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FARMER-MANAGED SEED SYSTEMS, COMMUNITY SEED BANKS AND FARMERS' RIGHTS – A SYNTHESIS

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Key messages

- Farmer-managed seed systems are important for present and future food security, especially given the implications of climate change for agriculture.
- Small-scale farmers in many countries of the Global South rely on farmer-managed seed systems for their seed and propagating material and thus for their seed and food security.
- Nevertheless, farmer-managed seed systems are largely neglected in policies and legislation, and thus their potential contributions to food and nutrition security and management of crop genetic diversity are under-developed.
- Community seed banks, when well-managed, represent platforms for the development of farmer-managed seed systems and are important contributions to food security.
- However, policies and legislation are often not supportive of community seed banks, making it difficult for community seed banks to become financially sustainable and to scale up.
- Supporting farmer-managed seed systems and community seed banks through policies, laws, effective implementation and adequate financial and technical support are ways to unfold the potentials of these systems and initiatives and implement Article 9 of the Plant Treaty on Farmers' Rights.

Introduction

This paper provides a brief synthesis of our knowledge to date about farmer-managed seed systems, how they contribute to seed and food security, challenges in this regard and how realizing farmers' rights may help to unfold these potential opportunities for seed and food security. In this context community seed banks are highlighted as a promising approach to developing the potential of farmer-managed seed systems, thereby also highlighting the most important barriers that prevents this to happen. The paper concludes with a proposed agenda for further work.

What are farmer-managed seed systems as compared to formal seed systems?

'Seed system' refers to the network of actors and the activities involved in the development and management of crop varieties, and the production, distribution, and use of seed and other propagating material of these crop varieties among the involved actors. In the Global North, formal seed systems now provide most of the seeds that farmers use. In the Global South, the formal seed system is mostly

[1] *The views and opinions expressed in this document are solely those of the author. The document is being presented for discussion purposes only and does not represent the views of the Secretariat of the International Treaty nor does it reflect any official position on any of the issues being discussed.*

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relevant for large and medium scale farmers. In formal seed systems, farmers buy certified seeds of registered varieties developed in scientific breeding programmes. Formal seed systems provide officially tested seed of uniform varieties that have been evaluated for their adaptation to specific farming systems (Louwaars and de Boef 2012). Formal seed systems have clear structures defined by law and are characterised by principles such as maintaining varietal identity and purity, producing seed of optimal quality, and distributing seeds exclusively from authorised seed shops, normally for commercial sale, and to some extent (free or for sale) from national research programmes (Sperling et al. 2013).

In farmer-managed seed systems (FMSS) – also called informal seed systems, local seed systems, traditional seed systems or farmers' seed systems – farmers save, use, exchange and sell farm-saved seed of both local unregistered varieties as well as varieties from modern plant breeding according to their preferences and availability. Through seed selection, they may also enhance and diversify the varieties at hand. Exchange and sale normally take place within the local community and neighbourhoods. FMSS have been described as complex and dynamic systems of interaction and components based on local production and management practices (Almekinders et al. 1994). As these systems develop from the ground, there is great variation and diversity between and among them (Bhutani, 2019).

Why are farmer-managed seed systems important for food security in the Global South?

Multiple research initiatives have confirmed the importance and potential of FMSS for a diverse, flexible and readily available seed supply for small-scale farmers in the Global South, particularly in remote and heterogeneous areas (e.g. Almekinders et al. 2021a, Andersen et al. 2018, Brush 2004, Almekinders et al. 1994). While the importance of farmer-produced seed and propagating material varies between crops, farms, regions and continents (Almekinders & Louwaars 2002), FMSS deliver the bulk of seeds used by small-scale farmers in many countries of the Global South (McGuire & Sperling 2016, Coomes et al. 2015; Louwaars & de Boef 2012) and are thus essential for seed and food security.

Seed security exists when men and women within the household have sufficient access to quantities of available good quality seed and planting materials of preferred crop varieties at all times in both good and bad cropping seasons' (FAO 2016). Access to a diversity of plant genetic resources for food and agriculture is a particularly critical factor for seed security as it helps farmers adapt their food production to the effects of climate-related and other stresses. For example, drought tolerant crops and varieties might be chosen to spread the risks of crop failure (United Nations 2009, Fujisaka et al. 2010, FAO 2015).

Seed security is a necessary, though not sufficient condition for food security among small-scale farmers who depend on their agricultural production for food and income generation. According to the classical definition from the World Food Summit of 1996, "food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" (HLPE 2020, p. 7). Many scholars and international institutions have also adopted the four dimensions that were identified as crucial factors in that context: availability, access, utilization and stability (HLPE 2020, 7). In its report from 2020, the High-Level Panel of Experts on Food Security and Nutrition (HLPE) introduced two additional dimensions alongside the four widely recognized ones: agency and sustainability (HLPE 2020, p. 2; also mentioned in FAO et al. 2021, 53). Clapp et al. advocate for the stronger inclusion of these dimensions in processes that aim at food systems transformation, to help implement measures that in fact lead to greater food security (Clapp et al. 2022).

Seed security is a central factor for food production, and thus for food security, in particular among small-scale farmers of the Global South who fully or partly depend on subsistence production. The interconnections between seed and food security are well recognised, particularly by the UN Special Rapporteurs on the Right to Food (UN 2009, UN 2021), as is the importance of FMSS for seed and food security among small-scale farmers in the Global South.

FMSS demonstrate valuable characteristics and are well adapted to local conditions and preferences, particularly in remote and heterogeneous areas (Almekinders et al. 2021b, Almekinders et al. 1994). As they are more efficient than formally organized seed systems to meet local needs in such areas, several researchers suggest that seed supply for small-scale farmers in the Global South is best improved through the strengthening of FMSS rather than seeking to replace these seed systems with seed supply from the formal sector (e.g. Almekinders et al. 2021a). They also note that strengthening local seed systems may be achieved by drawing on competence and capacities from the formal seed system to develop local potentials.

Integrated seed sector development is one approach to building such linkages, thus supporting a pluralistic approach to seed sector development (Louwaars and de Boef, 2012). Another approach, community-based seed systems, is aimed at integrating the formal seed system and FMSS in an inclusive and dynamic manner to meet the diverse needs of smallholder farmers (Gauchan and Shrestha). This approach is typically participatory and farmer-led.

Almekinders et al. (2021a and 2021b) emphasize the need for demand–driven seed systems to achieve seed security in the Global South. For a seed-supply system to be demand-responsive, the existence of multiple types of crop varieties, seed sources and seed-delivery pathways is essential.

Community seed banks as a way of developing farmer-managed seed systems and Farmers' Rights

A rapidly increasing number of community seed banks (CSBs) have emerged as promising platforms and pathways to maximizing the benefits of local crop diversity for food security, poverty alleviation and livelihoods (e. g. Nankya et al 2022, Song 2021, Vernooy et al 2020, Andersen et al 2018, Vernooy et al 2015, Andersen and Winge eds. 2013). CSBs are local, informal or formal institutions whose core function is to maintain seeds collectively for local use (DF, 2011). They save and store quality seeds of diverse, often local, varieties for conservation, in order to make them available for members. Sometimes CSBs may also enhance local varieties through varietal selection based on farmers' preferences. As CSB members acquire knowhow in the production of quality seed, some community seed banks also produce seed of officially registered varieties for sale.

Capacity building and farmer-to-farmer exchange of knowhow are typical features of many CSBs and may cover a wide array of topics in addition to the more seed related ones, such as group dynamics, gender issues, leadership, organic farming methods and income generating activities, the latter sometimes linked with micro credit schemes. As such, well-managed CSBs may appear as platforms for development. CSBs are usually jointly managed by members as networks, cooperatives or associations with the aim of improving seed and food security, and sometimes income generation among members.

Studies of CSBs in Nepal, Ethiopia and Malawi show that when managed well, CSBs contribute substantially to seed and food security, income generation and empowerment/agency – among their members and in their communities and nearby villages (Andersen et al 2022, Andersen 2019a and b). As such, CSBs may be seen as a measure to implement Farmers' Rights as they are addressed in the International Treaty on Plant Genetic Resources for Food and Agriculture (Plant Treaty): They help protect and share traditional knowledge, share benefits from the use of genetic resources, enable participation in decision-making processes and strengthen farmers' possibilities to save, use, exchange

and sell farm-saved seed (re. Article 9). Establishing and promoting community seed banks is among the options for realizing Farmers' Rights that have been developed under the Plant Treaty.[3]

How legislation and policies affect farmer-managed seed systems and community seed banks

The formal seed system is defined and promoted at the national level across the world through legislation, policies and financial support (e.g. Kell et al. 2017, Andersen 2017). However, FMSS are neither defined nor promoted through legislation and policies in most countries, particularly in the South, even though these systems are fundamental to seed and food security for so many farmers.

National legislation on variety release, seed marketing and intellectual property rights as well as national seed policies designed to regulate the formal seed system affect farmers' customary rights and possibilities to save, use, exchange and sell farm-saved seed in all countries to various degrees: The extent to which these rights/possibilities are limited determine the legal spaces that farmers have to manage their crop-genetic resources for seed and food security and in many countries this legal space is severely reduced (Lawson & Adhikari, eds. 2018, Kell et al. 2017, Andersen 2016, Andersen 2013, Santilli 2012, UN 2009, Andersen 2008). Incentive structures are also typically designed to promote the formal seed system and usually do not apply to FMSS. The only support to FMSS often comes from non-governmental organizations (NGOs) which are project based and limited in terms of time, space, number of beneficiaries, and financial resources. The formal seed system not only fails to reach many smallholders but also neglects and may undermine their seed systems and thus their seed security.

For example, most African countries have some form of seed marketing laws in place and in most cases, these regulations are modelled on those of European countries and thus adapted to a formal seed sector in a region where FMSS play a minor role (Peschard et al., 2023). These laws involve obligatory testing and registration of a variety in a national catalogue based on criteria of genetic distinctiveness, uniformity and stability (DUS) and Value for Cultivation and Use (VCU). They also involve the registration of authorized seed shops allowed to distribute/market seed and other requirements including the certification of seed.

Peschard et al (2023) point out that some countries, including Uganda, Tanzania and Ethiopia, provide for Quality Declared Seeds (QDS), which is a simplified certification system aimed at enabling the participation of farmers' cooperatives as seed producers in a semi-formal seed system. However, in most cases, they found, the quantity and geographic reach of marketing is narrowly limited (with Ethiopia as an exemption) and only varieties registered in the national catalogue can be multiplied under this scheme. Thus, they conclude that QDS is insufficient to accommodate FMSS.

Globally, the requirements for including crops and seed in the formal seed system are not – or only to a very limited extent - compatible with the genetic heterogeneity of local varieties. In an FMSS perspective, genetic homogeneity may not even be desirable, as it tends to make plants more vulnerable to environmental stress such as the effects of climate change (Robinson, 1995). Also, such requirements are inappropriate for farmers who normally don't have the capacity to apply for registration and follow up such processes. Furthermore, restricting seed sales to authorized seed shops that are only allowed to sell certified seed of registered varieties, limit the possibilities for farmers to distribute seed developed and produced through their own FMSS, although it is normally tolerated that farmers exchange and sell seed on a smaller scale between and among themselves.

[3] Document IT/GB-9/22/13.3. For easy access to this option, see: https://www.farmersrights.org/how-to-realize-farmers-rights/6-options-for-farmers-access-to-crop-diversity-csos-etc/option-6a

In most countries, CSBs are not allowed to sell the seed of local and locally improved varieties that have not been officially registered. Registering such varieties is very challenging, as their properties are normally not compatible with the criteria for registering, particularly with regard to genetic homogeneity. Thus, there are only very few examples of such registration (see e.g. Andersen 2019b). This is why, seeds from CSBs, which often have higher quality than what is sold among farmers, are normally only distributed outside the CSBs to the extent that member farmers engage in informal exchange or sale. This constitutes a serious barrier not only to the outreach of each CSB, but also to their financial sustainability and thus to the potentials for scaling up such promising initiatives.

Proposed agenda for future work

In seeking to promote and support farmer-managed seed systems, governments and stakeholders may seek to:

1. Identify legal barriers to the development of FMSS and possibilities to remove these barriers and introduce legal measures that support and enable the development of FMSS. In this context, seed legislation is of particular importance. Also, IPR legislation is relevant.
2. Identify policies which affect the development of FMSS and detect possibilities to remove policies with negative effects and introduce policies that promote and strengthen the development of FMSS. In this context, incentive structures are particularly important.
3. Identify actions that are required to promote the development of FMSS. Here, the development of comprehensive and well-funded long-term programmes would be core.
4. Organize capacity building activities to promote the support and development of FMSS.
5. Develop platforms and arenas at the national, regional and international levels for exchanging experiences from promoting and supporting FMSS and realizing Farmers' Rights in this regard.
6. Establish voluntary guidelines or similar tools to assist and support countries towards this end.

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