To: Special Rapporteur on Human Rights and the Environment John Knox

From: Quaker United Nations Office (QUNO)[1]

Date: September 30, 2016

Subject: Applying a human rights approach to agricultural biodiversity

Agricultural biodiversity is a critically important subset of biodiversity, upon which all of humanity depends. Small-scale farmers are the active managers and developers of the majority of this diversity worldwide. A human rights interpretation of agricultural biodiversity may encourage States to proactively develop legislation, programs and policies that are supportive of small-scale farmers.

Small-scale farmers and agricultural biodiversity

Small-scale farmers are major contributors to global food security, not only in terms of the volume of food they produce and the ecosystem services they help to maintain, but because of the agricultural biodiversity they actively manage and continually develop. This diversity — including genetic, species and ecosystem diversity as well as the diversity of small-scale farming communities themselves — is what enables our global food system to adapt and respond to change at a macro level.

The majority of the world's crop genetic diversity is actively maintained through farmers' seed systems, or informal seed systems. Crop varieties important to farmers are produced, improved and distributed via informal social and economic networks.

Informal seed systems are important for ensuring farmers have timely and sufficient access to quality, locally adapted and affordable planting material. They remain the primary source of seed for most crops throughout the world.[2] It is estimated that eighty percent of all seed in Africa is produced in the informal system,[3] and for minor crops this is most likely closer to a hundred

[1] QUNO works to raise the profile of small-scale farmers and agricultural biodiversity within international fora relating to food security, trade and agriculture, intellectual property and genetic resources conservation. http://www.quno.org/areas-of-work/food-sustainability

[2] Louwaars, N.P., De Boef, W.S. (2012). Integrated Seed Sector Development in Africa: A Conceptual Framework for Creating Coherence Between Practices, Programs, and Policies. *Journal of Crop Improvement*, 26: 39–59.

[3] Byerlee, D., A. de Janvry, E. Sadoulet, R. Townsend, and I. Klytchnikova (2007). *World development report, 2008. Agriculture for development*. Washington, DC: World Bank.

percent.[4] The FAO asserts that this is likely to remain the case for the foreseeable future.[5] Up to ninety percent of seed used in small-scale farming systems in South Asia and sub-Saharan Africa is produced, selected and saved by women, and it is women who predominantly grow and preserve varieties important for healthy diets and local food cultures.[6]

Threats to agricultural biodiversity: Industrial agriculture and climate change

Farmers' seed systems are threatened by the expansion of industrial agriculture: the system of chemically-intensive and fossil-fuel dependent food production developed in the decades following World War II, featuring large single-crop farms and animal production facilities. Farmers have financial incentives to replace their diverse mixtures of varieties with single high-yielding ones; and diverse mixtures of crops with staple crops with with high export value and greater demand on international markets. Improved varieties can yield immense public benefit. However, the displacement of on-farm diversity, loss of associated knowledge and the abandonment of traditional farming practices erodes the capacity to adapt. Farmers who rely on informal seed systems will likely face increasing challenges in sourcing the diversity they need.

Industrial agriculture is also a major contributor to anthropogenic climate change, which poses significant threats to global food production. Methane gas emissions from livestock and rice production, nitrous oxide from fertilized lands, and the loss of carbon capture associated with tropical deforestation are the largest contributing factors.

Many of 1.5 billion small-scale farmers in the world occupy marginal lands and are feeling the effects of climate change first. Many are landless and without access to affordable credit and social supports. Thus, while they are immensely valuable for the ingenuity they host and diversity they represent, they are a highly vulnerable population. The paradox that small-scale farmers are often the most food insecure population while contributing the most to national food production is likely to remain, and even be exacerbated in an era of climate change.

A human rights interpretation of agricultural biodiversity

Viewing agricultural biodiversity through a human rights lens may help ensure that proactive measures are undertaken by States to support their farming populations.

The linkages between human rights and agricultural biodiversity are many, including:

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[4] Louwaars, N.P., De Boef, W.S. (2012). Integrated Seed Sector Development in Africa: A Conceptual Framework for Creating Coherence Between Practices, Programs, and Policies. *Journal of Crop Improvement*, 26: 39–59.

[5] http://www.fao.org/docrep/013/i1500e/i1500e.pdf

[6] Almekinders, C. J. and Louwaars, N. P. (2002). The importance of the farmers' seed systems in a functional national seed sector. Journal of New Seeds, 4(1-2), 15-33.

- Agricultural biodiversity is essential for realising the human right to food, particularly in the context of climate change. Adapting to changing growing conditions will require access to the full breadth of diversity that exists in the environment in which it continues to evolve, along with the knowledge of what works under what conditions.

- Agricultural systems that host diversity at all levels, right down to soil microbial diversity, contribute to healthy and sustainable environments.

- Agricultural biodiversity is also essential to the realization of whole populations' social, cultural and economic rights, particularly those of Indigenous peoples and small-scale farmers. Local foods, culinary traditions and traditional agricultural systems are integral to the cultural identities, social systems and local economies around the world.

- More broadly still, agricultural biodiversity is fundamental to the achievement of internationally agreed development goals relating to poverty alleviation, rural development, human health and gender equality.

Article 23 of the draft text of the United Nations declaration on the rights of peasants and other people working in rural areas outlines the right to agricultural biodiversity. Importantly, this article is consistent with, but elaborates upon, Farmers' Rights as articulated in Article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture.

Farmers' Rights have until now been more-or-less narrowly interpreted as means of defending farmers' ability to reuse and exchange seed derived from proprietary seed that has been cross-bred with farmers' varieties. In this way, beneficial traits from improved varieties are introduced into informal seed systems. The implementation of Farmers' Rights legislation that protects and even encourages this flow of genetic diversity would be extremely valuable.

Going beyond farmers' established rights to save, re-use, exchange and sell seed and participate in decision-making, Article 23 of the UN draft declaration outlines the rights of peasants to, *inter alia*, "not accept certification mechanisms established by transnational corporations," and to be "protected from measures threatening biological diversity and traditional knowledge, including forms of intellectual property that might adversely affect their traditional knowledge and use of genetic resources."[7] Such a broader interpretation of Farmers' Rights may invite Member States to adopt a human rights interpretation of agricultural biodiversity, leading to intellectual property legislation and domestic seed sector policies that actively support small-scale farmers in their roles as managers and developers of on-farm diversity.

[7] A/HRC/WG.15/3/2

Human rights-based legislation, policies and programs

Some forms of intellectual property (IP) tools – when carefully selected and adapted to suit domestic circumstances – have the potential to promote on-farm innovation and contribute to agricultural biodiversity. Alternative or *sui generis* plant variety protection systems such as those implemented in Malaysia, Thailand, India and the Philippines; and collective and certification trademarks and geographical indications used around the world have this potential. On the other hand, IP tools that are more conventionally believed to incentivize innovation in agriculture (i.e. patents, UPOV-style plant variety protection systems and less commonly, trade secrets) have the potential to restrict the on-farm exchange of agricultural biodiversity. While there are flexibilities under the WTO TRIPS Agreement for countries to implement IP legislation that reflects the realities of domestic agricultural sectors, a human rights interpretation of agricultural biodiversity may encourage more States to do so.

Seed policies, laws and programs that actively support farmers' seed systems promote agricultural biodiversity. The seed and other propagating material developed and exchanged through informal seed systems is generally unregistered and uncertified. National governments can create an enabling environment for the establishment of community-based seed enterprises by allowing the registration and certification of farmers' varieties, which are heterogeneous and thus do not fit common criteria for certification. Governments can also facilitate the circulation of farmers' varieties by supporting community-based seed banks and seed fairs. They can invest in participatory plant breeding and farmer-led research programs, and in the improvement of minor crops important to small-scale farmers' food security.

Moving forward

Perhaps the most significant obstacle to the integration of human rights into agricultural biodiversity legislation, policies and programs is that agricultural biodiversity is presently valued primarily as an input into crop improvement programs rather than for the resilience it lends to agroecosystems and its contributions to the physical, cultural, social and economic wellbeing of all people.

At the international level, the dominant strategy for achieving the 'conservation and sustainable use' of agricultural biodiversity remains the collection of samples of a very small subset of plant genetic resources to be stored in *ex situ* gene bank facilities, and the application of advancements in the field of genomics to develop improved plant varieties. This is an imperfect, albeit sophisticated, strategy for a number of reasons.[8] It is imperative that it be complemented

[8] Firstly, our current understanding of the genetic base of complex traits such as heat and drought tolerance are incomplete. There is also a great deal of uncertainty regarding which traits (tolerances, resistances and immunities) will be needed in the future, given shifts in ranges of pests and pathogens and changes in crops' phenological cycles. This strategy does not allow for the further evolution of varieties in their natural environments. Moreover, investment in crop improvement is concentrated in

with efforts to support farmers in their roles as active managers and developers of agricultural biodiversity *in situ.*

So long as agricultural biodiversity is viewed as an input into a production system, its relationship with human rights is not immediately intuitive. A greater understanding of the many ways in which agricultural biodiversity contributes to human well-being may invite States to take a human rights approach to managing this diversity.

staple crops of high economic value rather than in minor crops and underutilized species that contribute more to the local food security of many small-scale farming communities.