	3	1	1	0
TOTAL (86)	23	35	17	7	4

Table 22: Regional distribution of responses (numbers) for constraint 2: Understanding the link between physical material and digital sequence information

Constraint 3: Poor scientific and technical understanding about digital sequence information and policy implications

35% of our respondents considered poor scientific and technical understanding about digital sequence information and policy implications to be a very serious constraint to achieving consensus on how DSI relates to the ITPGRFA, and 40% found it to be a serious constraint. However, 13% meant that it was a minor constraint, 6% felt that it was not a constraint, and 7% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (22)	9	8	2	2	1
Asia (20)	7	11	1	1	0
Europe (21)	8	7	2	1	3
L. America/Caribbean (9)	3	2	4	0	0
Near East (4)	1	1	1	0	1
North America (2)	0	2	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	2	3	1	1	0
TOTAL (86)	30	34	11	5	6

Table 23: Regional distribution of responses (numbers) for constraint 3: Poor scientific and technical understanding about digital sequence information and policy implications

Constraint 4: Impacts on Research & Development of including DSI in the MLS are not understood.

28% of our respondents held that the impacts on R&D of including DSI in the MLS are not understood and that this was a very serious constraint to achieving consensus on how DSI relates to the ITPGRFA. 38% found it to be a serious constraint; 23% saw it as a minor constraint, whereas 6% felt that it was not a constraint, and 5% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (22)	4	8	7	2	1
Asia (20)	3	12	4	1	0
Europe (21)	7	8	5	0	1
L. America/Caribbean (9)	3	3	2	1	0
Near East (4)	1	1	1	0	1
North America (2)	2	0	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	4	1	1	1	0
TOTAL (86)	24	33	20	5	4

Table 24: Regional distribution of responses (numbers) for constraint 4: The impacts on R&D of including DSI in the MLS are not understood

Constraint 5: It is difficult to establish the provenance of digital sequence information.

Here, 32% of our respondents found the difficulty of establishing the provenance of DSI to be a very serious constraint to achieving consensus on how DSI relates to the ITPGRFA. Further, 36% saw it as a serious constraint, and 20% as a minor constraint, whereas 8% felt that it was not a constraint, and 4% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (20)	5	8	3	4	0
Asia (20)	2	13	4	1	0
Europe (21)	11	4	5	0	1
L. America/Caribbean (9)	4	3	1	1	0
Near East (4)	1	1	1	0	1
North America (2)	2	0	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	2	1	3	1	0
TOTAL (84)	27	30	17	7	3

Table 25: Regional distribution of responses (numbers) for constraint 5: Difficult to establish the provenance of digital sequence information

Constraint 6: Access to DSI in private databases is difficult.

Concerning the difficulties of accessing DSI in private databases, 23% of our respondents saw this as a very serious constraint to achieving consensus on how DSI relates to the ITPGRFA, and 41% found it to be a serious constraint. However, 19% saw it as only minor constraint, whereas 7% felt that it was not a constraint, and 10% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (20)	7	5	4	1	3
Asia (20)	3	10	6	1	0
Europe (21)	5	8	4	2	2
L. America/Caribbean (9)	2	5	1	1	0
Near East (4)	1	2	0	0	1
North America (1)	0	1	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	1	3	1	1	1
TOTAL (83)	19	34	16	6	8

Table 26: Regional distribution of responses (numbers) for constraint 6: Access to DSI in private databases is difficult

Constraint 7: Uneven capacity to access and use DSI.

46% of our respondents considered uneven capacity to access and use DSI a very serious constraint to achieving consensus on how DSI relates to the ITPGRFA, and 30% found it to be a serious constraint. However, 12% held that it was only a minor constraint, 10% felt that it was not a constraint, and 2% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (21)	14	3	2	2	0
Asia (20)	7	8	3	2	0
Europe (21)	9	7	2	2	1
L. America/Caribbean (9)	5	3	1	0	0
Near East (3)	2	0	1	0	0
North America (2)	0	2	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	2	2	1	2	0
TOTAL (84)	39	25	10	8	2

Table 27: Regional distribution of responses (numbers) for constraint 7: Uneven capacity to access and use DSI

Constraint 8: Unequal capacity to analyse DSI.

As to constraint no. 8, 46% of our respondents found unequal capacity to analyse DSI a very serious constraint to achieving consensus on how DSI relates to the ITPGRFA, and 26% found it to be a serious constraint. However, 13% felt that it was only a minor constraint, 10% felt that it was not a constraint, and 5% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (21)	14	3	2	2	0
Asia (17)	7	5	2	2	1
Europe (21)	8	6	4	2	1
L. America/Caribbean (9)	5	2	2	0	0
Near East (4)	2	1	0	0	1
North America (2)	0	2	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	2	2	1	2	0
TOTAL (82)	38	21	11	8	4

Table 28: Regional distribution of responses (numbers) for constraint 8: Unequal capacity to analyse DSI

Constraint 9: Unequal access to the technology required for analysing DSI.

45% of our respondents saw unequal access to the technology required to analyse DSI as a very serious constraint to achieving consensus on how DSI relates to the ITPGRFA, and 30% found it to be a serious constraint. However,12% felt that it was a minor constraint, whereas 7% felt that it was not a constraint, and 5% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (21)	13	3	3	2	0
Asia (17)	7	6	2	1	1
Europe (21)	8	7	4	1	1
L. America/Caribbean (9)	5	3	1	0	0
Near East (4)	2	1	0	0	1
North America (2)	0	2	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	2	3	0	2	0
TOTAL (82)	37	25	10	6	4

Table 29: Regional distribution of responses (numbers) for constraint 9: Unequal access to technology required to analyse DSI

Constraint 10: The knowledge of farmers and indigenous and local communities is not recognized in DSI.

41% of our respondents found it to be very serious constraint to achieving consensus on how DSI relates to the ITPGRFA that knowledge of farmers and indigenous and local communities is not recognized in DSI, 16% saw it as a serious constraint, 18% meant that it was only a minor constraint, whereas 11% felt that it was not a constraint, and 14% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (22)	13	6	2	1	0
Asia (20)	6	3	3	2	6
Europe (21)	5	3	5	5	3
L. America/Caribbean (9)	7	2	0	0	0
Near East (4)	3	0	0	0	1
North America (1)	0	0	1	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	1	0	4	1	1
TOTAL (85)	35	14	15	9	12

Table 30: Regional distribution of responses (numbers) for constraint 10: Knowledge of farmers and indigenous and local communities is not recognized in DSI

9. Main challenges in including DSI in the MLS

Following from these questions, we wished to find out what the respondents saw as the main challenges involved in including DSI in the MLS – provided that consensus could be reached in the Governing Body that DSI is within the scope of the ITPGRFA. Again, we indicated some challenges, drawing on the discussions and literature at hand, and invited respondents to tick all those that applied and to indicate how serious they deemed these constraints to be.

Challenge 1: Difficult to monitor the exchange and use of digital sequence information.

46% of our respondents saw difficulties in monitoring the exchange and use of DSI as a very serious constraint to including DSI in the MLS, and 32% found it to be a serious constraint. However,15% saw it as a minor constraint, 3% felt that it was not a constraint and 3% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (22)	10	7	3	1	1
Asia (21)	7	10	2	2	0
Europe (21)	11	4	5	0	1
L. America/Caribbean (9)	4	4	1	0	0
Near East (4)	1	1	1	0	1
North America (2)	2	0	0	0	0
South-West Pacific (1)	1	0	0	0	0
Others (from int. org.) (7)	4	2	1	0	0
TOTAL (87)	40	28	13	3	3

Table 31: Regional distribution of responses (numbers) for challenge 1: Difficult to monitor the exchange and use of digital sequence information

Challenge 2: Lack of consensus regarding intellectual property rights and digital sequence information.

Next, 41% of our respondents found lack of consensus regarding intellectual property rights and DSI a very serious constraint to including DSI in the MLS; 34% saw it as a serious constraint. However,17% meant that it was only a minor constraint; 3% felt that it was not a constraint, and 5% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (22)	10	9	1	1	1
Asia (20)	5	4	9	2	0
Europe (21)	7	9	4	0	1
L. America/Caribbean (9)	5	3	1	0	0
Near East (4)	3	0	0	0	1
North America (2)	2	0	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	3	4	0	0	0
TOTAL (86)	35	29	15	3	4

Table 32: Regional distribution of responses (numbers) for challenge 2: Lack of consensus regarding intellectual property rights and digital sequence information

Challenge 3: Difficult to design benefit-sharing mechanisms.

29% of our respondents found difficulties in designing a benefit-sharing mechanism a very serious constraint to including DSI in the MLS, and 33% found this to be a serious constraint. Further, 29% saw it as a minor constraint; 5% felt that it was not a constraint, and 4% had no opinion on this.

Regions	*Very serious constraint*	*Serious constraint*	Minor constraint	*No constraint*	*No opinion*
Africa (21)	5	8	6	1	1
Asia (20)	4	6	9	1	0
Europe (21)	7	6	7	0	1
L. America/Caribbean (9)	5	3	0	1	0
Near East (4)	2	1	1	0	0
North America (2)	1	1	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	1	3	2	1	0
TOTAL (85)	25	28	25	4	3

Table 33: Regional distribution of responses (numbers) for Challenge 3: Difficult to design benefit-sharing mechanisms

Challenge 4: Lack of involvement of farmers and indigenous / local communities in the negotiation process.

As to the fourth challenge, 34% of our respondents saw lack of involvement of farmers and indigenous / local communities in the negotiation process as a very serious constraint to including DSI in the MLS; 18% considered it as a serious constraint; 29% held that it was only a minor constraint, 12% felt that it was not a constraint, and 7% had no opinion on this.

Regions	Very serious constraint	Serious constraint	Minor constraint	No constraint	No opinion
Africa (21)	12	3	4	1	1
Asia (20)	5	2	10	3	0
Europe (21)	5	3	5	4	4
L. America/Caribbean (8)	4	3	0	1	0
Near East (4)	1	2	1	0	0
North America (1)	0	0	1	0	0
South-West Pacific (1)	1	0	0	0	0
Others (from int. org.) (7)	0	2	3	1	1
TOTAL (83)	28	15	24	10	6

Table 34: Regional distribution of responses (numbers) for Challenge 4: Lack of involvement of farmers and indigenous and local communities in the negotiation process

Challenge 5: Lack of possibilities for the Governing Body to establish a protocol for the management of digital sequence information related to plant genetic resources for food and agriculture under the ITPGRFA.

21% of our respondents found lack of possibilities for the Governing Body to establish a protocol for the management of DSI related to PGRFA under the ITPGRFA to be a very serious constraint to including DSI in the MLS. 36% saw this as a serious constraint, whereas 23% meant that it was a minor constraint, 9% felt that it was not a constraint, and 11% had no opinion on this.

Regions	Very serious constraint	Serious constraint	Minor constraint	No constraint	No opinion
Africa (22)	7	4	8	3	0
Asia (17)	4	4	4	3	2
Europe (21)	2	9	4	1	5
L. America/Caribbean (8)	2	5	1	0	0
Near East (4)	0	3	0	0	1
North America (1)	1	0	0	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	1	4	2	0	0
TOTAL (81)	17	29	19	7	9

Table 35: Regional distribution of responses (numbers) for challenge 5: Lack of possibilities for the Governing Body to establish a protocol for the management of digital sequence information related to plant genetic resources for food and agriculture under the ITPGRFA

Other challenges

Finally, we asked respondents whether there were other main challenges related to including DSI in the MLS, provided that consensus could be reached in the Governing Body that DSI is within the scope of the ITPGRFA. Here we received 18 responses.

One respondent felt that reaching consensus in the Governing Body that digital sequence information lies within the scope of the ITPGRFA is in itself a very serious constraint to including DSI in the MLS. However, another respondent stated that whether or not there are challenges in including DSI in the MLS, DSI does lie within the scope of the Treaty.

Another respondent stressed that DSI implies de-materialization of PGRFA. This respondent held that, with the advances in biotechnology, especially within genetic or technical DNA engineering, all such genetic material is now accompanied by DSI. Similarly, another respondent held that DSI should be linked to PGRFA and be regarded as part of the information and documentation of the genetic

resource: thus, there would be no need for further regulations on DSI.

One respondent noted the that a main fear among DSI user countries as regards including DSI in the MLS, is that it could represent an obstacle to Research and Development. However, this respondent continued, the intellectual property protection systems that are applied in many fields of technological development are clear examples that this does not necessarily have to be the case: thus, an important challenge is to achieve a similar system that includes compensation, both financially and in kind, to the owners of the genetic material made available for future development. However, this respondent reflected, one reason for reluctance on the part of the countries that provide plant genetic resources is their low capacity to access and use DSI. An important challenge could be to improve the effectiveness of the instruments that the ITPGRFA provides for the distribution of non-monetary benefits, without excluding monetary ones. In particular, the transfer of technology and training aimed at countries that provide plant genetic resources should be strengthened: this would be important in bridging the positions of the two main blocks in these negotiations.

Following this line of argumentation, another respondent pointed out that it all boils down to the ability to generate resources from the use of DSI: some want to get rewards for what they consider theirs, whereas others want to contribute little. Mechanisms could be established to promote certain contributions of development aid aimed at reducing the digital gap. This point was supported by another respondent, who noted that in many countries, poor capacity concerning all aspects related to DSI is a very serious constraint.

On the other hand, one respondent warned against the tendency to characterize DSI as an issue of capacity-building. This respondent disagreed with such an approach and was somewhat concerned that such questions would bias the result.

Another respondent held that the key problem was the diverging views between developed and developing countries on this important issue. This respondent felt that the issue could be solved if the contracting parties of each of these groups could seriously consider the stand of the other group in order to understand their view better; further, that arguing along the lines of the options suggested in this survey could slow down the rate of progress – to the detriment of conservation of PGRFA for provider countries, as the benefits from DSI could represent a significant contribution to them. Thus, the important key would be to come up with a feasible rate for sharing the benefits from accessing PGRFA and/or the information derived therefrom.

Further, one respondent felt that all the issues mentioned in the survey could be solved or alleviated by an expert technical group.

Similarly, another respondent meant that given a system to which the bulk of industry subscribes, which is a mandatory condition for success, the complexities introduced by DSI are really not so great. They can be implemented with fairly simple approaches involving terms and conditions attached to data access and use. What is lacking is political will of developed countries to do much more than be servants to their companies, this respondent concluded. Two other respondents also mentioned lack of political will to find and implement suitable solutions.

Further, one respondent stated that, if there had been a subscription system that met the financial expectations of several negotiators, none of the ‘challenges" noted in this survey would have been relevant. Here the respondent referred to the WiLDSI report, which covers issues and challenges relating to DSI.

Other respondents were more pessimistic. One stated that vast volumes of DSI are already in the public DNA database, not under the management or control of the Contracting Parties to the Treaty. Therefore, this respondent meant that there are no possibilities of including these scientific assets (i.e. DSI) in the MLS for the Contracting Parties. Compared to these scientific assets, most of newly decoded DSI will be mere copies of existing sequence data and there will be no scientifically agreed threshold for DSI in and outside the MLS. One respondent meant that some stakeholders are overly and irrationally concerned with open and free

access. Another felt that DSI was used as a way of obstructing good solutions that could lead to proper conservation and sustainable use of PGRFA.

Finally, one respondent wished to stress that the main challenge lies in the sustainable use of plant genetic resources and the implementation of Farmers' Rights.

10. Resuming negotiations on the enhanced functioning of the MLS

Finally, we asked: If the negotiations on the enhanced functioning of the MLS under the ITPGRFA are to be resumed, what would be the best way to achieve that in your opinion? Here we indicated some options, drawing on experiences from the Governing Body, and invited respondents to indicate their opinions. 87 respondents replied to this question.

Option 1: Organize informal meetings of key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS (by digital means if necessary), to prepare an input paper for the Ninth Session of the Governing Body of the ITPGRFA.

Here, 48% of our respondents opined that it would be very helpful to organize informal meetings of key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS – by digital means, if necessary – to prepare an input paper for the Ninth Session of the Governing Body of the ITPGRFA. Further, 26% deemed such an approach to be quite helpful, and 17% found it somewhat so. Only 6% felt that it would not be helpful, and 3% were not sure. There were no regional patterns here.

Regions	*Very conducive*	*Quite conducive*	Somewhat conducive	*Not conducive*	*Not sure*
Africa (21)	11	6	3	1	0
Asia (21)	15	3	3	0	0
Europe (21)	6	6	6	1	2
L. America/Caribbean (9)	6	1	1	1	0
Near East (4)	0	3	0	1	0
North America (2)	0	1	1	0	0
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	3	2	1	1	0
TOTAL (86)	41	22	15	5	3

Table 36: Regional distribution of responses (numbers) for option 1: Organize informal meetings of key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS, by digital means if necessary, to prepare an input paper for the Ninth Session of the Governing Body of the ITPGRFA

Option 2: If the informal meetings mentioned above for key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS, succeed in preparing an input paper for GB9, the Bureau should be requested to include the item in the agenda for the Ninth Session of the Governing Body of the ITPGRFA.

Opinions were more polarized here. On one hand 47% of our respondents considered this option to be very conducive to achieving resumed negotiations, 24% felt that it would be quite conducive, and 8% meant that it would be somewhat conducive. However, 11% meant that such an approach would not be conducive and 9% were not sure. Again, there were no clear patterns as to regional distribution of these responses.

Regions	*Very conducive*	*Quite conducive*	Somewhat conducive	*Not conducive*	*Not sure*
Africa (22)	12	7	1	1	1
Asia (21)	14	4	2	1	0
Europe (21)	6	5	2	4	4
L. America/Caribbean (9)	5	2	0	2	0
Near East (4)	1	2	1	0	0
North America (2)	0	0	0	1	1
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	3	1	1	1	1
TOTAL (87)	41	21	7	10	8

Table 37: Regional distribution of responses (numbers) for option 2: If the informal meetings mentioned above for key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS, succeed in preparing an input paper for GB9, the Bureau should be requested to include the item in the agenda for the Ninth Session of the Governing Body of the ITPGRFA.

Option 3: If the informal meetings for key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS, succeeds in reaching an agreement on a set of agreed elements of an enhanced MLS, request the Bureau to include the item in the agenda for the Ninth Session of the Governing Body of the ITPGRFA.

As many as 56% of our respondents found this option very conducive to achieving resumed negotiations 20% found it quite conducive and 9% considered it to be somewhat conducive. However, 9% felt that it would not be conducive and 6% were not sure. Also here, there were no particular patterns as to regional distribution.

Regions	*Very conducive*	*Quite conducive*	Somewhat conducive	*Not conducive*	*Not sure*
Africa (22)	14	4	3	1	0
Asia (20)	15	3	1	1	0
Europe (21)	8	6	1	3	3
L. America/Caribbean (9)	7	0	1	1	0
Near East (1)	1	2	1	0	0
North America (2)	0	0	0	1	1
South-West Pacific (1)	0	0	0	0	1
Others (from int. org.) (7)	3	2	1	1	0
TOTAL (86)	48	17	8	8	5

Table 38: Regional distribution of responses (numbers) for Option 3: If the informal meetings for key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS, succeed in reaching agreement on a set of agreed elements of an enhanced MLS, request the Bureau to include the item in the agenda for the Ninth Session of the Governing Body of the ITPGRFA.

Option 4: Await the results of the negotiations on digital sequence information under the Convention on Biological Diversity before considering whether and how negotiations on the functioning of the MLS under the ITPGRFA should be resumed.

There was not much support for Option 4. Only 23% of our respondent felt this would be very conducive, 5% that it would be quite conducivehelpful, and 16% that it would be somewhat conducive. However, 36% felt that it would not be conducive and 9% were not sure. There were no regional patterns in the responses.

Regions	*Very conducive*	*Quite conducive*	Somewhat conducive	*Not conducive*	*Not sure*
Africa (22)	6	5	3	7	1
Asia (21)	5	3	3	9	1
Europe (21)	4	3	2	9	3
L. America/Caribbean (9)	5	0	2	1	1
Near East (4)	0	2	1	0	1
North America (1)	0	0	1	0	0
South-West Pacific (1)	0	0	1	0	0
Others (from int. org.) (7)	0	0	1	5	1
TOTAL (86)	20	13	14	31	8

Table 39: Regional distribution of responses (numbers) for Option 4: Await the results of the negotiations on digital sequence information under the Convention on Biological Diversity before considering whether and how the negotiations on the functioning of the MLS under the ITPGRFA should be resumed.

Other options

Finally, we asked our respondents whether there could be other options for achieving the resumption of the negotiations on enhanced functioning of the MLS under the ITPGRFA. 17 respondents made use of this opportunity to add their suggestions. These focused on awareness and knowledge of DSI as a precondition for progress in resumed negotiations; timing of negotiations under the ITPGRFA in relation to other international negotiation processes related to DSI; how consensus could be developed; what kinds of meetings would be required; and the composition of participants in such meetings.

Awareness and knowledge related to DSI

One respondent questioned whether members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the Multilateral System of Access and Benefit Sharing of the ITPGRFA really had sufficient scientific knowledge of DSI to discuss the subject. Another respondent held that it would be important to promote awareness among Parties to the Treaty about how genetic sequence data is generated, by whom, how it is used, and what the resulting benefits to farmers and consumers would be. A further respondent stressed that awareness on the clarity of the DSI concept and capacity building in this regard should be a priority for the negotiations on DSI in relation to the MLS under ITPGRFA. Policies and regulations cannot be effective unless deeper understanding is mainstreamed in the system, this respondent pointed out.

Timing of negotiations

One respondent noted that, although the Treaty has to some extent paved the way for other negotiations on DSI, it is not necessary to wait for these other negotiations before continuing the process under the ITPGRFA. Instead, it would be advantageous to concentrate on the crops of Annex 1, because there exists considerable knowledge about the potential of these crops – unlike the case for the organisms covered by the Convention on Biological Diversity, where there is more unknown than known. One respondent reflected on the importance that delegations to the Conference of the Parties to the CBD and delegations to the Governing Body of the ITPGRFA negotiating on DSI should be in close contact, to ensure that both instruments could work in a coordinated way. This respondent emphasized that the MLS is a pioneering instrument in terms of benefit-sharing and, although it needs to be improved, it should serve as an important starting point that can contribute to a global ABS system. Another respondent held that the bodies of the CBD and the ITPGRFA that discussed DSI should meet in parallel, since basically the same persons would be involved in both processes. One respondent stressed the importance of achieving an agreement before the next session of the Governing Body: otherwise the case would be lost, as technology would win, making it impossible to negotiate the matter at a later stage.

How to develop consensus

One respondent wrote that it would be necessary to conduct a large-scale inter-institutional discussion within the countries that are Contracting Parties to

the ITPGRFA as a means of developing national positions, which could then be discussed in the Governing Body of the ITPGRFA or in technical groups established by the Governing Body. Another respondent argued that all countries should be encouraged to have specific viewpoints to the questions at hand and that consensus should be developed in and among regions. In this process, participants could identify negotiable and non-negotiable elements.

What kinds of meetings?
One respondent held that the way in which the MLS negotiations had been managed under the ITPGRFA had made it difficult to achieve consensus; therefore, this respondent would not support any further informal meeting series at this point. Another respondent indicated that one way forward could be to organize informal meetings of key negotiators, to take stock of progress and ideas from the previous process and consider what might be useful lessons. A further respondent suggested that another formal intersessional meeting of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the Multilateral System of Access and Benefit Sharing of the ITPGRFA should be organized.

Composition of a group to negotiate on MLS and DSI
One respondent held that informal meetings of key negotiators need not necessarily include members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS. Perhaps it would be good to allow other countries to be involved in the process, bringing fresh and new ideas. Two respondents stressed that informal meetings should involve all relevant stakeholders, not just the negotiators from the country delegations. Along the same lines, one respondent held that any informal meetings with key negotiators must include a diversity of delegates from Peasant and Indigenous People's organizations and movements from a range of global regions – they are the primary innovators and stewards of PGRFA and they should guide the process of discussion.

11. Further reflections relating to the topics of the survey

Finally, we invited respondents to share any further reflections relating to the topics of the survey. Altogether 24 respondents made use of this opportunity: they focused on how to strengthen the capacity of negotiators on challenging issues like this; reflected on the negotiation process; proposed possible benefit-sharing mechanisms for the MLS; offered opinions on the proposed gradual expansion of Annex 1 to the ITPGRFA; warned against increasing burdens on the seed industry; and also provided feedback on this survey.

Strengthening negotiation capacity

One respondent stressed that it would be necessary to strengthen human capacities and infrastructure in developing countries so as to lessen the gaps with developed countries in relevant issues such as DSI related to plant genetic resources. Perhaps a course could be taught (online), dealing with this topic as related to the ITPGRFA, CBD and UPOV, in order to enable in-depth discussions. This would create a common platform where stakeholders could understand the advantages and disadvantages of this technique. Also others could benefit from enhanced understanding of these issues so crucial to the functioning of the ITPGRFA.

Two other respondents argued along the same lines, stating that it is important to build the capacity of developing countries for negotiating challenging issues; further, before during and after negotiations on such issues, wider interventions on capacity-building regarding the various proposed approaches would be necessary.

A further respondent argued along these lines, pointing out that the debate still lacks data and sufficient information, making views and opinions conjectural. There should be a greater focus on generating solid data in preparing for negotiations.

Reflections on the negotiation process

One respondent emphasized that it is very difficult to reach consensuses concerning the various themes of this survey – in particular, the extension of Annex 1, the inclusion of digital sequence information in the MLS;, strengthening/ improvement of the functioning of the MLS, and revision of the content of the SMTA. Finding consensus is so difficult because the interests of the Contracting Parties are diametrically opposed, this respondent pointed out. The developed Contracting Parties have the means and advanced biotechnologies for handling PGRFA with DSI in the MLS, whereas the developing/less advanced/poor Contracting Parties have more PGRFA but lack the means to conserve and use them sustainably. Perhaps, this respondent reflected, negotiations should take place between the user countries and the supplier countries who ask for the sharing of benefits in their favour.

Another respondent noted that the DSI issue has been unexpected, and that it is now very difficult to reach any agreement.

In addition to informal consultations, it would be advisable to look for alternative ways to compromise the political will of the countries, one respondent reflected. This respondent had the impression that even if an agreement were reached, it would not be implemented due to lack of political will.

New mechanism for benefit-sharing under the MLS

One respondent indicated two alternate solutions: Either (1) the ABS terms of the current SMTA should be revised to place time-limits on payments, thereby reducing the bureaucratic burden on users of PGRFA, or (2) a simpler and more effective mechanism for ABS should be found. The respondent pointed out that a mere 0.1% universal tax on groceries in USA alone would generate one billion USD annually. The challenge would be how to disburse these funds fairly.

Another respondent suggested that the negotiations on the enhancement of the functioning of the MLS should start on a fresh basis, in order to consider more radical changes than those that have been considered so far. A further respondent argued along the same lines, and held that discussions should be far more ambitious and wall-breaking than they have been up to now. Environmental concerns should be reset as the primary focus, with a call for urgent and ambitious actions to halt the dramatic biodiversity erosion and ecosystem collapse already underway. This respondent believed that the Treaty Secretariat and FAO have the responsibility for expressing these concerns and objectives to contracting parties with a much 'stronger' voice, proposing a new start for these new negotiations, away from economic selfish concerns.

One respondent favoured focusing more on the access component, as lack of access has been blocking the conservation and sustainable use of plant genetic resources. Further, this respondent proposed creating a subset of countries that do allow free exchange (in or outside the ITPGRFA). The current situation is indeed serious, with climate change causing genetic erosion and lack of access limiting our ability to conserve and to create adapted varieties to feed the world in a changing climate, the respondent stressed.

Another respondent emphasized that the main advantage of a subscription system was that it was a quick way to organize an agreement on material transfer, and that it could generate benefits to be distributed. However, this respondent continued, developing countries have wanted an immediate transfer that went against deferred benefits. Perhaps, continued this respondent, consideration could be given to creating a financial fund that would serve as an advance for the beneficiary countries, without creating an initial burden on the user companies. Such a fund could be established with government contributions (as has been the case until now) and with contributions from companies, their associations – or, as has been done in other sectors, with a fee for the sale of seeds, and similarity of UPOV, if it is shown that it has not been possible to exercise the right over the product obtained from the seeds.

One respondent noted the sovereign rights that countries may have on digital information, like music, movies and text in digital books, and that such digital information is already regulated under national copyright law. In other words, this respondent pointed out, some sorts of digital information are already treated under jurisdiction of countries: how could DSI be understood in this context?

Another respondent was opposed to a subscription system: most of the payment generated through the system would be used for managing the underlying IT system: to ensure that subscription fees have been paid as a precondition for the transfer of genetic material. This respondent believed that the gene banks will be made responsible for such a system, and would thus use their resources to ensure control and bureaucracy related to the subscription system rather than on their gene bank collections. This approach would create a paper tiger, according to this respondent, who urged that gene banks should be included in the process.

Moreover, one respondent stressed that the issue of the MLS should be discussed as soon as possible.

Gradual expansion of the Annex 1 of the Plant Treaty

One respondent felt that the Swiss proposal on the gradual expansion of Annex 1 might be a good option, but that it should be agreed upon in advance in working groups with experts in economic, commercial and intellectual property law, to compile the demands of the sectors of breeding and commercialization of seeds. Here it would be essential to take into account *all* the legal and economic aspects that can provide the legal security necessary to ensure that business is conducted in economically sound ways. Finally, the adoption of a new, revised Standard Material Transfer Agreement should enjoy broad prior consensus before being brought to the table of the Governing Body.

Another respondent pointed out that, if Annex I is re-opened for negotiations, this would mean a new ITPGRFA and all countries would have to be consulted again. The processes (also on MLS) would be delayed. Therefore, this respondent deemed it more feasible to strengthen the ITPGRFA, without re-opening Annex I for negotiations.

Increasing burdens for breeding and the seed industry

The International Seed Federation (ISF) stressed their concern about the increasing burdens on access and use of germplasm and other genetic resources at a time when *plant breeding* should be a priority. Additional barriers to information access and sharing would further threaten food security, as well as basic research on conserving biodiversity. It would also have a distinctly negative impact on plant breeding programmes that strive to meet the needs of farmers and their customers sustainably. Further, the ISF pointed out the immense value of non-monetary and in-kind benefit-sharing activities undertaken every day by seed companies around the world to sustain farmers' livelihoods and environment. They feel that, in discussions on monetary benefit-sharing, these valuable contributions are often ignored. In this connection, the ISF referred to a database of activities, with examples of capacity building, funding farmer-owned breeding projects, contributing material to the MLS: https://www.euroseeds.eu/seeding-benefits/

About the survey

One respondent opined that there were several unexamined core assumptions in this survey, with uncritical acceptance of certain elements of the ITPGRFA and the MLS. These assumptions need to be unpacked in open dialogue with peasant, indigenous, and traditional communities and their organizations and movements, the respondent stated. Plant genetic resources for food and agriculture – in fact all genetic material – represent a shared repository on which we humans depend for our very survival, this respondent stressed. They should be recognized as our common heritage, and international agreements should reflect this spirit of relationality, rather than a logic of bureaucratic management/research and 'innovation' for private profit and commodification.

In conclusion, five respondents took the opportunity to thank the organizer of the survey. One of them noted that the subject had been addressed well through the survey. However, another respondent wrote that answering the questions had been difficult. One respondent added that he/she was looking forward to the results of the survey.

Attachment: Word version of the SurveyMonkey Questionnaire (in English)

FRIDTJOF NANSENS INSTITUTT
FRIDTJOF NANSEN INSTITUTE

Survey: Enhancing the functioning of the multilateral system of access and benefit sharing under the ITPGRFA

1. Welcome to this survey!

After many years of formal negotiations on *enhancing the functioning of the Multilateral System of Access and Benefit Sharing* (MLS), the process came to a halt in November 2019, at the Eight Session of the Governing Body of the *International Treaty on Plant Genetic Resources for Food and Agriculture* (ITPGRFA). The draft resolution was not adopted, and no decision was made regarding any further formal negotiations.

This survey is aimed at exploring options for resuming negotiations on the enhancement of the functioning of the MLS.

You are receiving this invitation because you participated in the Seventh and/or Eight Session of the Governing Body of the ITPGRFA and/or the *Ad Hoc* Open-ended *Working Group* to *Enhance the Functioning* of the *Multilateral System* of Access and Benefit Sharing of the ITPGRFA, either as a delegate or an observer. Your contribution to this survey is highly appreciated. Please feel free to share the invitation with colleagues who have participated in regional consultations on the topic.

The survey is carried out as part of the research project *Global environmental governance as a tool for poverty alleviation*, which is aimed at providing research-based guidance on, *inter alia*, how implementation of the ITPGRFA can contribute to seed and food security and poverty alleviation in developing countries. The MLS is a central factor in this regard, and thus we wish to help facilitate a joint understanding of the options for resuming negotiations to enhance its functioning. The project is carried out by the *Fridtjof Nansen Institute (FNI)*, Norway, funded by the Research Council of Norway.

The results will also feed into the research project *Pathways to food security, poverty alleviation and livelihoods through the implementation of farmers rights to crop genetic diversity (DIVERSIFARM)*, carried out by the Fridtjof Nansen Institute (FNI) in collaboration with five partners from three continents, and also funded by the Research Council of Norway.

The results will be presented in a policy brief that will be made freely available at www.fni.no from February/March 2021 in English, Spanish and French.

All those who received this survey invitation directly from us will also receive the policy brief.

Completing this questionnaire will take approximately **10 – 15 minutes.**
Please note that the fields with an asterisk (*) are mandatory.

We would appreciate your response by 31 December 2020.

Please send the filled out questionnaire to Regine Andersen at randersen@fni.no.

Yours sincerely,
Regine Andersen (Research Professor, Dr. Polit)
Research Director, Biodiversity and Natural Resources
Project Leader, *Global environmental governance as a tool for poverty alleviation* and *DIVERSIFARM*
Fridtjof Nansen Institute (FNI), Norway, www.fni.no

2. Use of information

The information from this survey will be compiled anonymously in a policy brief that will be freely available from www.fni.no. The policy brief will be provided in English, Spanish and French. Results from the survey will also inform the DIVERSIFARM project and its publications. The fully anonymized data sets will be safely stored according to the FNI standard data management procedures approved by the Research Council of Norway and may be made available also for other research projects.

**** 2.1** Do you give your consent to the use of data as described above?*

☐ Yes

☐ No

2.2 Information you provide will be treated anonymously. We may wish to get in touch with you to learn more about your views. Do we have your permission to contact you?

☐ Yes

☐ No, I prefer not.

If you answered yes, please fill in your contact information below:

Name:	
Organization:	
Position:	
E-mail address:	

3 About yourself

*** 3.1 Which s**takeholder category fits your affiliation best?
If several categories apply, please tick the one that applies the most **(one choice possible)**.

	Government institution
	National or regional gene bank
	Farmer / farmer group /community-based farmers' organization, national farmers' organization or international farmers' federation
	Public or private plant breeding institution
	Seed industry or seed industry association
	National/local or international research institution (public or private)
	Intergovernmental/multilateral organization

	Non-governmental organization
	Donor organization/funding institution
	Independent consultant/technical advisor
	Other, please specify here:

**** 3.2*** *Which meetings of/under the Governing Body of the ITPGRFA did you participate in?* ***Please tick all those which apply.***

	The Seventh Session of the Governing Body of the ITPGRFA, in Kigali, Rwanda, 2017
	The Eight Session of the Governing Body of the ITPGRFA, in Rome, Italy, 2019
	One or more meetings of the A*d Hoc* Open-ended *Working Group* to *Enhance the Functioning* of the *Multilateral System* of Access and Benefit Sharing of the ITPGRFA
	Regional or national consultations on the topic
	None of the above

**** 3.3*** *What was your role in the latest meeting of/under the Governing Body of the ITPGRFA that you participated in?* ***Please tick the one that applies (one choice possible)***

	Delegation leader or delegation member
	Observer
	Not applicable: I did not participate in any of these meetings

**** 3.4*** *Which region are you from? Please tick the region that applies* ***(one choice possible)****:*

	Africa
	Asia
	Europe
	Latin America and the Caribbean
	Near East
	North America
	South West Pacific
	Not applicable, I am from an international organization

4. Overall questions relating to an enhanced MLS under the ITPGFRA

4.1 Do you believe that there is a need to resume negotiations on the enhancement of the functioning of the MLS?

Please indicate your opinions on the following statements by ticking:

- There is no need to enhance the functioning of the MLS as the system is functioning sufficiently well. Thus, there is no need to resume negotiations on this item.

I totally agree	*I agree to some extent*	*I tend to disagree*	*I totally disagree*	*Not sure*

- There is a need to enhance the functioning of the MLS as the system is not performing according to expectations. Thus, it is necessary to resume negotiations on this item.

I totally agree	*I agree to some extent*	*I tend to disagree*	*I totally disagree*	*Not sure*

- There is a great need to enhance the functioning of the MLS, as this is critical to the realization of the objectives of the ITPGRFA. Thus, it is vital to resume the negotiations on this item.

I totally agree	*I agree to some extent*	*I tend to disagree*	*I totally disagree*	*Not sure*

4.2 If negotiations are resumed, what is important to achieve with an enhanced Multilateral System of Access and Benefit-sharing under the ITPGRFA?
Please indicate your opinions about the following statements by ticking:

- A system that is conducive to scientific progress and innovation in plant breeding

Very important	*Quite important*	*Somewhat important*	*Not important*	*Not sure*

- A system that generates a fair and equitable level of benefits to be shared according to the relevant provisions of the Treaty

Very important	*Quite important*	*Somewhat important*	*Not important*	*Not sure*

- A system that promotes the conservation of PGRFA

Very important	*Quite important*	*Somewhat important*	*Not important*	*Not sure*

- A system that promotes the sustainable use of PGRFA

Very important	*Quite important*	*Somewhat important*	*Not important*	*Not sure*

- A system facilitates farmers' access to PGRFA

Very important	*Quite important*	*Somewhat important*	*Not important*	*Not sure*

- A system that is simple and requires a minimum of bureaucratic effort for those involved

Very important	*Quite important*	*Somewhat important*	*Not important*	*Not sure*

- Anther objective that you deem important:

4.3 If the negotiations are resumed, which of the following elements proposed at the last session of the Governing Body do you think should be part of an enhanced multilateral system of access and benefit-sharing under the ITPGRFA?

Please indicate your opinions about the following proposed elements by ticking:

- A subscription system with functional elements of benefit sharing

Must be included	*Could be included*	*Should rather not be included*	*Must be excluded*	*Not sure*

- A single access system with functional elements of benefit sharing

Must be included	*Could be included*	*Should rather not be included*	*Must be excluded*	*Not sure*

- An expansion of the Annex 1 list of plant species to be placed in the MLS

Must be included	*Could be included*	*Should rather not be included*	*Must be excluded*	*Not sure*

- Digital sequence information (DSI)* about PGRFA to be regulated by the MLS

Must be included	*Could be included*	*Should rather not be included*	*Must be excluded*	*Not sure*

** Digital sequence information (DSI) is a placeholder term for which a consensus on a replacement or precise definition remains to be agreed on.*

- Capacity building and technology transfer related to digital sequence information as additional measures of non-monetary benefit sharing

Must be included	*Could be included*	*Should rather not be included*	*Must be excluded*	*Not sure*

- Other elements that you deem important to include, please specify:

5. Access to digital sequence information (DSI) about PGRFA and the MLS

5.1 According to the ITPGRFA, "plant genetic resources for food and agriculture means any genetic material of plant origin of actual or potential value for food and agriculture" (Article 2). The Contracting Parties to the ITPGRFA have agreed to facilitate access to plant genetic resources for food and agriculture, and to share, in a fair and equitable way, the benefits arising from the utilization of these resources (Article 10.2). How does digital sequence information relate to the ITPGRFA in your opinion?

Please indicate your opinions about the following statements by ticking:

- Digital sequence information is not within the scope of the Treaty and should thus not be part of an enhanced MLS.

I fully agree	*I partly agree*	*I partly disagree*	*I totally disagree*	*Not sure*

- Plant genetic resources for food and agriculture include the genetic material of plant origin as well as associated genetic information. Thus, access to digital sequence information about plant genetic resources for food and agriculture should be regulated by an enhanced MLS.

I fully agree	*I partly agree*	*I partly disagree*	*I totally disagree*	*Not sure*

- Exchange of information and technologies related to plant genetic resources for food and agriculture is included as a benefit in the MLS (Art. 13.2.a) and facilitated access is regarded as a major benefit as well (Art. 13.1). Thus, access to digital sequence information about plant genetic resources for food and agriculture is already included in the Treaty and should be regulated by an enhanced MLS.

I fully agree	*I partly agree*	*I partly disagree*	*I totally disagree*	*Not sure*

- The ITPGRFA needs to be amended to explicitly include information about plant genetic resources for food and agriculture in its scope. Only if amended this way could access to digital sequence information about plant genetic resources for food and agriculture be regulated by an enhanced MLS.

I fully agree	*I partly agree*	*I partly disagree*	*I totally disagree*	*Not sure*

- Digital sequence information concerns all life on earth and is difficult to compartmentalise within specific multilateral agreements. It should thus be regulated in a new and integrated way, outside of the ITPGRFA.

I fully agree	*I partly agree*	*I partly disagree*	*I totally disagree*	*Not sure*

- The specificity and the needs of the food and agriculture sector requires a specialized solution to digital sequence information. We cannot wait for an all-encompassing new international regime on this which may not even fit the specific needs of the sector. A solution has to be found under the ITPGRFA and could then form a part of a more comprehensive solution later.

I fully agree	*I partly agree*	*I partly disagree*	*I totally disagree*	*Not sure*

- Other options, please specify:

5.2 What do you consider the main stumbling blocks towards achieving a consensus in the Governing Body on how digital sequence information relates to the ITPGRFA?

Please tick all those that apply – and indicate how serious you deem these constraints to be:

	Reaching consensus on a definition for digital sequence information			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Understanding the link between physical material and digital sequence information			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Poor scientific and technical understanding about digital sequence information and policy implications			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Impacts on research and development of including DSI in the MLS are not understood			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Difficult to establish the provenance of digital sequence information			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Access to DSI in private databases is difficult			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Uneven capacity to access and use DSI			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Unequal capacity to analyse DSI			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Unequal access to technology required to analyse DSI			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Knowledge of farmers and indigenous and local communities is not recognised in DSI			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

5.3 If a consensus should be reached in the Governing Body that digital sequence information is within the scope of the ITPGRFA, what would you consider the main challenges in including digital sequence information in the MLS?

Please tick all those that apply – and indicate how serious you deem these constraints to be:

	Difficult to monitor the exchange and use of digital sequence information			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Lack of consensus regarding intellectual property rights and digital sequence information			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Difficult to design benefit-sharing mechanisms			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Lack of involvement of farmers and indigenous and local communities in the negotiation process			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Lack of possibilities for the Governing Body to establish a protocol for the management of digital sequence information related to plant genetic resources for food and agriculture under the ITPGRFA.			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

	Other, please specify here:			
	Very serious constraint	*Serious constraint*	*Minor constraint*	*I have no opinion*

6. Negotiation process

6.1 If the negotiations on the enhanced functioning of the MLS under the ITPGRFA are to be resumed, what would be the best way to achieve that in your opinion?

Please indicate you opinions about the following options:

- Organize informal meetings of key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS, by digital means if necessary, to prepare an input paper for the Ninth Session of the Governing Body of the ITPGRFA.

Very conducive	*Quite conducive*	*Somewhat conducive*	*Not conducive*	*Not sure*

- If the informal meetings mentioned above for key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS, succeeds in preparing an input paper for GB9, request the Bureau to include the item in the agenda for the Ninth Session of the Governing Body of the ITPGRFA.

Very conducive	*Quite conducive*	*Somewhat conducive*	*Not conducive*	*Not sure*

- If the informal meetings for key negotiators, including members of the previous Ad Hoc Open-ended Working Group to Enhance the Functioning of the MLS, succeeds in reaching an agreement on a set of agreed elements of an enhanced MLS, request the Bureau to include the item in the agenda for the Ninth Session of the Governing Body of the ITPGRFA.

Very conducive	*Quite conducive*	*Somewhat conducive*	*Not conducive*	*Not sure*

- Await the results of the negotiations on digital sequence information under the Convention on Biological Diversity before considering whether and how the negotiations on the functioning of the MLS under the ITPGRFA should be resumed.

Very conducive	*Quite conducive*	*Somewhat conducive*	*Not conducive*	*Not sure*

- Other options you deem conducive, please specify:

7. Additional information

7.1 *Do you have any further reflections or suggestions relating the topics of this survey?*

Please feel free to share them here:

8. End of survey – thank you!

You have now completed this survey. We are most grateful for your participation. Your sharing of your views and reflections are highly appreciated.
Please send this questionnaire per e-mail to Regine Andersen at **randersen@fni.no**.

Thank you very much for your contribution!

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