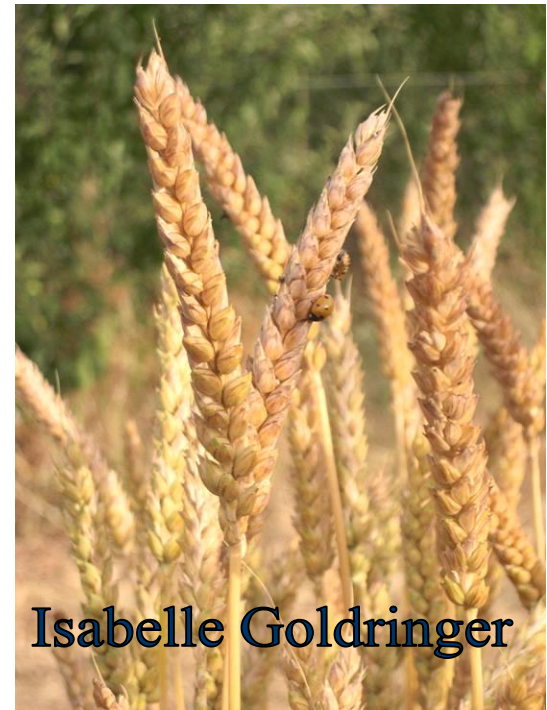




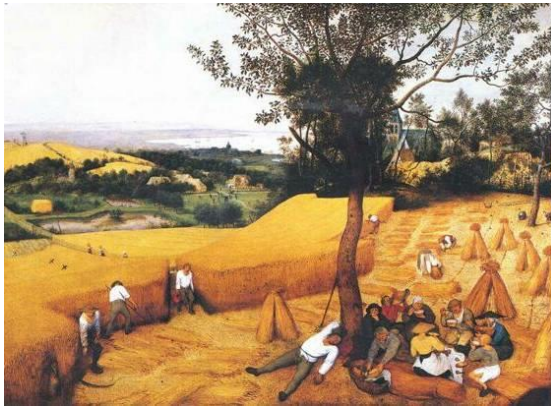
Potential and limitations for a sustainable use and maintenance of crop diversity in the fields



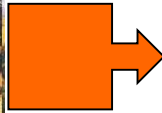
Isabelle Goldringer

Changing paradigm: Redeployment of crop genetic diversity in the fields

Agriculture intensification,
'modern' plant breeding (20th
c.)



Landraces, local
varieties



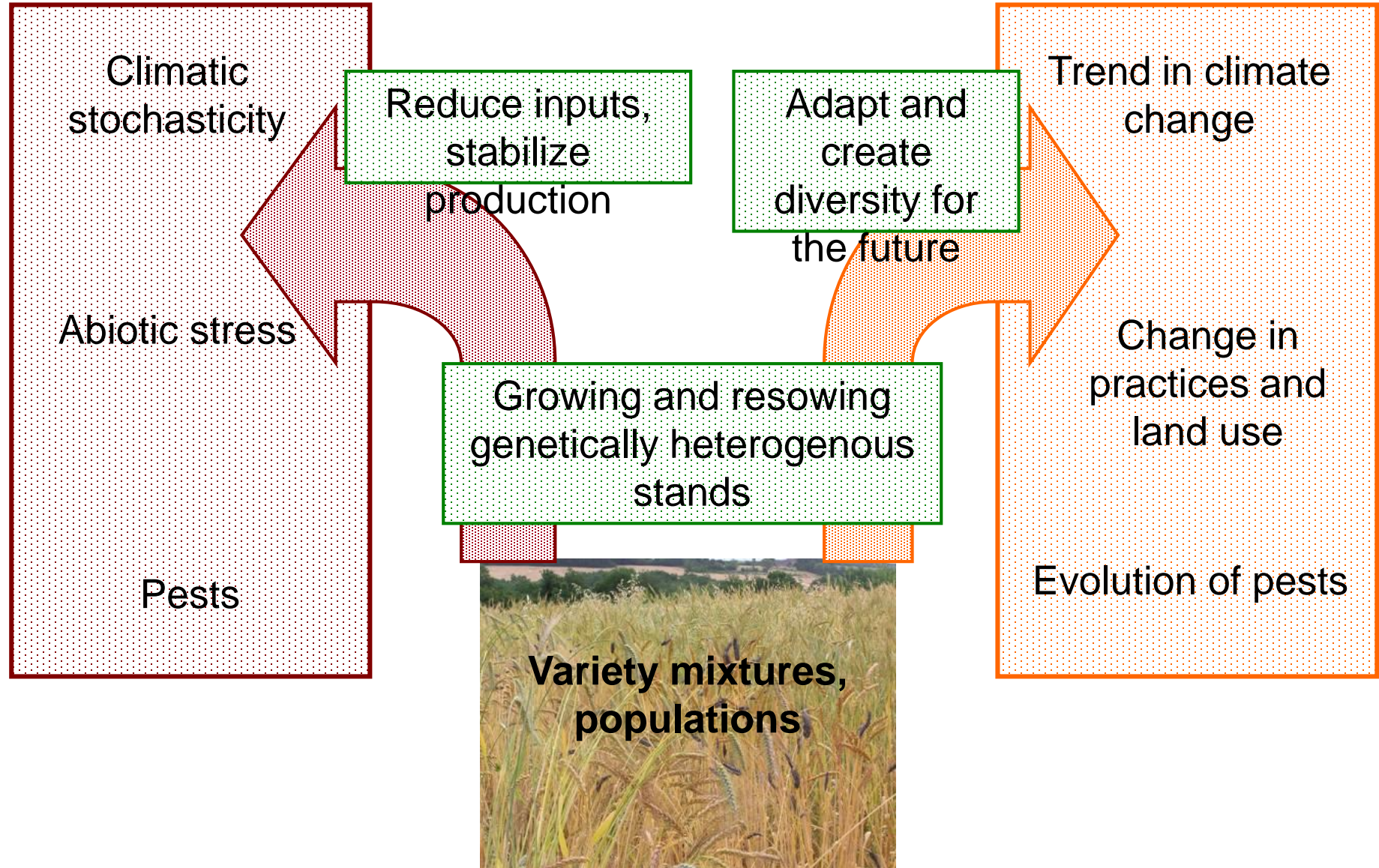
Genetically
homogeneous
varieties
(F1 hybrids, pure
lines,...)

Ecologization of
agriculture, dynamic
management (21st c.)



Variety mixtures,
heterogeneous
populations

Crop diversity: a key element in the new agricultural model



Redeployment of crop genetic diversity within agro-ecosystems:

Conceptual, organizational and regulatory challenges

- Conventional view of plant breeding: detecting the “best” variety for a wide area with “average high-inputs” agriculture
- Seed regulation: marketing restricted to registered varieties (Distinction, Uniformity, Stability; Value for Cultivation and Use)
- Top-down centralized governance: farmers are seen as mere users of varieties, they have no role in the breeding / management of agro-biodiversity
- Compartmentalized vision of cultivated diversity: crop genetic diversity stored in seed banks as a source of genes, but not deployed in the field

Redeployment of crop genetic diversity within agro-ecosystems:

A new model of research/breeding organization

- Decentralized Participatory Plant Breeding
 - => To develop locally adapted and adaptable populations-varieties
 - Associates producers, citizens and researchers
 - Combines scientific methods with the practitioners' knowledge of land, crop and their local market.
- Changing seed regulation
 - DUS, VCU, farmers' rights to exchange and resow seeds on their farms
- Interdisciplinary research
 - to assess the multi-dimensional ecosystemic services associated with within-field crop diversity
 - to design plant population that maximize instant services as well as their middle term evolution
 - to move towards a more integrative view of the agroecosystem more in line with the farmer view of his/her system



Thanks for your attention

Blés, ferme Florent Mercier, 2011