

LSP briefing notes

Access to natural resources

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Seed trails and sustainable livelihoods: understanding access to seeds and plant genetic resources

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Seeds and plant genetic resources (PGRs) make vital contributions to rural livelihoods, yet access by poor households to these resources is often neglected or poorly understood. A sustainable livelihoods perspective facilitates recognition of the role played by seeds and PGRs in rural people's livelihoods and strengthens understanding of issues of access. Livelihoods perspectives demonstrate how seeds and PGRs are key assets that are linked to other livelihood resources and strategies in complex ways. Great variation exists across contexts and three cases – on seed provision in emergencies, access to wild and weedy resources, and farmer engagement with agricultural research – are used as illustrations. The value-added of a livelihoods approach lies in its attention to the institutions, operating from local through to global levels, which shape access. Integration of a livelihoods approach into existing work on seeds and PGRs helps focus attention on access by the poor to these resources and so furthers the achievement of wider goals of food and livelihood security, poverty reduction, and environmental sustainability.

Access to seeds and plant genetic resources

Access to seeds and plant genetic resources (PGRs) is a vital element of food security and sustainable development. Seed and PGR interventions tend to focus on production or conservation concerns, such as crop and varietal improvement projects, the development of technical capacity and infrastructure, genebank standards and guidelines on in situ conservation. Scientific and technical activities such as these make invaluable contributions to agricultural development, but they sometimes fail to locate seeds and PGRs within the bigger picture of people's livelihoods. In doing so they may miss important links to wider goals of food security and sustainable development.

The role and significance of seeds and PGRs in achieving these goals cannot be fully appreciated only in scientific or technical terms, or through a production or conservation focused lens. Rural livelihoods are dynamic and diverse, and the bigger picture is complex and fast-changing. Understanding access to seeds and PGRs demands more than a local focus and calls attention to economic and political contexts and processes at national and global levels. These include the growth and consolidation of private sector companies, the declining capacity of the public sector in many developing countries, and the increasingly elaborate governance of seeds and PGRs through national and international regulation.

Attention to the diversity and complexity of rural livelihoods, and to this bigger picture, is critical if seed and PGR activities are to make effective contributions to reducing poverty and improving food and livelihood security. This note shows how a sustainable livelihoods (SL) approach can help to ground work on seeds and PGRs in the realities of people's livelihood systems and strengthen understanding of often-neglected issues around access to these resources.

What is a livelihoods approach?

A sustainable livelihoods perspective is a way of thinking about the linkages among vulnerability, poverty and environmental or natural resource management. It looks at how different people pursue a range and combination of livelihood strategies given a particular vulnerability context, combination of assets and set of opportunities and constraints presented by institutional structures and processes. Poverty reduction remains central to livelihoods approaches, and efforts to reduce poverty focus on strengthening people's command of assets, expanding their opportunities to pursue different livelihood strategies, and enhancing resilience in the face of risk, stresses and shocks. A sustainable livelihoods perspective has several key elements:

- It is **grounded and contextual**, and takes into account the *shocks, trends and seasonal factors* that shape people's livelihood systems, ranging from local climatic conditions to the broader macro-economic context.
- It is **people-centred**, emphasizing the decisions people make with the assets they have. These assets include *human, natural, social, physical and financial assets*.
- It is **dynamic**, and highlights the broad range of agricultural and non-agricultural *livelihood strategies* people pursue.
- It emphasizes the **centrality of institutions** and calls attention to how institutions operating at *multiple levels* and *across sectors*, span and connect local, national and global scales, and so shape local access to resources. (see Box 1)

While many livelihood frameworks have been developed by different organizations, no framework is definitive and a livelihoods approach may be adopted and adapted to suit the conditions of a particular context, and used in combination with other approaches.

The contributions of seeds and PGRs to sustainable livelihoods

The vast contribution of seeds and PGRs to livelihoods stems not only from the diversity of plant species but also the complexity of their interaction with other livelihood assets and strategies. While their direct contributions to food, income, improved agricultural productivity, and plant genetic diversity are well recognized, seeds and PGRs make less visible contributions to dynamic livelihood systems:

- *Managing uncertainty and responding to vulnerability:* Access to a diverse range of seeds and plant genetic resources helps people to respond to agro-climatic and economic uncertainties, and cope with risks, shocks and stresses in the external environment.
- *Maximising productive assets and strengthening the asset base:* Use of seeds with particular characteristics can help people make the most of the other assets they command. For example, seeds that have weed and pest tolerance characteristics are valuable to households where labour, a human capital asset, is in short supply.
- *Contributions to livelihood strategies:* Seeds and PGRs are crucial to agricultural livelihood strategies, but they also play an important, and often hidden, role in supporting non-agricultural activities (see Box 2).

Understanding access to seeds and plant genetic resources

The processes through which access to seeds and PGRs is secured are often overlooked, leading to the entrenchment of false assumptions about access, to the neglect of important access routes, and to a limited

understanding of the factors that influence and the forces that bear on access.

People may gain access to seeds and PGRs through a number of channels, including markets, aid programmes, extension services, engagement with agricultural research, community-based channels and local harvesting of wild and weedy resources. Each access pathway is underlain by particular institutional configurations. Which pathways are available, and the ways in which they are negotiated, will vary for different households and individuals in different contexts, as well as for different kinds of seeds and PGRs. Given the very context-specific nature of access, three cases are used as illustrations.

Case 1: Seed provision in emergencies

In emergency situations an assumption is often made that seed is unavailable locally, and on this basis direct distribution of seeds is frequently included as a routine component of emergency relief efforts, usually as a complement to food aid. Given the time and resource constraints that characterize emergencies, relief often occurs with little prior knowledge of local seed systems, how farmers gain access to seeds, to what extent and in what ways seed systems have been affected by the crisis and with what consequences for which farmers and groups of people.

WHAT CAN A LIVELIHOODS PERSPECTIVE OFFER?

A livelihoods approach suggests that lack of access to seeds in sufficient quantities and of appropriate varieties is often the key source of seed insecurity in emergency situations, rather than lack of availability.

- ◆ An SL approach helps reveal how in some cases, seed insecurity may stem from lack of access to financial assets and institutions, such as income, credit and markets.

BOX 1. MAKING AND SHAPING ACCESS TO SEEDS AND PGRS: WHAT ARE INSTITUTIONS?

Institutions are crucial in shaping the contextual factors and conditions that bear on livelihoods and in determining access to livelihood assets, including seeds and PGRs. Institutions govern the interactions among diverse sets of actors, and in this sense they may be thought of as 'the rules of the game'. They create and shape the pathways that people negotiate to secure access to resources and pursue livelihood strategies. A livelihoods approach to institutions encompasses both formal regulations, policies, and rules as well as informal but regularized practices or patterns of behaviour. A range of institutions at multiple levels affects access to seeds and PGRs in different ways. Some examples are:

GLOBAL LEVEL:

- Agreement on Trade Related Aspects of Intellectual Property (TRIPs)
- International Treaty on Plant Genetic Resources for Food and Agriculture
- Convention on Biological Diversity
- Cartagena Protocol on Biosafety

- International Union for the Protection of New Varieties of Plants (UPOV)
- Public Sector: International Agricultural Research System
- Private Sector: growth of life sciences industry, mergers and acquisitions

NATIONAL LEVEL:

- National legislation: IPRs, patents, benefit sharing, indigenous knowledge
- Regulatory frameworks: certification, varietal release, seed policy, competition policy
- National Agricultural Research systems and extension service
- Property rights and tenure regimes, usufruct rights

LOCAL LEVEL:

- Informal local institutions for resource management (e.g. labour sharing, systems, exchange common land, informal customary institutions)
- Formally sanctioned community-based organisations
- Credit institutions

BOX 2. THE HIDDEN ROLE OF SEEDS IN LIVELIHOOD STRATEGIES: 'TRANSPORT' AND MIGRATION IN WEST AFRICA

Migration is an important livelihood strategy in many parts of rural Africa. In Burkina Faso, an early maturing rice variety called 'Transport' is used because it helps to finance farmers' travel to mines in northern Ghana and allows them to return in time to harvest late-maturing sorghums. Use of the variety thus facilitates seasonal migration and optimises the use of labour.

- ◆ Equally, it also highlights the role that social networks and informal institutional arrangements play in creating access routes. This 'social capital' may be particularly vulnerable to disruption or destruction in emergency situations.
- ◆ Wider processes and institutions also shape local access to seeds in emergencies. Consolidation of the seed industry and regulatory controls affect what seed may be accessed through relief efforts. This, in turn, has an impact on the local seed system.

A sustainable livelihoods perspective can help to identify the different issues around access and, indeed, also availability, that may emerge in the context of particular emergencies. Through activities such as livelihoods based needs assessments and seed system security assessments, an SL approach helps to identify whether seed relief is appropriate, and if so what form relief efforts should take to ensure that interventions help to strengthen seed security and make it more sustainable.

Case 2: Access to wild and weedy resources

The local harvesting of wild and weedy resources and the cultivation of so-called 'minor' or local crops are often neglected in many research and development efforts to strengthen rural livelihoods. These resources may have income-generating potential, and access to them contributes to livelihood diversification. Their nutritional value makes them especially significant for particular groups of people such as women and children and for poor households, which may lack access (or access in sufficient quantities) to food for consumption through subsistence production, exchange, or market mechanisms.

WHAT CAN A LIVELIHOODS PERSPECTIVE OFFER?

A livelihoods perspective overcomes this neglect by locating wild and weedy resources within the broader context of people's livelihood systems: identifying the ways in which they may strengthen or maintain assets, contribute to livelihood strategies and enhance resilience. It also shows how institutions and processes of institutional change, at multiple levels, are significant in determining access to wild and weedy resources.

- ◆ Land and resource tenure arrangements are key, with the relationship between privately held spaces (e.g. fields and

gardens) and the wider commons (e.g. forests, rangeland) being a crucial dynamic.

- ◆ As commercial interest in the medicinal, nutritional and other properties of these resources grows, access to them will increasingly be shaped by emerging regulatory regimes establishing intellectual property rights.
- ◆ Responses to growing commercial and proprietary claims to PGRs include local level efforts to document local knowledge, establish community biodiversity registers and genebanks. These efforts offer important mechanisms to protect access to genetic diversity and recognize local knowledge. But such efforts must avoid the tendency to idealise 'the community' and recognize that communities are internally heterogeneous and socially differentiated.

Case 3: Farmer engagement with agricultural research

Historically, agricultural research has been a linear process, in which formal sector plant breeders implementing a research agenda develop seeds and technologies that are transferred to farmers through a 'pipeline' approach to extension. This model, exemplified by the Green Revolution, has led to vast increases in yields, but also to great disparity since many of the seeds developed are not suited to marginal environments or to the socio-economic conditions of resource-poor farmers. A similar research paradigm prevails in the development of agricultural biotechnology, though the private rather than the public sector leads innovation in this field.

WHAT CAN A LIVELIHOODS PERSPECTIVE OFFER?

With its people-centred approach, a livelihoods perspective supports the participation of farmers in agricultural research and the development of PGRs appropriate to local agro-ecological and socio-economic conditions.

- ◆ Participatory plant breeding and varietal selection demonstrate how important it is to use farmers' own understanding of their livelihood system to select traits and make best use of available germplasm.
- ◆ Making the most of local germplasm requires an approach that considers the institutional and policy context in the whole innovation and delivery chain, from priority setting, through experimental design, varietal release and certification, extension and monitoring.
- ◆ With the dominance of a few companies in agricultural research and development, a key challenge is how to integrate a farmer-oriented, livelihood-focused approach into the private sector. This requires an assessment of what public policy measures and incentives can be leveraged to improve livelihood outcomes for the poor.

An SL approach to understanding access

Access to seeds and plant genetic resources is not a single or uniform issue, but rather an umbrella for many issues and challenges that vary in different settings and for

different groups of people. Some of the factors that emerge as key to understanding access across, and within, particular contexts are:

- *Resource differentiation*: as the case studies illustrate, questions of access will differ depending on the particular type of seed or PGR in question.
- *Social differentiation*: differences in wealth, gender, age, ethnicity, social class or group, may affect the kinds of resources to which people can (or cannot) gain access and the strategies they are able to pursue to secure access.
- *The dynamic nature of access and the role of institutions*: institutions make and shape access to and use of seeds and PGRs, as well as other assets with which they are linked. Social practices and arrangements may be as or more significant than formal institutions in determining access. Exploring the dynamics of access involves recognition that institutions operate at multiple levels and calls attention to the relationships among overlapping, parallel, reinforcing or conflicting institutions.

Concluding Comments

Understanding access to seeds and plant genetic resources requires attention to both the context-specific nature of particular livelihood systems, as well as to the way that wider political and economic processes play out locally. The checklist in Box 3 outlines several questions in three key areas to facilitate thinking about these issues.

A sustainable livelihoods approach complements, informs and expands the range of existing work on seeds and PGRs. It has several implications for the design and development of entry points. Two of the most significant are:

- *Strengthening existing work*. An SL approach enhances existing work on seeds and PGRs by helping to ground these activities in an understanding of the broader context of people's livelihoods. (See Case 1, 2 & 3)
- *Opening up new entry points*. An SL approach flags up issues typically overlooked in development practice (see Case 2) and calls attention to how institutions and social relations shape access to seeds (see Case 1 and 3). This opens up entry points not normally considered within the frame of action. For example, it suggests that institutional entry points may offer a means to improve the poor's access to seeds and PGRs.

BOX 2. CHECKLIST: UNDERSTANDING ACCESS TO SEEDS AND PLANT GENETIC RESOURCES

I. CONTEXTS

- a) What are the main sources of livelihood risk for the people in question, noting that this will likely be different for different groups of people?
- b) What are the sources and nature of shocks or emergencies?
- c) In what ways do these risks, shocks and stresses affect assets and institutions?

II. LOCATING SEEDS AND PGRS WITHIN LIVELIHOOD SYSTEMS

- a) What resources or assets are important in the livelihood systems of particular people?
- b) How are these assets used or combined in different ways to gain access to seeds and PGRs?
- c) In what ways does access to seeds and PGRs facilitate access to other assets or enable the pursuit of particular strategies?

III. INSTITUTIONS, POLICIES AND PROCESSES

- a) What are the institutions, policies and processes at multiple levels that:
 - i. affect access to seeds and PGRs (direct effects)
 - ii. affect access to other assets that in turn affect access to seeds and PGRs (indirect effects)
- b) How do these institutions, policies and processes affect access to seeds and PGRs?
- c) In what ways do access pathways differ for different groups of people?

A livelihoods perspective directs focus on the many ways in which seeds and PGRs contribute to dynamic livelihood systems and exposes a range of complex, and often neglected, access issues. While such a perspective is always locally grounded, this need not mean that it is exclusively locally focused. Institutional complexity that is local, but also ever more global, presents substantial and sometimes entirely new challenges for securing local access to seeds and PGRs. A livelihoods approach that puts people at its centre, cuts across sectors, and draws attention to complex social and multi-level institutional dynamics can strengthen existing work on seeds and PGRs. In this way it helps address these new challenges, thus advancing efforts to achieve goals of food and livelihood security, sustainability and poverty reduction.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS



Livelihood Support Programme (LSP)

An inter-departmental programme for improving support for enhancing livelihoods of the poor. Through the **Livelihood Support Programme (LSP)**, FAO seeks to improve the impact of its interventions at the country level through the effective application of Sustainable Livelihood (SL) approaches. This work is supported by the UK Department for International Development (DfID). Email: lsp@fao.org

Access to natural resources sub-programme

Access by the poor to natural resources, including land, forests, water, fisheries and wildlife, is essential for sustainable poverty reduction. The sub-programme focuses on building stakeholder capacity to improve poor people's access to natural resources.