

Collaborative learning for sustainable seed-system development

Participatory Plant Breeding and Resilient Seed Systems: Options for Stakeholder Engagement and Benefit Sharing

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Objectives of sustainable seed system development?

Improving Seed Security – over what farmers already have:

- Seed quality (genetic and planting values)
- Seed availability (timeliness, quantity)
- Seed access (costs, distance)



All farmers can sow high quality seed of the preferred variety at the chosen time

Seed quality

Genetic Value

- Variety
- Specific traits
- Intra-varietal diversity

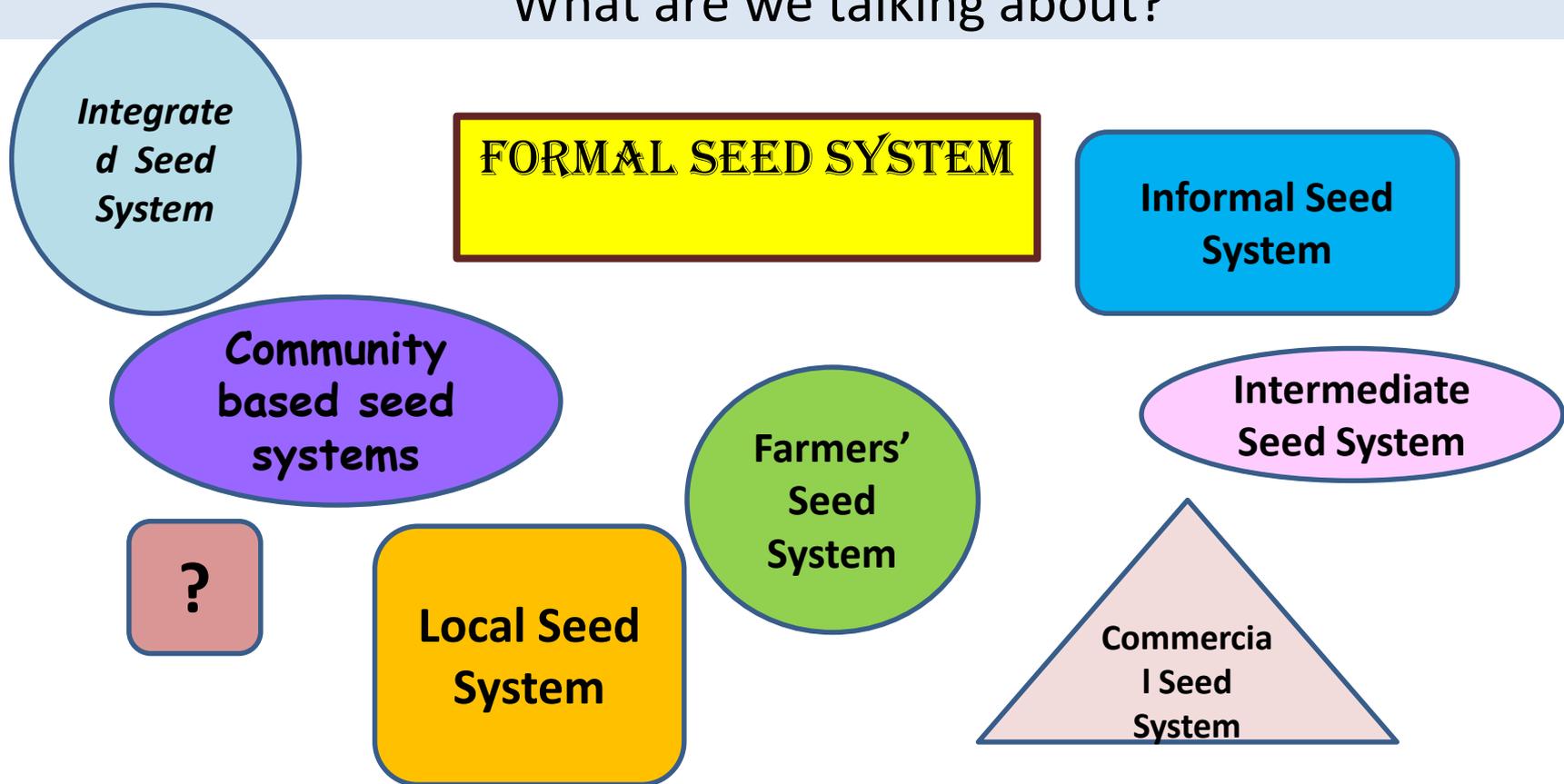
Planting Value

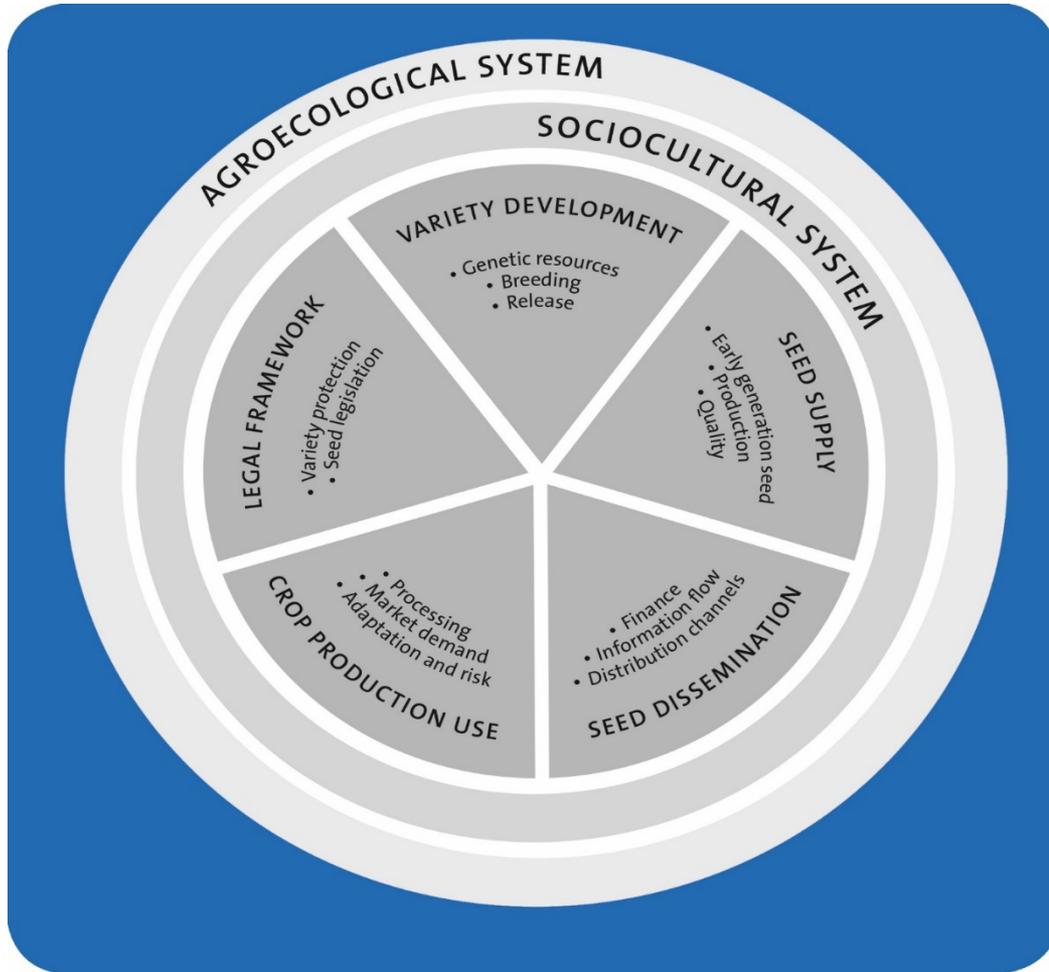
- Germination percentage, seed vigour
- Cleanliness: soil, other seeds, weeds, broken grains,...
- Healthy seeds: no seed borne diseases
- Varietal purity: the seed is not mixed, or crossed with other varieties

**What is 'improved seed'? : Better than what farmers use,
Provide farmers with clear
advantages**

Seed System Development?

What are we talking about?





Seed System functions

*embedded in larger
socio-cultural
and agro-ecological
environments*

Who is doing what?

**Who depends on
whom?**

A new perspective on seed systems:

Exploring problems and options for improvement based on actors' insights

Seed systems...

- Providing a most basic agricultural 'input'.
- Established and maintained by human actors, based on their respective needs and goals.
- The actors are highly interdependent: they rely on each other to achieve their individual and collective goals.

Assessing seed systems by focusing on

- Actors' perspectives and insights
- Actors' relationships
- Actors' suggestions for improvement



Practical steps and methods used

Identify actors



Study views,
goals, needs,
options etc.



Discuss and
prioritize
among options

Methods:
Internet research,
existing contacts,
“snowball” method

Methods:
Semi-structured
interviews, Focus
Group Discussions

Methods:
Multi-Stakeholder
Work-shops, ranking
/ scoring

Actor categories

OTHER ACTORS
E.G. ASSOCIATIONS,
DONORS,
SERVICE PROVIDERS,
GOVERNMENT OR
NGO REPRESENTATIVES

GENETIC RESOURCES MANAGER

PLANT BREEDER

SEED CERTIFICATION AGENT

SEED PRODUCER

SEED COMPANY

SEED SELLER

EXTENSION AGENT

FARMER

GRAIN TRADER

GRAIN PROCESSOR

Sorghum Seed System in Mali —

by seed system function



Photos F. Rattunde

Crop production and use

Demands for varietal adaptation, quality for home & market use

- Farmers produce grain for home consumption & market
- Critical trait priorities:
 - **Food yield** (good grain storage & food quality)
 - Adaptation to **poor soils, weed competition**
 - Tall height (Mali) & appropriate maturity
- Diverse races cultivated for different purposes
- Specific local varieties important for women
- Stover quality: opportunity for intensifying systems



Commercial seed dissemination: Sorghum in Mali

Issue	Finding
Culture	Seed purchase a novelty due social norms; hybrid seed a game changer
How /Who	Proximity critical, very few agro-dealers Short chain: Farmer Org. - Farmer Centralized companies with no rural sale networks
Information Flow	Very limited: Extension weak; National variety lists miss key traits; Performance data not accessible; Smallholder farmers seek experiential learning;
	Farmer Orgs active: Alternative demos, local radio, collaborate Variety Trials
Cash Flow	Access to seed limited for smallholder-farmer

Seed supply

Production and quality



Hybrid seed production by farmer-coop in Mali
(Photo: F. Rattunde)

Issue	Finding
Planning	Difficulty to predict demand (volume and variety)
Seed production	<ul style="list-style-type: none">➤ Farmer cooperatives produce, condition, package, multiple varieties at own risk;➤ Seed trade companies purchase on need basis➤ Seed trade companies condition and package
Quality	Minimal problems
Certification	Causes delays & costs; farmer coops seek alternatives, decentralization

Variety development

Genetic resources, breeding, release

Breeding	Mali
Who/Where	Single public program collaborates with farmer networks
Support	Projects, donor funding
What	<ul style="list-style-type: none">➤ OPVs & hybrids➤ Tall & short➤ Local germplasm used extensively,➤ Attention to food and stover quality increasing
Setting Priorities	Breeders-Farmer Coops-NGO/Extension interactions



Legal and regulatory frameworks

Issue	Mali
Seed Policy	UPOV91 members (favor private sector, limits Farmers' Rights) Restrict sale of local varieties & non-certified seed
Variety Release	VCU criteria for varietal release correspond poorly to farmer's priorities Delays & cost of release - started recently
Seed Certification	Delays & costs for farmer seed-coops

Workshops: Priority options for seed system development in Mali

...over all participants and actor groups

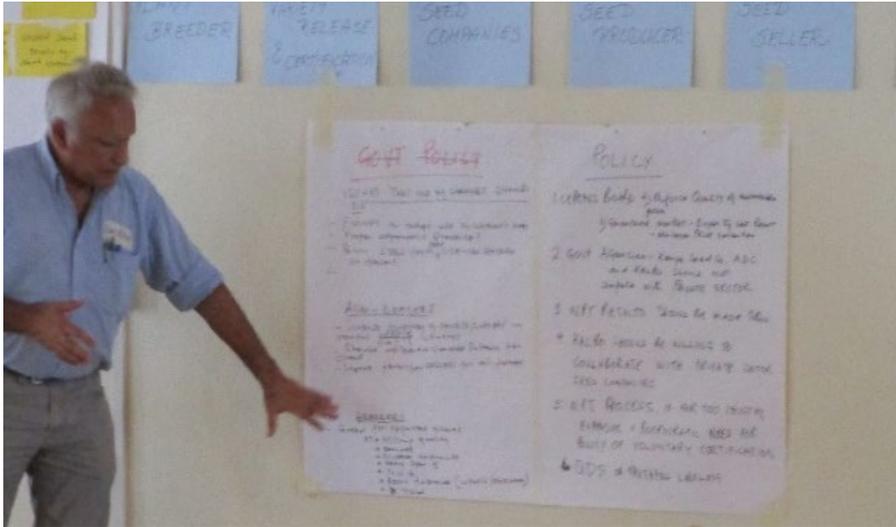


Photo: F. Rattunde

- Stakeholder fora: Dialogue between seed-producer groups and other actors
- Enhance capacities of seed producer cooperatives
 - Financial & operational management
 - Variety testing
 - Seed production and processing
- Enhance capacities of agrodealers
 - Knowledge of varieties
 - Communication and marketing
 - Linking among actors to better meet demand

Generalized Conclusions —

Entry points for sustainable seed system development





Actor oriented approach to seed system development leads to engagement for change

Clearer focus on farmers' capacities and needs

Enhancing all actors' capacities for collecting, sharing and disseminating information

Decentralizing seed production and dissemination

Shifting resources from regulation and relief to creative efforts

Enhancing relationships among actors

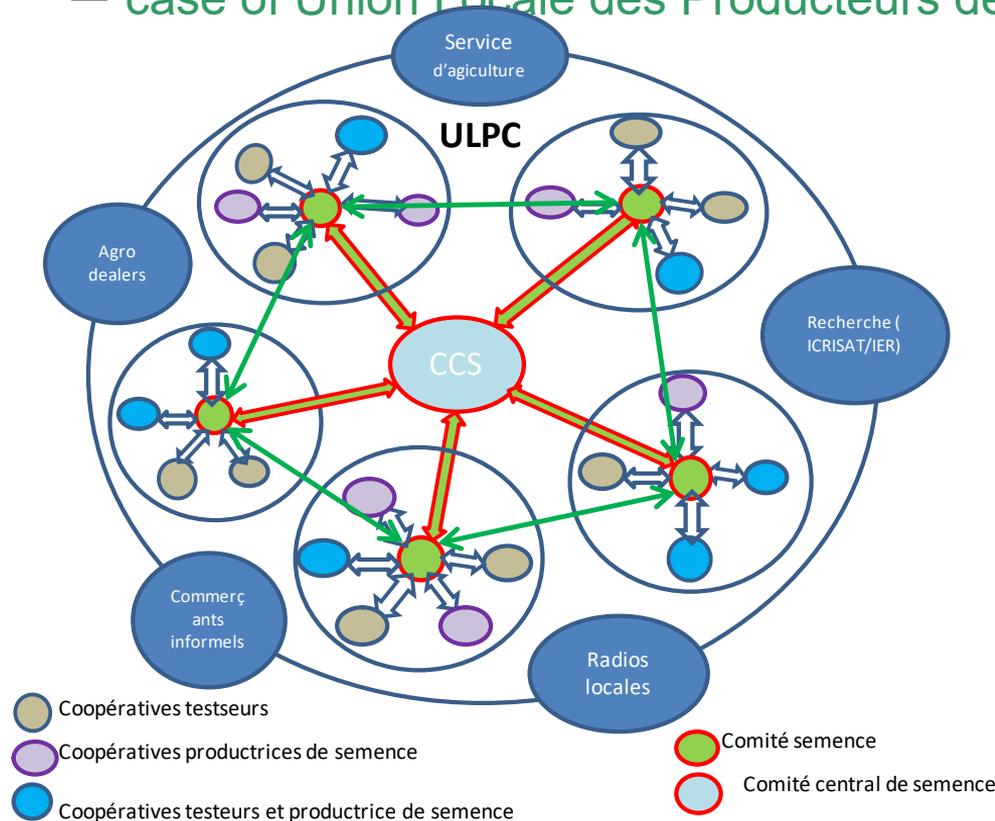
Building experiences with collaborative changes, joint actions

- Focus on what all actors are ready to change
- Encourages actors initiatives
- Identifies win-win scenarios
- Enables ecological, cultural, ethical and social considerations in addition to economic interests
- Builds trust and collaboration among actors
- Enables rapid and collaborative learning, implementation and evaluation among all actors



Sustainable Seed Dissemination: Organizing Processes for Transparent Decision Making

– case of Union Locale des Producteurs des Cereales de Dioila (ULPC)



Through individual discussions between research and farmers:

- Individual coops decide on activities
- Establishing commune level Seed Committees
- Farmer facilitators at commune level
- Form Central Seed Committee
- Transparency of finance management

Clearer focus on farmers' capacities and needs

Sorghum farmers as partners, not just beneficiaries —

- Attention to food yield/quality and specific adaptation
- Gender responsiveness:
 - Types of varieties
 - Regulations to allow sale of local varieties
- Focus on women's capacity for production and marketing of grain and seed
- Consider social norms for seed dissemination options
- Develop credit facilities for farmer-managed seed production and dissemination enterprises



Photo K. Isaacs

Improve collection and sharing of variety performance information

- Make comparative varietal-performance data accessible
- Build local capacities for sharing farmers' experiences with specific varieties and seed suppliers (rural radio, local language posters...)
- Use IT tools for transparency, real-time data sharing and information access for all actors
- Label seed packets with relevant info, pictures



Sharing knowledge on new varieties, on-farm variety evaluation
(Photos: E. Weltzien)

Decentralizing seed production and dissemination

Increase trust and reduce transaction costs

Proposed actions:

- Seed production by locally respected farmer organizations
- Conditioned and pack seed locally
- Market seed by and with local actors
- Treat seed at time of sale or on demand
- Sell seed by locally known farmers/ grain traders
- Saving/credit schemes via cooperatives



Photo: S. Gundo

Shifting funds and resources from regulation and relief towards creative efforts

Preparedness and resilience

- Breed varietal diversity for climate change adaptation
- Build capacity of wider range of seed system actors
- Conduct free seed distribution only in context of equitable seed system development strategy
- Develop seed dissemination paths that benefit and work with smallholder farmers



Photo: M. Sidibé

Advantages of Collaborative Learning for Developing Seed Systems

- Systematically Involving all who have expertise, insights and motivation for improving the seed system
- Identification of possible changes, based on common understandings of issues and opportunities
- Strengthening relationships and collaboration between actors

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Photo: E. Weltzien



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