Briefing Series March/2024

FOSTERING GENDER-RESPONSIVE INNOVATION ADOPTION AMONG SMALLHOLDER FARMERS IN AFRICA

SLM Briefing Series

N°1

Key Messages

Understanding reasons for low adoption rates of innovations is essential in identifying problems:

1. **Unequal, gendered and limited access and control over resources**
2. **High-risk environment**
3. **Weak supportive economic and political environment**
4. **Gender differences in responsibilities, norms, power structures and visions**

Fostering adoption of innovations requires a balance between technical requirments, environmental conditions and social dynamics, and should include:

1. **Adaptive and implementation research for higher impacts**
2. **Reducing scaling risks for smallholder farmers**
3. **Participatory design and development**
4. **Integration of gender-responsive and gender-transformative approaches**
5. **Innovation pathways based on institutional change and joint learning beyond the farm level**

Recommendations

1. **Funding support for transdisciplinary, adaptive and implementation research is key to fostering innovation adoption.**
2. **Ensuring that innovations are risk-reducing and are strongly supported over longer time frames by sufficient funding.**
3. **Ensuring the full inclusion of female and male farmers, marginalised groups, and other actors in the innovation development process from the on-set through participatory approaches.**
4. **Adopting gender-transformative approaches that address structural aspects of inequities between women and men from different social groups.**
5. **Engaging with the private sector for the development of win-win business models that increase smallholder farmers' access to resources.**
6. **Using co-design as well as joint or social learning approaches to understand the complexity of innovation adoption, to have an appreciation of social dynamics, to be able to adapt to local circumstances and to continuously reflect upon innovation pathways are crucial for successful and sustainable scaling outcomes.**

ISSN: 2590-9657

Key Findings

Fostering gender-responsive innovation adoption among smallholder farmers in Africa

The development and adoption of innovations are important for economic growth, enhancing well-being and for a more sustainable management of land and natural resources. Globally, improvements in agricultural development have been achieved through the adoption of innovations targeting productivity, sustainability, resilience or product quality of farmers and other food system actors such as processors and consumers..

The need to drive innovations among African smallholder farmers has never been more urgent. Africa has a rapidly growing population, insufficient food production, high rural poverty and land degradation, which is exacerbated by climate and environmental changes and extreme weather events.

Fostering new farming practices and innovation adoption among female and male smallholder farmers, including marginalised groups requires addressing the economic, environmental and socio-cultural dimensions of development and contribute to social justice and gender equity. This is not a self-evident process as some innovations have contributed to adverse environmental or social effects, resulting in low adoption rates and unsuccessful scaling of innovations.

Reasons for lower adoption rates

The reasons for smallholder farmers' low adoption of innovations are many and often overlapping. Socio-cultural, economic, political and agro-ecological contexts are often insufficiently taken into consideration in the design, implementation and adaptation of innovations. Gender-differentiated preferences, needs and constraints regarding innovations tend to be neglected based on incorrect assumptions, which science has increasingly underscored. For example, there is the common erroneous assumption that male-household heads speak in the interest of the whole family and that all members of a household equally benefit from innovations. Understanding better the reasons for low adoption rates from the start of an innovation design and implementation process is therefore crucial. These can be grouped into four clusters:

Unequal, gendered and limited access and control over resources

Smallholder farmers are reluctant to adopt innovations that require significant changes or reorganisation in factors of production and inputs. Relevant resources include for example land and water, capital and other physical infrastructure, farm inputs or labour. Women farmers and marginalised groups have less access to and control over these resources and are less involved in or ignored by decision-making processes at household and community levels.

High-risk environment

Smallholder farmers work in extremely high-risk environments and are dependent on the weather and ecosystem functioning for their farming activities. Therefore, they usually require a high cost-benefit ratio and investment safety. Smallholder farmers generally have limited resources but have incredibly high stakes as their food security and even their survival is threatened in case of innovation failure. Therefore, they often do not have enough room to experiment with unknown methods or those that require reorganisation of their existing farming practices, inputs and longer time frames than they are used to. For women, particularly in poor households, an additional constraint can be their dependence on the approval of their spouse and his family, risking also an increase in domestic violence upon own successful implementation of innovations or loss of access to land and other resources

Weak supportive economic and political environment

Structures that usually would cushion uncertainty, such as reliable financing and marketing, and access to information and legal systems to assure ownership, are less developed and/or available in Africa. Innovation development often disregards the external environment, especially access to markets, road infrastructure, transport availability and accessibility of inputs and availability of financing. Prices are often volatile and unlike in the Global North, farmers receive little support when hit by high input or low output prices. Extension and capacity building support is often not well endowed, but highly needed if farmers are to be convinced to change their current practices. Women tend to have even lower access to extension services than men despite being highly involved in farming activities and their specific constraints, preferences and needs for e.g., meeting times, crop types, land or financing are not considered.

Gender differences in responsibilities, norms, power structures and visions

A fourth important determinant for low adoption rates is the incongruence between goals of innovations and local values, aspirations, and norms, which often differ between women and men and their positioning within different social groups; but also, between them and the actors introducing the innovations. Gendered as well as local power structures often also limit or counteract possibilities for change. Unequal norms, responsibilities and expectations regarding gendered labour division, care work, access to and control over resources or participation in trainings and decision-making processes at household and community level contribute to a slowdown in the adoption of innovations.

Successfully scaling innovations

Harnessing innovations and identifying better innovation pathways to scale-out improved practices and technologies for sustainable land management is needed to foster resilience of livelihoods against climate change and other risks across diverse regions in the Global South. Fostering adoption and consequent successful scaling requires a balance between technical requirements, environmental conditions and social dynamics and should be based on continuous reflection and learning processes.

Adaptive and implementation research for higher impacts

It is erroneous to assume that an innovation that has worked for an individual or a community will likely work for others. Differences in social, economic, ecological, organisational, and geographic scales may affect the adoption of successful innovations when transferred without proper screening through adaptive research and accompanying implementation research. The latter specifically accompanies innovation processes and provides know-how to achieve higher impacts. Both types of research should entail inter- and transdisciplinary approaches.

Smallholder farmers, like other economic actors, are a heterogeneous group regarding agricultural systems, resource endowment and income levels. Depending on the socio-ecologic-economic conditions as well as the individual psychological disposition, some farmers like to innovate, others adopt quite early while others are late adopters. The support requirements among farmers therefore differ. The “one-size-fits-all” solutions do not reflect the current state of knowledge regarding cognitive behaviour models and approaches. Distinguishing the target groups for different types of innovations depending on their resource access and ownership, or developing and propagating accompanying innovative rules of access, can greatly benefit the willingness and opportunities to take up an innovation. Local universities and research institutes can support the site-specific adaptation of innovations as part of flexible out-scaling approaches.

Reducing scaling risks for smallholder farmers

An environment conducive to the adoption of innovations has to be created. A pool of research has identified and many projects have addressed supportive means and aspects to facilitate adoption. Once improved practices or technical innovations are available, farmers look for evidence of suggested innovations through demonstration plots, lead farmers or farmer field schools; others are willing to experiment on smaller plots. Access to reliable information and continuous advice through trusted sources is an important ingredient for increasing innovations adoption. Farmer organisations and extension services can expedite information on improved farming practices, climate information services and new markets, also through the use of digital tools. Farmer organisations and local extension services should be strengthened, financially well-equipped and continuously available as every farming season entails new challenges for the farmers.

Risk-reducing measures on agricultural plots such as climate smart agriculture, integrated pest management, water-saving irrigation but also socio-economic measures such as crop/livestock loss insurance, contract farming or microcredit schemes are important and are ideally combined to overcome various constraints to adoption. A combination of measures however leads to complex bundles of innovations that have to be introduced simultaneously. This often requires new organisational arrangements and new partners which can challenge farmers, their supporting structures and requires sufficient funding.

Participatory design and development

The linear transfer of technology model where scientists develop the innovations and extension agencies transfer the information to farmers has not been successful in Africa or elsewhere, particularly among smallholder farmers. The use of participatory and innovation system approaches that includes diverse stakeholders such as financial institutions and the private sector can contribute to the development of appropriate and context-specific business models for accelerating access to inputs, credits, machinery or markets. Participatory approaches in which farmers and other stakeholders, are not only involved in the innovation development process or in fine-tuning innovations to local realities, but are equal partners and therefore share a sense of ownership throughout the innovation development, has been found to be most promising.

Integration of gender-responsive and gender-transformative approaches

The ostensibly intractable socio-cultural bottlenecks can be untangled by gender-responsive and gender-transformative transdisciplinary processes that prioritise the practical and strategic needs of women versus men and also address norms, values and power differentials. Extension services and farmer organisations can also play a key role in this respect, though gender aspects need to be integrated at all levels and scales of the innovation processes. Through the incorporation of female and male farmers from different socio-economic or ethnic groups, and combining their knowledge with gender experts from ministries or NGOs from the beginning into the collaborative processes, their actual needs are directly brought to the fore and not what researchers, funders, or other stakeholders consider essential for them. Collaborative processes can help expose socio-cultural issues, power structures and gendered norms that hinder innovations adoption, which requires highly experienced facilitators. Gender and social equity issues are to be an integral part of the innovation development process and not an afterthought. This will ensure that the outcomes of innovations are favourable to the whole diversity of smallholder farmers, improve the conditions of typically disadvantaged or marginalised groups, particularly women, youth and ethnic minorities, and hence contribute to social equity.

Integration of gender-responsive and gender-transformative approaches

The Gordian knot that ties these together is the knowledge, attitude and motivation as well as the behaviour of not only the smallholder families but also of community leaders, extension agents, ministries, NGOs, business and scientists. It is therefore key to involve the different stakeholders through regular meetings and support platforms for reflection, exchange and continuous learning, be it in the form of innovation hubs, living labs

or participatory learning platforms. Collaborative and social learning processes are even more successful when they include co-development of gender-responsive theories of changes and innovation pathways. Local visions for sustainable land management as well as behavioural and capacity changes required for innovations adoption and adaptation are to be further incorporated. This allows for the uncovering of blind spots that otherwise would have been overlooked.

The role of knowledge sharing, joint learning approaches and the application of gender-transformative approaches that address power structures at local and institutional levels to improve agricultural innovation systems is growing in importance.

Given the significant role of policy-makers in scaling up and scaling out innovations, it is highly essential that they are engaged throughout the innovation development processes, and the participatorily developed innovations are integrated into national policies and programmes with appropriate incentive mechanisms for uptake and upscaling. This may also require institutional change and restructuring of approaches within the various bodies involved in sustainable land management—ranging from ministries and local governmental institutions to NGOs and businesses. This involves a whole additional set of necessary innovations beyond the smallholder farmers themselves.

Conclusion

Fostering innovations adoption among smallholder farmers in sub-Saharan Africa involves complex processes that depend on addressing various issues in parallel. These issues include but are not limited to: 1. consideration for the agro-ecological, socio-economic and political environment in which farming is done, 2. full inclusion of female and male farmers from various backgrounds and contexts, the marginalised, and other actors in the innovation development process from the onset, 3. inclusion of gender-transformative approaches that address structural aspects of inequities between women and men from different social groups, 4. ensuring that the innovations are risk-reducing, do not widely depart from the current practices, or are strongly supported over longer time frames by sufficient investments, trainings, etc. and acknowledge as well as address the gendered access to land, credit, market, information, labour, and inputs, 5. adaptive research and implementation research during scaling successful innovations in new communities, and 6. integration of co-design as well as joint or social learning approaches to understand the complexity of scaling and continuously reflect upon innovation pathways.

These six considerations address many of the reasons for the low adoption rates of innovations among smallholder farmers and indicate means for improving and fostering adoption. Working with social learning approaches, innovation pathways based on theories of change and participatory, equitable knowledge processes with a gender-responsive or ideally, transformative vision are important for gendered knowledge generation, and a stepping stone for contributing to behaviour change. Continuous support, coherent interaction and exchange between policy-makers, local implementers, NGOs, scientists and ministries remain one of the backbones to achieving a just, equitable and sustainable change in agricultural production and land management systems.

The paper is based on thorough literate reviews, many years of field experience as well as a side event held at the 8th Africa Agribusiness and Science Week in Durban, South Africa in June 2023 and a multi-stakeholder learning workshop held in Tamale, Ghana in November 2023. Scientists, farmers, farmer organisations, agricultural extension agencies, civil society organisations, financial institutions and other local, national and regional institutions interested in agricultural development have been consulted.

ISSN: 2590-9657

Target

The aim of this briefing series is to provide evidence-based advice to government policy-makers and decision-takers who influence policy-making, development projects and implementation activities in sustainable land management in sub-Saharan Africa.

Context

The German Federal Ministry of Education and Research (BMBF) funds several research projects to identify climate-adapted, resource-conserving and, above all, practicable solutions and instruments for sustainable land use in sub-Saharan Africa by engaging regional partners from science, administration, politics and business. The mutually generated knowledge will be integrated into local education and training programmes in order to improve livelihoods and support job creation in the long term. In particular, the development of digital formats, such as smart farming, advisory apps, e-learning and decision support systems, play a crucial role in the sustainable development of rural areas in Africa taking into account ecological, economic and social aspects in equal measure.

"Sustainable Land Management in Sub-Saharan Africa: Improving livelihoods through local research" is a research programme funded by the German Federal Ministry of Education and Research (BMBF), within the strategy of its platform Research for Sustainability (Forschung für Nachhaltigkeit, FONA), and consists of one accompanying project and four regional projects to strengthen the integration, coherence and outreach of research results in the area of sustainable land management:

INTERFACES - Supporting Pathways to Sustainable Land Management in Africa

COINS - Co-developing innovation for sustainable land management in West African smallholder farming systems

DecLaRe - Decision support for strengthening land resilience in the face of global challenges

InfoRange - Increasing efficiency in rangeland-based livestock value chains through machine learning approaches and digital technologies

Minodu - Fostering local sustainable development through technology and research

INTERFACES is an accompanying project that supports four BMBF-funded regional research and development (R&D) projects in their endeavor to drive change for sustainable land management in sub-Saharan Africa. At the heart of INTERFACES lies the recognition that to achieve changes towards sustainable land management, a fundamental reorganisation across technological, economic, political, institutional and social factors is needed, which also includes questioning existing paradigms, goals and values. For changes to be sustainable, they must be gender-responsive and socially inclusive, which means that implementation pathways for sustainable land management must be based on thorough gender and power analyses and lead to outcomes that benefit both women and men of different ethnicities, ages, classes, and income levels.

ISSN: 2590-9657

Production

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ISSN: 2590-9657