Farmers: food producers and breeders

 80% of food produced by smallholder farmers in Asia and Africa

They also produce 80% or more of seeds

Commercial plant varieties

- Uniformity
- Displacement of 'farmers' varieties'
- Genetic erosion



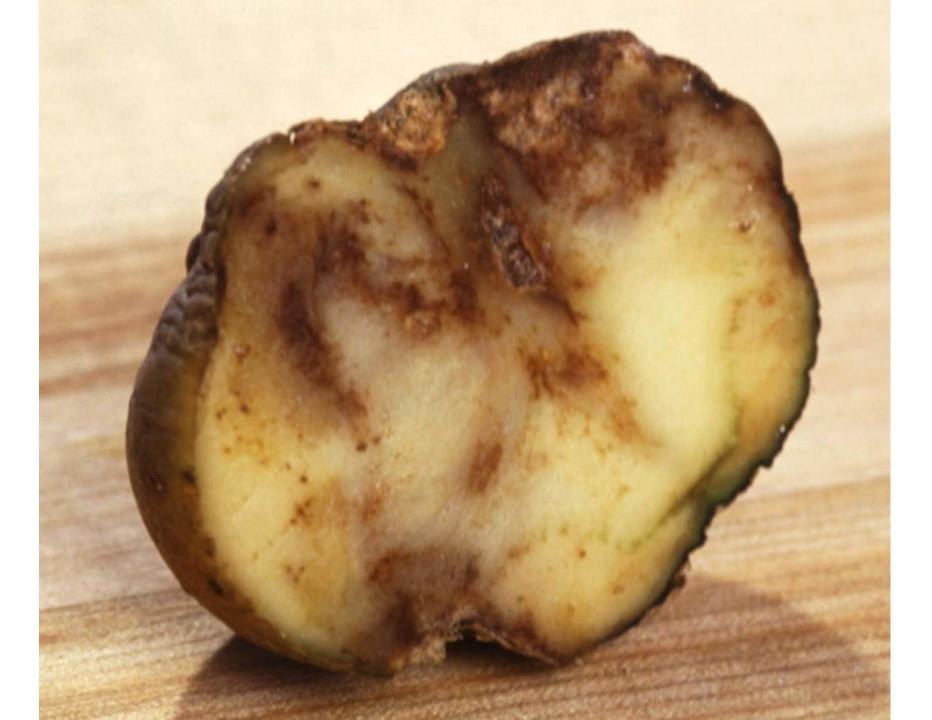






Ireland: Great Famine-1845/1852

- Two-fifths of the population reliant on potato
- Approximately one million people died and a million more emigrated (the island's population fell by 20%-25%.
- Potato blight



Farmers' seeds

Conservation of biodiversity

Heterogeneity

Adaptability

Affordability



Conservation and use of farmers' seeds

- Implementation of 'Farmers Rights' (conservation of traditional knowledge)
- Support of community and public genebanks
- Reform of seed and intellectual property laws (sui generis regimes)
- Recognition of the rights of peasants and other people working in rural areas

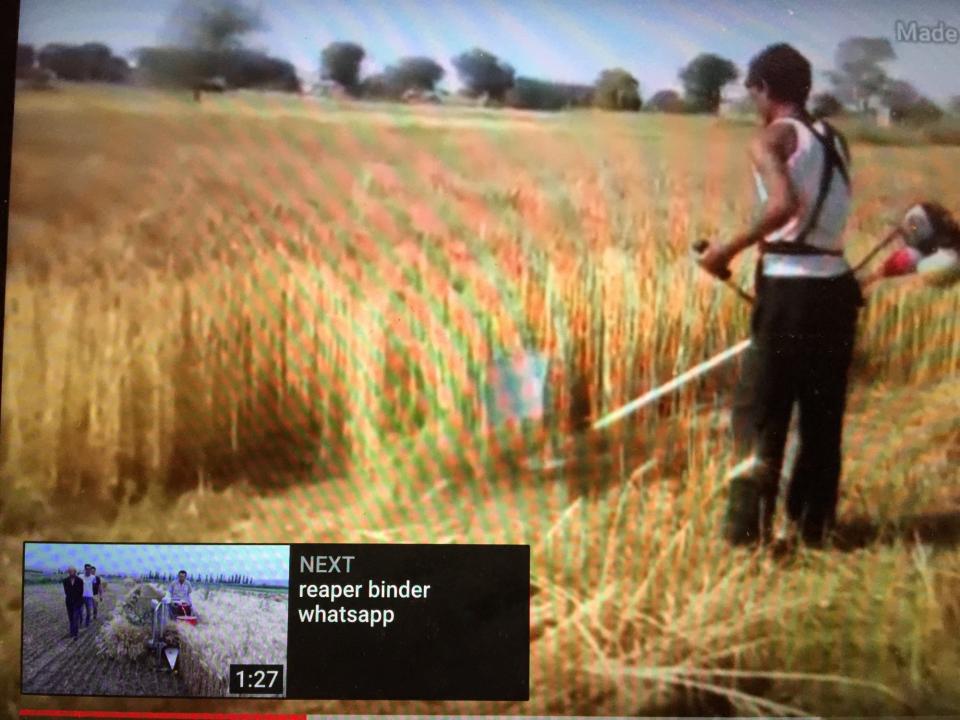
New technologies

- Lack of infrastructure
- Scale of production
- Complexity
- Cost
- Intellectual property (patents, know-how, designs)

Appropriate technologies

- small-scale,
- labor-intensive,
- energy-efficient,
- environmentally sound
- self-sufficiency









Innovation policies

- The design of innovative food systems should ideally support pro-poor and frugal agricultural innovations, promote the participatory engagement of smallholder farmers, recognize local and traditional knowledge systems, facilitate gender equity and be clearly linked to economic empowerment and livelihoods (para. 57)
- The role of science, technology and innovation in ensuring food security by 2030, Report of the Secretary-General, E/CN.16/2017/3