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Working Paper

Guide on Flexible Licensing Approaches and Options for NARES

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Acronyms

ADR	Alternative Dispute Resolution
AVISA	Accelerated Varietal Improvement and Seed Systems in Africa
CBD	Convention on Biological Diversity
CGIAR	Consultative Group on International Agricultural Research
CIMMYT	International Maize and Wheat Improvement Center
CIP	International Potato Center
COMESA	Common Market for Eastern and Southern Africa
DLC	Dryland Crops
DUS	Distinctness, Uniformity, and Stability
EAC	East African Community
ECOWAS	Economic Community of West African States
EGS	Early Generation Seed
EPR	End-Point Royalty
ERS	Extended Royalty Systems
IA	Intellectual Assets
IITA	International Institute of Tropical Agriculture
IP	Intellectual Property
IPMC	Intellectual Property Management Committee
IPO	Intellectual Property Office
IRRI	International Rice Research Institute
ISRA	Senegalese Agricultural Research Institute
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
KALRO	Kenya Agricultural and Livestock Research Organization
MTA	Material Transfer Agreement
NARES	National Agricultural Research and Extension Systems
NARO	National Agricultural Research Organization
NML	New Markets Lab
NPT	National Performance Trials

PBR	Plant Breeders' Rights
PGRFA	Plant Genetic Resources for Food and Agriculture
PVP	Plant Variety Protection
REC	Regional Economic Community
SADC	Southern African Development Community
SMTA	Standard Material Transfer Agreement
TARI	Tanzania Agricultural Research Institute
UPOV	International Union for the Protection of New Varieties of Plants
USTA	Uganda Seed Traders' Association
VCU	Value for cultivation and Use
VIN	Variety Identification Number
WTO	World Trade Organization

I. Introduction

Public agricultural research in Africa is largely the domain of designated National Agricultural Research and Extension Systems (NARES) at the national level and International Agricultural Research Centers (CG Centers) at the international level. The legal instruments establishing these institutions include the mandate to conduct research and development on behalf of and for the public. The results of these activities are intellectual assets,¹ which include improved seed varieties for farmers. However, due to resource constraints and other challenges that are elaborated further in this Guide, most publicly bred varieties developed by the NARES fail to reach the farmers for whom they are developed.

Licensing agreements are an important tool that public research institutions could use to address this gap in dissemination. Licensing can formalize the relationship between public and private actors in the seed sector, increase the availability and affordability of quality seed, and improve adoption of technology and, ultimately, farmers' access to seed. While some NARES have not yet implemented licensing programs, others have, with varied licensing strategies across NARES in Africa. Licensing practices within CG Centers are also evolving, with implications for the NARES.

This Guide serves as a practical resource for public research institutions, NARES, and their partners, including CGIAR Centers. It is intended to facilitate the transfer of rights and authorizations at the national level for the use of developed materials and registered varieties for commercial purposes. Such transfers are typically made in exchange for specific commitments, which may include predetermined payments (royalties), compliance with reporting obligations, and demonstration of the impact of public and philanthropic breeding investments. Licensing agreements have broader applicability beyond commercialization of seed varieties, but this Guide will focus only on their applicability for transferring rights from the NARES to the private sector in this context.

This Guide was developed by the New Markets Lab (NML), a legal and regulatory innovation lab dedicated to generating and disseminating data-driven research, tools, and approaches focused on equitable and inclusive design and implementation of economic law and regulation, in partnership with the International Potato Center (CIP) and the International Rice Research Institute (IRRI) under the Seed Equal Initiative and in collaboration with the International Maize and Wheat Improvement Center (CIMMYT) under the Dryland Crops (DLC) Initiative to use licensing as a tool to advance the development and promotion of new technological solutions, more effective business models, and policy reform to create sustainable and inclusive seed systems. It is built

¹ "Intellectual Assets" means any results or products of research and development activities of any nature whatsoever, including, but not limited to, knowledge, publications and other information products, databases, improved germplasm, technologies, inventions, know-how, processes, software, and distinctive signs, whether or not they are protected by IP Rights. See, CGIAR Principles on the Management of Intellectual Assets, 2012, at 2, available at: <https://icrisat.org/wp-content/uploads/CGIAR-IA-PRINCIPLES-Acrobat-Document.pdf>.

upon prior work done by NML under the Accelerated Varietal Improvement and Seed Systems in Africa (AVISA) project (now the DLC Initiative) but is tailored in its focus on the NARES, which face particular considerations and challenges with respect to licensing.

Section I contains an introduction to the Guide and addresses licensing from the NARES' perspective, highlighting why licensing can benefit public research institutions and discussing comparative licensing approaches by public research institutions in East Africa, Kenya, Tanzania, and Uganda, in particular. The section also presents common approaches, gaps, and challenges associated with licensing among NARES. Section II contains the first module, presenting licensing components and regulation, defining licensing agreements, rules that govern them, and key elements of a licensing agreement. It contains eleven parts, which will inform the structure of a digital tool under development, that define a licensing agreement, outline key elements, and present options, flexibilities, and trade-offs that a public research institution should consider when developing and implementing a licensing approach. Section III contains the second module, which is focused on institutional approaches to licensing, including intellectual asset (IA) and intellectual property (IP) management policies. Section IV contains the third module and discusses CG Centers' approaches to sharing breeding material and how it relates to the NARES, including use of standard material transfer agreements and licensing agreements and their impacts on NARES' licensing as their national partners. This Guide is accompanied by model annotated licensing tools developed for NARES, including a model Intellectual Assets Management Policy (IAMP) and model licensing agreement.

NML plans to develop a digital knowledge platform based on this Guide and the tools it contains. For NARES that are already engaging in licensing, the digital knowledge platform would help fine-tune their licensing approaches and policies and provide ongoing capacity building support to address gaps and bottlenecks. For other NARES that have not yet engaged in licensing or do not yet have a licensing framework, the Guide and digital knowledge platform would provide an important set of tools to guide the development of institutional policies and instruments, drawing lessons from the NARES that already have these instruments in place, with options for effective implementation and streamlined application. At a later stage, the digital platform could be expanded to include a policy and agreement builder that the NARES could use to develop IA Policies and licensing agreements, as well as other tools, such as a model licensing catalogue.

The assessment of NARES licensing practices in this introduction below and training modules that follow in sections II, III, and IV are based on consultations held between September and December 2023 with stakeholders from Kenya, Tanzania, and Uganda from the NARES, CG Centers, and the private sector, including seed companies, to understand stakeholder interests and experiences in implementing licensing agreements and ways in which to improve NARES commercialization of publicly-bred improved varieties through licensing. The combined findings are incorporated into this Guide as a benchmark for good licensing approaches and flexibilities that could be considered by public research institutions. This section examines some of the benefits of licensing

by public research institutions, presents approaches used by NARES in licensing their varieties, and highlights common challenges and gaps that NARES face in licensing.

A. Why Licensing Can Benefit Public Research Institutions

The public-good nature of material developed by the NARES makes licensing an important tool, provided that these approaches are carefully designed. Public materials developed by the NARES should be accessible, available, and affordable to the intended users—as many farmers as possible. Therefore, the NARES should carefully establish strategies for engaging in licensing centered around the public-good focus of their work.

Public research institutions develop important technology and intellectual assets in the form of improved germplasm and seed varieties that have significant benefits for farmers; however, they could benefit from leveraging the private sector to bring these innovations to market through commercialization and improve the adoption of this technology.² Research and development of new seed material is expensive and can take a long time.³ Public research institutions thus need to find and establish reliable partners and sources of income to support this process and related activities aimed at improving varietal adoption, including marketing and commercialization, enabling public varieties to reach larger geographic markets that otherwise would be too remote for public research institutions.⁴ Licensing by public research institutions could also improve the quality of varieties developed by research teams, since a stronger connection with the market could lead researchers to focus on in-demand traits for varieties that deliver greater public benefit and are commercially viable.⁵ Using licensing to formalize the relationship between public research institutions and private entities in the seed sector would also ease the tracing of public varieties to ensure proper maintenance of parent material.

Given that public varieties are trusted and often demanded in the market, licensing agreements can be a win-win tool for both the private and public sectors to leverage their strengths to improve farmers' access to diverse quality seed. Private companies gain access to a wider range of varieties for commercialization without spending resources and time on varietal development, and public institutions gain access to alternative sources of income in the form of royalties to support future research.⁶

Licensing agreements can also be a way for public research institutions to gauge market opportunities for public varieties and early generation seed (EGS) with low upfront risk.⁷ As

² ISSD Africa, “Public Variety Use Agreements,” 2017, Kit Working Papers, 6-2017.

³ New Markets Lab, “Annotated Guide on Flexible Licensing Models and Agreements,” 2019, Seeds2B Africa and Syngenta Foundation for Sustainable Agriculture.

⁴ Id.

⁵ Id.

⁶ Id.

⁷ Id.

private sector demand for EGS increases for the varieties they are licensed to commercialize, public research institutions build data on market-preferred varietal traits, which can inform better research and development. Private companies will only be interested in commercializing crops that have demand in the market, signaling research priorities for the NARES.

Even though there are many high-quality, publicly developed seeds, many may not be commercially available to farmers.⁸ Engaging private and public institutions in a constructive dialogue, or entering into licensing agreements directly with farmers' associations, could be ways in which to address this challenge. Public research institutions can also use market data to better project demand and improve supply of improved seed varieties to farmers.

B. Comparative Licensing Approaches Among NARES in East Africa

Within sub-Saharan Africa, it is not yet a common practice for NARES to use licensing agreements. The Kenya Agricultural and Livestock Research Organization (KALRO) was a pioneer in this area,⁹ followed by the National Agricultural Research Organization (NARO) in Uganda. The Tanzania Agricultural Research Institute (TARI) in Tanzania is also reengaging on licensing after a pause in these practices. These three institutions are among the few exceptions of NARES that commercialize publicly bred varieties to enable farmer access. Below is a summary of licensing approaches by NARES in the three countries (Table 1), which are discussed in further detail in this section. Based on consultations, the approaches of these three NARES have been relatively successful in some instances but largely unproductive in others.

Table 1: Comparative Licensing Approaches Among NARES in East Africa

KALRO	NARO	TARI
Licensing by Focus NARES and Royalty Collection		
KALRO has successfully used licensing agreements since 2001, earning an average of USD 200,000 a year.	NARO commenced licensing in December of 2021, earning slightly over 50,000 dollars in 2022.	In 2014, TARI issued its first licenses, but they all expired in 2019 without TARI receiving any royalties.
Type of Licensing Agreements		
- KALRO has licensed over 100 varieties to a total of 87 seed companies. Licenses with 32 seed companies are currently active, with some of the licenses granting rights to multiple varieties under a single license. - Most of the licenses are on a non-exclusive basis. Only nine exclusive licenses have been issued since KALRO began licensing in	NARO has issued a total of 13 licenses to 13 seed companies to multiply and sell 77 NARO plant varieties including maize, beans, sorghum, rice, millet, and sunflower. Each license granted exclusive, semi-exclusive, or non-exclusive rights with respect to a particular variety; these rights are sometimes combined in one license.	13 varieties were licensed to eight companies, all with non-exclusive licenses, although all have expired.

⁸ Id.

⁹ Id.

2001, with only one issued since 2019.		
Nature of Rights Transferred		
KALRO's licenses transfer the right to produce, market, and sell formally registered KALRO varieties.	NARO's licenses transfer the rights to production, marketing, and selling based on use of a formally registered variety. Five of them give access to regional markets.	TARI's licenses transferred the right to produce, market, and sell formally registered TARI varieties.
PBR Versus Non-PBR Licenses		
KALRO's licenses are not based on plant breeders' rights (PBR).	NARO's licenses are not based on PBR.	TARI's licensing agreements were based on PBR.
Institutional Intellectual Property Policy		
- KALRO has an Intellectual Property (IP) Policy to guide the management of its technologies. - The IP Policy creates an IP management committee and office, detailing terms for exclusive and joint IP ownership, providing for capacity development on IP issues for KALRO staff, and describing IP protection for KALRO varieties and benefit sharing mechanisms. KALRO's IP Policy also includes a standard licensing agreement, which is a common practice.	- In December 2017, NARO approved an IP Policy to guide management of its IP, and Guidelines for IP Management were approved in March 2018. - The instruments create an IP Office and IP Management Committee, which were later established in 2020. They also include provisions on the roles of the IP Management Committee and IP office; institutional IP protection, commercialization, and inventory, coordination at the different NARO centers; IP disclosure; and risk management, and benefit sharing, among other issues.	TARI does not have an IP Policy, although it is mandated to have one under the TARI Act and Regulations.

1. KALRO's Licensing Approach

KALRO has been licensing its varieties since 2001 under several legal instruments.¹⁰ These include the Kenyan Seed and Plant Varieties (Amendment) Act, 2012 (No. 53 of 2012); the Seeds and Plant Varieties (Seeds) (Amendment) Regulations (L.N. No. 49 of 2009); the KALRO Act, 2013; the KALRO Strategic Plan, 2022-2026; and the KALRO IP Policy, 2019. KALRO's licensing approach has changed over the years. Before liberalization of the Kenyan seed industry

¹⁰ New Markets Lab and Syngenta Foundation for Sustainable Agriculture, "Licensing of Public Plant Varieties: The Case of KALRO," December 2022, Seeds2B Africa. Available at: <https://www.syngentafoundation.org/sites/g/files/kgtny976/files/media/document/2022/12/12/KALRO%20Licensing%20Report%20NML%20December%202022%20FINAL.pdf>. See also, New Markets Lab and Syngenta Foundation for Sustainable Agriculture, "Case Study on KALRO Model Plant Varieties Licensing Agreement," February 2020, Seeds2B Africa. Available at: https://www.syngentafoundation.org/sites/g/files/kgtny976/files/document/sites/g/files/zhg576/f/2020/04/15/kalro_model_licensing_agreement_case_study_20_feb_2020_.pdf.

in the mid-1990s, KALRO exclusively licensed varieties to Kenya Seed Company, which was a parastatal seed company. After liberalization of the seed sector, KALRO abandoned this model. In its 2005-2015 Strategic Plan, KALRO established the KALRO Seed Center with the mandate of promoting KALRO technologies and maximizing revenue. Licensing agreements presented a promising avenue for doing so and collecting royalties on publicly bred varieties.

KALRO has shown a preference for nonexclusive and nontransferable licenses, with exclusive licenses used only in very few instances.¹¹ Preference for nonexclusive licenses was based on KALRO's experience with seed companies that would obtain an exclusive license, only to keep the licensed variety off the market so that they could promote their own competing variety. KALRO then shifted to issuance of nonexclusive licenses, which inhibits monopolization over one variety by a single licensee and enables wider farmer access to the licensed variety. This KALRO licensing model and preference was embedded in its IP Policy, which was developed in 2019 after 18 years of licensing. KALRO's IP Policy defines its licensing approach and gives guidance on the management of licenses and KALRO's IP, including the type of licenses to be granted, procedures for application and granting of licenses, procedures for staff to declare developed technologies, access and benefit sharing, an institutional IP management framework, application for IP protection for the institution's technologies, and standard licensing agreement, among other issues.¹² Under its IP Policy, KALRO is moving towards IP-based licensing, which could attract higher royalties and garner greater confidence in the varieties licensed.

KALRO has licensed its varieties to a total of 110 seed companies, with only nine holding exclusive licenses, earning KALRO an average of USD 200,000 annually. Some licenses give companies rights to multiple varieties under a single license. In 2022, KALRO revealed that it had active licenses with 32 seed companies. KALRO has, however, expressed uncertainty regarding how many licenses are currently active due to institutional gaps in overseeing implementation. KALRO's licenses transfer the rights to production, marketing, and sales based on use of a formally registered variety, and they are not based on plant breeders' rights (PBR).¹³ In return, the licensee pays a royalty fee to KALRO, based on a percentage of gross annual sales.

Companies interested in obtaining licenses apply by writing a formal letter to KALRO's Director, attaching a seed merchant license, company incorporation documents, and brief company profile. Once KALRO receives a request, it engages its scientists to gauge whether the varieties requested are ready for commercialization. If they are, KALRO responds to the letter with its standard licensing agreement. The agreement has standard terms, but KALRO has some flexibility for negotiation on certain terms, for example, reporting. Once a license is issued, the licensee places an order for EGS (pre-basic or basic seed) with the KALRO Seed Center, the business unit of KALRO. The application for EGS must be made a season in advance, specifying the crop and

¹¹ Id.

¹² Id.

¹³ Id.

variety desired and showing proof of payment for half of the quantity requested and existence of a licensing agreement with KALRO. This is done to allow KALRO enough time and resources to produce the requested EGS. KALRO no longer supplies breeder seed to the licensee, due to prior experience of licensees not returning for more.

Capacity development on IP, including through securing adequate resources, is one of KALRO's obligations under its IP Policy and Strategic Plan of 2022-2026, but the institution is admittedly yet to achieve this objective. At the time of consultations, breeders in eleven KALRO centers had been trained on IP, with additional trainings for five more centers scheduled.

To improve awareness within industry of varieties available for licensing, KALRO conducts field days where it exhibits its varieties, and it has also compiled a catalogue of varieties, which is available on its website.

2. NARO's Licensing Approach

For a long time, NARO used memoranda of understanding (MoUs) to allow access, multiplication, and distribution of their varieties by third parties, including cooperatives and seed companies. In December 2017, NARO approved an IP Policy to guide management of its IP.¹⁴ The Policy creates an IP Management Committee (IPMC) and office.¹⁵ The IPMC, which was established in 2020, oversees the implementation of the NARO IP and commercialization policies. The IP and Commercialization Unit is the IPMC secretariat, which is tasked with daily IP management activities including IP scouting, IP protection through filings, patent drafting, and IP commercialization, among other things. The IPMC is made up of seven members, three of whom are not NARO affiliates or staff, and two of whom are women. It meets at least once every quarter of a financial year. The IP and Commercialization Unit has conducted physical IP workshops once a year at every NARO institute and has held specialized meetings with specific product development teams focused on their products. The IP Unit also offers virtual IP advisory services once a week every Tuesday.

In March 2018, NARO approved Guidelines for IP Management,¹⁶ which reiterate the provisions of the Policy and elaborate on the functions of the IPMC; IP coordination at the different public agricultural research institutions; IP protection, commercialization, and inventory; IP disclosure and risk management; sharing of IP royalties (60% to NARO and 40% to the research team); joint ownership of IP; access and benefit sharing; and dispute resolution, among other things.

After the institutional IP framework was put in place, NARO started to formally license its varieties. An interested company applies to the NARO director general detailing the varieties of

¹⁴ National Agricultural Research Organisation, Intellectual Property Policy, 2017. Available at: <https://www.firi.go.ug/other%20publications/NARO%20IP%20Policy.pdf>.

¹⁵ Clause 4.0 of the NARO IP Policy.

¹⁶ National Agricultural Research Organisation, Guidelines for Intellectual Property Management, March 2018. Available at: <https://www.firi.go.ug/other%20publications/NARO%20IP%20guidelines.pdf>.

interest with their NARO Varietal Identification Numbers (NVIN). The application must be accompanied by operation and production plans, a certificate of incorporation, and the Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF) seed trading certificate. The IPMC reviews the application, conducts due diligence, and negotiates with the licensee. The applicant then pays a commitment fee and signs a licensing agreement. NARO has reported that, although there is no online application system, seed companies may complete the process by email. Licensing agreement terms are developed through continuous engagement and negotiations between NARO and private sector seed companies. In December 2021, NARO issued a total of 13 licenses to 13 seed companies to multiply and sell 77 NARO plant varieties, including maize, beans, sorghum, rice, millet, and sunflower. Five of the seed companies were allowed access to regional markets.

The seed companies that had already marketed and commercialized NARO varieties before formal licensing were given exclusive licenses for those varieties so that they could continue to benefit from their investment in promoting those varieties in national and regional markets. Most companies, however, were given nonexclusive licenses. NARO also introduced another class of semi-exclusive licenses, with a maximum of four seed companies given access to a variety based on their market strengths within various regions in the country.

The other determinant of the type of licensing agreement is the nature of the variety. Exclusive and semi-exclusive licenses have been used for hybrid varieties, and non-exclusive licenses have been mainly used for open pollinated varieties (OPVs).

NARO's licenses are for a maximum of five years, subject to renewal. NARO rationalized that the preferred duration was because licensing is relatively new within NARO and there is a need for time to meaningfully assess performance of the licensing agreement, while also allowing the seed company optimal time to market the licensed variety.

Royalties are determined based on a designated amount of shillings per kilogram sold. A licensee is required to deposit UGX SHS 5,000,000 (approximately USD 1,400) at the signing of the agreement, from which the first royalty installment will be deducted. To determine the exact amount of royalties, the licensing agreement requires that companies file financial reports with NARO, with NARO authorized to have the reports audited at the cost of the company in case it suspects under reporting. December 2022 marked one year after NARO's first formal licensing began, and NARO reported that only one seed company paid its royalties on time. It also noted that this could have been because some companies already had stock of the licensed variety which needed to be depleted before the licenses could be implemented.

Once a licensing agreement is in place with NARO, the licensee can apply for EGS from NARO Holdings Ltd., the business unit of NARO. The application must be made one season in advance, with payment of a percentage of the price in order to allow NARO enough time to produce the seed. This is meant to streamline the process of EGS access, as breeders previously sold EGS to seed companies in their individual capacity instead of going through the official NARO channels. In April 2023, NARO implemented a provision on benefit sharing in its IP Management Guidelines

that provided monetary rewards to 30 scientists who were part of the research teams that developed licensed varieties. This was done to support innovation and gain breeders' faith in the licensing process, instead of transacting directly with seed companies.

The NARO IP and Commercialization Unit has put in place various measures to monitor the implementation of the provisions of the licensing agreement. The IP Unit, which is comprised of two senior officers, visits the licensed seed companies to monitor compliance with the licensing agreement, conducts market surveillance and consultations with agro-input dealers to assess seed prices and sales, and follows up with seed companies on submission of financial reports that guide NARO in determination of royalties.

NARO has noted that, moving forward, it is considering changing its licensing strategy to offering licenses to the highest bidder through the formal government procurement process. This means that NARO will only be able to offer exclusive and semi-exclusive licenses in the future. While this will undoubtedly have implications for smallholder farmer access to publicly-bred varieties, during consultations NARO highlighted that it could put in place measures under the licensing agreements to ensure that exclusivity would not inhibit farmer access and affordability of NARO varieties.

Notably, NARO's licensing agreements are not PBR-based. NARO noted that, while it sees value in plant variety protection (PVP) and is ready to have its technologies protected, the absence of a complete legal framework on PVP is a limiting factor.

Consultations revealed that NARO publishes calls for applications for licensing agreements through the Uganda Seed Traders' Association (USTA) to make the industry aware of the varieties that are available for licensing. While NARO admittedly noted that this might keep out other seed companies or farmers' cooperatives that are not associated with or members of USTA, this is a relatively new practice for NARO, and it is likely that other approaches could be adopted in the future. To build capacity on IP and licensing, NARO has been consulting with its breeders and the seed companies.

3. TARI's Licensing Approach

TARI had previously (2014) issued eight licenses to eight seed companies to produce, market, and commercialize 13 varieties. Unlike KALRO and NARO, these licenses were all based on PBR. However, all of these licenses expired in 2019 without TARI receiving any royalties. TARI is now in the process of resuming licensing and putting in place licensing structures that could ensure effectiveness for the next round of licensing.

C. Common Gaps and Challenges in NARES' Licensing Approaches

For the NARES in Africa that are engaging in licensing, there have been a few successes. Consultations revealed, however, that regardless of whether the public institution has a long track record with licensing, like KALRO, or is new to it, like NARO, they continue to face challenges,

ranging from institutional capacity gaps and administrative bureaucracies to uncoordinated licensing approaches and activities within the NARES and with CG Centers. These challenges inform and correspond to the modules in the sections below and the licensing options and trade-offs contained in this Guide for NARES:

1. [Knowledge of Licensing Components and Human Resources and Regulatory Gaps](#): Even in the countries that have a licensing structure in place, and especially in the those that do not, there are significant knowledge and human resource gaps around licensing. These include questions on what licenses do, how they can be structured, how PVP relates to licensing, and other issues. There are also legal and regulatory gaps that relate to licensing, including with respect to PVP. These are covered by Module 1 of this Guide and link with the Model Plant Variety License developed as a stand-alone tool.
2. [Gaps in the Institutional Structures for Licensing, Including Specialized Intellectual Property Management Framework](#): Most NARES lack a clear institutional structure to manage issuance and effective oversight of licenses, including unclear application procedures and licensing bureaucracies; limited coordination of licensing activities among different institutions' centers and units/departments; limited availability, poor quality and leakage of EGS; unstructured and limited follow-up on royalty payments; and absence of an updated variety licensing catalogue to inform the private sector of varieties available for licensing. All of this could be addressed under a comprehensive IA management policy, that not only covers protected properties but also other intellectual assets. Some NARES like NARO and KALRO have partly done this under their IP Policies, but it is important to consider these elements separately as well, as some NARES (e.g., KALRO) have built their institutional structures more incrementally. Module 2 will cover these institutional structures and link with the Draft Model IA Management Policy developed as a stand-alone tool for further discussion and validation.
3. [Competing Licensing Approaches Across CG Centers and NARES](#): Both CG Centers and NARES can be sources of public varieties for the private sector. While the main goal for both is to ensure that improved varieties reach the farmer as the ultimate beneficiary, the institutional path to reaching that goal may be different. This delicately co-dependent relationship between the NARES and CG Centers may be threatened by competing licensing approaches, with some companies obtaining CG Center varieties royalty free, while others pay royalties. In some cases, there is also uncertainty within the NARES regarding ownership and rights in varieties sourced from CG Centers, including whether NARES have the authority to license them to seed companies. Module 3 will cover the issues related to the relationship between NARES and CG Centers related to licensing and includes options on alignment of NARES' and CG Centers' licensing approaches, developed in close collaboration with SeedEqual partners. These options can be updated as approaches and practices evolve.

II. Module 1: Licensing Components and Regulation

The first step in developing a licensing approach is building the capacity and human resources to develop and design licenses. Adequate technical, financial, and human resource capacity is essential for the effective design and execution of licensing strategies. This includes developing well-structured agreement templates, setting clear benchmarks, and establishing transparent procedures for negotiating royalties and other revenue-generation mechanisms. Beyond royalties, revenue may also be generated through one-time licensing fees, recurrent fees (such as annual or milestone-based payments), and sales of EGS. Strong capacity is equally important for ensuring timely royalty collection, monitoring licensees' compliance with license terms, and assessing the ability to meet agreed performance standards. Knowledge of licensing approaches and options could support the NARES as they increasingly look to negotiating licenses, particularly so that they can craft terms favorable to their mission and the public good and reduce monitoring and implementation burdens. Stakeholder consultations revealed that limited human resource capacity and knowledge gaps are among the main challenges to licensing within the NARES.

Due to the importance of capacity building on licensing and IP, the digital knowledge platform under development by NML will focus on how to address specific needs of stakeholders, learning from the experiences of NARES like KALRO and NARO that have a licensing process underway, as well as other NARES stakeholders that are much less advanced in the development of licensing approaches. The digital knowledge tool will provide a readily available tool for capacity building on licensing and PVP, with the option for more tailored follow up upon request. These capacity-building tools, created under SeedEqual and housed in NML's digital learning lab, will be focused on options and alternatives in key areas, such as licensing agreement design and royalty-setting and collection, which have proven challenging for all NARES that undertake licensing. This will help facilitate implementation and reduce administrative burdens for the NARES.

This Module presents options for NARES that will help address knowledge and human resources capacity gaps. It is divided into eleven parts: (1) licensing and its regulation, including what a license is and how it is regulated; (2) key dimensions of a licensing agreement, including differences between licensing with and without PBR and considerations for NARES when choosing an approach; (3) key elements of a licensing agreement; (4) parties and key terms of a licensing agreement; (5) different types of licenses and considerations for NARES; (6) scope of rights that can be transferred under a licensing agreement; (7) different approaches for setting royalty payments and trade-offs NARES should consider in determining the most suitable approach; (8) length of a licensing agreement; (9) termination; (10) mechanisms for dispute resolution; and (11) other key issues the NARES should consider when designing licensing systems, including reporting mechanisms, flexible and inclusive clauses that could facilitate wider access to the public varieties, and compulsory licenses.

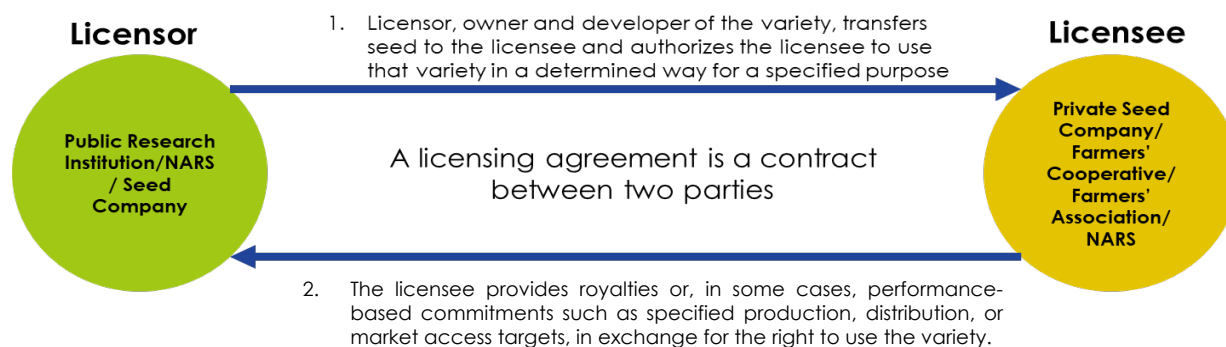
Part I: Licensing and its Regulation

Consultations in Kenya, Uganda, and Tanzania related to development of this Guide revealed that, in general, there is limited understanding of licensing agreements and PBR, both among the public breeders and the seed industry. For instance, some breeders and seed companies considered the need for PBR and licensing to be very low, given that NARES develop public goods. Some breeders were unsure of how licensing or PBR are connected to seed rules and were initially disinterested as a result. Moreover, there are several other relevant rules at the national level that may influence the nature of NARES' licensing approach, and there is a lack of awareness of these among most stakeholders, including licensing management teams within the NARES. To respond to these knowledge gaps, it is that important to address the first and critically important question regarding licensing: what is meant by “licensing” or “licensing agreement”?

1. What Is a Licensing Agreement?

In very simple terms, a licensing agreement is a contract. Like any contract, a licensing agreement formalizes a promise between parties, creating obligation(s) by a promisor to perform (or not perform) a particular duty in exchange for (or in consideration of) a promise, a performance, or a bargained forbearance. At its core, a plant variety licensing agreement transfers the rights to use (register, market, commercialize, etc.) a variety from the “licensor,” who in this case is the public breeding institution to the “licensee,” in this case an entity interested in access to said variety, generally in exchange for a royalty to the variety breeder or institution. This is illustrated in Figure 1 below.

Figure 1: Illustration of a Licensing Agreement



Source: © 2019, New Markets Lab

2. Regulation of a Licensing Agreement

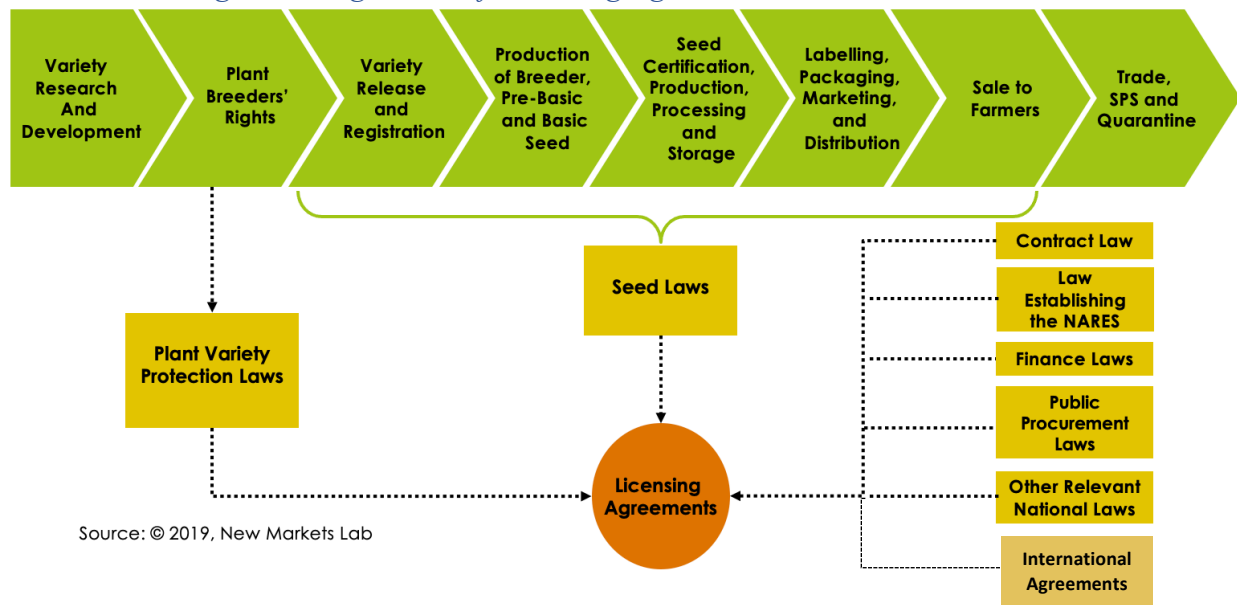
The design and specific terms, or parts of the licensing agreement depend upon the international, regional, and national legal frameworks that apply in a specific market. These rules can determine the nature of the agreement to be entered, the rights that can be transferred, and even the manner in which the parties deal with the material to be licensed. Understanding the relevant rules and regulations of a particular jurisdiction will thus be important for NARES as public research institutions when designing and enforcing licensing agreements. This section highlights key issues to consider when identifying regulatory frameworks relevant to licensing agreements.

In most countries, licensing agreements are governed by general contract law, although some countries have specific rules and regulations that directly relate to plant variety licensing, including laws and regulations governing the NARES. For instance, under the TARI Act and Regulations, TARI can only issue licenses for varieties that are protected under plant breeders' rights.¹⁷ In addition, laws on public finance will be directly applicable, as they will determine what happens with royalty payments (i.e., whether they go into the general budget or whether they can be earmarked for the NARES). In other countries, public procurement laws may apply, specifying how to apply for a license and the general criteria that must be met. For instance, consultations with NARO revealed its preferred future direction to offer licenses to the highest bidder, which is aligned with Uganda's public procurement rules.

Because licensing agreements are contracts, are usually governed by more general rules and regulations that cover contracts within a jurisdiction, as depicted in Figure 2 below.

¹⁷ Section 18(2) of the TARI Act, and Regulation 33 of the TARI Regulations.

Figure 2: Regulation of Licensing Agreements



- Licensing agreements are a vehicle to get public varieties to the market by creating a contractual relationship between public research institutions and private seed companies or farmer associations.
- They are regulated through contract law, sometimes seed laws, international agreements, and Plant Variety Protection Laws when applicable, and other times other country specific laws relevant to licensing, like NARES laws, finance laws, public procurement laws, etc.

The *common elements of a contract* in general are:

- There must be an **offer** reflected by an intention to create legal binding relations, which can be shown in the language used in the agreement. What is being offered for licensing by the public research institution should be clearly indicated in the licensing agreement by clearly identifying and defining the variety and the scope of rights that are being transferred to the private sector entity. This will be elaborated further below when looking at the key elements of a licensing agreement.
- There must be **acceptance** of terms of the offer by the licensee, in this case a private sector entity. Acceptance of terms also relates to the authority and capacity to enter in such agreement. The public research institution should, for instance, clearly identify the entity to which it is licensing, confirming legal establishment in the country in which the agreement will be enforced. It should also confirm that the person representing it has the authority to enter into the agreement and perhaps identify a point of contact for follow-up matters. The clear identification of the entity is key for the NARES, because it can otherwise create enforcement problems. Not every employee in a company can legally represent it or sign on contracts on its behalf, for instance.
- There must be some form of **consideration**, which is something of value that is exchanged between the parties to the contract. In licensing agreements by the NARES, this is often, though not necessarily, a royalty fee paid by a private sector entity in return for the right to

use a public variety. While royalties are a common form of consideration, some NARES and CGIAR Centers instead impose performance-based obligations, such as commitments to reach specific production, distribution, or market access targets. The role and structure of royalties, as well as alternative forms of consideration, are discussed in subsequent sections.

- d) Last, but not the least, the **legality** of the contract, meaning the terms should be consistent with the applicable rules and regulations and that the agreement must be binding upon the parties.

The element of legality is particularly broad, and national legislation often adds or defines other components, such as stipulations for when the agreement must be in writing, description who has contractual capacity, and how signature should be executed (whether in writing or electronic), among other things.

For licensing of varieties, legality can encompass assessment of other rules and regulations, depicted in Figure 2 below, including in particular:

- a) *Seed laws and regulations*, which regulate activities relevant to licensing, including varietal research and development, seed certification and quality assurance, registration of seed dealers, marketing, and commercialization, among others.
- b) *Laws on Plant Variety Protection (PVP) and Plant Breeders' Rights (PBR)*, which provide intellectual property to breeders and protect against infringement of rights for the protected variety. This particular aspect is discussed further in the next section.

Depending upon the scope of rights and activities being licensed, a public research institution could require in a licensing agreement that a private sector entity complies with the legal requirements relating to the activities relevant to the rights transferred. A provision to comply with legal requirements can protect the quality of the licensed products and provide the public research institution with limited liability in case the licensed private entity is found in breach by legal enforcers.

Most countries in Africa, for example, require that a variety be formally released and registered in a national catalogue as a prerequisite for its commercialization, and both variety registration and commercialization must follow legal requirements. Public institutions that develop new varieties could license these new varieties contingent on the obligation that the licensee will adhere to all relevant local legal and regulatory requirements, including those related to variety registration, seed quality assurance (including formal certification), storage, and labeling and packaging. The licensing agreement could spell out all the specific relevant laws with which the licensee should comply. The NARES may also contractually retain flexibility to amend the agreement in case elements are left out or new priorities arise after the license is in place.

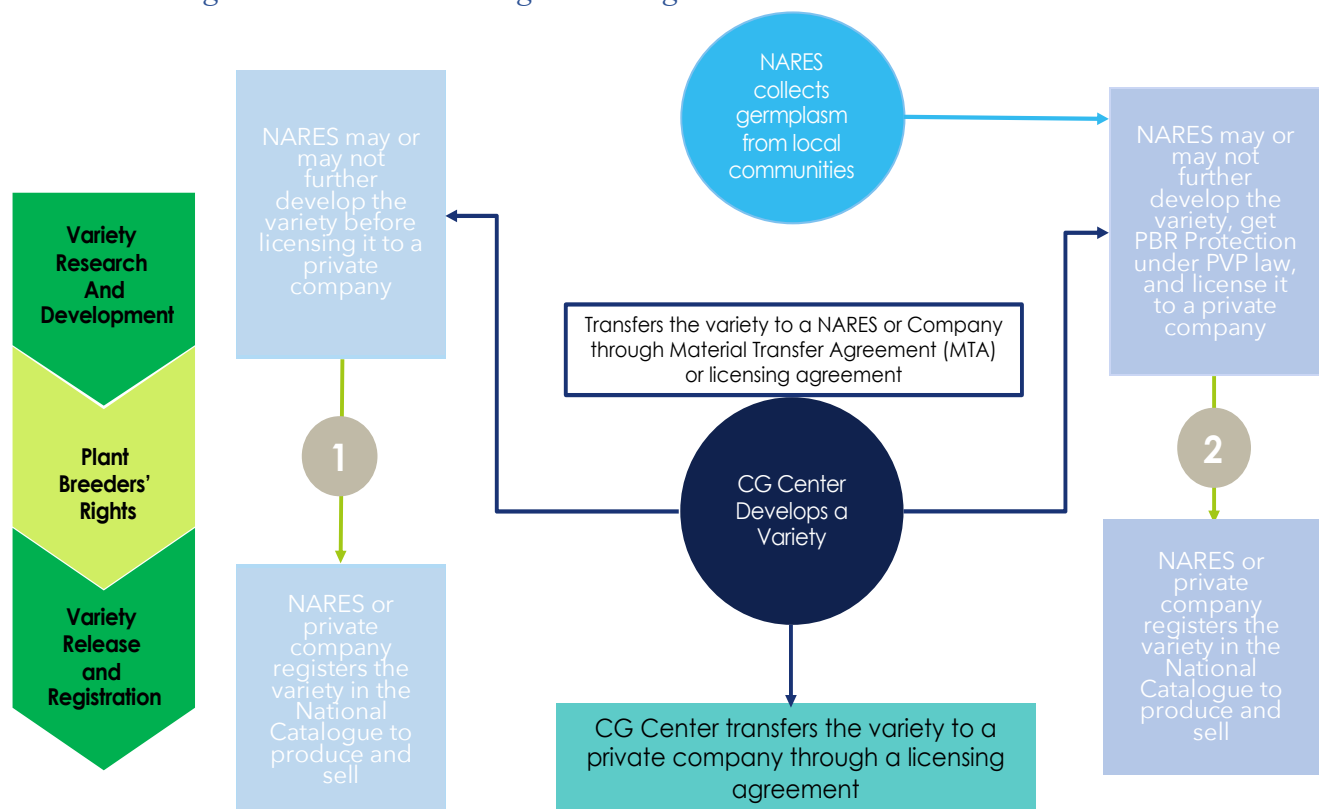
Part II: Scope of a Licensing Agreement

The scope of a licensing agreement is also a central factor in NARES' licensing approaches. As illustrated in Figure 3 below, there are two distinct approaches to licensing that NARES can explore, namely:

1. Licensing agreements to produce, commercialize, and sell a variety without PBR protection, and
2. Licensing agreements to produce, commercialize, and sell a variety with PBR protection.

Consultations revealed limited understanding of these two approaches, with some stakeholders insisting that licensing cannot happen without PBR, and others finding no relevance for protection of publicly-bred varieties. Although all the consulted NARES have conducted some trainings on IP and licensing for their staff and a few for the seed industry, most consulted stakeholders, including staff in the NARES were still unaware of key principles relating to PBR/PVP including application procedures, protection criteria, exceptions to protection, when and how to lodge objections, among others, and how PBR/PVP relates to licensing of public varieties. This part of the module discusses issues related to PBR/PVP and its relevance to NARES licensing, and considerations for issuing licenses either with BPR or not.

Figure 3: NARES Licensing Flow Diagram



Source: © 2023, New Markets Lab

1. Difference Between Licensing with or without PBR

As depicted in Figure 4 above, a public research institution could license its breeding material with or without PBR. PBRs are regulated and granted through specific laws, typically under PVP Laws and Regulations, which establish intellectual property for plant varieties, often influenced by international and regional agreements.¹⁸

At the international level, the World Trade Organization (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs Agreement), calls for a *sui generis* or special kind of protection for plant varieties,¹⁹ which is embedded in the International Convention for the Protection of New Varieties of Plants (UPOV Convention). The UPOV Convention has two versions, 1978 and 1991, and member countries have the option to adhere to either depending upon the scope of PBR they wish to allow in their jurisdictions, which has an impact on the rights that can be transferred in the licensing agreement.²⁰ The scope of rights under UPOV 1991 was expanded beyond commercialization, offering for sale, and marketing of a variety, adding importation, exportation, conditioning for the purpose of propagation, and stocking for the purpose of these activities.²¹

In sub-Saharan Africa, instruments relating to PBR at the regional level have been largely influenced by the UPOV Convention, including the Arusha Protocol for the Protection of New Varieties of Plants of the African Regional Intellectual Property Organization (ARIPO), the East African Community (EAC) Seed and Plant Varieties Bill, and the Annex on PVP of the African Organization of Intellectual Property (OAPI). Some of these instruments, like the Annex on PVP under OAPI, confer regional protection to a variety, which can expand the geographic territory in which the rights granted under a license can reach.

A few notable issues arise regarding PBR/PVP:

- Only the “breeder” is entitled to protection, and the variety is the subject matter of the protection. The breeder is the one who **bred, or discovered and developed** the variety, and the scope can include an institution that commissioned the breeder’s work. This means that not every researcher can apply for PVP. Individual breeders within the NARES may not have a right to claim PBR in their individual capacity, depending upon the rules the NARES has in place on ownership of developed technologies. Importantly, as discussed during consultations, an entity that conducts an evaluation of a received variety from a CG Center does not meet the definition of “breeder” under the PVP rules. This means that a

¹⁸ New Markets Lab, “Annotated Guide on Flexible Licensing Models and Agreements,” 2019. Seeds2B Africa and Syngenta Foundation for Sustainable Agriculture.

¹⁹ Article 27.3 (b) of the WTO TRIPS Agreement.

²⁰ Markets Lab, “Annotated Guide on Flexible Licensing Models and Agreements,” 2019. Seeds2B Africa and Syngenta Foundation for Sustainable Agriculture.

²¹ Id.

NARES that has merely evaluated a received variety for registration and release would not be eligible for PBR unless the relevant CG Center provides explicit, written authorization that it can apply for protection. This follows the principle that when materials have been transferred under the Standard Material Transfer Agreement (SMTA), which covers nearly all CGIAR germplasm, any application for IP protection will trigger the SMTA's benefit-sharing obligations, including potential monetary or non-monetary contributions to the international benefit-sharing system.

- There are **criteria** that must be met in order for PVP to be granted. The main one is that a plant variety must be **new or novel, and it must also be distinct, uniform, and stable (DUS)**. This means that not all varieties can be protected. Old varieties, for instance, cannot be protected in general, even if they are highly desired in the market, since they cannot meet the novelty requirement.
- PBR **does not vest automatically**, and breeders must claim PBR over the material they develop according to the rules of the applicable legal framework (typically national law) in the respective jurisdiction.
- PBR is **territorial**, meaning that it only applies in the jurisdiction in which it is claimed. The jurisdiction can be national or regional, depending upon the relevant legal instrument. In Africa, both OAPI and the EAC have, or are in the process of implementing, PVP regulations with regional scope, meaning that once PBR is granted in one country that is a member of the regional organization, these rights will be enforceable within the other countries in the region as well.
- PBR registration **comes with a cost**. A breeder must pay for registration in the respective jurisdiction, and, depending upon the applicable rules, there is a one-time cost for application and an additional recurring cost for maintenance of the registration. Failure to pay fees for the renewal of the registration could mean de-registration and loss of protection.
- PBR protection is only **for a specified period of time**, meaning that, after its term has elapsed, the protected variety goes back into the public domain. Protection is generally 25 years for trees and vines and 20 years for other crops, subject to extension in some jurisdictions.

More information on PVP criteria and conditions for protection, nature of varieties protected, exceptions to PBR, and other related issues can be found in the Explanatory Notes on the UPOV Convention, which can be accessed online.²²

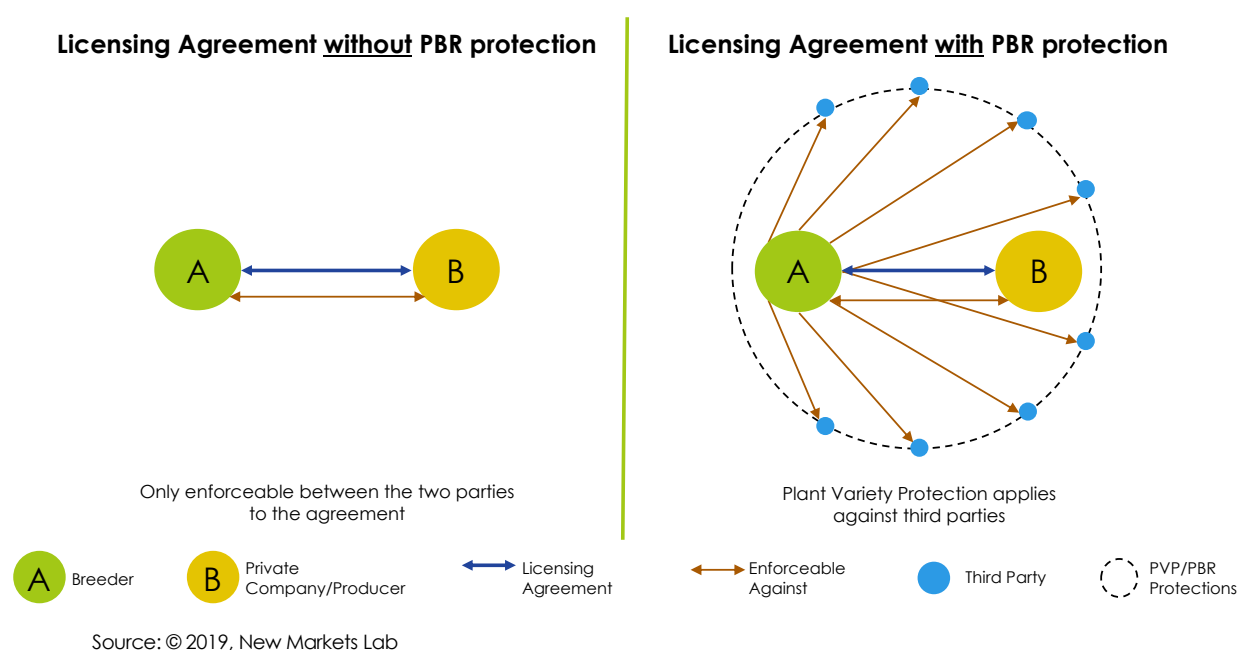
²² UPOV, "Explanatory Notes on the UPOV Convention", available at: https://www.upov.int/explanatory_notes/en/.

Entering into a licensing agreement based on PBR will have implications for some of the elements of the licensing agreement, in particular the scope of rights being transferred; however, it is important to reiterate that **IP protection is generally not a requirement for licensing agreements**.

As illustrated in Figure 4 below, entering into a licensing agreement when PBR protection has been claimed can add an extra layer of security for the breeder to enforce rights in the variety against any unauthorized use of the licensed variety. In case of a breach of the licensing agreement, the breeder will have recourse against the other party to the agreement under contract law and PVP law as well as any other actor under the PVP law.

When a licensing agreement is entered into without PBR protection, the breeder will only have recourse against the other party to the agreement under contract law and will not have any protection against any third party inappropriately using the licensed variety.

Figure 4: Difference Between PBR and Non-PBR based Licensing Agreements



When a variety is protected under PBR, the breeder holds a legally recognized bundle of exclusive rights, including the authority to produce, condition for propagation, market, offer for sale, export, import, and stock the variety. These rights are proprietary in nature and can be formally transferred—through sale or license—to another party, with enforceable remedies under a country’s PBR law in cases of infringement.. Without PBR protection, the breeder does not have statutory exclusivity over the IP of the variety itself but may still grant licenses to use certain associated rights or assets. These may include the right to commercialize a variety that is formally registered in the breeder’s name (where national laws require such registration for marketing) and

the transfer of know-how—such as technical knowledge, production protocols, or quality standards—needed to exploit the variety. In such cases, the enforceability of the license depends on contract law rather than IP law, meaning that the scope of control is narrower, remedies for unauthorized use are more limited, and protection is harder to maintain once the variety is in circulation.

Licensing agreements are not the only type of contract present in the seed value chain. Breeders can also enter into contracts to outsource the multiplication and certification of seed, outsource the distribution of seed, or transfer genetic material to other breeders to use and develop new varieties. While these agreements are not typically in the form of commercial licenses granting rights to market seed to end-users, they often contain licensing clauses—for example, authorizing the contractor or collaborating breeder to use the variety or genetic material for specific purposes under defined conditions.

When implemented effectively, PVP laws and regulations can support the interests of both the licensor and licensee by facilitating technology transfer, encouraging investment in the sector, and ensuring that improved varieties reach farmers and improve farmers livelihoods by providing the technology required for successful farming.²³ For both parties, PBR enhances the rights transferred under a licensing agreement, including the right to use, multiply, transfer, and commercialize seed. For the licensor, PBR provides an incentive for the development of new crop varieties by providing the legal framework for breeders to have an opportunity to profit from their breeding efforts and generate further incentives for investments in variety development.²⁴ PBR-based licenses can also create a more actionable right of enforcement in the market. In addition, licenses that transfer the right to use PBR may also fetch higher royalty payments. While PBR does not impact all provisions in a licensing agreement, different drafting approaches will apply to PBR-based licenses versus non-PBR-based licenses.²⁵

2. Considerations for Licensing with or without PBR

The choice to enter into a licensing agreement with or without PBR depends upon the applicable rules and the interests of the public research institution. It is notable that licensing under these two dimensions differs. Each transfers a different composition of rights and can be enforced differently. Public research institutions should consider the four options/considerations below.

²³ Malin Nilsson, “The In- and Out-Licensing of Plant Varieties,” *IP Handbook of Best Practices*, <http://www.iphandbook.org/handbook/ch11/p03/>, last visited July 14, 2019.

²⁴ Katrin Kuhlmann, “Plant Variety Registration and Licensing Agreements,” Presentation at AFSTA Congress Special Interest Groups Meeting on 5th March 2019. *See also*, New Markets Lab, Legal Guide to Strengthen Tanzania’s Seed and Input Markets, 2016. Available at: https://docs.wixstatic.com/ugd/7cb5a0_1f412c57810140ee8fcfbf96a402ea83.pdf.

²⁵ *See*, New Markets Lab, “Case Study on KALRO Model Plant Varieties Licensing Agreement,” Syngenta Foundation for Sustainable Agriculture and New Markets Lab, 2019, publication forthcoming.

a. PVP as a Mandatory Legal Requirement for the NARES

Legality of a contract is at the core of an enforceable licensing agreement. As a public research institution considers whether to license with or without PBR, it should check whether licensing with PBR is a mandatory requirement under national law. In Tanzania, for instance, TARI is mandated under the TARI Act of 2014 and recent 2023 regulations to only license its technologies if they are protected.²⁶ This means that even if a variety is in high demand in the market but is not protected, TARI cannot offer licenses. Notably, this heavily restricts the scope of varieties that can be licensed by a NARES, and a more flexible regulatory approach could be considered in order to use licensing as a tool to improve adoption and commercialization of public varieties.

b. Conformity with PVP Protection Criteria

In considering whether to obtain PBR, the NARES should consider the implications of PBR protection, including that need to meet specific criteria in order for a variety to be protected and the fact that PVP registration comes with costs. In considering whether to license with or without PBR, a public research institution must assess whether the variety can be protected to begin with, and, if so, whether it can afford to pay the costs for registration and maintenance of the variety on the PVP Register. Some varieties are too old to be protected, meaning that they cannot meet the novelty requirement for PBR, or their parent material may be lost and untraceable, so the DUS requirement cannot be met.

In the focus countries, the maintenance fee for PVP registration averages USD 200 per variety. Considering that NARES may develop many varieties, careful consideration should be given in determining which should be protected, considering the cost attached to each and the consequence(s) of nonpayment. Consultations revealed, for instance, that while TARI is mandated to protect the varieties it intends to license, it could only afford to protect 84 of its over 500 varieties (approximately 17 percent).

When resources are limited, which is generally the case with NARES, claiming PVP should be considered for only those varieties that have high market viability, meaning they could be easily licensed to the private sector due to their demand in the market. The royalties collected from the licenses could be funneled back into payment for maintenance of registration on the PVP Register.

²⁶ Section 18(2) of the TARI Act, and Regulation 33 of the TARI Regulations.

c. Cost-Benefit Assessment

Historically, it has not been a common practice among NARES and CG Centers to claim PBR over their varieties, as the outputs of their breeding programs are generally intended to serve the public good. An additional factor is the governance framework established under the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), which covers much of the germplasm used within CGIAR–NARES breeding networks. Under this framework, germplasm is typically exchanged using the SMTA, and applying IP protection to such material will, in most cases, trigger the SMTA’s benefit-sharing obligations. These considerations—both the public-good mandate and the treaty-based benefit-sharing requirements—have contributed to the limited use of PBR claims in these contexts. Most licensing by NARES and CG Centers has not been based on PBR as a result. This is changing, however, and NARES are now claiming PBR for publicly-bred varieties for various reasons. For instance, after over two decades of licensing without PBR, KALRO has applied for PBR for eight of its new hybrid maize varieties.

The benefits of PBR for the NARES include assertion of ownership by the public research institution, traceability and quality control of the variety traceable, and identifiability by the public. PBR could prevent misuse of a variety, as the public research institution can enforce its rights in case of unauthorized use, as indicated in Figure 4 above. This is also directly related to prevention of baseless and unfair claims of rights by any other entity or individual. Stakeholder consultations revealed, for instance, that, due to limited coordination in some NARES centers, some individual breeders in the institutions had claimed PBR for the varieties to which they contributed research, even though legally the NARES is the rightful “breeder” to claim those rights.

Licensing agreements that are subject to PBR also tend to fetch higher royalties. Private seed companies noted during consultations that they preferred that licensing agreements contain an extra layer of security against third party infringement so that they would have additional enforcement recourse in case of counterfeiting of licensed products or unauthorized use, even if this came with higher royalties.

d. Legal Framework for PVP/PBR

In order for a public research institution to explore licensing with PBR, there has to be a relevant legal framework in place. Where this is not in place or is incomplete, PBR protection is not possible, nor is licensing with PBR by extension. In Uganda, for instance, while NARO wants to issue PBR-based licenses, it cannot protect its varieties, because the regulatory framework is incomplete. While Uganda has had a PVP Act in place since 2014, its system lacks implementing regulations.

It is not just a matter of a PVP legal framework, however. The system must also be enforceable and effective in providing protection in practice. Consultations revealed, for instance, that while the PVP legal framework is complete in Kenya, it lacks enforcement, with very lenient punishments and fines of under USD 30, alongside bureaucratic enforcement procedures. For seed companies and KALRO alike, PBR often does not make financial sense in this context, where higher royalty rates and annual PVP maintenance fees may not be justifiable when penalties for infringement are negligible.

PART III: Key Elements of a Licensing Agreement

The scope and terms of the licensing agreement are at the discretion of the parties, but a public research institution should generally consider its mandate when negotiating any agreement with a private sector entity. The public research institution could adopt a “model” licensing agreement that represents its interests, occasionally tailoring it to circumstances relevant to the variety being licensed, market characteristics, and/or the specific needs of the parties. Regardless of the type of license preferred by the public research institution, licensing agreements include common elements that can be tailored or adapted depending upon the situation.

Common licensing elements include:

- Definition of parties to the agreement, their goals, and key terms to facilitate the interpretation of the agreement;
- Type of license being granted, including any limitations in terms of territory, duration, or field of use;
- Scope of the rights being transferred and whether they are exclusive or non-exclusive;
- Royalties or other forms of remuneration and modalities for their collection;
- Causes for termination of the agreement and dispute resolution in the event of conflict; and
- Other provisions that are considered useful, such as smallholder-friendly clauses and provisions focused on gender, and flow-down terms and conditions related to any parent licensing agreements or licenses related to 3rd-party background IP.

The sections that follow explain these common elements and describe options and trade-offs for choosing different approaches. The Model Licensing Agreement includes all of these elements and provides sample provisions for each approach that could be used in NARES licensing agreements.

PART IV: Definition of Parties to the Agreement, Goals, and Key Terms, to Facilitate the Interpretation of the Agreement

The definition of key terms in a licensing agreement is important to interpretation of the agreement and can affect aspects of the scope of rights transferred and their enforcement. The public licensing agreement should thus be carefully designed to define key terms, especially because in the case of a conflict or dispute that arises during enforcement of the agreement, the definitions will be used as guidance to gain clarity by the parties and the relevant conflict resolution authority.

Under most countries' contract laws, the parties to an agreement have a high level of freedom to define as many terms as they deem appropriate, so there is no minimum or standard set of definitions that should be included or terms that should be specifically defined. However, for clarity of the intention of parties, the public research institution could consider defining certain terms so there is no confusion or claim of ambiguity by the licensee.

1. Parties and Their Goals

The public research institution will need to clearly identify to whom it is offering a license and how to preserve goals as a public research institution. The institution and its goals and objectives for entering into a licensing agreement should always be clearly defined. From the outset, the licensing agreement should state that the NARES is entering into the agreement in the public interest, as serving the public good is the core mandate of public breeding institutions.

As the breeder of the variety offered for licensing, the NARES should clearly identify itself as the **licensor**. It is important that the right person with proper authority from the NARES be the signatory, or the licensing agreement will be null and void. Determination of who can legally represent the NARES can depend upon its structure and legal instruments. For instance, the breeder who developed the variety within the NARES does not necessarily imply the authority to license the material either on your behalf or on behalf of the institution.

The entity authorized to multiply and commercialize (or otherwise use) the variety covered under the agreement should be clearly identified as the **licensee**. The clear identification of this entity is key for the NARES, because lack of clarity could create enforcement problems. The NARES should, for instance, make sure the licensed entity is legally recognized by confirming its status in the country in which the agreement will be enforced. Contact details should also be clear and kept up to date. This is important in the event the NARES would like to communicate with the licensee, perhaps if there is delayed payment of royalties. Equally, proper representation of the licensee is key, as not every employee in a company can legally represent it or sign on contracts on its behalf.

A typical provision identifying the parties to the agreement and establishing the points of contact for each could look like the text contained in the Sample Provision in Figure 5 below.

Figure 5: Sample Provisions Establishing the Parties to the Agreement and their Points of Contact

This Agreement is entered into between [**Name of the Variety Developer/ Public Research Institution**], a Public Research Institution established or incorporated under the laws of [**Country**] and having its registered offices at [address] (hereinafter referred to as "**Licensor**"), and [**Name of the Company/Farmers' Association**], a company established under the laws of [**Country**] and having its registered office in [address] (hereinafter the Licensee).

WHEREAS the Licensor has performed research and developed a new [common name of crop] variety that [novel aspects of the variety and further description of the variety];

WHEREAS the Licensor has the proprietary rights to the above-described variety, parental lines, and/or populations;

WHEREAS the Licensor desires, in the public interest, that this [common name of crop] variety be propagated for distribution so that its benefits are readily available to the public in the shortest time possible;

WHEREAS the Licensee is desirous of acquiring and formalizing a written license from the Licensor to undertake the certified seed production, marketing and sale of seed [description of other uses] of the above stated plant variety listed herein, and

NOW THEREFORE, the parties hereto agree as follows:

.....

The Point of Contact for the Licensor will be:

NAME:

POSITION:

PHONE:

EMAIL ADDRESS:

PHYSICAL ADDRESS:

The Point of Contact for the Licensee will be:

NAME:

POSITION:

PHONE:

EMAIL ADDRESS:

PHYSICAL ADDRESS:

Who is the Right Licensee?

In line with the mandate as a public research institution, the NARES should carefully determine who the right licensee is to drive forward its interest of getting the variety out to the most farmers in the shortest timeframe and with the right quality and quantity. The public research institution should assess the potential of the licensee to perform the activities stipulated in the license. Where the licensee is to produce or multiply seed, the licensing institution should confirm that the licensee has enough land for production and access to facilities for processing and storage, along with qualified personnel. Where the licensee is to commercialize the variety, the public research institution could first assess the licensee's market reach before offering it a license. It would, for instance, not achieve the public institution's licensing objectives to offer a company a regional

license spanning various countries if the potential licensee does not have such reach. Consultations revealed that the IPMC in NARO conducts field inspections to confirm whether the prospective licensee has the capacity to commercialize the variety.

The licensee is usually a private seed company, but it could also be a seed trade association or NGO. Entering into licensing agreements with farmer associations could be beneficial to advancing the goals of public research institutions, because farmers are the target of the public breeding and research.

2. Definitions of Key Licensing Terms

Depending on the licensing agreement, there are several key terms that a public research institution should consider defining. Of particular importance is the value basis on which royalty payments will be calculated. This could be expressed as a percentage of a defined sales figure, such as gross sales or a net sales figure with specific cost elements deducted, or as a fixed rate in a specified currency (e.g., USD) per standardized unit (such as a bag of seed or a kilogram). In each case, the terms used (e.g., “gross sales,” “net sales,” or “unit”) must be clearly defined to avoid ambiguity and disputes.

Other definitions that may be significant include:

- “Licensed Product or Material” could set the scope of the licensee’s rights in the variety licensed;
- “Variety” licensed should be clearly described;
- “Rights” would define the acts that the licensee is restricted to doing with the licensed variety; and
- “Territory” would set the jurisdiction of application of the agreement, among others.

A PBR-based licensing agreement could have additional definition of key terms, such as what constitutes “intellectual property” and “plant variety protection” in the licensed variety.

A set of sample definitions provisions are contained in Figure 6 below, with general terms that are usually included in non-PBR and PBR based licenses. This list is illustrative, and the parties to the agreement could always modify and add to definitions as they consider it appropriate.

Figure 6: Sample Provisions Defining Key Terms in a Non-PBR Versus PBR-Based License

Non-PBR Based License	PBR-Based License
GROSS SALES means income at invoice values received for LICENSED PRODUCTS over a given period of time. LICENSED MATERIAL means all forms of living and non-living biological material including without limitation strains, clones, plants, parts of plants, cultivars, germplasm, and genetic material provided by Licensor to Licensee under this agreement. LICENSED PRODUCT means the crop or crops or any parts of the VARIETIES or TRIAL VARIETIES as defined in this provision. RIGHTS shall mean plant variety rights to the Varieties in the Territory. TERRITORY shall mean Country X and any such countries listed in the Schedule X as amended from time to time by mutual written agreement. VARIETY (and VARIETIES) shall mean [list of varieties and their description].	GROSS SALES means income at invoice values received for LICENSED PRODUCTS over a given period of time. INTELLECTUAL PROPERTY means the patents, copyrights, trademarks, design rights, data protection rights and any other rights for inventions, improvements, designs, and intellectual property rights. LICENSED MATERIAL means all forms of living and non-living biological material including without limitation strains, clones, plants, parts of plants, cultivars, germplasm, and genetic material provided by Licensor to Licensee under this agreement. LICENSED PRODUCT means the crop or crops or any parts of the VARIETIES or TRIAL VARIETIES as defined in this provision. PVP MEANS PLANT VARIETY PROTECTION; the protection of varieties as a form of exclusive ownership and use rights determined based on novelty, distinctness, uniformity, and stability of the Plant Material. RIGHTS shall mean plant variety rights to the Varieties in the Territory. TERRITORY shall mean Country X and any such countries listed in the Schedule X as amended from time to time by mutual written agreement. VARIETY (and VARIETIES) shall mean [list of varieties and their description].

Part V: Type of License

After defining the parties to the agreement and useful terms for its interpretation, the public research institution needs to decide which type of license will best suit public needs. The type of license into which the NARES enters is central to achieving its public good mandate. There are three main types of licenses that a public research institution could consider: (1) an exclusive license, (2) a non-exclusive license, and (3) a limited or semi-exclusive license.

1. Exclusive Licenses

Under an exclusive license, the NARES grant the licensee the sole or exclusive right to use and market a particular variety. These kinds of licenses are most preferred by private sector entities, because they allow them a market monopoly over the licensed variety, enabling the licensee to control supply, pricing, and branding. The private sector entity has a direct incentive to invest in market development for the variety, as it alone captures the benefits of any resulting market expansion. Exclusivity also limits the licensee's exposure to reputational risk, particularly in jurisdictions where seed regulations restrict differentiation of packaging for the same variety. In non-exclusive arrangements, any quality defect in seed supplied by one licensee may adversely affect the perceived quality of the variety in the marketplace, regardless of the producing entity.

By conferring exclusive rights, the licensor ensures that brand reputation for the variety is tied solely to the licensee's quality assurance and performance.

The exclusivity typically allows the licensor to negotiate higher royalty rates per unit sold. However, evidence from some studies suggests that the total royalty revenue to the licensor is often lower than under non-exclusive licensing, largely because exclusivity tends to limit overall market penetration compared to multiple-licensee arrangements. This exclusivity typically allows the licensor to negotiate higher royalty rates per unit sold for²⁷ on market size and penetration.^[66] In contrast, non-exclusive licensing generally broadens market reach, resulting in higher total sales volumes across all licensees, but each individual licensee²⁸ sell less, often at a lower royalty rate.²⁹

These types of licenses are not commonly issued by NARES. For instance, KALRO has only issued one exclusive license since 2019, NARO has issued five exclusive licenses, and TARI has not issued any exclusive licenses. In situations in which the licensee is being granted rights to pursue varietal registration, exclusivity is generally required, as only one entity can register a given variety within a country. While such arrangements are relatively rare for NARES—particularly within their own jurisdictions—they are more common for CGIAR Centers, which often license varieties for registration in multiple countries.

2. Non-Exclusive Licenses

A non-exclusive license allows the NARES to freely enter into another agreement with another entity to use the same variety. With multiple non-exclusive agreements for one variety, there is potential for higher market penetration of the licensed public variety, since more licensees would be commercializing the seed in the market. This would also mean that the public research institution could earn more royalties with multiple paying licensees and greater market reach. This type of licensing agreement is most preferred by the NARES for these reasons. KALRO is an example of a NARES that follows a non-exclusive licensing model.³⁰ This type of license may not be preferred by the private sector, however, because it results in more competition for the same variety. It can also heighten reputational risks in markets where multiple companies sell seed of

²⁷ New Markets Lab, “Case Study on KALRO Model Plant Varieties Licensing Agreement” Washington, DC: New Markets Lab, 2020. https://newmarketslab.org/assets/case_studies/6.pdf. See also, Stephan Marette and David Zilberman, “Market Organization and Exclusive Licensing of Agricultural Innovations.” Paper presented at the Allied Social Science Associations Annual Meeting, Chicago, January 6–8, 2017. <https://www.acaweb.org/conference/2017/preliminary/paper/FHSThrF3>. See also, Hall, Aaron. “Structuring Exclusive vs Non-Exclusive IP Licensing Agreements.” Aaron Hall, Attorney at Law, July 1, 2022. <https://aaronhall.com/structuring-exclusive-vs-non-exclusive-ip-licensing-agreements/>.

²⁹ Id.

³⁰ See New Markets Lab, “Case Study on KALRO Model Plant Varieties Licensing Agreement,” Syngenta Foundation for Sustainable Agriculture and New Markets Lab, 2019.

the same variety. In especially countries with strict packaging uniformity rules, any quality or performance issue linked to one licensee’s seed can negatively affect farmers’ perceptions of the variety as a whole. In such cases, even licensees who maintain high quality standards may suffer reputational harm and reduced sales due to problems caused by competitors marketing the same variety.

3. Limited/Semi-Exclusive Licenses

The semi-exclusive license strikes a balance between exclusive and non-exclusive licenses by limiting the scope of the exclusivity of the rights conferred in the licensing agreement in certain ways. The NARES could limit the rights granted under a license to a certain territory or duration, or they could simply limit the number of licensees with rights in the same variety.

Figure 7 below contains sample provisions on exclusive, non-exclusive, and semi-exclusive licenses.

Figure 7: Sample Provisions on Type of License Granted

Exclusive License	Non-Exclusive License	Limited Exclusive License
LICENSOR grants to the LICENSEE the exclusive and [non] transferable right to produce, market and sell seed of the following crop variety(ies) in [Insert Territory] .	LICENSOR grants to the LICENSEE the non-exclusive and [non] transferable right to produce, market and sell seed of the following crop variety(ies) in [Insert Territory] . The licensor remains free to exploit the same IP and allow any number of other licensees to exploit the same.	LICENSOR grants to the LICENSEE the exclusive and [non] transferable right to produce, market and sell seed of the following crop variety(ies) in [Insert Territory] for a period of [insert time limit] . Or Limitation on Number of Licenses The Licensor agrees that, during the Term of this Agreement, it will not grant more than [X] non-exclusive licenses for [Variety Name] in the Territory under terms materially similar to those granted to the Licensee.

a) Which Type of License Best Suits the NARES’ Interests?

Many public institutions have opted to use non-exclusive licenses to uphold their public mandate to make varieties available to farmers and other users. Exclusive licenses are sometimes viewed as contrary to the public mandate, with concern that sometimes a seed company might use a licensing agreement as a way of taking a public variety off the market that competes with its own varieties, withholding or “shelving” it rather than commercializing it. In this case, an exclusive licensing agreement may include a “use it or lose it” clause, which serves as a safeguard for public breeding institutions. This clause allows the licensor to terminate or convert an exclusive license to a non-exclusive license if the licensee fails to meet clearly defined and measurable milestones,

such as production volumes, market coverage, or sales targets, within specified timeframes. By linking license retention to demonstrable performance or measurable milestones, the clause ensures that varieties are actively marketed and that public breeding outputs reach farmers in a timely manner.

The determination of exclusivity could also depend upon the capacity of the licensee and the nature of the crop variety. NARES could consider flexibility when issuing an exclusive license whereby depending upon whether the licensee has the capacity to disseminate the variety to the public. This might most directly apply when the variety is a hybrid and the licensee would have to invest in the maintenance of parental lines and marketing of the variety. In Uganda, NARO offered exclusive licenses to a large seed company with a wide market reach, which was already using the hybrid variety and had heavily invested in its marketing.

b) Territorial Exclusivity

The definition of territory in the licensing agreement is particularly important, because it will indicate the jurisdiction in which the licensed variety can be registered, marketed, commercialized, protected, and/or sold by the licensee. The jurisdiction could be the location of the NARES, for example, but it could also be the jurisdiction of the place in which the commercialization will take place. It could be a country, a territory within a country, or a region. If the license is limited to a territory, the private entity would have the right to produce, market, and/or commercialize the variety in the licensed jurisdiction but would be precluded from doing so in any other territories.³¹

NARES often grant licenses for a particular country, but they could also consider an expanded scope of the licensing agreement to include regional and continental coverage depending upon the existing regional or continental rules and what would be in the public interest. Regional and continental licenses could fetch more royalties for the NARES, considering that the licensee would be authorized to commercialize the variety in a wider market; however, just as at the national level, the licensor must determine whether the licensee has the capacity to commercialize the variety within a territory.

The NARES could also consider a wider territory where the applicable PVP rules afford regional protection, such as under Annex X of Bangui Agreement establishing OAPI and as proposed under the EAC Seed Bill.³² For instance, the Senegalese Agricultural Research Institute (ISRA) in Senegal has some of its varieties protected under OAPI, which gives them regional protection.³³

³¹ New Markets Lab, Annotated Guide on Flexible Licensing Models and Agreements, 2019. Seeds2B African and Syngenta Foundation for Sustainable Agriculture.

³² Id.

³³ Katrin Kuhlmann, Adron Nalinya Naggayi and Camille Renou, Report on Capacity Building and Licensing Needs Assessment in Malawi, Mali, Senegal, and Uganda, 2022, New Markets Lab and Syngenta Foundation for Sustainable Agriculture. Available at: https://www.syngentafoundation.org/sites/g/files/kgtn976/files/document/sites/g/files/zhg576/f/2022/05/22/licensing_report_pastta_nml_19_may_2022.pdf.

This protection, however, was lost due to nonpayment of maintenance fees before ISRA could license them to the private sector.

The NARES could also consider expansion of the licensing territory where there are regional seed rules that allow for commercialization of a regionally registered variety within the respective region. For instance, for regional economic communities (RECs) like the Common Market for Eastern and Southern Africa (COMESA), Southern African Development Community (SADC), and Economic Community of West African States (ECOWAS), which have regional variety catalogues, this would be an important consideration.

NARO in Uganda gave a license to a seed company to register its varieties in the COMESA Variety Catalogue. The granting of a regional jurisdictional license like this would mean that, unless otherwise restricted in the licensing agreement, the licensed company could have access to all of the 21 COMESA countries' seed markets.

Regarding the definition of the territory, the NARES should consider its mechanisms and capacity to oversee the implementation of the licensing agreement in the stated jurisdiction. For instance, when the territory is restricted to a state or region within the country, the NARES could consider approaches that could prevent spillover of licensed materials to other regions.

c) Duration

Another way for NARES to limit the scope and exclusivity of a license is through the duration of the agreement and/or the period of exclusivity. Parties to licensing agreements have absolute freedom to determine the duration of the agreement, which can be very important. Negotiating a very lengthy agreement could give a seed company the opportunity to establish continuity and presence in a local market; however, a long duration could also be problematic if the licensing agreement is not yielding the desired results for the public breeding institution. If there is no demand for the variety or the seed company is using the licensing agreement to keep a variety out of the market as noted above, entering into a very long agreement could present challenges. One way to resolve this issue would be to have shorter agreements with an option for renewal based on review of contract performance. This format could also give the parties the opportunity to renegotiate the terms of the agreement periodically. A license may also be granted on an exclusive basis for an initial term, after which it automatically converts to a non-exclusive license, allowing the licensor to work with additional partners while maintaining the original licensee's rights. Long-term licensing agreements usually leave no room for the NARES to renegotiate royalty fees, even with a change in market situation.

d) Number of Licensees within a Semi-exclusive Licensing Model

Consultations revealed a rather unique approach to determination of semi-exclusivity, whereby the NARES limit the number of licensees that can use a single variety. For example, in Uganda, NARO issues semi-exclusive licenses to four licensees only. NARO mentioned that this kind of semi-exclusivity is not set in stone and that the particular number was arrived at in consultation with seed industry stakeholders. NARO assessed the market strengths of the licensees and issued the semi-exclusive license based on the regions of the country in which the company had a strong presence. This was designed to make the variety accessible to farmers without necessarily creating strong competition for the interested seed company. NARO mentioned that, moving forward, semi-exclusive licenses would be offered to the first four highest best bidders on a first-come, first-served basis.

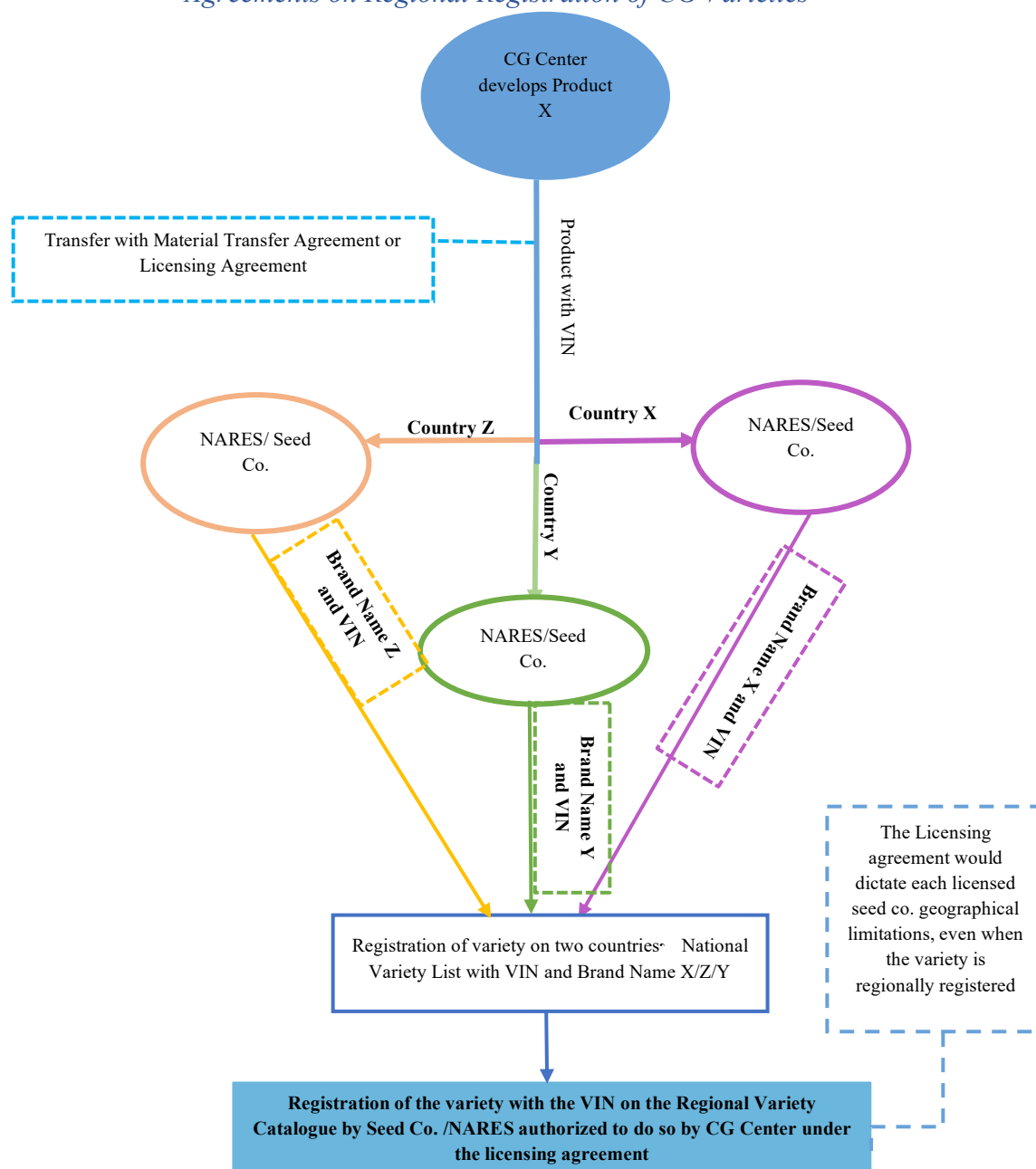
e) License for Varieties Sourced from CG Centers or Developed with Other Partners

NARES should also be mindful of how their licensing policies align with those of the CG Centers and research collaborative partners. This is especially important for varieties sourced from CG Centers shared with NARES under Material Transfer Agreements (MTAs) or licensed to other seed companies in other countries. NARES should keep in consultation with CG Center partners regarding the nature of licenses that best reflect the nature of material received from the CG or that has been developed in partnership with other institutions. In most cases, there are separate prior agreements that already determine how the NARES should deal with the material received or developed in partnership with another entity, and NARES should always consult these ahead of developing new licensing arrangements. For instance, consultations revealed that under the Water Efficient Maize for Africa (WEMA) project in partnership with the International Maize and Wheat Improvement Center (CIMMYT) and African Agricultural Technology Foundation (AATF), the NARES were not allowed to license developed varieties for a royalty, with KALRO stopped when it attempted to do so.

The same principle applies to instances in which the NARES would desire to expand the licensing territory through registration of the variety in a regional variety catalogue or under regional PBR. If the variety in question was sourced from a CG Center or developed in partnership with another institution, then the NARES should first consult with that institution. Some RECs like COMESA and SADC require national varietal registration in at least two member countries prior to regional registration (the second of these is expedited). The CG Center could have already given authorization to regionally market and register the same variety to other institutions and companies in other countries in the region, which may complicate efforts to register the variety regionally since it would require collaboration between two or more of the licensees within the region. Further, even if regional registration is achieved, regional marketing efforts may be limited by those prior licenses. In Figure 8 below, NML illustrates that the CG Center could share the same variety with NARES and seed companies in different countries, but its registration on a regional seed catalogue and use in the different territories will depend on the agreements that the CG Center

has with each individual party. RECs and CG Centers are currently exploring the use of variety identification numbers to trace CG Center varieties and their use in the respective countries and regions. The NARES should be mindful of these and other developments related to licensing with the CG.

Figure 8: New Markets Lab Regulatory Systems Map on the Effect of Licensing Agreements on Regional Registration of CG Varieties



Source: New Markets Lab, Legal Review and Analysis of the Implementation of the Variety Identification Number at the National and Regional Levels, Alliance for a Green Revolution in Africa and Common Market for Eastern and Southern Africa, 2022.

Similar considerations would apply to regional PBR. More specifically, the NARES may not have the right to claim regional protection for a variety that the CG Center has shared with other NARES or seed companies in the same region (the NARES may also be restricted in claiming PBR for CG varieties more generally).

The process for how to license breeding material from another institution could be clearly stipulated in the NARES' Intellectual Assets Management Policy, in line with the licensing, intellectual assets, and PBR policies of the other institutions. The KALRO IP Policy, for instance, provides that there will only be joint interest in a variety if an agreement was negotiated with the

collaborating institution ahead of research or in cases in which a collaborator’s resources have been used. KALRO’s IP Policy provides for cost and benefit sharing in such cases, meaning that the collaborating institution could claim a share of the royalties KALRO earns from licensing the developed variety. In Uganda, the NARO IP Policy provides that NARO owns all IP arising from the collaborative research, unless otherwise stated in the collaborative agreement; however, it is important to ensure that this is aligned with the policies of the collaborating institutions.

Part VI: Scope of Rights Transferred

The scope of rights transferred under a licensing agreement is one of the more important aspects and will depend upon the actual terms used by the parties. The scope will have implications for the execution and enforcement of the agreement, so it should be carefully considered. When one of the primary objectives of a licensing agreement is to effectively market and commercialize public varieties, the scope should be properly tailored to reflect this objective.

Right to Register, Produce, Condition, Stock, Market, Sell, Export, Import, or Sub-license a Variety

Under a licensing agreement, a NARES could transfer the right to produce, condition, stock, market, sell/commercialize, export, import and/or sub-license a variety. NARES usually transfer the rights to produce, market, and commercialize a variety. This is the approach adopted by KALRO, NARO, and TARI. The sample provisions in Figure 9 below transfer the rights with respect to use of the licensed varieties.

Figure 9: Sample Provisions on Scope of Rights Transferred

Transfer of Commercialization Rights	Transfer of Registration Rights	Transfer of Rights to Sublicense
LICENSOR grants to the LICENSEE the [non]-exclusive and [non] transferable right to multiply, produce, sell, market, and commercialize seed of the following crop variety(ies) in [Insert Territory] ...	LICENSOR grants to the LICENSEE the exclusive and non-transferable right to register the following crop variety(ies) into the national the [national or regional catalogue] of [Insert Territory] ...	LICENSOR grants to the LICENSEE the right to grant sublicense subject to the provisions of this Agreement and prior to the prior submission and approval by the LICENSOR of the proposed sublicense, which approval shall not be unreasonably withheld. All sublicenses shall make reference to this Agreement. The LICENSEE shall provide to the LICENSOR copies of all sublicense agreements.

to explore a wider market to collect higher royalties, it could consider authorising the licensee to register the variety in the regional catalogue and either allow the licensee to commercialize the variety in the region or issue licenses to other entities in various jurisdictions to do the same. NARO in Uganda has used this approach for regional licensing agreements.

As related considerations, many NARES lack proper facilities like cold rooms and human and financial capacity to maintain parental lines for good hybrid varieties, or they lack the capacity to produce adequate foundation seed for multiplication. In such cases, the NARES could consider licensing germplasm maintenance and foundation seed production to a trusted seed company. This approach is already being explored by KALRO in Kenya. In contrast, when the NARES intend to keep the components of a variety secret, specifically for hybrid varieties, they could retain production of foundation seed and license marketing and sales.

There is no one-size-fits-all approach when it comes to the rights that NARES can transfer. It is up to the respective NARES to assess its interests in the context of a particular agreement and variety. The NARES could either offer a bundle of rights or license one individual right. Production and multiplication of a public variety could, for instance, be tied to the commercial exploitation and actual sale of the variety. What is essential, as highlighted above, is that the NARES assess the capacity of the licensee to exercise the licensed rights. A “use it or lose it” provision could be added to the licensing agreement to motivate the licensee to exercise the rights within a particular time or otherwise lose the license.

b) Transfer of Right to Sub-license

Sublicensing becomes a consideration when the licensee wishes to transfer to another party a right that has been licensed. Some public institutions that have used licensing agreements for many years have opted for limiting sub-licensing by entering into **non-transferable** agreements.³⁴ This option ultimately gives the licensor absolute control over who is authorized to produce and commercialize the licensed variety, ensuring control over the variety itself, with clear benefits.

However, non-transferability provisions could also create undesirable inflexibilities by forcing termination of an agreement rather than allowing for transfer to a company that might be better suited to execute the agreement, or at least certain key elements of it. This can be particularly problematic when those elements are necessary steps toward commercialization and the licensee relies on partnerships, subcontracting, or outsourcing to fulfill them. NARES could consider sub-licensing in instance in which it could be of benefit to farmer out-grower groups, allowing them the flexibility to benefit from the use of the public variety, as aligned with the NARES public good mandate. The NARES could also require the licensee to pay a percentage of the sub-licensing royalties, thereby securing more reliable earning from the sub-license.

To maintain some control over use of the licensed variety, the NARES could include monitoring provisions on prior written consent before sub-licensing is to be considered, giving the NARES

³⁴ New Markets Lab, “Case Study on KALRO Model Plant Varieties Licensing Agreement,” Syngenta Foundation for Sustainable Agriculture and New Markets Lab, 2019, publication forthcoming.

the final say regarding to whom a sub-license could be granted, terms for royalties to be charged in the sub-license, and other requirements that ensure that the sublicensing does not result in unavailability, inaccessibility, and unaffordability of the licensed variety.

Part VII: Royalties and Modalities for Collection

Royalties are among the most important elements of licensing agreements for public institutions. They are commonly defined as the fee a licensee pays the licensor for the use and exploitation of a right, often the use and commercialization of a licensed variety. For public institutions, the payment of royalties in exchange for a license of their varieties can create another revenue stream that can aid in the development of new improved varieties. The parties to a licensing agreement generally take several elements into consideration when negotiating royalties, including whether a license is exclusive, semi-exclusive, or non-exclusive, whether the licensing agreement includes the transfer of protected PBR, and the nature of crop variety to be licensed. The parties to a licensing agreement may even agree on different royalty rates and modalities simultaneously, depending on whether the seed is being sold upstream or downstream. The main types of royalties and the methods for calculating them are described below.

1. Fixed Rate Royalties

This is a fixed rate is that is calculated by weight or other defined unit (e.g., seed bags containing a particular quantity of seed).³⁵ This means that the amount paid is independent from the price at which seed sells in the market. Determination of royalty in this manner is currently done by NARO, which set an amount of shillings per kilogram sold, as indicated in the table 2 below. Verification of sales quantities for royalty calculation is based primarily on sales data reported by licensees. To ensure accuracy, NARO retains the right to commission an audit of the licensee's records. This type of royalty is also commonly used in Europe, for example,³⁶GESLIVE³⁷ in Spain and SICASOV^[OBJ] in France, negotiate fixed annual royalties for each variety. In Latin America, it is common to use the number of standard-sized bags as the royalty basis.

³⁵New Markets Lab, Annotated Guide on Flexible Licensing Models and Agreements, 2019. Seeds2B African and Syngenta Foundation for Sustainable Agriculture.

³⁶ Id.

³⁷ Id.

Table 2: NARO Royalty Rate Per Kilogram of Seed Sold for the Licensed Variety

CROP	SHILLING PER KILOGRAM SOLD		
	Exclusive	Semi exclusive	Open
Maize OPV	Not applicable	Not applicable	50
Maize Hybrid	240	180	120
Upland Rice	240	180	55
Lowland Rice	110	80	55
Rice Hybrid Upland	240	180	55
Rice Hybrid Lowland	240	180	55
Sorghum OPV	80	55	35
Sorghum Hybrid	115	85	60
Sunflower OPV	75	55	35
Sunflower Hybrid	120	85	60
Beans	Not applicable	Not applicable	25
Climbing beans	Not applicable	Not applicable	25
Finger Millet	Not applicable	Not applicable	35
Soy Bean	55	35	25
Wheat	240	180	120
Barley	240	180	120
Ground Nuts	55	35	25
Pigeon Peas	55	35	25

2. Royalties Contingent on Seed Price

Royalties contingent on seed prices vary depending on the final sale price for seed in the market. They are usually calculated as a percentage of net sales price or gross annual sales. Since actual net sales prices or gross annual sales may be difficult to verify, royalties contingent on sale often depend upon verification mechanisms like audits and reporting, as stipulated in a licensing agreement, or on a high level of trust between the licensor and the licensee.³⁸ The model licensing agreement used by KALRO, for example, sets royalties as a fixed percentage of the gross sales of the licensed varieties in each fiscal year.³⁹ The KALRO model licensing agreement also establishes reporting and auditing obligations to verify the amount of royalties due at the end of each term.

3. Minimum Royalty Rate

Minimum royalty rates are not as common as the previously discussed types of royalties and are often used in addition to other forms of royalties. With a minimum royalty rate, the licensee agrees to pay a minimum rate every term regardless of seed production or seed sales.⁴⁰ When negotiated

³⁸ Id.

³⁹ See also, New Markets Lab and Syngenta Foundation for Sustainable Agriculture, Case Study on KALRO Model Plant Varieties Licensing Agreement, February 2020, Seeds2B Africa. Available at: https://www.syngentafoundation.org/sites/g/files/kgtny976/files/document/sites/g/files/zhg576/f/2020/04/15/kalro_model_licensing_agreement_case_study_20_feb_2020_.pdf.

⁴⁰ Id.

in conjunction with other forms of royalties, minimum royalty rates are not charged in addition to other royalties accrued, but rather are only paid if the other royalty accrued is lower than the minimum rate. For example, if after the fiscal year the sale price of the seed is very low and the accrued royalties are less than the minimum rate, the licensee would be mandated to pay the minimum rate rather than the accrued royalties. Even though not commonly used, a minimum royalty rate can be advantageous for public institutions, because it secures a pre-established payment. On the other hand, however, minimum royalty rates might be difficult to negotiate with a seed company.

4. Royalties Based on Production

Royalties based on production tend to be more efficient in cases in which sales volumes are difficult to control, since they are independent from actual seed sales.⁴¹ The royalty is calculated based on the multiplication acreage with a fixed rate per surface unit. Seed certification data could be used to validate these figures, providing an independent means of verifying the reported multiplication area. The most common form of multiplication acreage royalty is the End-Point Royalty (EPR), which has been used in Australia since ⁴²~~[OBJ]~~ when breeders created an EPR Steering Committee that established an EPR industry collection system (See Box 1). Under this system, grain traders either deduct the royalty amount from the grower's grain payment and remit the royalty directly to the variety owner or compile reports on grain purchases, which assist the variety owner in correctly invoicing the grower for any outstanding royalties owed. Grower declarations, grain delivery information, and contract auditing are all used to ensure that accurate EPR⁴³ are being collected.⁴⁴

Multiplication Acreage systems are also common for ornamental crops, backed by licensing agreements and market surveillance mechanisms to confirm actual areas planted with the crop or units planted.⁴⁵ They are, for example, widely used in the United Kingdom for varieties that are prone to farmer seed saving,⁴⁶ which could have implications for public institutions that have a mandate to make public varieties more accessible to farmers by allowing public research institutions to keep track of the amount of seed that is being saved. In such a case, additional provisions could be made, such as waiving the right to receive royalty payments from smallholder

⁴¹ Nilsson M. 2007. The In- and Out-Licensing of Plant Varieties. In Intellectual Property Management, in *Health and Agricultural Innovation: A Handbook of Best Practices* (eds. A Krattiger, RT Mahoney, L Nelsen, et al.). MIHR: Oxford, U.K., and PIPRA: Davis, U.S.A.

⁴² Variety Central, End Point Royalties, web, <http://varietycentral.com.au/end-point-royalties/>.

⁴⁴ Australian Centre for Intellectual Property in Agriculture, "End Point Royalties, Fact Sheet," available at: <http://acipa.edu.au/pdfs/factsheets/Aus-05End-Point-Royalties-Fact-Sheet.pdf>.

⁴⁵ Peter Munyi, Bram De Jonge & Neils Louwaars, "Plant Breeders' Rights Licensing in Smallholder Farming: Observations from Kenya," *Journal of Politics and Law*; Vol. 11, No. 2; 2018.

⁴⁶ Kerry Ten Kate, Sarah A Laird, *The Commercial Use of Biodiversity*, Routledge Royalty Editions.

farmer, for example, as discussed in more detail below, or charging a reduced royalty fee for saved seed.

Royalty models can also be classified based on the point of collection and can take any of the forms described above. The most common types of royalties based on the point of collection are the EPR and the Extended Royalty System (ERS). Under an ERS system, royalties are collected at the point of sale of the seed.⁴⁷ This system could apply in seed systems that have well-managed certification procedures, because quantities of seed sold can be more easily verified. However, for similar reasoning, ERS is not as efficient for farmer-saved seed. Under an EPR system, the royalty is collected based on the amount of seed produced, rather than the amount of seed sold, and is collected at the end of the production stage. EPR is applied to all delivered crops or produce, regardless of whether the seed used to produce them was purchased or farmer-saved.⁴⁸ The main difference between ERS and EPR is the point of collection: for ERS the point of collection is the sale of the seed, whereas for EPR the point of collection is the seed production and not sale of the produce from the seed. Moreover, ERS is regarded as more efficient in the case of certified seed, whereas EPR is regarded as efficient for both certified seed and farmer-saved seed.

Box 1: The Australian End-Point Royalty System

In Australia, similar to most African countries, the development of new plant varieties is done predominantly by public institutions rather than private institutions. Royalties are the primary source of funds for public institutions and are then reinvested to develop new plant varieties. More than 90 percent of seed produced comes from farmer-saved seed rather than from purchased seed, rendering ERS systems inefficient. Australia's EPR system has been in place since 1996 and started as an industry-led initiative created by breeders who established the EPR Steering Committee. Under this system, grain traders either deduct the royalty amount from the grower's grain payment and remit the royalty directly to the variety owner or compile reports on grain purchases, which assist the variety owner in correctly invoicing the grower for any outstanding royalties owed. Grower declarations, grain delivery information, and contract auditing are all used to ensure that appropriate EPR are being collected.

Source: Australian Center for Intellectual Property in Agriculture, End Point Royalties, Fact Sheet, available at: <http://acipa.edu.au/pdfs/factsheets/Aus-05End-Point-Royalties-Fact-Sheet.pdf>.

5. Collection of Royalties

Royalty collection requires institutional capacity and a proper system in order to be efficient. Breeders' associations and farmer producer cooperatives can be actively involved in facilitating royalty collection. For example, in countries like South Africa, France, and the United Kingdom,

⁴⁷ Peter Munyi, Bram De Jonge & Neils Louwaars, "Plant Breeders' Rights Licensing in Smallholder Farming: Observations from Kenya," *Journal of Politics and Law*; Vol. 11, No. 2; 2018.

⁴⁸ Nilsson M. 2007. "The In- and Out-Licensing of Plant Varieties," in *Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices* (eds. A Krattiger, RT Mahoney, L Nelsen, et al.). MIHR: Oxford, U.K., and PIPRA: Davis, U.S.A.

different forms of cooperatives play a key role in royalty collection. The South African National Seed Organization (SANSOR), SICASOV, Grain SA in France, and the British Society of Plant Breeders have all established collection mechanisms for grain crops, whether from certified or farm-saved seed.⁴⁹

Well-established seed regulatory systems and strong government support can have a positive impact on royalty collection, because they increase transparency and establish traceability mechanisms throughout the seed value chain, enabling the process of royalty collection.⁵⁰ For public research institutions, establishing collection mechanisms either through guidelines or regulations could help them anticipate the necessary legal infrastructure and other needs to efficiently collect royalty payments. However, royalty collection remains one of the main challenges in countries where licensing agreements between public research institutions and private companies are used,⁵¹ and the proper mechanisms and institutions are not always in place. The tools for collection of royalties may include obligations for farmers to provide information on the seed they have saved in the case of farmer-saved seed, certification systems, and penalties for evasion of royalty payments.⁵²

Several case studies for royalty collection mechanisms are contained in the Early Generation Seed System Case Studies developed by CONTEXT Global Development with support from BMGF.⁵³ One interesting case study for royalty collection mechanism is that of the Potato Variety Management Institute (PVMI) and the Michigan Crop Improvement Association (MCIA) in the United States. Both organizations are non-profit corporations established by growers' associations with the purpose of managing licensing agreements and collecting and redistributing royalties from licensed varieties.⁵⁴ Establishing a non-profit as an intermediate vehicle to manage royalty collection could help streamline processes and address some of the challenges discussed above. In both instances (PVMI and MCIA), the non-profit is financed by a portion of the royalties collected, making them financially sustainable as well.

The PVMI was launched in 2005 by the state potato commissions of Washington, Oregon, and Idaho to oversee licensing agreements and royalty collection for the tri-state potato varieties.⁵⁵ Through this alternative structure to universities or public research institution collection

⁴⁹ Peter Muniy, Bram De Jonge & Neils Louwaars, "Plant Breeders' Rights Licensing in Smallholder Farming: Observations from Kenya," *Journal of Politics and Law*; Vol. 11, No. 2; 2018.

⁵⁰ Curtis, F., & Nilsson, M. (2012). "Collection Systems for Royalties in Wheat: an International Study." *Bio-Science Law Review*, 1(6).

⁵¹ See New Markets Lab, "Case Study on KALRO Model Plant Varieties Licensing Agreement," Syngenta Foundation for Sustainable Agriculture and New Markets Lab, 2019.

⁵² Curtis, F., & Nilsson, M. (2012). Collection Systems for Royalties in Wheat: an international study. *Bio-Science Law Review*, 1(6).

⁵³ CONTEXT Global Development, "Early Generation Seed (EGS) System Case Studies," December 2019; CONTEXT Global Development, "EGS System Case Study: Idaho Potatoes," August 2018.

⁵⁴ CONTEXT Global Development, "Early Generation Seed (EGS) System Case Studies," December 2019; CONTEXT Global Development, "EGS System Case Study: Idaho Potatoes," August 2018.

⁵⁵ Potato Variety Management Institute, website available at: <http://www.pvmi.org/about/about.htm>.

mechanisms, growers also participate more actively in the research and development stage by identifying which varieties have high demand in the market. Additionally, PVMI also works on increasing the adoption of new potato varieties by working with processing centers, grocery stores, and restaurants. PVMI's collection system requires growers to provide written reports with the location, acreage, and number of units sold (cwt) of all licensed material produced or sold as seed. Growers are required to save these records for at least three years and are also required to publish seed information in a grower directory for the region to keep track of the varieties being produced and sold.⁵⁶

The MCIA, on the other hand, has been operating for many years (it was established in 1927) and functions a bit differently given its different crop focus. Even though the MCIA's collection mechanisms are like those used by PVMI, for dry beans the moment of royalty collection is different. Most royalty collection mechanisms will activate or accrue when seed is either sold or transferred to the end user (farmers). The MCIA collection system for dry beans activates when foundation seed is sold to certified growers, which is said to increase transparency and lower account receivables.⁵⁷

a) Royalties under Exclusive, Non-exclusive, and PBR-based Licenses

An exclusive licensing agreement usually involves higher royalty payments from the licensee to the licensor. The economic logic for this increased fee is that the licensee will face no competition for that variety in the market and can exercise market power to increase its revenues. The higher the expected revenue for the licensee, the higher the royalty payment will be for the licensor. In contrast, when varieties are licensed on a non-exclusive basis, licensees will have to compete against each other in the market and could expect lower individual revenues from commercializing a variety; consequently, the royalty payment will also be lower. For public institutions, a higher royalty payment may be desirable to secure an additional source of income; however, non-exclusive licenses may allow for the collection of royalties from multiple licensees. Exclusivity often results in lower overall market penetration compared to a non-exclusive licensing strategy, where multiple licensees can simultaneously market the variety. While the per-unit royalty rate may be higher under exclusivity, the total sales volume, and therefore⁵⁸ may be lower than in a non-exclusive arrangement. When a license is based on PBR, as explained above, the breeder has exclusive enforceable rights over the use, production, commercialization, export, import, and

⁵⁶ CONTEXT Global Development, "EGS System Case Study: Idaho Potatoes," August 2018.

⁵⁷ CONTEXT Global Development, "EGS System Case Study: Michigan Dry Beans," February 2018.

⁵⁸ New Markets Lab, "Case Study on KALRO Model Plant Varieties Licensing Agreement" Washington, DC: New Markets Lab, 2020. https://newmarketslab.org/assets/case_studies/6.pdf. See also, Stephan Marette and David Zilberman "Market Organization and Exclusive Licensing of Agricultural Innovations," paper presented at the Allied Social Science Associations Annual Meeting, Chicago, January 6–8, 2017. <https://www.aeaweb.org/conference/2017/preliminary/paper/FHSThrF3>. See also, Aaron Hall, "Structuring Exclusive vs Non-Exclusive IP Licensing Agreements" July 1, 2022. <https://aaronhall.com/structuring-exclusive-vs-non-exclusive-ip-licensing-agreements/>.

marketing of the variety. Consequently, it can license these different activities in exchange for higher royalty payments than if it were just licensing the *use* of a registered variety. However, it is important to stress that royalties are independent from intellectual property protection.

b) Royalties for Hybrids versus OPV Varieties

Royalties can take different forms or modalities, which will depend upon the characteristics of the market and the varieties being licensed. For example, self-pollinated or self-propagated varieties, for which the breeder has low control over the amount of seed saved and sold in the market, are usually handled through End Point Royalties (EPRs). EPRs are charged and collected based on the amount of seed produced or the acreage sowed, rather than the volume of seed actually sold.

Hybrid varieties, in contrast, which cannot be propagated or multiplied without accessing new seed, are usually handled differently, with royalties often as a percentage of total sales. Breeders and private companies can negotiate and agree on the modality that is best adjusted to the variety licensed.

Part VIII: Duration and Renewal

As with any contract, a licensing agreement should foresee the agreement's end and include different causes or scenarios for termination, both naturally and due to some sort of breach of the agreement. Without these provisions, licensing agreements might be inflexible and unmanageable, and general contract law would dominate. Different types of clauses can be included in a licensing agreement with regard to duration and termination, as described below, and, as with the other elements described above, the parties have a high level of flexibility to tailor these provisions to particular circumstances. The way in which these provisions are drafted will determine the different actions the parties must take to terminate or continue the contractual relationship.

All licensing agreements should include a clause limiting the duration of the agreement to a predetermined period of time. Licensing agreements vary in length, typically anywhere between two and fifteen years, and, if there is no conflict that arises between the parties during that period or willingness to extend an agreement, licensing agreements will naturally terminate. While some public institutions may wish to include shorter duration clauses to allow for the flexibility to negotiate and renew licenses more frequently, there are examples of longer agreements, like the KALRO model licensing agreement (KALRO's licensing agreements have a standard duration of 15 years).⁵⁹

⁵⁹ See also, New Markets Lab and Syngenta Foundation for Sustainable Agriculture, "Case Study on KALRO Model Plant Varieties Licensing Agreement," February 2020, Seeds2B Africa. Available at: https://www.syngentafoundation.org/sites/g/files/kgtn976/files/document/sites/g/files/zhg576/f/2020/04/15/kalro_model_licensing_agreement_case_study_20_feb_2020_.pdf.

Clauses related to the duration of a licensing agreement can also include provisions for the automatic renewal of the contract. In this sense, for example, licensing agreements that have a shorter duration (two to five years) can include automatic renewal provisions that will give continuity to the contractual relationship and allow the parties to continue their engagement without the need for renegotiating every aspect of the contract. However, renewal can also be a good opportunity for review and renegotiation of the contract, and aspects that are not working for a party could be amended. Contract renewal provisions can take different forms (upon mutual agreement by the parties, automatic renewal, or otherwise), but each will have different implications. For example, automatic renewal provisions renew the licensing agreement automatically unless a party otherwise acts. The renewed term will usually be for the same period, and no additional action will be required by the parties. This option may be desirable when there is greater certainty that the agreement should continue or greater familiarity among the contracting parties.

Administering licensing agreements can be challenging, especially when an institution has dozens of agreements that are signed at different times. Using automatic renewal clauses could also facilitate the administration of licensing agreements, because it allows the parties to continue their relationship without any further action. However, parties can build in notification of desire to terminate, which would preempt the automatic renewal.

Renewal clauses by mutual agreement are also possible and require the parties to actively decide to renew the licensing agreement when it is about to expire. These provisions can give the parties more control over whether a relationship should continue, but like automatic renewal clauses, they can also incorporate a requirement that the parties actively seek the agreement's renewal.

In any case, renewal clauses may be modified if the parties agree. This means that public institutions can start by using one type of renewal clause and adjust it depending on their needs.

Part IX: Termination

Licensing agreements can also be terminated due to a specific action or inaction. For example, termination may occur on the grounds of a significant breach of the agreement by either of the parties, including liquidation, bankruptcy, or any ceasing of business by the licensee. It is in the public institution and the private company's best interest to include these types of clauses in any licensing agreement. This is because sometimes things do not go as intended, and either of the parties might not comply with the agreement. A termination clause for significant breach of contract would establish the requirements and procedures for one party to terminate the agreement in the event it considers that the other party has breached the agreement's terms. Usually, these clauses will include a process and period of notification for the aggrieved party to notify the other of the breach and demand that the other party fulfill its obligations. If, after a period (preestablished in the provision), the non-complying party does not change its behavior, the aggrieved party can terminate the agreement. It is in the best interest of a public institution to include a clause that allows it to terminate the contract if the private company goes into bankruptcy, liquidates, or ceases to remain in business. The reason for this type of clause is to give control to the licensor over the varieties and not lose the opportunity for distribution when the licensee ceases to operate in the market. Since, in such a case, the licensee would be involved in legal proceedings and would likely not continue commercializing the varieties, so public institutions would have the right to *automatically* terminate the agreement without the need to notify or wait for a preestablished period.

Finally, the failure to commercialize a variety can also be a cause for termination under a "use it or lose it" clause. "Use it or lose it" clauses allow the licensor to terminate an agreement, usually without any notice, if the licensee refuses to fulfill the purpose of the contract. This could include time-bound obligations for formal registration and release of the variety, the production or marketing of the licensed variety, or certification and commercial exploitation. These types of provisions are highly advisable for public institutions, since, as has been the case in some countries, companies have sometimes used licensing agreements to keep public varieties out of the market and limit competition. In these instances, companies have entered into licensing agreements to keep others from competing with some of the company's own varieties. This is, of course, contrary to the mandate of public research institutions, and, thus, "use it or lose it" provisions can give public institutions a way out of agreements when they are not yielding expected results.

Part X: Dispute Resolution

Finally, licensing agreements should also include provisions that identify the method for resolving disputes that might arise in the execution of the agreement. As with many of the other elements described in this Licensing Guide for NARES, parties to an agreement will have different objectives and goals when determining the dispute resolution mechanisms.

One option for dispute resolution may be solving disputes through arbitration, a private dispute resolution mechanism where an impartial third party issues a binding resolution. Another option is alternative form of dispute resolution (ADR), such as mediation or a specialized tribunal. A third option is resolution through the applicable judicial system within the agreement's jurisdiction.

All of these mechanisms have advantages and challenges. For example, arbitration can be a potentially more efficient (faster) way of resolving issues, but it is often more expensive than using the judicial system, and the availability of skilled arbitrators may be an issue. Mediation or another form of ADR may combine efficiency with cost effectiveness in such a case. In some instances, the legal and regulatory framework applicable in the agreement's territory will limit the methods for dispute resolution available; consequently, the parties should carefully review relevant law when entering into a licensing agreement and determining the best method of dispute resolution.

For NARES, the most cost-effective dispute resolution mechanism should be identified and used as the preferred approach.

Part XI: Other Considerations

The elements described so far are common to most licensing agreements. However, there are a number of additional provisions that parties could include to further tailor licensing agreements. This section will mention a few of these provisions; however, this is an illustrative list only and does not include all additional possibilities. Since licensing agreements are contracts and are ultimately guided by the will of the parties, a broad array of other provisions could potentially be included.

1. Reporting

Reporting duties are often included in licensing agreements and mandate that a licensee periodically reports back to the licensor on the amount of seed produced and sold. They have a two-fold purpose. On the one hand, reporting and notification requirements are a way for the licensor to check in on the progress of commercialization of the seed, which gives the licensor oversight and can allow the licensor to assess impact and generate information that may be useful for guiding future breeding and scaling efforts. Ultimately, this can activate the “use it or lose it” termination clause. On the other hand, reporting can also be used as a verification mechanism for royalty collection. For example, KALRO's model licensing agreement includes a reporting obligation that allows the institution to validate and verify the amount of royalties owed each period.⁶⁰ Reporting can also be done by neutral third parties for auditing purposes, although this can be expensive and cumbersome.

⁶⁰ New Markets Lab, “Case Study on KALRO Model Plant Varieties Licensing Agreement,” Syngenta Foundation for Sustainable Agriculture and New Markets Lab, 2019, publication forthcoming.

2. Flexible and Inclusive Clauses: (e.g., smallholder friendly clauses, gender specific clauses)

These clauses can be included in any type of licensing agreement, even exclusive licenses, and they can be used to advance public good mandates. For example, flexible and inclusive clauses that protect smallholder farmers can waive the licensor's right to collect smallholder licensing fees and royalties and thus protect farmers' privilege, make a majority percentage of the seed produced available to third parties at reduced prices, and establish smaller seed pack sizes that are more suited for smallholder farmers.

Flexible and inclusive clauses are only limited by the relevant legal framework under which the agreement will be executed and enforced. Consequently, parties may often include such provisions and tailor their agreements in a way that best achieves their objectives.

3. Flow-down Terms and Conditions (Parent Licenses and Third-Party Background IP)

Flow-down (or “pass-through”) terms are obligations in a parent agreement that must be replicated in any downstream license, sublicense, or transfer so that the original licensor's requirements remain enforceable across the whole chain of use. Typical seed-sector drivers include: (i) treaty-based material transfers (e.g., ITPGRFA/SMTA), (ii) third-party background IP embedded in a variety or production process, and (iii) donor or public-funding conditions. Failing to flow down required clauses can put the NARES or CGIAR Center in breach of the parent agreement.⁶¹

For instance, as a mandatory flow-down obligation, where germplasm is exchanged under the SMTA, any onward transfer must be made under a new SMTA. The upstream recipient's job is to ensure that this condition is passed on. After doing so, the upstream party generally has no further responsibility for the subsequent recipient's actions. Technology transfer agreements routinely require that all sublicenses be consistent with the head license, including key duties like use-field limits, reporting/audit, confidentiality, and IP/acknowledgment clauses. Guidance from WIPO frames this as standard risk control to keep downstream users bound by critical terms (and to avoid creating broader rights than the licensor intended).⁶²

⁶¹ WIPO, “Successful Technology Licensing,” IP Assets Management Series. Geneva: World Intellectual Property Organization, 2015. https://www.wipo.int/edocs/pubdocs/en/licensing/903/wipo_pub_903.pdf. See also: AUTM. US-BOLT Term Sheet (Climate). Deerfield, IL: Association of University Technology Managers, April 4, 2024. <https://autm.net/AUTM/media/Surveys-Tools/Documents/US-BOLT-Term-Sheet-%28Climate%29-final-%284-4-24%29.pdf>.

⁶² WIPO, “Successful Technology Licensing,” IP Assets Management Series. Geneva: World Intellectual Property Organization, 2015. https://www.wipo.int/edocs/pubdocs/en/licensing/903/wipo_pub_903.pdf.

Third-party background IP is another example of a flow-down condition. When a licensed variety or production protocol depends on third-party “background” rights (e.g., a proprietary treatment, coating, or marker), the NARES or CGIAR Centre must ensure that those background license conditions are flowed down to each sublicensee or transferee. Several MTA and consortium templates expressly require passing on background-related obligations to any subsequent recipient.⁶³

⁶³ CGIAR, “Principles on the Management of Intellectual Assets” (CGIAR IA Principles), Montpellier: CGIAR Consortium, approved 7 March 2012. <https://storage.googleapis.com/cgiarorg/2018/03/CGIAR-IA-Principles.pdf>.

II. Module 2: Institutional Structures for Licensing

For licensing to be effective, the institutional structure for managing licensing, intellectual assets, and royalties within the NARES will be an important consideration. Some NARES, such as NARO and KALRO, have used IP Policies that guide the management of the institution's intellectual assets and IP (beyond crop varieties) to formally embed a structural framework for licensing, although these instruments have evolved very differently and on very different timelines in the different NARES. For NARO, a licensing strategy and institutional structure were developed concurrently, whereas at KALRO, licensing preceded a formal institutional structure by many years, and the institutional structure for licensing is still not fully in place.

The current instrument of choice for establishing an institutional structure is an IP Policy, which is likely since this is the practice among public institutions, including universities, in many countries outside of sub-Saharan Africa with a more established history of licensing technological innovation. However, it is important to note that an IP Policy may be a bit narrow given the practices of the NARES, since much of the technology being licensed is not formally registered IP and would instead be better classified as an “intellectual asset.” For example, a developed variety would be an intellectual asset, while a plant variety that has been registered as PBR would be IP. Both come with certain rights, and, although registered IP confers certain benefits to the IP holder, it also carries costs.

Whether an institutional framework is designed as an Intellectual Asset Policy or an IP policy, many of the same policies and procedures could apply, such as management of these assets and access and benefit sharing with breeders, but the distinction between intellectual assets and IP can be important. As discussed under Module 1, licenses for intellectual assets without IP have somewhat different implications than licenses for IP-based assets. As TARI's case shows, a requirement for a NARES to base all licenses on registered IP, there are costs to this approach that will be difficult for most NARES to bear, particularly in the near term.

An Intellectual Assets/IP Policy can be a useful tool in establishing an institutional structure, but regardless of the structure pursued, understanding the elements of such a framework is critical and perhaps even more important than the form of the instrument itself. Also, as KALRO's case highlights, building an institutional structure can be done gradually. Regardless of form, a formal institutional structure for licensing should be designed to oversee the acquisition, management, and commercialization of crop varieties and their intellectual assets and property, including guiding the NARES in their licensing activities.

To strengthen such a structure, institutions can adopt specialized intellectual property management software to streamline functions such as asset tracking, licensing workflow, royalty collection, compliance monitoring, and reporting. Examples include Inteum, Sophia by Wellspring, and Anaqua. This software is widely used by public research institutions for technology transfer and

licensing management.⁶⁴ While these systems may cost several thousand dollars per year, they can significantly enhance the efficiency, effectiveness, and transparency of licensing operations, particularly in contexts where licensing volumes and anticipated revenues justify the investment.

This Module will present options for how NARES could address gaps in their institutional structures for licensing to improve the management and implementation of licensing agreements. It is organized around six key elements of institutional structures: (1) specialized institutional licensing management framework; (2) coordination of institutions involved in licensing; (3) streamlined application procedures; (4) improved management, access, availability, and quality of EGS; (5) access and benefit sharing; and (6) maintenance of an updated variety licensing catalogue.

1. Specialized institutional licensing management framework

A specialized institutional licensing management framework is important, because it can help ease implementation and administrative burdens on the licensor (NARES). Consultations revealed that a lot of NARES do not have a specialized licensing management framework in place, and the few that do have some sort of structure continue to face various challenges that could affect their operations with respect to licensing. In setting up an institutional licensing management framework, the NARES may consider the following issues.

a) Formal Establishment of the Licensing Management Framework

A licensing management framework could be structured around an office, a committee, or a unit/department. While the precise structure could vary, it is important to note that it could be formally established, for example under the NARES licensing policy or IP Policy, with clearly defined roles to avoid confusion, neglect, and duplication of licensing duties with other related units. Roles could be defined to include handling of all administrative issues relating to licensing, for instance, negotiating and facilitating issuing of licenses, conducting background checks on prospective licensees, following up on EGS production and royalty payments, and coordinating with the various NARES centers on declaration of innovations, among others.

Consultations revealed that NARO and KALRO have established clearer institutional structures through IP Policies that create an IP office and Management Committee (IPMC), with defined roles relating to licensing and management of the institutions' intellectual assets and IP. The IP office generally exercises all administrative duties relating to licensing, while the IPMC has an

⁶⁴ Inteum, "Inteum: Innovation Management Software," Kirkland, WA: Inteum Company, 2024. <https://www.inteum.com>; Wellspring, "Sophia Technology Transfer Software," Chicago, IL: Wellspring Worldwide, 2024. <https://www.wellspring.com>; Anaqua. Anaqua IP Management Software. Boston, MA: Anaqua, Inc., 2024. <https://www.anaqua.com>.

advisory role alongside the IP office and the NARES management team. While KALRO is yet to establish such frameworks in practice, NARO established its IP office and IPMC in 2021 under the Department of Technology Transfer. These two have since been overseeing NARO's licensing since and are operating relatively well with a few remaining gaps.

Until the IP office and IPMC are established within KALRO, the legal and finance units will remain directly responsible for managing KALRO's licenses. These units are, however, not well synchronized in their operations. The legal unit drafts, negotiates, and issues licensing agreements to seed companies, while the finance unit coordinates royalty payments, including receiving payments and sending an implementation team to collect royalties when overdue. Consultations revealed that, in most cases, the legal unit is not informed regarding which seed companies have made payments and which still owe royalties, which complicates follow up. For instance, one of the seed companies with a licensing agreement with KALRO noted that while it pays royalties annually and on time, it last received a notification of recognition of payments over five years ago. The legal unit was unaware of which licenses are currently active or which companies had made payments, as that is usually overseen by the finance unit, which equally has capacity challenges.

The first licenses that were issued by TARI in 2014 and expired in 2019 were under the purview of the legal unit, which was supposed to work with the finance department. The coordination, however, never happened, and thus no one oversaw implementation or royalty collection, resulting in no royalties actually collected. TARI has now put in place an acting IP committee to manage its renewed licensing strategy, but this is on a temporary basis, and its roles are not clearly defined anywhere. The three members of TARI's IP committee also have their other full-time jobs, and thus managing licensing is not their priority.

b) Composition of Competent and Capacitated Individuals

To be effective, the institutional licensing management framework must be competent and have enough financial and human resources capacity to oversee the administration of the licensing agreements. The licensing policy instrument could define the competencies of the IP office members. Most NARES have considered the importance of legal expertise in the office, considering that licenses are contracts and rest on legal principles and instruments.

Consultations revealed that a number of capacity gaps exist within licensing management structures in NARES. For instance, the legal unit in KALRO, which currently manages licenses, is largely understaffed and has little capacity to effectively handle and monitor licensing matters on top of all other institutional legal issues. The legal unit has one lawyer who handles over 600

contracts, assisted by only one intern.⁶⁵ TARI also has only one lawyer tasked with overseeing all legal issues relating to TARI centers and sub-centers who handles over 300 legal issues. TARI's temporary IP committee, composed of three people, has been tasked with developing a new strategy for licensing and overseeing licensing activities until a time when a more permanent structure can be put in place. Even though this is a temporary solution, capacity building is needed for this team. NARO's department for technology transfer, which also acts as the IP office, has four full-time staff tasked with following up with companies on compliance with provisions of licensing agreements, but none of them is a lawyer.

2. Coordination of Institutions Involved in Licensing

The NARES often have different centers specialized in research and development of specific crops, as well as EGS production for specific crop varieties. There may also be different units within the NARES that are responsible for coordinating licensing for the institution. For effective licensing and implementation, it is important that the centers and their respective research teams, along with the institutional units responsible for licensing, are all in sync. Proper coordination at the institutional level is at the core of effective licensing management and royalty collection, synchronized EGS production, and general oversight over implementation of licensing agreements.

Consultations revealed that research and varietal development at the different NARES are not centrally coordinated. For instance, KALRO, NARO, and TARI headquarters, in most cases, do not know which varieties breeders in their different centers have developed and are developing. Consultations revealed that KALRO and TARI breeders do not usually know which varieties have already been licensed, yet they are responsible for providing the licensed products. In KALRO and NARO, the absence of this information makes it difficult for the breeders to claim the inventor's allowance provided for under the respective IP Policies where IP has been claimed. While these benefits are also being provided in the case of intellectual assets (e.g., developed varieties) that have not formally been claimed as IP, it would be helpful to note the differences between intellectual assets and IP, the latter of which must go through a formal legal process for most forms of IP, including PBR and patents.

To better coordinate licensing agreements and manage related intellectual assets and IP, the IP policy could include provisions on the obligations of NARES' employees regarding varieties, including duties to disclose developed varieties and all related IP, adherence with confidentiality

⁶⁵ New Markets Lab and Syngenta Foundation for Sustainable Agriculture, "Licensing of Public Plant Varieties: The Case of KALRO," December 2022, Seeds2B Africa. Available at: <https://www.syngentafoundation.org/sites/g/files/kgtny976/files/media/document/2022/12/12/KALRO%20Licensing%20Report%20NML%20December%202022%20FINAL.pdf>.

duties, cooperation with the IPMC in any areas related to licensing, avoidance of conflicts of interest, disclosure of any engagements with other institutions in their capacity as employees of the NARES, and notification to other institutions of the IP Policy, among other things.

3. Streamlined Application Procedures

Although the design of licenses themselves is important, equally if not more important are the procedures related to how licenses work in practice. It is important that the NARES make aware to any prospective licensee the proper application procedures, licensing requirements, and other relevant modalities. Consultations revealed that a number of companies are unsure of licensing application procedures for NARES technologies. Some shared their experiences related to bureaucratic processes for obtaining licensing agreements, specifically with KALRO and TARI. Several companies consulted were unaware of the formal application procedures in these institutions. Other companies alleged that they contacted the responsible breeder at the respective crop center, the legal office, or/and the KALRO/TARI director and did not receive a response, were constantly referred to other offices and people, or received a response that was so delayed that they lost interest.

Unclear application procedures inhibit licensing by NARES. These could either be created as stand-alone guidelines that are made publicly available or integrated as part of an Intellectual Assets/IP Policy, including options on streamlined application processes for licensing agreements by NARES and the office to which applications should be addressed, the form of application, possible required documentation, and recommended response times. Options would be useful for NARES that are already engaged in licensing, such as NARO and KALRO, or NARES that are interested in developing licensing strategies.

4. Improved Management, Access, Availability and Quality of EGS

EGS is usually the licensed product in a licensing agreement. It reasonably follows that EGS should be stored and managed based on proper quality procedures and guarded from any unauthorized use that would render licensing nugatory.

a) Royalty and Benefit Sharing with Research Teams

Among the NARES, ESG is often “leaked” through informal processes, which is a pressing challenge. For instance, side-sales by breeders in the licensing institution or theft of licensed product during demonstration by the institutions can occur. If this continues, it will complicate

licensing, as there will be no reason for companies to buy EGS through formal channels. There have been various approaches by NARES to address this challenge, and the inclusion of royalty sharing provisions in Intellectual Assets/IP Policies are relevant to benefit and motivate research teams that are involved in developing a variety licensed by the NARES. NARO, for instance, allocates 40% of royalty payments to the research teams, and the first benefits were given out in 2023.

b) Coordinated EGS Production

Availability and access to quality EGS after licensing is a problem among many NARES. Some consulted NARES did not have the EGS or parental lines (for hybrid varieties) for some of the licensed varieties. While both NARO and KALRO stressed that they have put systems in place to streamline EGS access, including prior placement of orders and partial payment, seed companies noted that this was largely not the case in practice. Sometimes EGS is not provided in time or in the right quantity or quality. For instance, one company reported that it entered into a license with KALRO in 2021 but still has not been able to obtain EGS for that variety two and a half years later. Some companies noted that EGS is of poor quality, meaning that they must invest more money to clean it up. A combination of these issues reportedly discourages seed companies from obtaining EGS from NARES and entering into licensing agreements by extension. Companies also noted that since the NARES have their own seed companies that compete in the market, where EGS is limited, priority is given to the parastatal seed companies over private seed companies, even when orders are placed in advance and payments made.

Documentation is not always clear on some parental material, especially where specific breeders have either retired or otherwise left the institution. Moreover, due to limited resources, some NARES' centers do not have proper facilities for maintenance of germplasm. Further, EGS production requires both resources and time, and breeders noted that sometimes funds are inadequate.

To address these gaps, an Intellectual Assets/IP Policy could contain stronger provisions on coordination amongst the centers that are responsible for producing EGS, the business centers responsible for supplying the EGS, and other units responsible for licensing. Breeders and relevant centers should be involved prior to licensing to share information on which varieties are available for licensing. In addition, the policy could recognize the role of dedicated EGS supply businesses—including parastatal entities such as KALRO Seed or private companies like QualiBasic Seed and EcoBasic Seed—as strategic partners. NARES could enter into special partnerships with such entities to ensure consistent, high-quality EGS supply to downstream seed producers.

5. Maintenance of an Updated Variety Licensing Catalogue

A NARES variety licensing catalogue contains information that can be critical for effective licensing, including information on varieties available for licensing and traceability of implementation of issued licenses. The licensing catalogue can indicate the varieties that are available for licensing, their unique traits that make them attractive for licensing, varieties that have already been licensed, to whom they were licensed, and the nature of exclusivity of the license. A model variety licensing catalogue could be used by NARES to keep track of their technologies and inform the industry of varieties available for licensing, among other information.

Stakeholders noted that they were concerned that NARES lacked catalogues or databases (preferably digital) of institutional varieties, including a description of their traits, list of licensed varieties and companies to which they are licensed, and varieties available for licensing. Seed companies mentioned that the absence of such a catalogue or database makes it difficult for them to know of existing varieties or seek licensing agreements for available varieties. It also makes it difficult for the NARES to keep track of active licenses and follow up on their implementation, including royalty payments. For instance, KALRO remains unaware of the number of active licenses, despite its long history of licensing.

III. Module 3: CG Centers’ Transfer of Breeding Material and Impact on NARES Licensing

CG Centers have ongoing breeding programs that develop new and improved Center Breeding Products within the multilateral system, with the main purpose of benefitting lower-income farmers and economies. Center Breeding Products include lines, clones, open-pollinated varieties, and hybrid combinations. These can be used commercially, either directly, as a parental line in a hybrid combination, or commercially used as a trait donor.

The primary products of CG’s research are international public goods, and access to them has to be consistent with the International Treaty on Plant Genetic Resources for Food and Agriculture (“ITPGRFA”), the Convention on Biological Diversity (“CBD”), fundamental human rights as stated in the Universal Declaration of Human Rights and other relevant international treaties and instruments, and CG policies, including the Intellectual Assets and Open Data policies.

A. CG Centers and Transfer of Breeding Products to NARES

CG Centers use the SMTA⁶⁶ of the ITPGRFA for the transfer of its genebank and breeding materials for research, breeding, and capacity building. The scope of permitted uses of materials transferred under the SMTA is essentially limited to ‘research, breeding and training for food and agriculture,’ including using the transferred materials to develop new varieties for commercialization. The SMTA is, therefore, the way in which material is most commonly transferred between the CG and NARES.

The nature of the SMTA does not allow direct use or commercialization of the transferred materials from the CG Center in the form in which they were transferred.⁶⁷ This means that any commercial use of the transferred material by the NARES must be authorized by the CG Center. Institutions must follow specific compliance steps when seeking IP protection for CGIAR-derived materials. First, they need to obtain explicit written authorization from the CGIAR Center of origin before initiating any IP protection process. Second, they should review and plan for compliance with any benefit-sharing obligations under the SMTA that may be triggered by such applications. Third, they should maintain thorough documentation of authorizations, benefit-sharing commitments, and compliance measures to facilitate audits or resolve disputes. Failure to adhere to these requirements can result in breaches of licensing or material transfer terms, potentially leading to suspension or termination of rights, exposure to legal claims, or reputational damage for

⁶⁶ See Standard Material Transfer Agreement, Resolution 1/2006 of 16 June 2016, available at <http://www.fao.org/3/a-bc083e.pdf>. See also, SGRP. 2009. Guide for the CG Centers’ Use of the Standard Material Transfer Agreement. Biodiversity International, Rome, Italy. 2, available at: http://treatylearningmodule.biodiversityinternational.org/fileadmin/templates/learning/upload/eng.policy_module/Reference_Material/Guide_SMTA.pdf.

⁶⁷ New Markets Lab, “Annotated Guide on Flexible Licensing Models and Agreements,” 2019. Seeds2B African and Syngenta Foundation for Sustainable Agriculture.

unauthorized use of public breeding outputs, as well as loss of collaborative access to CGIAR germplasm and related research partnerships. It also means that when a CG Center is ready to license a product that it has developed for commercial use, the CG Center can use a licensing agreement to transfer use rights and remain within the benefit sharing conditions of the SMTA. This explains why the CG Centers could share the same variety with NARES and seed companies because of the different nature of the transfer instruments and the obligations that accrue from each.⁶⁸ The CG Centers have been putting in place rules to streamline their licensing approaches to ensure they do not clash with those of NARES, their partners at the national level, which are also licensing CG products that are transferred to them under the SMTA.

B. Licensing by CG Centers to Private Sector

CG Centers also often use a form of licensing agreement with NARES and private companies whereby they transfer the right to register, produce, market, and sell public varieties within certain territories.⁶⁹ Licensing by CG Centers is only of materials that are ready for commercial use and does not apply to landraces, original collections, and plant genetic resources for food and agriculture (PGRFA) received by the Centers under the SMTA, or any breeding materials that are not considered to be ready for commercial use.⁷⁰ As a general condition, CG Centers enter into partnerships with the private sector when access to the same technology through public-sector channels in low- and middle-income countries is not significantly inhibited or disadvantaged.⁷¹ CG Centers' secondary goal of licensing germplasm or technology is revenue generation, with revenue reinvested in their research for development mission.⁷²

CG centers may directly license to commercial users under limited exclusivity licensing agreements where (i) it is necessary for further improvement of licensed products or (ii) private sector engagement provides impact acceleration advantages for the CG Center's target beneficiaries (e.g., where no public sector partner exists with the willingness or capacity to register and effectively scale the product), and such exclusivity is as limited as possible in duration, territory,⁷³ [CB]. The limited exclusive license is issued once that general criteria is met, provided the

⁶⁸ New Markets Lab, "Legal Review and Analysis of the Implementation of the Variety Identification Number at the National and Regional Levels," Alliance for a Green Revolution in Africa and Common Market for Eastern and Southern Africa, 2022.

⁶⁹ Id.

⁷⁰ Id.

⁷¹ CGIAR Principles on the Management of Intellectual Assets, 2012. Available at: <https://cipotato.org/wp-content/uploads/2014/01/CGIAR-IA-Principles-approved-as-of-7-March-2012.pdf>. See also, the CIMMYT Intellectual Property Policy, 2009. Available at: <https://www.cimmyt.org/content/uploads/2019/04/CIMMYT-Intellectual-Property-policy-2009-04.pdf>. See also, the Policy of the International Institute of Tropical Agriculture (IITA) on Intellectual Property/ Assets, 2012. Available at <https://cgspace.cgiar.org/server/api/core/bitstreams/175fed40-6d73-4467-9d2b-3f6acb68f1a0/content>. See also, the International Potato Center Intellectual Property Rights Framework Policy, available at: https://cipotato.org/wp-content/uploads/2014/01/Intellectual-Property-Rights-Framework-Policy-_updatedDec-2016.pdf.

⁷² Id.

⁷³ Id.

licensed products remain available to public sector organizations⁷⁴, under what is referred to as the research exemption, and in the event of national or regional food security for the duration of the emergency.⁷⁵ Some CG Centers will generally license a variety only where no NARES has expressed interest in it and will maintain geographic exclusivity, avoiding ⁷⁵the same product to more than one user in the same country.⁷⁶

In practice, some CG Centers, such as CIMMYT, publish details on Center Breeding Products available for licensing and commercial use, how to express interest or apply for commercial use, types of licenses used, and other considerations for issuing licenses. Consultations revealed that this information is usually available on the respective CG Center website ⁷⁶in some cases, notices may also be issued through seed trade associations. However, approaches differ across crops and Centers; for example, CIMMYT's wheat licensing model is structured quite differently, and it is unclear whether other CGIAR Centers follow the same practice or level of transparency for their breeding products. Interested prospective licensees can then apply to the respective CG Center for a license.

When licensing to the private sector, CG Centers consider fair, equitable, and transparent criteria and processes,⁷⁷ from which NARES could gain lessons for their own practices. Consultations revealed that among the criteria used by CG Centers in consideration of issuing a license are the licensees' ability to make affordable, good quality seeds or planting materials widely available to farmers in a timely manner; track record, expertise, and ethical reputation; engagement in, and support of the research and development process; ability to achieve wide geographic coverage, including through multiple suppliers; ability to allocate different materials to different suppliers, including small businesses, to foster the development of a diverse seed sector; and ability to support the development of an inclusive, diverse, and sustainable seed sector, including the participation of small and medium-sized enterprises (SMEs), farmer-based organizations, women- and youth-owned enterprises, and other actors who contribute to the diversity, equity, inclusiveness, and sustainability goals of the CG Centers.⁷⁸

1. Restrictions on Licensing by CG Centers

Sometimes breeding products used by CG Centers incorporate proprietary third-party materials that were transferred to the Centers under restricted use agreements. Transfer and use by third-parties have to be carefully regulated to ensure that the Centers remain in compliance with their obligations under the parent agreement.⁷⁹ Where the breeding products were developed using genetic modifications, gene editing, or other technologies, CG Center authorization of third-party

⁷⁴ Id.

⁷⁵ CIMMYT, Principles and Procedures for Acquisition and use of CIMMYT Maize Hybrids and OPVs for Commercialization. Available at: <https://www.cimmyt.org/about/guidelines-and-policies/>.

⁷⁶ Id.

⁷⁷ Id.

⁷⁸ Id.

⁷⁹ Clause 6.3 of the CGIAR Principles on the Management of Intellectual Assets, 2012. Available at: <https://cipotato.org/wp-content/uploads/2014/01/CGIAR-IA-Principles-approved-as-of-7-March-2012.pdf>.

use could be restricted by specific national regulations. Transfer also must comply with national and regional legislation, regulations, agreements and other instruments that may also regulate the number and type of entities that can register and/or multiply the same product and/or a certain class of seed in a given territory, and/or require geographic definition of the market.⁸⁰

2. Intellectual Property and Transfer of CG Center Breeding Products

PBR is typically not claimed for material transferred to NARES by CG Centers under SMTAs.⁸¹ Article 6.2 of the SMTA limits the ability of NARES to claim IP over the transferred material stating that: *“the Recipient shall not claim any intellectual property or other rights that limit the facilitated access to the Material provided under this Agreement, or its genetic parts or components, in the form received from the Multilateral System.”*⁸² The policy goal behind this prohibition is to prevent the limitation of access to genetic material through IPR.⁸³ However, this article does not limit the CG Centers’ ability to claim IP Rights and then license them to the NARES. This alternative seems to be further supported by the SMTA Guide, which allows CG Centers to contract separately with NARES and confer upon the⁸³ right to claim IP rights before seed is commercialized.⁸³ It thus follows that unless authorized by the CG Center, the NARES technically have no inherent right to claim PBR on material shared by CG Centers as is. In all cases in which a NARES applies for PBR or other intellectual property rights over such material, assuming it has obtained prior authorization from the CGIAR Center, this action would generally trigger the SMTA’s mandatory benefit-sharing obligations under Article 6.7, which may include monetary contributions to the Benefit-Sharing Fund.

⁸⁰ New Markets Lab, “Annotated Guide on Flexible Licensing Models and Agreements,” 2019. Seeds2B African and Syngenta Foundation for Sustainable Agriculture.

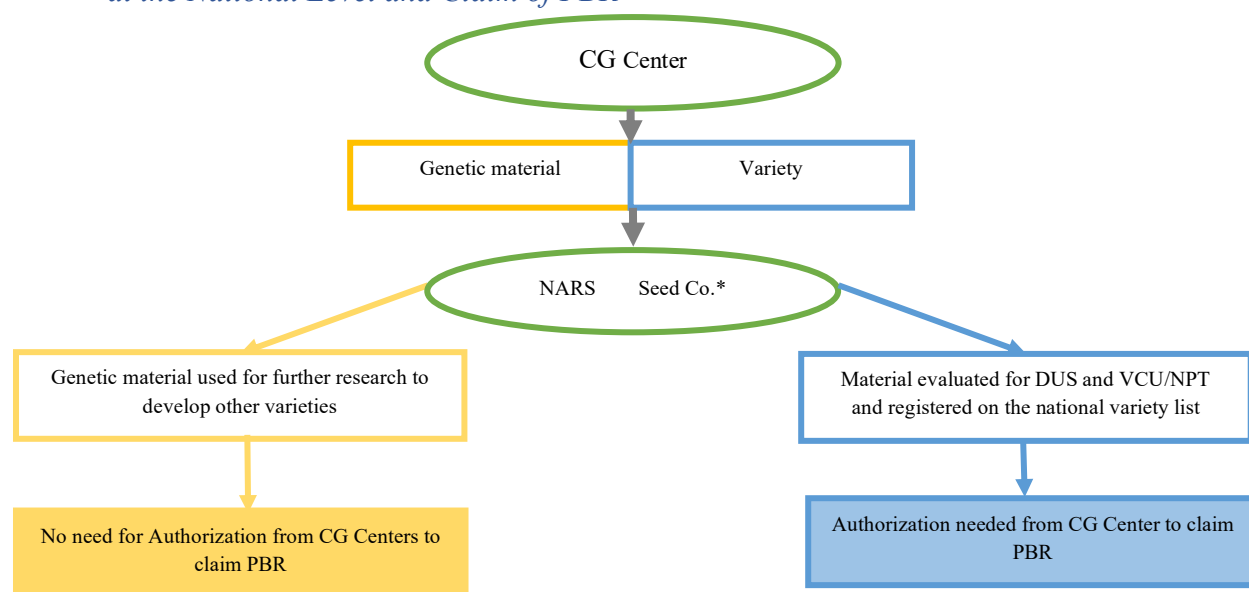
⁸¹ Id.

⁸² Id.

⁸³ Id.

The position is different when the NARES use the material transferred under the SMTA as part of research to develop a new variety that is distinct from that originally shared, in which case the NARES would not need authorization from the CG Center to claim PBR. This is depicted in Figure 10 below.

Figure 10: New Markets Lab Regulatory Systems Map on Use of CG Center Germplasm at the National Level and Claim of PBR



Seed Co.=Seed Company.

Source: New Markets Lab, 2023.

With regard to licensing agreements, CG Centers still do not often pursue formal protection of intellectual assets transferred. CG Centers may consider pursuing intellectual property protection where it is necessary for the further improvement of such intellectual assets or to enhance impact acceleration on target beneficiaries, especially through commercial channels.⁸⁴ It may also be required as a condition of access to proprietary third-party materials that were transferred to the Centers under restricted use agreements and that were used in development of the breeding product.⁸⁵ In cases in which protection is considered by the CG Center, it should comply with the conditions of the SMTA; ensure the continued availability of the material for research, breeding, and capacity development by other users; and enable the continued farmer's rights to freely save, use, exchange and sell farm-saved seed and propagating materials.⁸⁶

⁸⁴ Clause 6.4 of the CGIAR Principles on the Management of Intellectual Assets, 2012. Available at: <https://cipotato.org/wp-content/uploads/2014/01/CGIAR-IA-Principles-approved-as-of-7-March-2012.pdf>.

⁸⁵ Clause 6.3 of The CGIAR Principles on the Management of Intellectual Assets, 2012. Available at: <https://cipotato.org/wp-content/uploads/2014/01/CGIAR-IA-Principles-approved-as-of-7-March-2012.pdf>.

⁸⁶ Clause 6.4.3 of the CGIAR Principles on the Management of Intellectual Assets, 2012. Available at: <https://cipotato.org/wp-content/uploads/2014/01/CGIAR-IA-Principles-approved-as-of-7-March-2012.pdf>.

3. Royalty Generation from Licensing

While, in most cases, CG Centers issue licenses with no royalties or other forms of income involved, they are allowed to recover reasonable financial fees beyond actual costs and processing fees.⁸⁷ Some CG Centers are also charging royalties as part of a member-sponsored germplasm improvement consortium. CG Centers may also consider income generation in a manner that encourages investment by the licensee in scaling and positive impact for smallholder farmers, which can be monitored through reporting. While approaches may change as CG Centers consider developing a harmonized intellectual assets management policy, they will have to be aligned with NARES' policies as they manage their licensing approaches and consider licensing in some cases.

⁸⁷ CGIAR Principles on the Management of Intellectual Assets, 2012, Clause 7. Available at: <https://cipotato.org/wp-content/uploads/2014/01/CGIAR-IA-Principles-approved-as-of-7-March-2012.pdf>. See also, Clause 2.4 of the Policy of the International Institute of Tropical Agriculture (IITA) on Intellectual Property/ Assets, 2012. Available at <https://cgspace.cgiar.org/server/api/core/bitstreams/175fed40-6d73-4467-9d2b-3f6acb68f1a0/content>.