

Summary of current practices of use and exchange of plant GRFA

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Use of PGRFA

- For crop improvement (breeding)
 - By farmers
 - By breeders (public, private, NGO)
- Restocking diversity in the field
- Genetic research (public, private – biotechnology)



Status of development of the sector using

PGRFA

- High level of professionalisation:
 - Conservation (ex situ and in situ)
 - Breeding
 - Production
 - Research (for all different purposes, including the three above-mentioned one)



Rewarding innovation

- Intellectual property rights
 - Patents
 - Plant Breeder's Rights
 - In some cases also for farmer-breeding
- Market regulation may result in pseudo-IP
 - Seed certification
 - Biosafety (GMOs)
- In few countries: effective protection of TK



Holders of PGRFA

- **ex situ collections:** Approx. 7 million accessions in public genebanks
 - Cereals 45% - legumes 15% - forages 10%
 - Landraces 24% - breeding materials 11% - wild 10% others 46%
- **Breeding companies:** unknown but for some crops considerable collections
- **Farmers:** unknown diversity maintained



Genetic erosion

- Depends on definition, crop and region!
- Domestication bottleneck - %age domesticated
- Distribution bottleneck - %age transported to new regions
- Modernisation bottleneck – replacement of landraces
- Between bottlenecks: opportunities for diversity to increase
- Current trend in OECD-countries: increase in diversity in the field due to molecular techniques in breeding allowing wider use of genetic resources.



Exchange and its conditions

- Among farmers: generally free – limited by distance and social factors
- Among breeders:
 - generally free (finished varieties under breeder's rights)
 - Commercial MTAs (under patent law)
 - Research license
 - Commercial license
- Through genebanks: increasingly SMTA (for Annex 1 material and non-Annex 1)



Exchange of PGRFA

- Constant need for new variation
- High number and frequency of exchanges
 - Significant: CGIAR: 50,000 accessions/year
 - CGN ('85-'00): 2,200 for 7 crops



	NARS	NGO	PS	OECD	Non-OECD
CGIAR	90	?	10	40	60
CGN	56	2	41	92	8



Other conditions for exchange

- Phytosanitary rules
- Biosafety rules
- Contractual arrangements (either or not based on IPRs)