Licensing as a commercialization strategy to improve varietal adoption in Tanzania

ABSTRACT

Unfortunately, many improved varieties developed and released by African National Agricultural Research Institutions (NARES) remain shelved, never reaching the final intended beneficiaries–the farmers. This brief summarizes key findings from a study done in Tanzania on how the Tanzania Agricultural Research Institution (TARI) could strategically explore licensing to commercialize and improve varietal adoption. **The findings show a dire need to develop institutional and industrial capacity for licensing and to revise the TARI legal framework in order to expand the range of varieties that can be licensed.** The recommendations contained in this brief were based on consultations with stakeholders and workshop discussions in October and December 2023, led by the New Markets Lab (NML) in collaboration with the International Maize and Wheat Improvement Center (CIMMYT). The results revealed that the NARES have a limited knowledge of licensing and intellectual property rights in the form of Plant Breeders' Rights (PBR), which is a stringent legal requirement for the protection of varieties prior to licensing in Tanzania that poses a challenge for TARI. The consultations also highlighted institutional gaps in coordinating and overseeing the implementation of licensing agreements and the absence of an institutional intellectual assets policy and a varietal licensing database that are key factors affecting licensing.

Photo by New Markets Lab

CONTEXT

In Tanzania, the agricultural sector contributes about a quarter of the gross domestic product (GDP) and employs over 70 percent of the population.[1] To support the agricultural sector, it is important that new varietal technologies developed by TARI, a public agricultural research institution, reach farmers in order to improve agricultural productivity and contribute to food and nutritional security. The previous attempt by Tari to increase adoption of its improved varieties through licensing to seed companies for commercialization in exchange for royalties was largely unsuccessful, as is seen in Table 1 below.

Table 1: Crop Varieties and Companies Licensed to by TARI

Crop Licensed and variety denomination	No. of Companies Licensed to	Royalties collected
Maize (Selian H308)	4	0
Maize UHS 5350	2	0
Beans (Fibea)	1	0
Maize (UH 6303)	6	0
Maize (STAHA)	2	0
Beans (Uyole 05)	1	0
Rice (TXD 306)	1	0
Maize (UH 615)	2	0
Maize (TMV 2)	1	0
Maize (TMV 1)	1	0
Soybean (Soy 3)	1	0
Soybean (Soy 4)	1	0
Maize (UHS 5210)	1	0

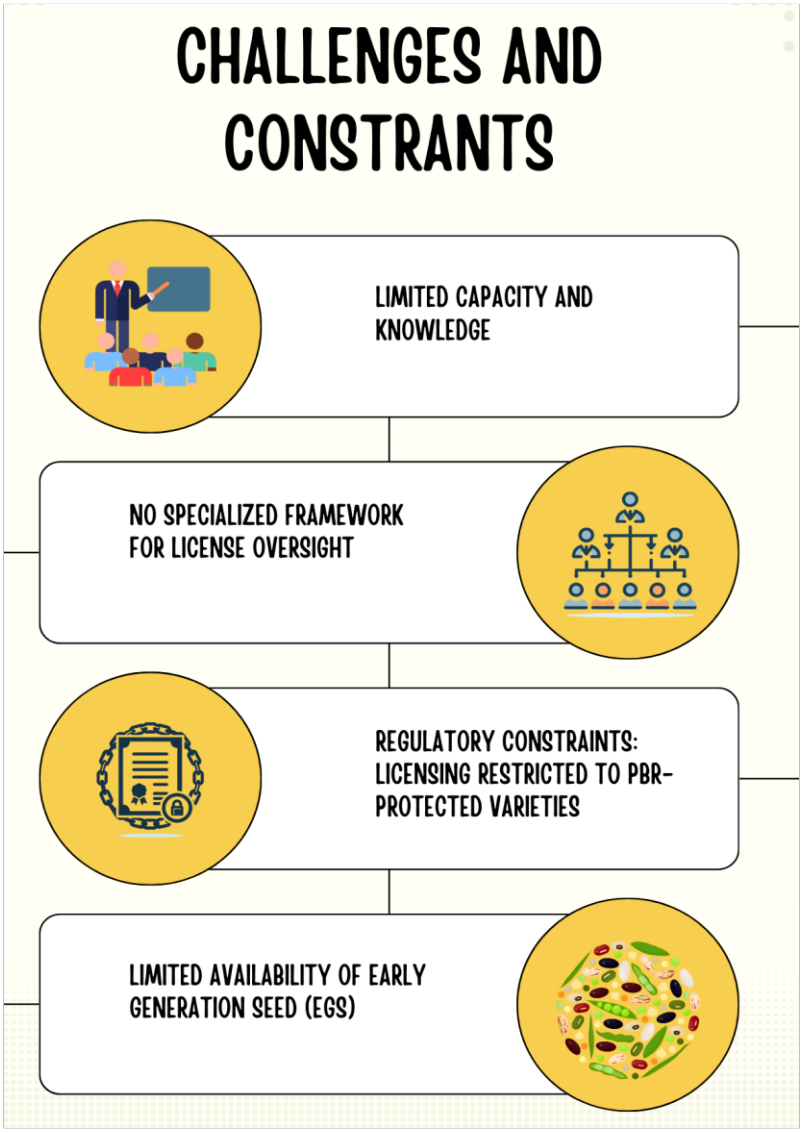
Source: New Markets Lab based on Information from TARI

In 2014, TARI issued five-year, non-exclusive licenses to 8 seed companies for 13 protected varieties of maize, beans, soybeans, and rice. The licenses allowed companies to benefit from the breeders' rights and produce, market, sell, and commercialize the licensed varieties. The licenses expired in 2019 without TARI having received any royalty payments. Since there was no coordinated institutional follow-up of the issued licenses, there is no information on the effect that licensing had on incremental adoption of the licensed varieties.

CHALLENGES AND CONSTRANTS

Training workshops in licensing and consultative meetings revealed numerous challenges regarding public sector licensing in Tanzania. As is true elsewhere, there is limited capacity and knowledge regarding licensing that negatively affects the negotiation of licensing agreements and their subsequent implementation. TARI also lacks an institutional framework designed specifically to oversee the issuance and implementation of licenses. Moreover, the staff both of TARI and of most companies have limited understanding of key licensing terms.

[1] Harun Onder, et al., 2023, Privatizing Growth: A Country Economic Memorandum for the United Republic of Tanzania, the World Bank. Available at https://documents1.worldbank.org/curated/en/099120523172572316/pdf/P177386065705608a0894401f03243fd2c6.pdf.



The legal and regulatory framework of Tari requires that only varieties that are protected under the PBR are licensed. While this provides an extra layer of protection, it limits TARI on the number of varieties it can license. The vast majority (84%) of TARI's varieties are not protected under the PBR Claiming and maintaining protection come at a higher cost and most of TARI's varieties that have market viability have been in circulation too long to meet the novelty criteria that are central to claiming PBR protection.

There is also limited availability of early generation seed (EGS), as well as EGS "leakage" to unlicensed users, which renders licensing agreements with seed companies of less value. There have been reported instances of seed produced as EGS sold directly to enterprises and farmers who then use it as certified seed. Although the Agricultural Seed Agency (ASA) is a semi-autonomous government agency mandated to produce and make available basic seed, it also produces and trades in certified seed. This can discourage seed companies from applying for licenses and paying royalties because of what they view as unhealthy competition from TARI and ASA as sellers of certified seed instead of simply producers and brokers of EGS. Moreover, due to limited resources and facilities for the proper maintenance of germplasm, some breeder seed and parental lines (for hybrid varieties) of the licensed varieties cannot be tracked.

There are other general institutional coordination gaps that affect the monitoring and implementation of licenses. Although required under the TARI legal framework, TARI does not yet have an institutional intellectual assets or intellectual property policy to guide its licensing activities, and interested seed companies are, for instance, not aware of the terms of the application process or of how and to whom to apply. Further, there is a limited flow of information between TARI and the private sector about which varieties are available for licensing and the traits that would make them viable in the market.

POLICY RECOMMENDATIONS

The capacity-building work on licensing in Tanzania done by NML and CIMMYT has so far resulted in a reinvigoration of TARI's licensing work, with licenses issued to two seed companies in 2023 that contain an authorization to market and commercialize the licensed varieties. Going forward, TARI could further expand its licensing approach to increasing varietal adoption and increasing

revenues if certain steps are taken that also build on other strategic methods such as marketing varieties through media campaigns, expos, and farm demonstrations.

- **Prioritize adoption of the Cooperation Agreement** among TARI, ASA, and the Tanzania Official Seed Certification Institute (TOSCI), developed under the AVISA project to enable TARI to trace both authorized and unauthorized use of its varieties. While this is an agreement among government entities, the Tanzania Seed Trade Association could be a vital partner in its implementation.
- **Develop a TARI Intellectual Assets Policy** to guide TARI in the acquisition, management, and commercialization of its intellectual assets, including TARI's position on the type of licenses to be granted; the criteria to be met by prospective licensees; the procedures for the application and granting of licenses; the procedures for staff to declare developed technologies; access and benefit sharing; applications for IP protection for the institution's technologies; and a standard licensing agreement, among others. The New Markets Lab has developed an annotated model Intellectual Assets Policy under SeedEqual, which could serve as a useful tool to develop a customized policy for TARI.
- **Consider revisions to the TARI legal framework** to remove the mandatory requirement to obtain PBR protection for varieties prior to licensing in order to increase the number of varieties that can be licensed by TARI.
- **Expand and tailor capacity-building efforts** by different actors on licensing approaches, PBR, and regional variety registration, building upon an assessment of needs from the workshops held under AVISA.
- **Create a specialized Management Committee and Office for Intellectual Assets** to conduct and implement activities related to the licensing of TARI technologies and to equip the committee and office with the relevant staff and resources to enable them to perform their duties effectively.
- **Compile a variety-licensing database** to track licensed varieties and activities related to their use that would include a variety's traits, the agro-ecological zones suitable for the variety, which varieties are protected under PBR, which have parent material still available, and other related information. This could be made publicly available to the private sector.

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