



FAO

Seed Security Assessment Training

Seed Systems: Basic Concepts (S-3)



Session Objective

- Understanding the basic concepts behind Seed Systems
- Understanding formal & informal, public & private/commercial and community based Seed Systems

Seed & variety (I)

Seed is one of the most crucial elements in the livelihoods of agricultural communities

- **Seed:** consists of an embryo, endosperm and seed coat capable of developing into a plant
- **Crop:** species level i.e. rice, maize, beans, sorghum
- **Variety or Cultivar:** a distinct group within a species that will reproduce true to type
 - **Self pollinated crops:** normally more uniform and easier to save seed e.g. rice and beans
 - **Open/Cross pollinated crops:** more heterogeneous and more difficult to maintain distinct variety
 - **Hybrids:** a product of two or more inbred lines to gain hybrid vigour. Next generation will not be true to type

Varieties

- Varieties have names assigned to them – however the name of the same variety could vary from place to place
- Have unique seed colors, shape, size and organoleptic properties
- Could have different growth habit – duration & architecture
- Note: same variety could have slightly different features/properties in different environment (GxE interaction)



Groundnut



A Cassava B

Seed & variety (II)

Improved varieties

In relation to crops of the same species it is:

- Different to all others that belong to the same species
- The product of formal plant breeding
- Normally homogenous and stable over some time
- Normally produced by the formal sector but often later are produced by farmers

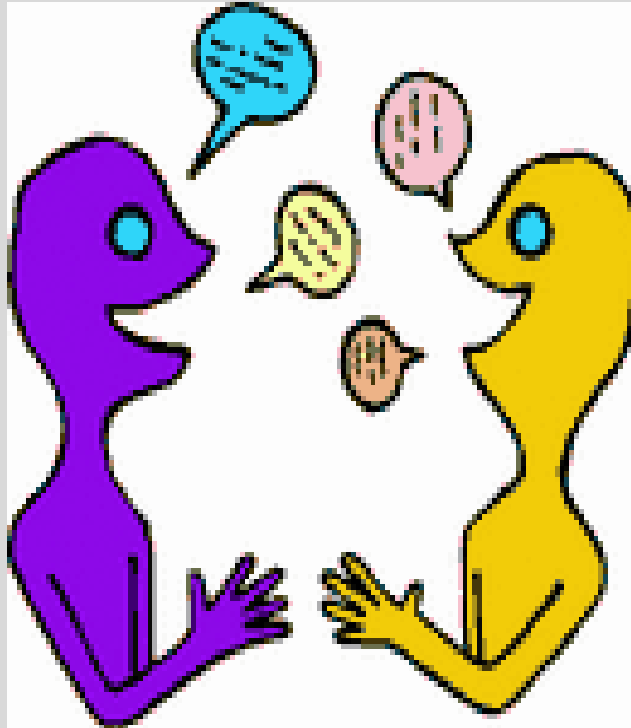
Local varieties

- Landraces selected by farmers or improved varieties in the hands of farmers for many years
- Not certified and sometimes not homogenous (uniform)

Seed & variety (II)

Advantages of using improved varieties (and disadvantages?)

Discussion



A Seed System is...

The value chain of the demand and supply of seeds inside a given agricultural system

a) Formal

- Public
- Private
- Mixed

b) Informal



Formal Seed System

- Based on new varieties developed by formal plant breeding by international or national research institutes or seed companies
- Released varieties that are multiplied and sold as certified/modern varieties
- “Objective” is to provide high quality seed of adapted varieties to farmers

Formal systems can be:

- ✓ Public
- ✓ Private
- ✓ Mixed (public/private)



Formal Seed System

Plant breeding

Variety Testing and Release

Early generation Seed
Multiplication

Certified Seed production
and Quality control

Storage & Conditioning

Commercialization

Value chain



Formal Seed System

Plant Breeding



Public or Private

Variety Testing and Release



Public

Early Generation Seed
Production



Public

Quality Control



Public

Seed Conditioning



Private Sector

Commercialization



Informal Seed System (I)

Farmers access to seeds via:

- Their own production
- Social networks
- Local markets



Characteristics



- ✓ Flexible system
- ✓ Local landraces
- ✓ Local (new) improved varieties (not certified)
- ✓ Inexpensive and available
- ✓ Seeds' quality is variable and depends on trust in the seed seller

Informal Seed System (II)

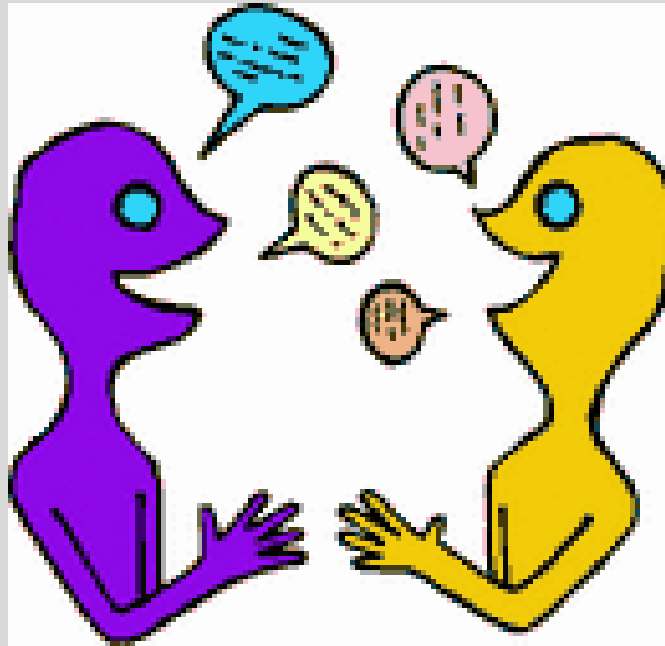
- Production of seeds, multiplication, distribution & storage in farmers' hands
- Activities around seeds are organized & integrated locally
- Multiplication, distribution & storage of seeds part of production system
- Sometimes there is scope for improvement



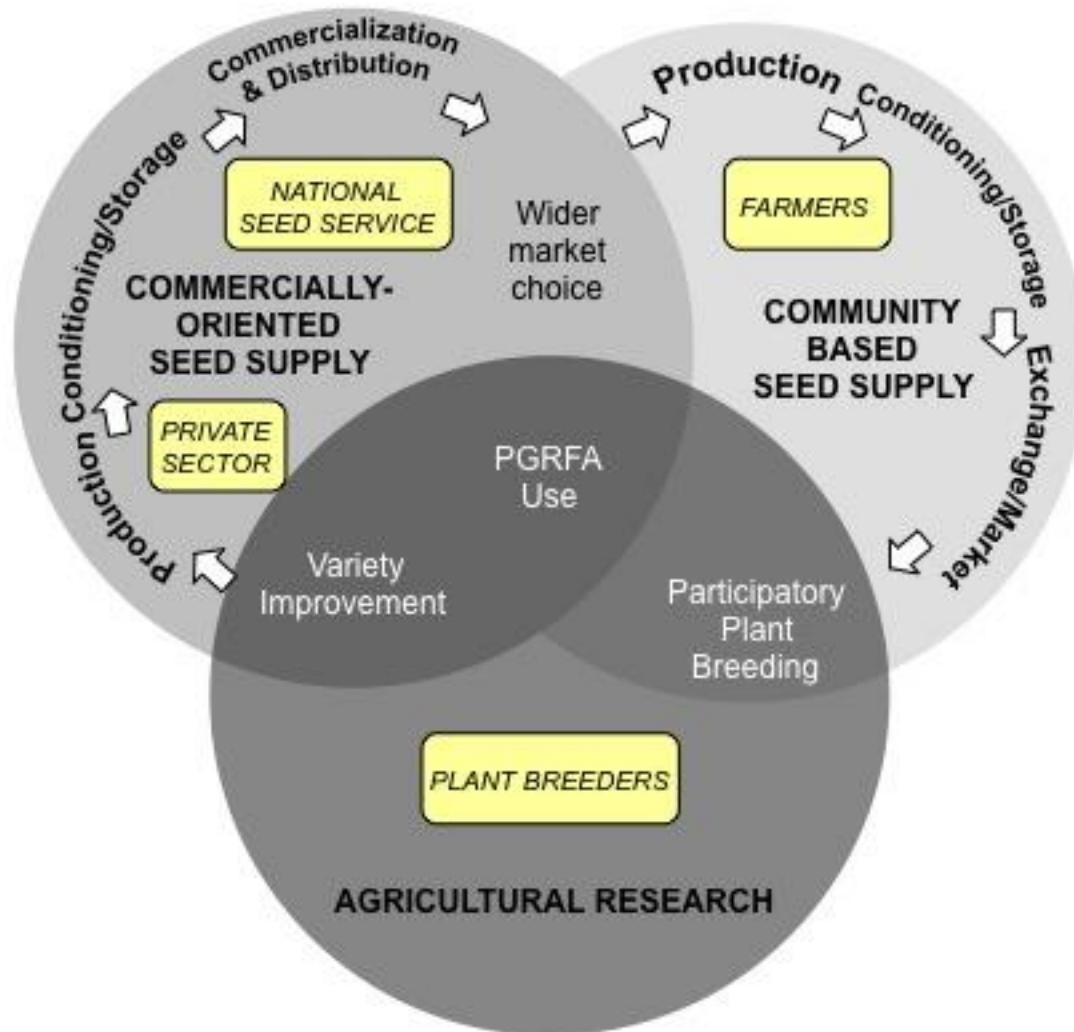
Formal & informal. Let's compare

Advantages of a formal system in relation to a informal one (and the other way around)

Discussion



National Seed System



Source: FAO AGPS, 2005



Q & A