



# HOW TO ACCESS QUALITY SEEDS AND SEEDLINGS?

## WHAT IS IT ABOUT ?

Seeds are a major component of agricultural systems / food security in a context of climate change. Farmers' production success depends on seeds' **quality**, **accessibility** and **diversity**. Seeds are at the heart of many technical, economic, legal, socio-organizational and environmental issues.

**Seedling**: state of a plant intended to be planted; this generally corresponds to the asexual mode of reproduction.

**Seed**: kernel that is planted (sown). In most cases, the term "seed" is also used to designate other reproductive organs (tubers, etc.).

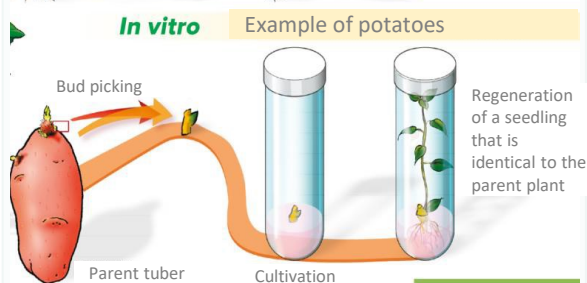
### Essentials on plant reproduction biology

Several modes of species reproduction to maintain varietal purity:

**Sexual** reproduction:

- **Self-pollination**: Fertilization by the pollen of the same flower. It leads to homozygous lines: *hermaphrodite (tomato) or monoecious species (zucchini)*.
- **Cross-pollination**: Fertilization by the pollen of another flower. It leads to heterozygous lines: *dioecious (asparagus), monoecious or hermaphrodite species*.

**Asexual or vegetative** reproduction:



**Variety**: set of cultivated plants whose physical criteria are identical between individuals (homogeneity) and are preserved after sexual or vegetative propagation (stability).

**Pure line** variety: set of individuals that are genetically identical, homozygous for all their characteristics, reproducing by self-fertilization (e.g.: tomato, bean).

**Population** variety: set of individuals with well-defined characteristics, but with a certain degree of variability (e.g.: carrot).

**Hybrid** variety: set of individuals produced by crossing two pure lines, chosen for their complementary and interesting characteristics. The resulting variety benefits from hybrid vigor or heterosis.

**Clone** variety: set of individuals descending from a single individual by vegetative propagation. All descendants have the same genotype as the mother plant (e.g.: potato, strawberry).

**GMO** variety: set of individuals whose genetic heritage has been modified by human intervention.

## STEPS TO ACCESS QUALITY SEEDS AND SEEDLINGS

1

### FARMERS' NEEDS

- Seeds characteristics: productivity, drought resistance, disease resistance, taste, etc.
- Seeds availability locally and at the right time
- Assurance of seed quality (productive characteristics, absence of disease)
- Affordability
- Variety adapted to soil and climate conditions and to specific needs (e.g., cowpea for flour)

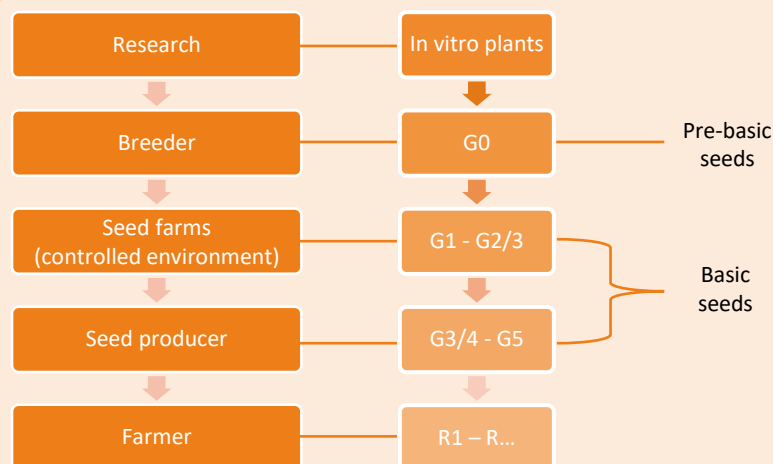
2

### FO'S ROLE IN PROVIDING ACCESS TO QUALITY SEEDS AND SEEDLINGS

- Group purchase of seeds, then resale to members
- Production of seeds and seedlings, that are officially certified or via participatory guarantee system or quality declared

3

### SEEDS/SEEDLINGS PRODUCTION PROCESS



### GOOD PRACTICES

- Prioritizing seeds for FO members
- Identifying seed farms among the best multipliers and support them in close proximity
- Planning to store the seeds in good conditions
- Establishing an efficient system in terms of monitoring-control and traceability
- Determining the fair cost for seed (costs, market price...)

4

### BECOMING A SEED PRODUCER

- **Selection criteria** set by the FO and/or the government (e.g., minimum surface area)
- Preliminary and continuous **training** (technical knowledge of production, storage, and marketing)
- A **support** and regular **follow-up** with competent technicians

### CERTIFICATION (by the Official Control Department - OCD)

- A cumbersome, long and costly process
- Constraints (cost, OCD follow-up...)
- A useful way of gaining recognition for seed quality
- Official approval to market seed (and be eligible for project tenders)



Madagascar – Seed producer



Madagascar – Potato seedlings storage



Burkina Faso – Cowpea seeds



## FUNDAMENTALS

- Needs: productivity but also adaptation to biotic conditions (living environmental conditions: e.g., disease resistance) and abiotic conditions (non-living environmental conditions: e.g., drought resistance), taste / market needs
- Rigorous study of members' and market needs (especially to avoid poor sales)
- Certified seeds and farmers' seeds (resowing of farm-saved seed)
- Renewing the seeds ensures its quality (if the process is rigorously controlled) and prevents the variety from degenerating
- Fundamental importance of seed industry research (and its funding)



## WORDS OF FARMERS

"Quality seed is a guarantee of success for my production, it's my first insurance policy."

"Komcallé variety (cowpea) is advantageous because it's early maturing, adapted to our area and suitable for flour processing. Farmers also appreciate its taste, so we can sell it more easily."

"In my opinion, a good seed producer must have enough arable land to set up a crop rotation, have a good water management system, a strong knowledge in the production practices and have good relations with the members of his FO."



## FOR MORE INFORMATION

**Webinar:** "Access to quality seeds and seedlings", October 2021 ([link](#))

### Videos:

- Fifata group: VFTV collective marketing initiative ([link](#))
- [Farmer's voice] Hasinjaka Raminoarisoa, vegetable producer in Madagascar ([link](#))
- [Farmer's voice] Guy Roland, potato producer in Madagascar ([link](#))
- Fifata group / Ceffel: Strategic workshop on potato seedlings multiplication ([link](#))
- Ida Randrianasolo's interview (Ceffel) on the potato producers' network ([link](#))

### Articles:

- WillAgri study: "Biotech seeds and farmers' seeds in Africa: choosing diversification" ([link](#))
- Fert article: "Potatoes: main source of income for VFTV-Fifata producers" ([link](#))
- Fert article: "Fifata group's development of a potato seedlings sector in Madagascar" ([link](#))
- Fifata article: "Outbreak of brown rot in potato: great dynamism of Fifata group" ([link](#))
- Fifata article: "Ceffel's promotion of the potato sector" ([link](#))



v1 – Aug. 2023

