



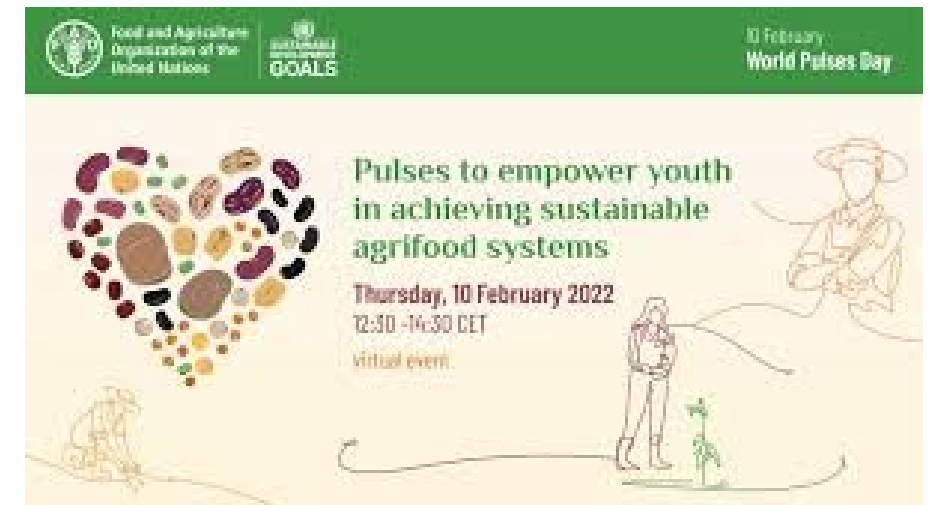
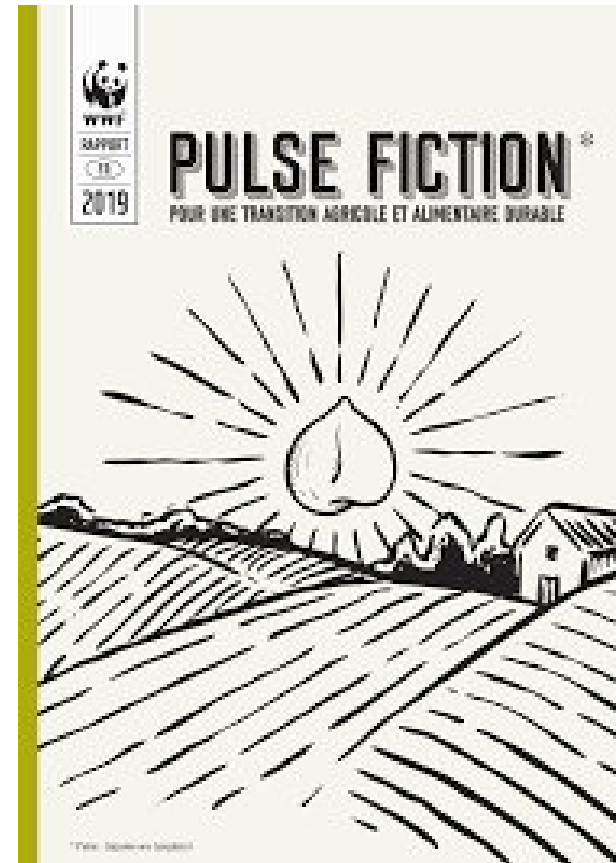
Session 13 - Revisiting a long lasting an unsolved problem with a systemic approach: the case of pulses development in agri-food systems

- **Introduction : problem statement** (Jacques Wery)
- **Genetic options to increase crop resilience and cope with climate changes in Morocco (case of cereals and food legumes)** (Faouzi Bekkaoui et al. ; Morocco)
- **Evaluation of Vigna spp. functional diversity** (Marwa El Graoui et al. ; Morocco and France)
- **Pulses development in agri-food systems: sociotechnical lock-in and unlocking** (Marie-Helene Jeuffroy et al., INRAE)

- **Collective discussion** towards a framework for renewed collaboration on food legumes between Africa and Europe)



Pulses are increasingly seen as key entry-point in agrifood systems transformation

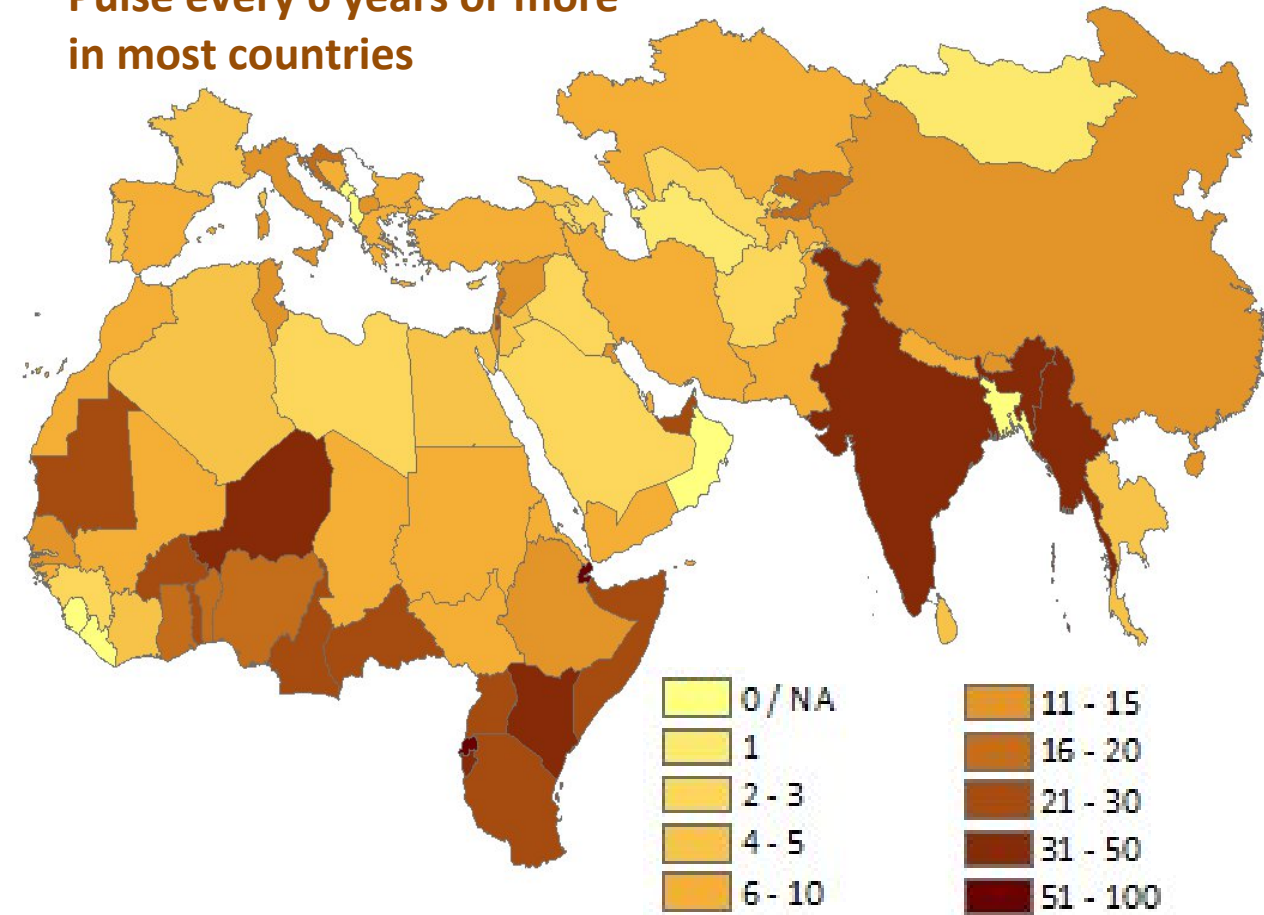


An increasing demand by food industry and markets



We are still far from pulse-cereals cropping systems

Pulse every 6 years or more in most countries



$P*100/(P+C)$ calculated
with FAO Stats



Egypt imports 80% of its pulses

Genetic diversity is largely underutilized

Interspecific agrobiodiversity

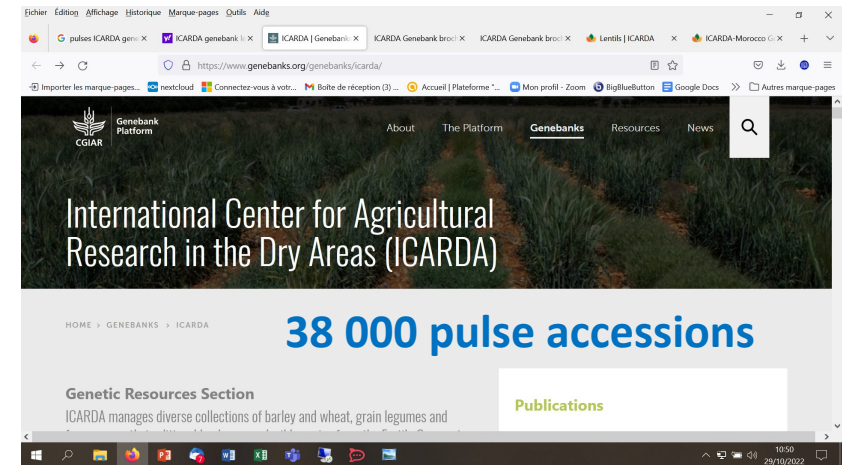
Pulse diversity is neglected in research and policies on agri-food systems

....We gathered data for 17 functional traits and six agroecosystem properties for 43 pulse species.

(Guiguitant, J., Vile, D., Ghanem, M.E., Wery J., Marrou M. (2020). Evaluation of pulse crops' functional diversity supporting food production. *Sci Rep* 10, 3416 (2020). <https://doi.org/10.1038/s41598-020-60166-4>)

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Intraspecific agrobiodiversity



Chickpea



Lentils



Faba bean



Grass pea



Should we breed for grain or multipurpose pulses? (eg. Fababean)

Food Grains



Vegetable



Replace N and P fertilizers



Feed Grains



Straw for Livestock

Pests, Diseases and Weeds Management

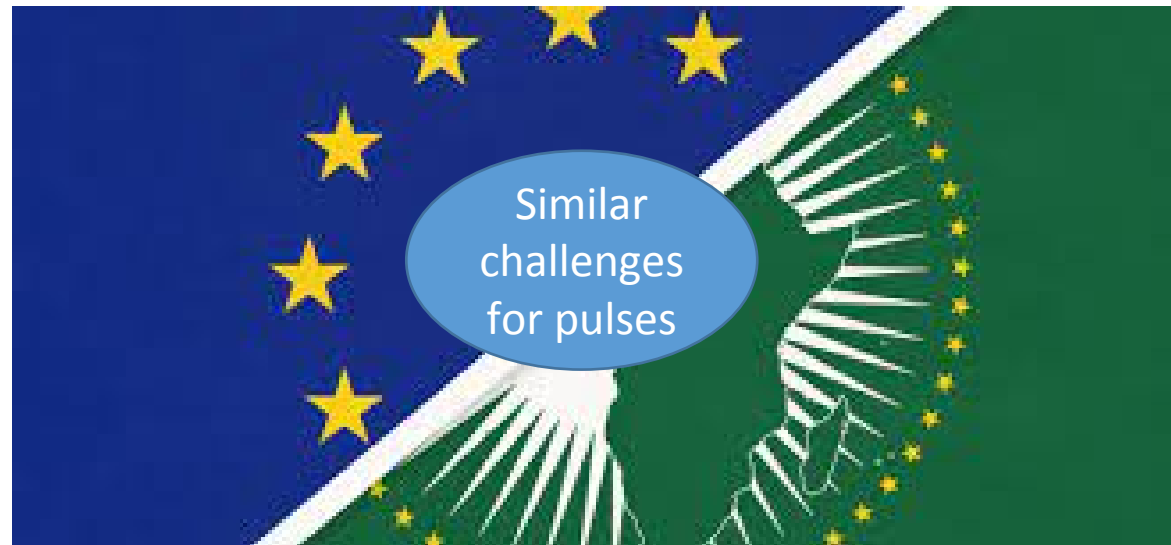


There are socio-technical lock-ins in the innovation and scaling process

Pulses development in agri-food systems:
sociotechnical lock-in and unlocking
(Marie-Helene Jeuffroy et al., INRAE)

There is scope for a collective intelligence on pulses between Africa and Europe

Different and growing markets



Share experience
(e.g. food innovation process ; climate smart cropping systems ; policy ; school canteines....)

Share research efforts
(e.g. plant breeding ; training ; agri-food systems co-design....)

Complementary Knowledge

<https://youtu.be/7nA4Ao3VsSw>

