

# COVID-19, seed security and social differentiation: when it rains, it pours

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**Abstract:** *Food security and seed security are closely linked, especially for poor smallholders in developing countries. The impacts of COVID-19 highlight the vulnerability of marginalized groups, and their exposure across multiple social and economic dimensions. Employing seed interventions as part of the COVID-19 recovery requires recognizing local social dynamics, or risks worsening the situation for the most disadvantaged.*

**Keywords:** COVID-19, seed security, poverty, seed systems

## Impact of COVID on vulnerable people

A great deal of COVID-19 related discussion addresses the stability of the global food system in continuing to feed the world. With global commodity stocks high and relatively modest disruptions to date in international trade, concern is refocusing on maintaining food production and processing value chains (e.g. Barrett, 2020). But how do things play out at the local and individual level for smallholder farmers?

For the poor, COVID-19 only adds to a long list of uncertainties. Society's poorest are the least food secure, subject to high vulnerability and low resilience to shocks, as has been described in relation to the interacting factors of climate change (e.g. Almekinders et al., 2010; Kaijser and Kronsell, 2014). The concept of intersectionality highlights how the poorest are usually disadvantaged across a number of interacting social dimensions, subjecting them to different mechanisms of marginalization and clusters of interlocking disadvantages (Clever, 2005). Poor smallholders farm on marginal agricultural land where livelihoods are most severely affected by extreme weather, pests and diseases, shifts in markets, and natural or man-made disasters. By their nature, smallholders have limited access to resources and capital to withstand hardships, endure losses, or to adopt coping and mitigation practices.

## Food and seed security

When considering the food security of poor smallholder farmers, seed security is a particular concern (McGuire and Sperling, 2011). For a large number of developing country smallholders, across the majority of food crops, saving one's own seed remains by far the most common sourcing practice, especially in the case of

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self-pollinating crops like beans, rice, wheat, and vegetatively propagated ones like potato (e.g. Kansime and Mastenbroek, 2016; McGuire and Sperling, 2016; Tadesse et al., 2016). On the surface, self-supply seems a resilient, self-reliant practice appropriate for poor or remote settings. It also seems technically straightforward: one can set aside and save a part of the harvest for next planting since for many crops the planting material is the same as the harvested grains, tubers or roots. However, this also increases the risk of seed being eaten or sold during periods of household food deficit or cash needs. This is exactly why many of the poorest farmers are seed insecure, and frequently need to source seed at planting time (e.g. McGuire and Sperling, 2016). Poor farmers often end up looking to buy whatever seed is available from small traders or local markets, risking getting stuck with low-quality seed, or relying on seed obtained from their social network, e.g. family or neighbours (e.g. Tadesse et al., 2016). Although a social network functions as a safety net, it is likewise a network of obligations (Cleaver, 2005; Pircher et al., 2013), a phenomenon that is also noted for seed systems (Coomes et al., 2015). Seed that is given often comes with expectations of providing labour in the future, or running errands in the time to come (McGuire, 2007; Tadesse et al., 2016).

### **Smallholders and family farms: dependence on multiple sources**

These aspects of seed security are consequential for a huge number of farmers. Out of a conservative global estimate of 570 million farms, 90 per cent are estimated to be family farms (primary reliance on family labour), and 85 per cent are smaller than 2 hectares in area (Lowder et al., 2016). An estimated 90 per cent of all seed supply takes place through informal channels (McGuire and Sperling, 2016). Poor smallholder households often face insufficient harvests to meet both household food and cash needs, and adopt livelihood strategies depending heavily on supplemental income from off-farm sources such as seasonal migrant work, day labour, and remittances – all at risk of interruption by policies implemented to curb the spread of COVID-19. COVID-19 quarantine policies have also exposed the frequent mismatch between social networks of rural households and administrative divisions. Quarantine measures are imposed on the basis of administrative boundaries – structures that are political in nature and often divide informal social networks that are important for labour, income, and food and seed security.

### **On a positive note: the opportunities**

Some clonally propagated crops may have a seed security advantage because the part of the plant that is used for seed is different from the part which is harvested for food. For example, cassava, sweet potato, and banana are propagated by stem cuttings, vines, and suckers, respectively, decoupling food production and seed supply. These crops may also make outside contributions to local food security if their bulkiness and perishability keep them around in the production area.

Evaluating the impacts of the COVID-19 quarantines on seed systems may also provide researchers with natural experiments. For example, strict plant material movement quarantines are often suggested to control crop diseases such as Sri Lanka Cassava Mosaic Disease (South-east Asia), Maize Lethal Necrosis (East Africa), and *Fusarium* wilt of banana (Latin America). COVID-19 border closures may provide a chance for researchers to evaluate the real effects of interrupting seed movement. Border closures also threaten formal seed supply by restricting inspection travel of seed certification officers and the movement of quality seed (FSC, 2020; OECD, 2020; SeedSystem.org, 2020). These interruptions to the formal sector may be very visible to researchers and policymakers, but how they affect seed access and use by different segments of the farming population using seed from formal and informal sources is unknown.

### Implications for interventions

Interventions in response to COVID-19, whether to bolster seed security or otherwise support the livelihoods of the poorest, risk missing the appropriate entry points and effects if they do not consider the totality of social differentiation and dynamics at the community level. Initiatives may connect with farmers who turn out to be part of a local elite, and use different seeds and inputs than the poorest (Pircher et al., 2013; Tadesse et al., 2016; De Roo et al., 2019). They may also not take into account local social networks and norms and values, eventually helping out the poorest but in other ways than perceived ‘right’ (Pircher et al., 2013, Shapland et al., in preparation). Insufficiently responsive interventions risk not only failing to be effective, but may in fact worsen participants’ situations by exacerbating existing structural inequalities.

While COVID-19 has only recently become a global phenomenon, the target beneficiaries of relief projects were already living with a list of socioeconomic disadvantages and perpetual food insecurity. For the poorest the adage is often true: when it rains, it pours.

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