



Report of the International Workshop on Registration of Farmers' Varieties

4-7 December 2018, Entebbe, Uganda

Tobias Recha, Chris Muwanika, Gloria Otieno and Bram de Jonge

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Nankya and Gloria Otieno**

**Bioversity International
2019**

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Citation: Recha, T., Muwanika, C., de Jonge, B., Mulumba, J.W., Nankya, R. and Otieno, G. (2019) Report of the International Workshop on Registration of Farmers' Varieties, 4-7 December 2018, Entebbe, Uganda. Bioversity International, Rome, Oxfam Novib, The Hague, National Agricultural Research Organisation, Entebbe.

ISBN: 978-92-9255-123-0

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Acronyms and abbreviations

AFSTA	African Seed Trade Association
CBOs	Community-based organizations
COMESA	Common Markets in East and Southern Africa
CSO	Civil society organization
CTDT	Community Technology Development Trust of Zimbabwe
DUS	Distinct, uniform and stable
EAC	East African Community
ECOWAS	Economic Community of West African States
ISSD	Integrated Seed Sector Development
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries of Uganda
NAFRI	National Agriculture, Forestry and Rural Development Research Institute of the Lao People's Democratic Republic
NARO	National Agriculture Research Organization of Uganda
NGOs	Non-Governmental Organizations
PELUM	Participatory Ecological Land Use Management of Uganda
PGRC	Plant Genetic Resource Centre
PGRFA	Plant Genetic Resources for Food and Agriculture
PPB	Participatory plant breeding
QDS	Quality-declared seeds
SADC	Southern Africa Development Community
SD=HS	Sowing Diversity=Harvesting Security
UPOV	International Union for the Protection of New Varieties of Plants
VCU	Value for cultivation and use
VRRC	Variety Release and Registration Committee of Nepal

Acknowledgements

We appreciate the contributions and experiences from ISSD Africa – Uganda programme, PELUM Uganda and partners in Zimbabwe, Zambia, Cote D'Ivoire, Lao People's Democratic Republic, Burkina Faso, Nepal, Bolivia, Kenya, Uganda, Tanzania, the European Union, and KIT Royal Tropical Institute. This work was undertaken as part of, and funded by, the CGIAR Research Program on Grain Legumes and Dryland Cereals (GLDC) and supported by CGIAR Fund Donors. Additional funding for this study was provided by the Netherlands Ministry of Foreign Affairs, Swiss Agency for Development and Cooperation (SDC), the International Treaty for plant genetic resources for food and agriculture through the benefit sharing Fund (BSF); and the Netherlands Organization for Scientific Research (NWO).

We acknowledge Olga Spellman (Science Writer, Bioversity International) for English and copy editing of this workshop report and Luca Pierotti for design and layout of the front cover.

Cover photo: Seed fair in Hoima Uganda, August 2018. Credit: Bioversity International/G. Otieno.

Other photos: International Workshop on Registration of Farmers' Varieties, 4-7 December 2018, Imperial Botanical Beach Hotel, Entebbe, Uganda. Credit: PGRC of NARO Uganda/B. Namulondo.

Executive Summary

The registration of farmers' varieties in national and regional seed catalogues – as objects of seed regulation -- has been the subject of considerable debate in recent years, at local, national and international levels. Farmers have contributed immensely to the development, management and conservation of a wide range of crop varieties, but national seed regulations generally only focus on crop varieties that are the products of so-called 'formal sector' plant breeding. Article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) recognizes the contribution farmers have made to the conservation and development of plant genetic resources and stipulates that the responsibility of protection of farmers' rights rests with national governments in accordance with their needs and priorities.

In addressing these challenges, an international workshop on registration of farmers' varieties was held at the Imperial Botanical Beach Hotel in Entebbe, Uganda, in order to advance the understanding of farmers' varieties and the gains from establishing mechanisms for their registration at both the global and national level. During the workshop, the participants were able to share global experiences from countries where farmers' varieties and evolutionary populations have been registered and have an active supportive legal system. After reflecting on experiences from a range of countries and regions around the world, the participants narrowed their collective focus to the situation in Uganda, and Ugandan seed policies and laws in particular.

The current legal and policy framework in Uganda comprises the National Seed Policy (2018), the Seeds and Plant Act (2006), and the Seeds and Plant Regulations (2017). However, they only focus on the so-called formal seed system, which produces only 20% of the nation's seed on an annual basis. This legal framework does not provide policy support for the production and distribution by small-scale farmers of quality seed of farmers' varieties. However, the National Seed Policy (2018) recognizes that the informal seed system is strategic in conserving the biodiversity of landraces and meets 80 percent of the seed requirements in Uganda. It also allows the exchange of farm-saved seeds and recognizes quality-declared seeds (QDS). This is encouraging, but the existing legislation does not have provisions that support registration and commercialization of farmers' varieties. This lack of a supportive policy environment denies farmers the right to produce and sell varieties they have helped to create and conserve for generations. Also, the draft policy on Plant Genetic Resources for Food and Agriculture (PGRFA), which provides a legal framework for registration of farmers' varieties, is yet to be approved by the Cabinet.

Through participatory engagement of participants from national and international agricultural research institutions, academia, the private sector, farmers' organizations, seed regulatory authorities, politicians and civil society organizations (CSOs), a roadmap for registration of farmers' varieties in Uganda was developed to address the gaps in the current seed laws. One of the critical actions was to push for Cabinet approval of a draft PGRFA policy that has recently been developed through a process of consultation. In addition, the participants discussed other variety registration and seed-certification standards that may hinder or help small-scale seed producers and/or participatory plant breeding.

From the sessions, it was observed that most participants had varied understanding of what farmers' varieties are. This is due to a lack of a universally recognized taxonomic or legal definition of farmers' varieties to refer to for clarity. However, the common characteristics of a farmers' variety were identified as the following: having a historical origin, high genetic diversity, local adaptation, recognizable identity, no formal-sector genetic improvement, and association with traditional farming systems. These characteristics were found to be key in defining farmers' varieties. Countries that have set up systems for registering farmers' varieties have introduced relaxed standards.

The workshop participants also considered the issue of ownership of farmers' varieties, which in many (perhaps most?) countries is dealt with through separate intellectual property laws. Participants appeared to agree that farmers who have contributed to the development and conservation of farmers' varieties should enjoy rights of control (which could be called property rights) over those varieties, either as groups or individuals. For the case of group ownership, the participants considered the possibility of legal entities in which rights could be collectively vested (e.g. cooperatives, associations, community-based organizations, etc.). It was further noted that a range of different organizations (nongovernmental organizations, local governments, companies) could usefully offer technical support to farmers as collaborators in the variety evaluation and registration process and, subsequently, in seed-production activities.

Therefore, there is a need for champions and commitment from stakeholders, as well as resources to address gaps in the registration of farmers' varieties. It is also necessary to clearly justify the key benefits of registering farmers' varieties and, most importantly, put in place a flexible and relaxed regulatory framework for such registration.

1. Background¹

Introduction

Nearly 70 percent of the food-security needs of developing countries are met by smallholders.² Today, there are approximately 500 million smallholders supporting 2 billion people and accounting for 90 percent of the agricultural holdings in most developing countries. Agricultural biodiversity is an essential asset for rural households worldwide, especially for the poor and the marginalized. A diversity of crop options allows farmers to respond to different situations and contexts and, when responses are accompanied with an enhanced capacity to cope with risk, these options can be more effective in building resilience within livelihood systems and can improve food and nutrition security. A community's resilience relies on the use of crops adapted to new weather patterns, which are most often those crops that are maintained and conserved by smallholders whose seed systems are informal and managed by the farmers themselves through indigenous knowledge passed down over centuries.

Informal seed systems are characterized by seed production that is integrated in normal crop production, managed solely by farmers who practice seed selection, reproduction and variety maintenance. In local seed reproduction, there is a strong interaction between the genetic make-up of the planted varieties, farmers' selection practices and environmental factors, such as droughts, low soil fertility and disease.³ Although farmers contribute to the maintenance and conservation of these varieties, most countries' seed laws do not recognize farmers' varieties, nor do they recognize or support smallholder farmers as the producers and sellers of seeds of those varieties. As a consequence, many of these laws have the effect of overlooking the dynamic innovative roles of farmers as developers and conservers of crop varieties, and fail to provide policy support and incentives for their continued innovation.

¹ For more information on this section, see <https://drive.google.com/open?id=1VaukFm5Bm0jQDLBdFk71HdreVvV3MhUx>.

² Smallholders are family farmers that derive a substantial and indispensable part, or all, of their income and/or food from agriculture. The family is often also engaged in non-agricultural activities. Smallholders actively try to improve their livelihood through the development of their resource base, which is small insofar as it is not, or is hardly, sufficient to maintain a reasonable livelihood.

³ Almekinders C (2000) The Importance of the informal seed sector and its relation with the legislative framework (Deutsche Gesellschaft für Internationale Zusammenarbeit [GIZ], Berlin) Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.195.468&rep=rep1&type=pdf>. Accessed 1 April 2019.

We recognize and support the policy objectives of existing national seed laws, which is to promote the availability of quality seed and to protect farmers/consumers against the risk of buying poor-quality seed. But we are concerned that in most countries, seed laws are not designed in ways that reflect sensitivity to the important innovative roles that farmers can play. Even though there is growing recognition and support of farmer-led seed systems,⁴ most countries have not put systems in place to register farmers' varieties and support the production and commercialization of the seeds of those varieties.⁵

This workshop brought together experts from around the world to discuss how national seed laws can be developed to provide policy support for farmer innovation in seed systems. It was organized by Bioversity International in collaboration with OXFAM, National Agricultural Research Organization of Uganda (NARO) and the Integrated Seed Sector Development (ISSD) Uganda Programme. The workshop was held from 4 to 7 December 2018 at the Imperial Botanical Beach Hotel, Entebbe, Uganda.

Workshop participation and facilitation

The workshop was attended by 52 participants (25 female, 27 male) from national and international agricultural research institutions, academia, the private sector, farmers' organizations, seed regulatory authorities, and civil society organizations (CSOs) in Bolivia, Burkina Faso, Kenya, Lao People's Democratic Republic, Nepal, Tanzania, Uganda, Zambia and Zimbabwe (see participant list in Annex I). The workshop was facilitated by Bram De Jonge, Seed Policy Advisor, OXFAM SD=HS Project, the Netherlands, and Gloria Otieno, Associate Scientist, Genetic Resources and Food Security, Bioversity International, Uganda.

Workshop objectives and expected outputs

The main purpose of the workshop was to develop a clear roadmap for registration of farmers' varieties in Uganda.

The workshop was organized to:

⁴ ISSD Africa Synthesis Paper (2017) The support for farmer-led seed systems in African seed laws. Available at www.issdseed.org/sites/default/files/case/synthesis_paper_the_support_for_farmer-led_seed_systems_in_african_seed_laws_issd_africa_twq3.pdf Accessed on 16 April 2019.

⁵ FAO (2018). Commission on Genetic Resources for Food and Agriculture: Review of the status and trends of seed policies and seed laws. Available at www.bioversityinternational.org/e-library/publications/detail/farmers-crop-varieties-and-farmers-rights-challenges-in-taxonomy-and-law/ Accessed on 16 April 2019.

1. Discuss what farmers' varieties are and why it is important to establish (alternative) mechanisms for their registration.
2. Learn from experiences in countries where farmers' varieties and evolutionary populations have been registered:
 - a. How has this been done?
 - b. What challenges were faced and how have these been overcome?
 - c. What benefits have been observed (e.g. has there been an impact on farmers' seed security)?
3. Discuss the current and desired situation regarding the registration of farmers' varieties in Uganda,
 - a. Reflecting on the current regulations and guidelines for registering varieties in Uganda and seeing how they can facilitate or hinder the registration of farmers' varieties in the country.
 - b. Developing a roadmap for registration of farmers' varieties in Uganda, including guidelines and the roles of the relevant stakeholders
4. Discuss other variety registration (e.g. for modern varieties) and seed certification standards that may hinder or facilitate small-scale seed producers and/or participatory plant breeding (PPB) projects.
 - a. What are the key bottlenecks and how can these be overcome?
 - b. What are some examples from other countries, including Uganda?

The expected outputs of the meeting included the following:

1. A detailed workshop report on the roadmap towards registration of farmers' varieties and farmers' rights in Uganda.
2. A draft for publication in a high-impact journal on the case studies on registration of farmers' varieties.

Workshop approach

Participatory approaches such as interactive PowerPoint presentations, panel discussions, experience sharing, group work and plenary discussions were used to actively engage participants and make the workshop interesting and productive.

Opening and setting the scene

Dr John Waswa Mulumba, who presided over the opening session, welcomed the participants and encouraged them not only to enjoy the workshop but also the beauty of

Uganda. Dr Mulumba highlighted the significance of farmers' varieties and how they came into being. He noted that farmers are central to germplasm conservation and that germplasm collection and conservation dates way back to our ancestors (early humans).



Discussion panel



Presenters giving opening remarks

To contextualize farmers' varieties, presentations were made by Bram De Jonge and Gloria Otieno. Both presentations highlighted the importance of so-called informal seed systems, challenges to seed access, benefits and challenges of farmers' varieties and legal (international, regional and national) perspectives on farmers' rights and the registration of farmers' varieties. They highlighted the key benefits of registering farmers' varieties, including food security/sovereignty, protection of traditional knowledge against misappropriation, and *in situ* conservation of biodiversity. They also underscored challenges to registration of farmers' varieties as part of national seed laws including technical and procedural requirements for variety registration.

Gloria Otieno reviewed Article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and highlighted the possibility of promoting farmers' rights by including farmers' varieties within the scope of varieties that are subject to national seed regulations. This would create space for the open exchange and marketing of those varieties, including, potentially by farmer-led seed enterprises. Article 9 of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) states as appropriate, and subject to its national legislation, that countries should take measures to protect and promote Farmers' Rights, including the following:

- protection of traditional knowledge relevant to plant genetic resources for food and agriculture
- the right to equitably participate in sharing benefits arising from the utilization of plant genetic resources for food and agriculture

- the right to participate in making decisions, at the national level, on matters related to the conservation and sustainable use of plant genetic resources for food and agriculture).

Furthermore, the right to seed is a human right according to the United Nations pronouncements on the rights of peasants and people living in rural communities, as described in an article published by International Property Watch:⁶

...peasants and other people working in rural areas should have the right to seeds. This includes: the right to the protection of traditional knowledge relevant to plant genetic resources for food and agriculture; the right to equitably participate in sharing the benefits arising from the utilisation of those resources; the right to participate in decision-making relating to the conservation and sustainable use of those resources; and the right to save, use, exchange and sell their farm-saved seed or propagating material.

This right to save, use, exchange and sell farm-saved seed has been a longstanding demand of peasants and civil society groups, in particular in the context of intellectual property protection on new varieties of plants.

Article 19 also asks that peasants have the right to maintain, control, protect and develop their own seeds and traditional knowledge; and requests that states “shall take measures to respect, protect and fulfil the right to seeds of peasants.”

The article further requests that seeds of sufficient quality and quantity are made available to peasants at “the most suitable time for planting, and at an affordable price.”

Peasant seed systems should be supported and promoted, as well as agrobiodiversity. Article 19 further directs, and notes that states shall recognise the rights of peasants to “rely either on their own seeds or on other locally available seeds of their choice, and to decide on the crops and species that they wish to grow.”

“Seed policies, plant variety protection and other intellectual property laws, certification schemes and seed marketing laws should respect and take into account the rights, needs and realities of peasants.”

Drs Otieno and de Jonge both stressed the importance of creating an enabling environment and mechanisms for including farmers’ varieties more systematically within the scope of national seed regulations. This will make it possible to register farmers’ varieties in national catalogues and enable commercialization. Day 1 generally focused on the international perspectives and experiences from countries that have registered farmers’ varieties. Day 2

⁶ Saez C (2018) *UN Human Rights Council Passes Resolution on Peasants’ Rights Including Right to Seeds*. Intellectual Property Watch. Available at: www.ip-watch.org/2018/10/01/un-human-rights-council-passes-resolution-peasants-rights-including-right-seeds. Accessed 26 March 2019.

focused on the Ugandan context since it was the focus of the workshop as a practical learning experience and reference for other countries. Day 3 focused on a review of the two days' progress and the need to publish the outputs from the workshop.

2. Key observations from sessions

Session 1: Farmers' varieties and their importance for food security in the face of climate change

This session focused on defining farmers' varieties and their importance to improving food security and livelihoods in the face of climate change. The technical challenges to defining farmers' varieties and their benefits were also elaborated. This session aimed at achieving a common understanding of farmers' varieties and their significance in smallholder farming systems and crop-improvement programmes.

A panel of three experts (moderated by the session chair, Dr John Mulumba of NARO PGRC) was asked to define farmers' varieties. It was generally observed that there was no universal definition of farmers' varieties, but panelists looked at the key characteristics of a farmers' variety. They defined farmers' varieties as follows:

- Whatever a farmer is harvesting and selecting for planting in the next season.
- A variety that is stable after several years of selection for various attributes such as adaptability, nutrition, etc. It could be from an improved variety, as shown by one of the panelists in a case study of white potato (Nyamongo) and hybrid maize (614) in Western Kenya.
- The original materials of all varieties (in national genebanks) used in research.
- Landraces or obsolete varieties.

One conclusion at the end of the session was that, while most participants had ideas about the meaning of 'farmers' varieties', there was no unanimously agreed-upon definition. This conclusion is reflected in the existing literature, which shows that there is no universally recognized, taxonomic or legal definition of farmers' varieties to refer to for clarity.⁷ This prompted the facilitators to take this up as one of the key topics for further discussion during the subsequent group session.

⁷ Halewood M (2016) *Farmers' Crop Varieties and Farmers' Rights: Challenges in Taxonomy and Law*. New York: Routledge.

Why is it difficult to define farmers' varieties?

Legal and technical/institutional challenges to defining farmers' varieties were raised and these include the following:

- Farmers' varieties cover a broad spectrum of types and are not easy to categorize.
- Globally, most countries have no relevant legislation to recognize the system under which farmers' varieties are generated and utilized. Farmers' rights and varieties are not prioritized in our legal frameworks. In most African countries, the laws regarding farmers' rights and varieties are still in draft form (e.g. Uganda and Zimbabwe). Therefore, there is a need to advocate the registration of farmers' varieties so that farmers can get value from their varieties.
- Policymakers have tended to focus on laws to provide support for seed companies and national public research organizations to develop varieties and multiply and sell seed of those varieties.
- Most countries lack specific structures/mechanisms/guidelines for selection, description and registration of farmers' varieties.
- The characterization and description of farmers' varieties requires data. However, data on farmers' varieties is grossly lacking.
- Farmers' varieties should also meet some minimum quality standards, such as purity, germination and freedom from pests and diseases. These standards are not clearly defined, so it is important to define minimum quality standards and an appropriate quality assurance mechanism for farmers' varieties.

Key questions/comments

- What are the implications of the recently approved Genetic Engineering Regulatory Act (2018) on farmers' varieties in Uganda?
- How do we address the contradictions in the national, regional and international laws/commitments (e.g. ITPGRFA versus the International Union for the Protection of New Varieties of Plants [UPOV])?
- Won't promotion of farmers' varieties erode the gains from investments in and/or compromise the competitiveness of the formal seed sector?
- How do we balance the support for farmers' varieties and improved varieties in terms of public investment in their development and use?

Both formal and informal seed systems have their unique benefits, so the relevant policies and laws should not create disincentives for the operation of those systems. What is

important is to look at the purpose and objectives of the different systems and build structures and mechanisms to support the co-existence of pluralistic seed-delivery systems.

Farmers know how to identify their varieties. The key issue would be to link local knowledge to science/action-based research and build beneficial partnerships with farmers, which can be done through characterization of farmers' varieties and participatory plant breeding.

Session 2: Experiences from countries that have registered farmers' varieties

Experiences from countries drawn from different continents were shared. The general observation is that the conservation and sustainable use of farmers' varieties still face challenges, even in more advanced seed systems such as Europe, as well as in other countries that have taken significant strides in the registration of farmers' varieties, such as Nepal. The key messages from the various country experiences are summarized in table 1.

Table 1: Summary of Experiences with the Registration of Farmers' Varieties in Other Countries

Country	Experiences	Challenges
Nepal	<ul style="list-style-type: none"> – 90% of the seed sector is informal; 10% formal. – Registration of farmers' varieties is provided for in the national legal framework (Provision 5d of the Seed Rules, 2013). – There is a clear framework for variety evaluation (following the same pathway as improved varieties but more relaxed; does not strictly follow <i>distinct, uniform and stable</i> [DUS]) and a relaxed registration process that requires only yearly data. – To be eligible for release, the variety must be morphologically distinct, fairly uniform, with typical characteristics as observed from farmers' fields. – Focus is on farmers' varieties with commercial value. – Three landraces of leafy vegetables have been registered. – Registration is done by community based organizations (CBOs)/farmers' groups/community seed banks through local agriculture offices. <p>Refer to: https://drive.google.com/open?id=1ua4vnwiCz98hpooiS8SdB-WH8h_BWJ6V</p>	<ul style="list-style-type: none"> – Lack of specific guidelines to technical and Variety Release and Registration Committee (VRRRC) as per the relaxed provision (still follows the formal pathway, which is cumbersome) – Less understanding of notification processes among technical and VRRRC personnel – Unclear mechanism for varietal registration and maintenance – Lack of guidelines on seed production and maintenance for local landraces.

Country	Experiences	Challenges
European Union	<ul style="list-style-type: none"> – 90%-92% of the seed sector is formal. – There are 11 directives/framework laws governing the European seed sector. – 28 different legal regimes with differences in each Member State. – 2 European common catalogues (for vegetable and field crops). – Uniform and strict rules for productivity, identity, quality and varietal purity. – Listing a variety in national catalogue and common catalogue mandatory prior to marketing of vegetable and agri-seeds; DUS and <i>value for cultivation and use</i> (VCU) criteria applicable – Exemptions for landraces: <ul style="list-style-type: none"> ○ Farmers' varieties categorized into conservation varieties and amateur varieties. ○ Conservation varieties: landraces and varieties that are "naturally adapted to local and regional conditions and threatened by genetic erosion", which include vegetables, agri- and fodder crops. ○ Amateur varieties: varieties "with no intrinsic value for commercial crop production but developed for growing under particular conditions", which are only vegetables. ○ Varieties not mentioned in the directives can be sold/exchanged freely. France is more restrictive: no exchange without money! For Denmark, money transactions between farmers and companies not considered commercial exploitation if small scale. ○ DUS is required following UPOV protocols but member states can adopt relaxed rules with minimum standards. ○ No official verification required – simple notification procedure (based on description of the main agronomic and phenotypic characteristics over a three-month period). ○ Production and marketing of seed restricted to country/region of origin. ○ Quantitative restrictions (e.g. 5ha-200ha for vegetables and no more than 100ha for agri-crops) for conservation varieties and only small packages for amateur varieties. ○ Organic regulation (2018) promotes use of organic heterogeneous materials. <p>Refer to: https://drive.google.com/open?id=1WD8X2_bhGbltxOQId-I_dO0Yd7dqE6yA</p>	<ul style="list-style-type: none"> – It is extremely complex to read and navigate the EU directives governing marketing of seeds – Traceability regime: What is the extent of obligations for small actors? – The framework for registration of varieties is prohibitive for registration of traditional varieties – Strict plant health rules – Risk of sovereignty rights of states extending to farmers' varieties – National compliance rules: if no sufficient information on origin, discontinued use – Intellectual property rights: can farmers' varieties that have been made uniform get UPOV protection? What happens if patented native traits/characteristics are found in farmers' varieties?

Country	Experiences	Challenges
Ethiopia	<ul style="list-style-type: none"> – Are traditional varieties competent? Yosef Gebrehawaryat gave a research perspective on durum wheat in Ethiopia, comparing traditional and improved varieties. – Many landraces were observed to mature earlier than the improved varieties. – A yield advantage of 61% was obtained from the best landrace over the best improved variety (Robe). – Landraces had better tolerance to <i>Setoria tritici</i>. – There are two pathways for registration of farmers' varieties: <ul style="list-style-type: none"> ○ Formal variety release process in which varieties are evaluated in at least three locations for two seasons. Four traditional barley and 2 durum wheat varieties have been released through this process. ○ One-year characterization of farmers' varieties through PPB and quality-declared seed (QDS) production. Farmers' varieties can be identified by office of agriculture, research center or NGO, and can be registered by a nearby research center or university. Focus is on distinctiveness and uniformity since stability is locally specific. QDS production is inspected and certified by the seed inspection unit. Seed can be distributed through the informal seed system. – In both cases, the registration center is responsible for maintaining the variety and providing pre-basic seed. <p>Refer to: https://drive.google.com/open?id=193zp7Af-TgX55K5sWO4i4M0Z7X127gfl</p>	

Country	Experiences	Challenges
Zimbabwe	<ul style="list-style-type: none"> – Community Technology Development Trust (CTDT) is a non-profit making, non-governmental organization established in Zimbabwe in 1993 and operating in 22 districts. – CTDT is at the forefront of promoting integrated agrobiodiversity management, environmental management, food and seed security, water and sanitation and policy and advocacy programmes. – CTDT facilitates participatory variety selection through communal growers in farmers' field schools to screen varieties and identify desired traits. – Landraces adaptable to climate change and farmers' needs for nutrition, disease and pest tolerance, yield and maturity are stored in community seed banks, which are linked to national genebanks to store accessions of key landraces. These can be rejuvenated and/or repatriated to communities as required. – Seed production follows the formal seed-certification process. – Certified seed of locally demanded varieties is multiplied locally by Champion Farmer Seed Cooperative Company, which is wholly owned by contracted communal growers through a share-holding structure. – Seed is exchanged through seed fairs in communities. – A separate legal framework (Draft Plant Genetic Resources Management Act) based on the ITPGRFA was drafted in 2014 and presented to the responsible ministry. It is yet to be approved. This draft legislation recognizes and advances commercial utilization and benefit sharing of farmers' varieties, as well as promotion and protection of farmers' rights. <p>Refer to: https://drive.google.com/file/d/1CzbUFTIOurwz48Rmg7bEgkEdq5fs-UV5/view?usp=sharing </p>	<ul style="list-style-type: none"> – Variety release and seed production of farmers' varieties still follows the stringent formal system.

Country	Experiences	Challenges
Lao People's Democratic Republic	<ul style="list-style-type: none"> – A variety is “officially” released when it has been published in the National Agriculture, Forestry and Rural Development Research Institute (NAFRI) journal after consideration by the Science Council of the Ministry of Agriculture and Forestry. – Laos has a parallel release process for farmers’ varieties that is less stringent than the one for commercial varieties or those for export purposes. No need for multi-location trials. Evaluation is by comparison on farmers’ fields. – Farmers’ varieties are developed through PPB in farmers’ field schools, and Laos gives a typical example of collaboration between the national research programme and selection of farmers’ varieties. – PPB has resulted in two stable lines of rice. <p>Refer to: https://drive.google.com/open?id=1d91tG-R44XrJ4yB_on-tAOpvdFCPZSW-</p>	
Burkina Faso	<ul style="list-style-type: none"> – A national catalogue of plant species and varieties has been published, but this is only for improved varieties in the formal seed system. – There is no framework or structure for registering farmers’ varieties. There is a need to fit it into the formal system but with relaxed conditions because the formal framework for variety registration cannot work for farmers’ varieties. – Laws and legislation must concern only a few crops, not all crops. – Among the six themes identified for advocacy regarding the concerns of smallholder producers are the following: <ul style="list-style-type: none"> ○ Producer seed autonomy and promotion of traditional varieties. ○ Development and capacity building for farmers’ seed organizations. ○ Strengthening the participation of farmers in the governance of the seed industry. <p>Refer to: https://drive.google.com/open?id=1XN4dUuATba02R5l9WlVVeCba_B65LXw5</p>	<ul style="list-style-type: none"> – National Law versus Economic Community of West African States (ECOWAS) regulation of the seed sector.



Presentation of country issues

Key issues/comments from session 2

The presenter provided examples of countries that have put systems in place to register farmers' varieties pursuant to alternative, relaxed criteria (compared to those included in standard seed laws and regulations). Two such countries are Nepal and Laos. In the European

Union, DUS is required but member states can adopt relaxed rules with minimum standards for certain classes of varieties, e.g. conservation varieties. Ethiopia uses two pathways to register farmers' varieties: the formal variety release process that requires multi-locational trials and a relaxed system that requires one year's collection of basic varietal traits in a single location as a requirement for registration.

The rapporteurs identified the following issues that would benefit from further discussion when considering adaptations to other countries national seed policies and laws:

- Who applies for registration? Who owns and maintains farmers' varieties and/or traditional knowledge? To whom do the farmers' varieties belong? Individual farmers, the community, farmers' groups, etc.?
- What is the ideal structure/framework for farmer variety registration? Do we need it at the national level or should there be regional frameworks for registering farmers' varieties, such as Common Markets in East and Southern Africa (COMESA), Southern Africa Development Community (SADC) or ECOWAS?
- How do we address the contradictions in international, regional and national laws/commitments (e.g. ITPGRFA versus UPOV)?
- With reference to Nepal, the focus is on farmers' varieties with commercial value. What about those with niche/distinct and other values, such as adaptability, cultural value and nutrition? This case could inform our approach/strategies. In the short term, we could focus on those varieties with commercial value and on others in the long term!
- How do we ensure that farmers' varieties that are registered in the national variety register and national genebanks remain entirely under the control and ownership of the farmers?
 - Do we need to maintain separate variety registers for farmers' varieties and improved varieties?
 - Who is the custodian of the registered farmers' varieties?
- There is a need to devise mechanisms that ensure that registering farmers' varieties do not create disincentives for investments in the formal seed system; thus, there is a need to balance the two systems.
- Given the significance of informal seed systems, why do policies still target the formal seed system?

These areas of concern were addressed through group discussions.

3. Group discussions and results

Session 3: First group assignment

To guide the discussions, the rapporteurs presented a synthesis of the key challenges for registration of farmers' varieties arising from the previous sessions (opening session and sessions 1 and 2). Four groups were constituted, with participants randomly selected. Topics for group discussions were drawn from the key issues arising from the previous sessions as recapped by the rapporteurs. These are presented in table 2.

Table 2: Presentations from Group Discussions

Group	Question	Responses
1	What is the definition of farmers' varieties?	<ul style="list-style-type: none"> – A variety originated through natural/continuous selection, breeding and maintenance, which has unique distinguishing characteristics/traits – If it is developed from an obsolete variety, it should be subjected to DUS to justify whether it is significantly different from the original variety – Not subjected to basic research or having undergone any formal improvement or modification
	What should be done to register farmers' varieties?	<ul style="list-style-type: none"> – Identify the variety <ul style="list-style-type: none"> ○ Gather preliminary information about the variety (e.g. name, origin, unique known attributes as perceived by the community) – Agree on key distinguishing parameters against which to describe the variety. Use traits known by the farmers <ul style="list-style-type: none"> ○ How many traits (could vary per crop)? – Evaluate the parameters on farmers' fields to validate the selected traits – Document the variety descriptor based on participatory evaluation trials – Submit to designated authority for release if it meets minimum requirements
2	Who applies for registration of farmers' varieties?	<ul style="list-style-type: none"> – Since farmers are the maintainers, they should own 100% of farmers' varieties, either as groups or individuals – For farmers' groups, it is highly recommended that it should be a legal entity, in order to attach responsibility (e.g. cooperatives, associations, CBOs, etc.) – Interested individual farmers could also register – preconditions for this should be clearly spell out in the regulations – Institutions (NGOs, local government, companies and research) should not register farmers' varieties – they should only offer technical support to farmers as collaborators in the variety evaluation and registration process and, subsequently, in seed production activities
	Who maintains farmers' varieties?	<ul style="list-style-type: none"> – Assess capacity to maintain the variety before granting maintainer rights <ul style="list-style-type: none"> ○ Could be a legal or moral person designated in the application (first define the seed source) ○ Designated public authority or genebank – Field inspections depend on the criteria for registration and/or definition of farmers' varieties – safeguard against loss of variety or specific characteristics
	Who benefits from registration of farmers' varieties?	<ul style="list-style-type: none"> – Moral recognition for owners/maintainers – Farmers who take up these varieties – Opportunity for built-in benefit-sharing mechanism

Group	Question	Responses
3	Alternative mechanisms for quality assurance of farmers' varieties	<ul style="list-style-type: none"> – Suggested that only 4 to 5 morphological parameters be considered in identification of farmers' varieties – Recommended verification of farmers' descriptors for one season by the regulator at the farmers' fields – Define minimum quality standards for seed of farmers' varieties – Relax the formal system to make it work for farmers by reducing costs for registration with the regulator, inspection costs, etc.
4	Framework/structure for registering farmers' varieties	<p>Two mechanisms proposed:</p> <ul style="list-style-type: none"> – Option 1: Adoption of existing but relaxed framework for national variety evaluation and release <ul style="list-style-type: none"> ○ Create flexibility without requiring the submission of strict DUS dossiers/descriptors, which most farmers do not have ○ Provide the basis for allowing acceptable seed-quality parameters such as QDS, truthful labeling, etc. ○ Emphasize unique combination of variety attributes preferred by farmers in a particular community/region/agroecological zone – Option 2: Adapting the provisions of the ITPGRFA (Article 9 of which recognizes farmers' rights to save, use, exchange and sell farm-saved seed and propagating material, subject to national law and as appropriate) to the country level <ul style="list-style-type: none"> ○ Basis for providing a framework for conservation, access, utilization and benefit sharing of all PGRFA at international and country level.



Participants during group discussions

Key issues/comments from first group work

The response received from group work raised additional issues, which are summarized in table 3.

Table 3: Issues Arising from Group Presentations

Group	Key issues/comments
1	<ul style="list-style-type: none"> – Do obsolete varieties qualify as farmers' varieties? Some landraces are not landraces in reality! Response: Only if justified to be significantly different from the original variety through DUS testing. – Can different communities register the same variety? Response: Co-ownership is provided for in the ITPGRFA. Solutions to ownership rights should be guided by the ITPGRFA. There are also provisions for protection of communities.
2	<ul style="list-style-type: none"> – The system for registration of farmers' varieties in most countries is not well established – unethical individuals/institutions could hijack the process and register farmers' varieties. <ul style="list-style-type: none"> ○ There is a need for formal criteria with safeguards to avoid misappropriation and deletion of farmers' varieties. ○ Cooperatives/societies/associations should be strengthened to register farmers' varieties. ○ Conflicts of ownership should be guarded against and conflict resolution under the law should be considered. – Formal criteria are needed to link community seed banks/farmers (owners) with national genebanks.
3	<ul style="list-style-type: none"> – Consider self-certification (truthfully labeled) or delegation of seed certification of farmers' varieties as mechanisms to reduce costs. – Focus on building the capacity of farmers to ensure self-regulation through strengthening internal quality-control mechanisms or building local capacities for seed-quality assurance.
4	<ul style="list-style-type: none"> – Coverage of options for the registration of farmers' varieties should initially be limited to application at the national and sub-national level because most farmers' varieties are specific to local farm conditions. – Harmonization across countries and regional economic blocs such as COMESA, SADC, ECOWAS and the East African Community (EAC) can be done later once countries have advanced in employing the options.

Session 4: Opportunities and challenges for registration of farmers' varieties in Uganda⁸

Sessions 4 and 5 focused specifically on the context of Uganda. Three background presentations were made prior to the second group assignments to highlight the status of registration and utilization of farmers' varieties in Uganda. Dr Bonny Ntare (Seed Sector Consultant) presented a situational analysis for registration of farmers' varieties in Uganda (mechanisms, policy and regulatory framework). Astrid Mastenbroek (Chief of Party, ISSD Uganda) shared the opportunities and challenges for production of QDS of farmers' varieties, and Rose Nankya (Bioversity International, Uganda) presented the role of community seed banks in conservation and use of farmers' varieties in Uganda.

Dr Ntare noted that farmers' varieties have limited space in the current regulatory framework, with stringent conditions that inhibit farmers from registering varieties. He emphasized that farmers' varieties must be developed, adapted and maintained by community-based farmers' organizations, such as cooperatives, CBOs, associations, etc. He clarified the definition of farmers' varieties by sharing their key characteristics, and he noted that different terms (e.g. farmer, local, informal, landraces and traditional) are used interchangeably. The common characteristics of a farmers' variety are identified as having the following:

- identity
- historical origin
- high genetic diversity
- local adaptation
- recognizability
- no formal genetic improvement
- an association with traditional farming systems

Dr Ntare concluded his presentation with practical steps that Uganda needs to take to ensure the registration of farmers' varieties, based on the recently concluded environmental scan on this subject.

⁸ For more information on this section, see https://drive.google.com/open?id=1Mq_S3tl3lR1iEoGykb_9_njwagQP1r8V, https://drive.google.com/open?id=1YhX2wTNMYKpx4vwHlpkVfLEVKC_vYLfl and https://drive.google.com/file/d/1_decPofTfZbVb1dYOV2Vcllu59xBs1DY/view?usp=sharing.

From Astrid Mastenbroek's presentation on QDS, it was apparent that according to the National Seed Policy (2018), farmers' varieties on a maintainer list are allowed for QDS production. It was also generally observed that the QDS system is a practical pathway for the production and sale of farmers' varieties due to its less stringent quality-assurance process. However, there is an urgent need for approval of the draft QDS regulations to ensure strict and proper regulation of QDS production.

The role of community seed banks in conservation and use of farmers' varieties was clearly elaborated by Rose Nankya. Two key points for attention were noted: 1) How do we trace the origin of farmers' varieties? This complicates the registration process if it is one of the requirements. 2) Is the national genebank signing prior informed consent on behalf of farmers? This is in relation to a scenario where breeding programs (local and international) access materials from the national genebank.

Session 5: Roadmap for registration of farmers' varieties in Uganda

Session 5 builds on the previous session and proposes practical steps to operationalize the registration of farmers' varieties in Uganda, based on the experiences from other countries and the current situation. In three mixed groups, participants were tasked with identifying what needs to be done to ensure the registration of farmers' varieties in Uganda, and how to do it, based on the current situation as presented above. The following was proposed:

1. Create a common understanding of the definition of farmers' varieties among stakeholders.
2. Sensitize stakeholders, especially policymakers, on the importance of recognizing farmers' varieties.
3. Collect and characterize farmers' varieties.
4. Amend the Seeds and Plant Act (2006) and the Plant Variety Protection Act (2014) to recognize farmers' varieties.
5. Zone crops according to agroecologies.
 - a. Map out crops per agroecological zone.
 - b. Organize farmers into and/or strengthen existing associations/cooperatives and community seed banks.
 - c. Develop a data base to take stock of numbers of farmers by agroecological zone.
6. Establish regional hubs for seed quality assurance to accommodate farmers' varieties.

7. Build pressure through technical and policy evidence to approve the PGRFA policy because it provides the framework for registering farmers' varieties in Uganda.
8. Develop practical technical procedures for registration of farmers' varieties.
9. Enact regulations and develop procedures for QDS classification.

4. Conclusions and recommendations/way forward

General recommendations

This workshop was intended to share experiences on registration of farmers' varieties in order to stimulate further discussions on mechanisms or strategies for registration. The workshop participants recommended the following:

1. In order to understand what farmers' varieties are and why it is important to establish (alternative) mechanisms for their registration, we need to know who registers, owns and maintains farmers' varieties. Note the following:
 - a. Farmers' varieties and related indigenous knowledge should be community owned and the process should be driven by farmers collectively through their respective organizations.
 - b. There should be a consideration of provisions for the registration of farmers' varieties by individual farmers.
 - c. Flexible regulations and procedures should be developed to accommodate farmers' varieties by adopting the national variety evaluation and registration framework to include relaxed conditions for registration of farmers' varieties.
2. Consider the QDS system as a pathway for production and supply of farmers' varieties to improve their accessibility in seed systems.
 - a. This is a good entry point for farmers' varieties since QDS frameworks are already operational in some countries.
 - b. It has clear quality-assurance mechanisms that could work for farmers' varieties. Separate regulations should be developed for the QDS class.

The approaches listed above, on their own or in combination, would represent ways of implementing ITPGRFA Article 9 on farmers' rights in national laws.

The way forward for Uganda

The following items were clearly pointed out during group discussions. They specifically address the gaps that exist in Uganda's policy and legislative frameworks. There is a need to do the following:

1. Lobby for approval and adoption of the draft PGRFA policy and the draft QDS regulations.
2. Deliberately create awareness among stakeholders on the need for farmers' varieties at all levels in Uganda.
3. Strengthen communities to manage their own diversity.
4. Amend Uganda's Seeds and Plant Act (2006) and Plant Variety Protection Act (2014) to accommodate farmers' varieties.
5. Popularize the existing legal frameworks.
6. Zone crops according to agroecologies:
 - a. Characterize farmers' varieties.
 - b. Develop a maintainer list of farmers' varieties.
7. Establish and institutionalize alternative quality assurance mechanisms for seed of farmers' varieties.

5. Closure

Remarks by the Director General, NARO

The Director General started his remarks by welcoming participants from all over the globe. He quoted, "Seed is the cradle of life." Community seed banks offer opportunities for seed access by farmers and productivity enhancement. They are particularly important because they are custodians of orphaned crops. The Director General emphasized the need to maintain traditional varieties because of their unique inherent attributes that are critical for crop improvement and resilience to climate variability, among other benefits. Naming these varieties is particularly important in order to attach social and economic value to them, mentioning an example of the "*chwaramara*" variety of bean in Luo, which means "my husband loves me." He emphasized the need to clearly define incentives for community innovators as an encouragement to continue with conservation of genetic materials and encouraged MAAIF to expand the national variety list to include maintainer varieties. "Let the experiences from this

workshop be a basis to tailor and pilot mechanisms to our national conditions. Start small but sure, pilot and refine the mechanisms as you go forward,” the Director General advised. He encouraged Uganda to be a reference point for other countries to learn from.

He recommended a multi-stakeholder approach to tackle the proposed recommendations arising from the workshop. He encouraged stakeholders to build champions around key institutions such as MAAIF, NARO and CSOs. ISSD Uganda committed to championing approval of the QDS regulations by mid-2019, while Participatory Ecological Land Use Management (PELUM) Uganda pledged support to build farmers’ capacity in community biodiversity management, as well as farmer variety registration. MAAIF pledged to continue playing a supportive role in terms of creating an enabling environment for registration. The African Seed Trade Association (AFSTA) is also supportive of the initiative of registering farmers’ varieties.

Remarks by the Hon. Francis Gonahasa

The Hon. Gonahasa started his remarks by quoting the key messages he learnt from this workshop: “Without seed sovereignty, we can’t have food security. The harvest is in the seed.” Uganda is well positioned to feed the region but needs to exploit its potential by taking advantage of its agroecological situation. He thanked the organizers for holding the meeting in Uganda and the international participants for sharing their very interesting and useful experiences. This workshop has contributed tremendously to the process that will guide the different countries in developing internal mechanisms for registering farmers’ varieties. He noted that as a legislator, this workshop has empowered him to advocate for farmers’ rights from an informed point of view. He promised to include seed issues in the alternative agriculture policy statements published by his office annually, and he requested that stakeholders involve legislators as much as possible in these very useful discussions on important issues in the seed sector. This will help them to legislate better. He welcomed the Minister to give his speech and officially close the workshop.

Closing speech by the Minister of Agriculture, Animal Industry and Fisheries

The Minister was represented by the Director General of NARO, who read his speech. The Minister sent his apologies and thanked OXFAM, NARO, Bioversity International and ISSD Uganda for convening this workshop. He particularly thanked Bioversity international for the tremendous support, knowledge and partnerships at local, national, regional and international levels in the area of advocacy for farmers' rights and conservation, as well as utilization of genetic materials. He also thanked ISSD for the collaboration with MAAIF and NARO in supporting community-based seed production, and farmers for the excellent work in biodiversity management. He welcomed international participants to Uganda and encouraged them not to leave without exploring the "Pearl of Africa." From the various experiences shared, this workshop justified the need for farmers' varieties. He noted that the government crop priorities exclude the most important crops grown by farmers, and he acknowledged the genetic biodiversity that Uganda has. Because of this, the Ministry will fast-track the recommendations of this workshop to ensure that this biodiversity is appropriately managed and utilized. MAAIF has undertaken measures to create an environment that is favourable for the informal seed system. For example, the National Seed Policy (2018) provides for strategic support toward development of the informal seed system and further pledges support toward registration of farmers' varieties. The Minister concluded his remarks by wishing participants journey mercies and officially closed the workshop.

6. Media

The event attracted media coverage from some of Uganda's leading television stations. The coverage can be accessed through the following links:

- <https://youtu.be/jkbHB1n2Ie0>
- <https://www.youtube.com/watch?v=3NANaHL5JJA>

The event pictures by Brenda Namulondo of NARO PGRC can be accessed via

<https://oxfam.app.box.com/s/hlnnu1jur67dhkkq019pgosk70j70h4r/folder/60853224484>

7. Annexes

Annex 1: Workshop participants

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Annex 2: Agenda

WORKSHOP AGENDA

INTERNATIONAL WORKSHOP ON REGISTRATION OF FARMERS' VARIETIES

5 – 6 December 2018

Venue: Imperial Botanical Beach Hotel, PO Box 895, Entebbe, Uganda

Tuesday, December 4th

Arrival and check-in		
19.00	Groups dinner	Hotel Restaurant

Wednesday, December 5th – Day 1

8.30 – 10.30	Opening Session <i>Chair: John Mulumba</i>	
	<ul style="list-style-type: none">• Welcome and objectives of the workshop: Bram de Jonge, Oxfam and Gloria Otieno, Bioversity International• Remarks, Ass. Commissioner Seed• Opening Speech, Director, Crop Resources Certification	
10.30 – 11.00	Tea break	
11.00 – 12.00	Session 1: Farmers' varieties and their importance for food security in the face of climate change	
	Panel discussion with experts: <ul style="list-style-type: none">• Defining farmers' varieties and their importance to food security and livelihood improvement in the face of climate change• Technical challenges to define farmers' varieties and their benefits	
12.00 – 13.00	Session 2: Experiences from countries that have registered farmers' varieties	<i>Chair: Bram de Jonge</i>
	<ul style="list-style-type: none">• Nepal• Bolivia• European Union	
13.00 – 14.00	Lunch Break	

14.00 – 15.30	Session 3: Experiences from countries that are moving towards the registration of farmers' varieties and/or modern varieties developed through Participatory Plant Breeding	
	<ul style="list-style-type: none"> • Ethiopia • India / Burkina Faso TBC • Zimbabwe • Laos • Synthesis of key challenges for registration of farmers' varieties arising from the presentations by Rapporteur (15 minutes for rapporteur and 15 minutes for feedback from the audience) 	
15.30 – 16.00	Tea break	
16.00 – 17.30	Session 4: Groupwork to discuss key challenges from the synthesis above, unpack them and formulate options to overcome them and by whom	<i>Chair: Gloria Otieno</i>
	e.g.: i) Who should apply for the registration of farmers' varieties? ii) What are the basic requirements for farmers' varieties to be registered? iii) Seed production and maintenance of farmers' varieties; who should do it? iv) Protection of indigenous knowledge and intellectual property for owners of farmers' varieties etc.)	
	Groups presentations to the plenary and discussions (30 min)	
18.00	Departure for dinner	

Thursday, December 6th - Day 2

08.30 – 10.10	Session 5: Opportunities and challenges for registration of farmers' varieties under the current seed regulatory framework in Uganda	<i>Chair:</i> Joseph Bazale, Ass. Commissioner
	<ul style="list-style-type: none"> • Situation analysis for registration of farmers' varieties in Uganda (mechanisms, policy and regulatory framework) - Bonny Ntare, consultant (30 min and 20 min of discussion) • Opportunities and challenges for production of Quality Declared Seed of farmers' varieties - Astrid Mastenbroek, ISSD Uganda (15 min and 10 min of discussion) • Role of community seedbanks in conservation and use of farmers' varieties - Rose Nankya, Bioversity International (15min and 10 min of discussion) 	
10.10 – 10.40	Tea Break	
10.40 – 13.00	Session 6: Roadmap for registration of farmers' varieties in Uganda	<i>Chair:</i> Joseph Bazale
	<ul style="list-style-type: none"> • Group work on specific elements of the draft roadmap • Plenary reporting 	
13.00 – 14.00	Lunch break	
14.00 – 16.00	Session 7: Lessons learnt and looking forward	<i>Chair:</i> Director General NARO
	<ul style="list-style-type: none"> • Panel discussion on lessons learnt and perspectives from other Countries • Plenary reflections on the way forward • Recommendations and way forward by Rapporteur 	
16.00 – 17.00	Closing of workshop	
	<ul style="list-style-type: none"> • Remarks, Ass. Commissioner, Seed Certification • Remarks, Director General NARO • Closing Speech, Minister 	



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ISBN: 978-92-9255-123-0

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