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Expanding the FAO Seed Treaty: Concerns for Developing Countries, Indigenous Peoples and Farmers

In November 2019, after six years of negotiations, a Working Group of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) will present a draft plan to fix the Treaty's failed Benefit Sharing Fund. The Governing Body of ITPGRFA, comprising the governments that have ratified the Treaty, will then have to seek compromises on remaining unsettled details, and then adopt or reject the plan.

This report by Edward Hammond deals with one important aspect of the efforts to fix the Seed Treaty, as it is commonly referred to: What will the Working Group's proposal mean for access to *in-situ* plant biodiversity in developing countries? Especially for countries with limited institutional capacity to manage germplasm flows and, very importantly, for the indigenous peoples and local communities that create and conserve agricultural biodiversity.

A Risky Fix

The fix that the Working Group proposes is likely to include a controversial idea, most ardently advanced by wealthy European countries, for a sweeping expansion of the biodiversity that is included within the Treaty's access and benefit sharing (ABS) system. This expansion would transform the reach of the Treaty's multilateral system of access and benefit sharing (MLS) from a closed list of crops (called "Annex 1") to "all Plant Genetic Resources for Food and Agriculture" ("all PGRFA"), a far broader category.

Unless exclusions to "all PGRFA" are made, such an extension would include *ex situ* collections like genebanks as well as *in situ* diversity that is under the "management and control" of Treaty member countries. The expansion would require amending the Treaty and, once a text is adopted by the Governing Body, a ratification process would be triggered. The amendment would take effect after two thirds of Treaty parties ratified it.

Is expansion a good idea? On its face, it does not seem sensible to take a failed benefit sharing system and "fix" it by making it larger. This is especially the case for the developing countries and rural communities that are supposed to – but seldom have – received substantial support from the Treaty's Benefit Sharing Fund.

Many developing countries, farmers, and indigenous peoples will likely find few reasons to support the Working Group's proposal, and are likely to be alarmed at its broad implications for access to their biodiversity.

Benefits Never Shared

ITPGRFA's Benefit Sharing Fund (BSF) was supposed to collect payments from companies that use farmers' seeds of the Annex 1 species in their breeding programs, primarily those seeds that are held in international and national genebanks, and invest those proceeds in *in-situ* conservation of agricultural genetic resources by farmers.

The terms of these payments are laid out in a Standard Material Transfer Agreement (SMTA). But the Fund has never worked because, among other reasons, the SMTA contains a "benefit sharing" option that says that benefit sharing is optional.

Thus the SMTA to implement the Treaty's benefit sharing obligations doesn't in most cases make benefit sharing obligatory. This type of difficult to rationalize contortion is not unusual in ITPGRFA because the Treaty, although 18 years old, contains much unfinished business. It has always been a pastiche of plasters applied on top of unhealed wounds.

Unsurprisingly, most companies that accessed seeds from the multilateral system apparently exercised the "optional" option for benefit sharing, and did not share benefits. It is necessary to say "apparently" because details on individual SMTAs are kept secret, lack of transparency being another of the Treaty's larger problems.

In any event, the companies say that the payment rates on those SMTA options that require benefit sharing are too high, among other complaints. Some companies avoid the Treaty altogether, not signing any SMTAs and accessing seeds from other sources, such as the US, which until recently was not a Treaty party, and whose national genebanks shared many of the same seeds without any benefit sharing requirements at all.

While some countries, including the US and Canada, argue for keeping the old system of non-benefit sharing intact, other developed countries and many industry interests have converged around a "subscription system" for ITPGRFA. In this idea, in return for "subscribing" and making an annual payment based on their seed sales, companies will have access to all the seeds in the MLS.

But Europe and the companies say that they will not agree to a subscription system unless the MLS is expanded to include "all PGRFA". Some developing countries, generally larger developing countries that have greater institutional capacities to manage ABS, such as Brazil, are willing to go along with this idea. Many others are not so sure.

In some cases, national positions are strongly influenced by internal dynamics between environment and agriculture ministries, and questions about who is responsible for regulating access to genetic resources that were awaked by the Nagoya Protocol.

How far does "all PGRFA" go? Sacred and Medicinal Plants? Wild Relatives?

The Treaty is often thought of as primarily pertaining to seed banks, that is, *ex situ* collections of genetic resources. But in a number of circumstances it also applies to *in situ* diversity that may be found in farmers' fields and the wider environment. What will greatly surprise people who have not followed the Working Group negotiations is the sweeping breadth of what could be included an MLS that is expanded to "all PGRFA." They will be surprised both of the many kinds of plants covered, and by how deeply an expansion could reach into *in situ* diversity on indigenous peoples' and farmers' lands.

Expanding to "all PGRFA" raises a real possibility in some countries that agriculture ministries are on the verge of committing to "facilitated access" under the revised SMTA's benefit sharing terms to seeds that farming communities consider their own. The most severe potential implications in this scenario are for communities that lack land title, that live inside protected areas, or are in other vulnerable situations in which their lands and resources are not under their full control.

The question boils down to what plants are deemed to be "under the management and control of the Contracting Parties and in the public domain" (Article 11.2). For farmers and indigenous peoples, that phrase raises obvious questions about land and genetic resource rights under national law, as well as the ability and willingness of agriculture ministries to protect indigenous and small farmer interests.

For companies that join a subscription system that includes "all PGRFA", and governments where large commercial seed and biotechnology interests are based, there will be a strong incentive to promote the broadest possible scope for the term. These interests will want to make "all PGRFA" as big as possible because everything that falls within and is and under state management and control effectively comes out of the Nagoya Protocol, when it is accessed for food and agriculture purposes.

(*Of course, if something is accessed for food and agriculture purposes and genetic sequence data and/or other digital sequence information is made available in public "open access" databases about it, then this can be accessed without any commitment by to restrict use to food an agriculture purposes. This and related issues will be the subject of a future report*.)

Farming communities with ironclad land title and clear domestic legal rights to their genetic resources will be in a stronger position to defend against *de facto* expropriation of their seeds under a revised ITPGRFA. If such communities have clear legal right under national law to manage and control their seeds then their plant genetic resources, generally, will be deemed to be in private hands and not part of the MLS. Unless those farmers' seeds have been collected and placed in a public genebank, in which case they might be considered to be under public management and control and included in the MLS.

But what about more vulnerable communities with less established land and resource rights, and communities that face socioeconomic disadvantages and discrimination, such as many indigenous peoples and subsistence and small farmers?

To answer that question first it is necessary to review what kinds of genetic resources could be included in "all PGRFA".

Remarkably, specifics have not been negotiated by the Working Group or Governing Body to establish what "all PGRFA" actually means, and with little time left before the Treaty's November meeting, there little opportunity for a careful and nuanced negotiation. Whatever limitations are placed on the scope of "all PGRFA" – if any – they will necessarily be blunt and crude if the Treaty is to act in its chosen timeframe.

If it is not qualified, "all PGRFA" is likely to be interpreted as exactly what it sounds like and, the scope of any expansion would include any plant used and tended to by humans for food and agriculture purposes as well as, many think, crop wild relatives.

Forest and Tree Species

Consider the huge number of trees that historically provide food and are today utilized by rural communities. Many of these plants might seem wild but have, in fact, been managed by humans for millennia. All such species that humans have historically used and managed for food and agriculture could become part of the Treaty system.

For example, the Brazil nut tree (*Bertholletia excelsa*) is found not only in Brazil but across much of the Amazon Basin. An iconic rainforest product that is important in international trade for several South American countries, most Brazil nuts are said to be "wild" harvested. But the tree has been used for food and other uses for millennia by many indigenous peoples, and Brazil nut tree populations have been managed by humans. They were spread across the Amazon by indigenous peoples beginning at least two thousand years ago.[1]

Similar examples of forest species historically managed and used for food include crops that have moved into plantation agriculture, such as many other nut species, palms (e.g. *Elaeis guineensis*, the African oil palm), fruits such as jujubes (*Ziziphus* spp.), the economically huge cacao – source of chocolate - and its relatives (*Theobroma* spp.), and many more.

Humans use the plant resources around them for sustenance, and there is no end to the number of species that are found in forests that humans have managed, bred, and used for millennia. While these have typically to date been considered to be under the purview of the ABS rules of the Convention on Biological Diversity and its Nagoya Protocol on Access and Benefit Sharing, if the Seed Treaty's MLS is expanded to "all PGRFA", they could come under the ITPGRFA access regime.

Sacred Plants

It is well known that many indigenous peoples and local communities have long managed and utilized plants that are considered sacred. This occurs throughout the world, north and south. Such plants, which might include crops only cultivated in one country or limited regions, are not necessarily excluded from "all PGRFA". Thus, in addition to the potential economic inequities, non-consensual use of indigenous peoples sacred genetic resources could result from the Treaty expanding to "all PGRFA," resulting in situations directly contrary to the customs and beliefs of communities and that could be violations of human rights.

The Treaty's authors sought to resolve this situation but did not completely do so, and in such situations, the Treaty states (Article 12.3a):

> Access shall be provided solely for the purpose of utilization and conservation for research, breeding and training for food and agriculture, provided that such purpose does not include chemical, pharmaceutical and/or other non-food/feed industrial uses. In the case of multiple-use crops (food and non-food), their importance for food security should be the determinant for their inclusion in the Multilateral System and availability for facilitated access.

Thus, plants sacred to indigenous peoples and local communities that are deemed to have use related to food security are not excluded from "all PGRFA", and national governments could be bargaining away access to these indigenous peoples' resources without consent.

[1] Shepherd G and H Ramirez 2011. "Made in Brazil": Human Dispersal of the Brazil Nut (Bertholletia excelsa, Lecythidaceae) in Ancient Amazonia. Economic Botany. V. 65, n. 1, 15 March, p. 44-65.

Crop Wild Relatives

Perhaps the most far-ranging swathe of biodiversity that could fall under "all PGRFA" are crop wild relatives (CWRs), the uncultivated plants related to crops that can contribute valuable traits to breeding programs, such as environmental tolerance, growth habit, or disease resistance.

How closely related to a cultivated crop does a CWR need to be in order to fall under the term "all PGRFA" and hence be part of such a Treaty expansion? The unfortunate answer is that this issue has not been discussed by the Working Group, and no agreed scope exists.

Like many other issues that the Working Group has yet to settle, the scope of "crop wild relatives" is complex and tricky, and if CWRs are included, there is a need to both create a biologically rational scope applicable across all PGRFA, and to determine how any extension to CWRs interfaces with the CBD and Nagoya Protocol, particularly under national access laws.

Bioversity International, the agricultural research organization, doesn't have a useful definition of crop wild relatives. It defines them as "plant species which are more or less closely related to crops" on its global portal for wild relatives.[2] Such a definition could mean just about any plant.

Bioversity's manual for conservation of wild relatives isn't much more helpful, stating:[3]

> "… a crop wild relative (CWR) may be defined as a wild plant species that is more or less closely related to a particular crop and to which it may contribute genetic material, but unlike the crop species has not been domesticated… It is difficult to give a more precise definition…"

Some have nevertheless tried. The same Bioversity manual notes that, in 2004, the following definition was proposed:

> "CWRs should include the wild congeners or closely related species of a domesticated crop or plant species, including relatives of species cultivated for medicinal, forestry, forage, or ornamental reasons…"

Which is perhaps slightly more specific if "congener" is synonymous with " within the same genus". Nevertheless, this definition still includes an enormous number of plants. Some researchers, however, would not necessarily restrict their definition to the genus level and might include an even broader scope for some crops.[4]

For example, potatoes and tomatoes that originate in the Americas, and aubergines (eggplant, brinjal) from China and Southeast Asia, are major crops that belong to the genus *Solanum*. So do other crops that are strongly associated with individual countries and regions, such as the Ethiopian eggplant (*S. aethiopicum),* the West African gboma eggplant *(S. macrocarpon)* and the lulo or naranjilla (*S. quitoense*) of Ecuador and Colombia. Or the tree tomato (*tomate de arbol - S. betaceum*), another Andean native that, like the Chinese "Kiwi fruit" before it, has been given a new name ("tamarillo") by New Zealand agricultural marketers and is now grown for export there.

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[2] See http://www.cropwildrelatives.org/

[3] Hunter D and V Heywood 2011. Crop Wild Relatives: A Manual of *in situ* Conservation. Earthscan.

[4] Kell S et. al. 2017. Broadening the Base, Narrowing the Task: Prioritizing Crop Wild Relative Taxa for Conservation Action. Crop Sci. 57:1042–1058 (2017). doi: 10.2135/cropsci2016.10.0873

But the cultivated members of the *Solanum* genus are few compared to the estimated 2000 different "wild" *Solanum* species across the world. So not only will a Treaty expansion to "all PGRFA" newly include in the Treaty system cultivated species like naranjilla, African eggplants, and the tree tomato, if crop wild relatives are included in an expansion, nearly 2000 other species will likely come into the Treaty via the *Solanum* genus alone.

While *Solanum* is a large genus, its situation is hardly unique. For example, whereas there are five species of capsicum (pepper) that are typically cultivated, another two dozen can be found in the wild, especially in the southwestern Amazon Basin. Similarly, there are only two coffee species that are in large scale cultivation, but there are about 120 more locally cultivated types and "wild" *Coffea* species found from West Africa to South Asia.

Many Other Plants

So as not to belabor the point that an expansion of the IRTPGRFA to "all PGRFA" could be dramatically sweeping in scope, other types of plants will be mentioned in less detail, though these too are very large swathes of germplasm.

Other biodiversity that could be subsumed within "all PGRFA" include many **ornamental plants**. This economically important subset includes many plants that were only recently removed from wild surroundings and of which wild populations and wild relatives often exist. Like some other categories of agricultural biodiversity, ornamentals cannot be neatly separated from food plants. Should "facilitated access" and Treaty SMTA terms apply to "edible ornamentals" primarily sold to be decorative (e.g. peppers, pineapple, asparagus, etc.)? How should forages, grasses, and other plants with ornamental use, and also use in agriculture be treated?

Medicinal plants could also be part of "all PGRFA", with huge and obvious implications for traditional knowledge. If medicinal plants used by indigenous peoples and local communities are located on lands not fully under their control, could those plants be collected and used without their consent? If a plant has food uses but is also used in medicine – e.g. in a poultice or other topical preparation – how is it treated?

Furthermore, even if attempts were made to exclude medicinal plants from "all PGRFA", drawing a clear line between medicinal and food plants, and whether a plant is being accessed for use as medicine or food is a difficult proposition due to the linkages between health and nutrition, and the varying approaches among traditional medicinal systems.

For example, is turmeric (*Curcuma longa*), a plant with wide use in Ayurvedic medicine, simply a food plant, as it is has been historically typically considered in Western diets? If it is included in the Treaty system, are turmeric varieties with particular medicinal uses and properties treated in the same way as types sown for use in cooking?

Similar conundrums are easy to find with other Asian, African, and Latin American plants. When is an aqueous herbal extract (tea) a beverage, and when is it medicine? There are no clear lines, and no discussion to date of such issues by the Treaty's Working Group.

Then there are the species that are managed by humans as **forage/fodder** crops for animals (and which sometimes also provide human food). Some of these crops are already in the MLS, but others, such as trees including acacias or the multi-use Moroccan argan (*Argania spinosa)*, would be newly included.

Management, Control, and the Public Domain

A critic of the perspective offered in this paper thus far is, by now, eager to make an observation. This observation likely is along the lines of:

But wait. Yes, 'all PGRFA' includes more plants than Annex 1, but don't exaggerate the impact, because an expansion would only apply to plants under the management and control of national governments and in the public domain…

The answer is that "under the management and control of the Contracting Parties and in the public domain" has no agreed meaning and is far too conceptually loose to offer protection to indigenous peoples and farmers in many circumstances.

These circumstances include many genetic resources *in situ* and when farmers' seeds have been collected by national researchers, quite possibly originally without intent or consent for them to be shared with multinational companies.

Even more troubling is what happens both in parks and other protected areas where farmers and indigenous people live or have lived, and for indigenous peoples and farmers that live and work lands over which they lack full legal title.

Until a full reckoning with the phrase "*under the management and control of Contracting Parties and in the public domain*" is undertaken by the Working Group and limits established, indigenous people and farmers must consider "all PGRFA" to be a clear threat to their control over their own genetic resources.

In cases where farmers do not have clear title to their lands and genetic resources, "management and control" may rest with the state. Though there are many parallels in Africa and Asia, Latin America offers striking examples:

Peru is an extremely important country for agricultural biodiversity of crops and wild relatives. It has recently made strides forward in recognition of the rights of indigenous peoples, but it is estimated that there are that about 20 million hectares of indigenous peoples lands still lack proper legal title in the country.[5] That is an area nearly five times the size of Switzerland (4.13 million hectares).

While those lands and many resources on them rightly belong to indigenous peoples that are often farmers, those peoples do not have full formal control. The state is quite present in much of this territory, operating schools, asserting military control, authorizing and managing mineral and other resource exploitation, regulating movement, and many other activities. Could the state's significant presence on this land in legal limbo now or in the future be construed to mean that the genetic resources on those indigenous peoples' lands are "under the management and control of Contracting Parties and in the public domain"?

In Brazil, strong concerns have recently surfaced on the fate of efforts to demarcate and title indigenous peoples lands. Those peoples, who like in Peru include uncontacted peoples, are undoubtedly skilled farmers and knowledgeable about crop wild relatives, but they find themselves

[5] Rights and Resources Initiative (RRI) 2015. Who owns the world's land? - A global baseline of formally recognized indigenous and community land rights. September. URL: http://rightsandresources.org/wp-content/uploads/GlobalBaseline_complete_web.pdf

in conflict, often violent, with an industrialized agriculture system whose interests are much more aggressively represented by the state. Brazil is well known for the zealous measures it takes to maintain its sovereignty and government control over the remote lands where many of its indigenous people live, including large state investments in remote sensing technology and personnel deployments. Yet the peoples that live in these areas often lack legal recognition of their rights over their lands and resources.

TYPE	EXAMPLE	POSSIBLE IMPACT
Parks and other Conservation Areas	Parks and other state conservation management areas often displace IPLCs or limit their rights over traditionally managed and used agricultural genetic resources.	Populations of useful plants belonging to now-displaced peoples, wild plant populations historically used and managed by IPLCs that have been dispossessed. IPLCs may maintain and use agricultural genetic resources on parklands yet not have rights over park genetic resources.
"Designated" and other lands where IPLCs may have limited rights.	In many countries IPLCs have land designated for their use but do not have full legal rights over those lands, including genetic resources.	Agricultural genetic resources on such lands may be controlled by states and, hence, crops and wild relatives located on them placed in the MLS without IPLC consent.
Slow progress titling lands	For example, despite progress in recent decades in Peru, "estimates indicate that an additional 20 [million hectares] of land is still due for formal recognition."	If untitled, land may be controlled by the state. Untitled IPLC lands in Peru hold wild relatives of many globally crucial vegetable, fruit, and others crops from a wide range of ecosystems.
Local communities never granted titles	Following Colombia's 1991 Constitution, Afro-Colombian lands were to be titled, yet recent studies conclude that, "only around 2 percent of land held under customary tenure by Afro-Descendant communities has been formally titled."	Includes much of the Choco region on Colombia's Pacific coast with native agrodiversity including, *Annona*, *Passiflora*, *Borojoa,* solanaceous species and others.
Customary Use Areas	"an Indonesian Constitutional Court decision in May 2013 invalidated Forestry Law 41 which claimed government ownership of customary forests. If fully implemented, the decision could increase the percentage of land owned or controlled by Indigenous Peoples and local communities from 0.25 percent to approximately 23 percent of Indonesia's total land area"[6]	Although Indonesia is advancing toward more thorough legal recognition of the rights IPLCs, it isn't there yet. Many crop wild relatives can be found in Indonesia, including relatives of sugarcane, banana, rice, coconut, mango, yams (*Dioscorea*), and other crops.

[6] RRI 2015.

The highly diverse Choco-Darien forest, with wild relatives of numerous cultivated fruits, solanaceous species, and many others is shared between Colombia, Panama, and Ecuador. Colombia's portion, the largest, is primarily settled by Afro-Colombian communities and indigenous people. The Colombian Choco is about 7.4 million hectares, a little less than twice the size of The Netherlands (4.25 m/ha), or two and half times the size of Belgium (3.05 m/ha). While data aren't available on indigenous peoples, for Afro-Colombian communities, who are generally reliant on farming, it is estimated that only two percent (2%) of traditional lands are fully titled,[7] despite a law to do so that was placed on the books more than 25 years ago.

Comparable situations of unsettled land tenure simply do not exist in densely populated and highly regulated Europe. Perhaps Europe's agricultural diplomats have not thought clearly on the injustices that could be brought about by their demand for an expansion of the Treaty's coverage to "all PGRFA" "under the management and control of Contracting Parties and in the public domain". The loose and undefined phrase is enough to protect the interests of companies – with their proprietary programs, patents, and plant breeder's rights – but it's a dangerous proposition for indigenous peoples, local communities, and developing countries with limited capacities to oversee and enforce access rules.

Conclusion

This paper has not fully described the proposed subscription system in favor of focusing on one aspect – implications of a possible expansion of the Treaty's coverage for small farmers and indigenous peoples. It remains uncertain whether or not the other elements of the proposed subscription system, still under negotiation, will auger toward making that proposal a worthwhile experiment to try to fix a failing Treaty.

But it is very clear that an expansion of the Treaty's coverage to "all PGRFA" will be undesirable for many indigenous peoples, local communities, and developing countries because of the serious risks that it poses of generating social and economic injustices, to Farmers' Rights, and to the human rights of indigenous peoples and local communities. That these communities, who are at the forefront of in situ conservation of PGRFA, would be potentially alienated from their genetic resources and have their interests harmed by the Treaty is a terrible irony, given the Treaty's ostensible goal of supporting them.

If it is supposed, for the sake of argument, that other details of a subscription system (e.g. payment rates, digital sequence information, retention of non-benefit sharing options) are adequately resolved, then the path forward for the coverage of the Treaty system could lie in the careful elaboration of an expanded list of crops, rather than "all PGRFA" that could lead to a sort of officially-sanctioned biopiracy of farmers and indigenous peoples.

It also might be possible for an expansion of the Treaty system – whether by way of an expanded list or by substantially qualifying the concept of "all PGRFA" - to be restricted to *ex situ* collections, that is, genebanks. Whether or not this would satisfy Europe's demand to include "all PGRFA" is unclear, however, and legal advice received by the Treaty on this question is inconclusive. The Treaty's legal advisors say it is possible to restrict expansion of the Treaty to seedbanks, partially ameliorating the concerns for farmers and indigenous peoples, but they also

[7] RRI 2015.

note that such a limitation would be "*in principle still incompatible with Article 12.3h*."[8] Thus is it not clear to date if this would be a viable approach or not.

If it proves impossible for a proposed subscriptions system to adequately protect farmers and indigenous peoples, whether due to European or corporate resistance, a lack of time to negotiate, or because of legal limits of the Treaty itself, then it would be preferable to abandon the present effort to enhance the Treaty's Multilateral System.

[8] IT/OWG-EFMLS-9/19/Inf.4 (Opinion 18).