3rd IMAGE Dialogue Forum Zagreb 24. August 2018
NGO Positions: Economics of Conservation – View and experiences

Cost awareness has always played an important role in the field of breeding and keeping livestock breeds. Today old and endangered livestock breeds are often not competitive in their production rate with the modern high performance breeds. In particular, NGOs and private individuals care about the livestock and herd book breeding of these economically not very interesting breeds, mostly in small populations. By maintaining a gene pool that is currently not of economic interest, breeders and keepers provide societal benefits and receive subsidies for the governmental accepted rare breeds. These subsidies are often scarcely sufficient. In addition, breeding is hampered by regulations and restrictions on the exchange of breeding material. This applies in particular to cross-border measures, which are often necessary to prevent inbreeding.

According to the Convention on Biological Diversity (CBD, art. 2) the states have committed themselves to support the conservation of agrobiodiversity and with that the conservation of rare breeds. In Europe and especially within the EU there are different regulations in place for this support e.g. in the frame of the Fund for Rural Development [EAFRD]. But the breed must be accepted nationally as rare breed and subsidies are paid partwise by EU sources and partwise by the states. Genebanks mainly are run by universities and/or paid by governmental sources. Single governments pay support for events and training to NGOs for the in-situ / on-farm conservation.

The NGOs participating in the 3rd IMAGE Dialogue Forum were asked in advance for a statement about their position on "Economics of Conservation ex situ and in situ: view and experiences of my NGO and breeding experiences". The following summarizes the results of the statements:

In situ/on farm

- Rare local breeds lost their economic importance and market value since the introduction of modern high performance breeds. The multipurpose use and adaptation to the environment of the traditional breeds was no more needed, but the genetic resources need to be conserved according to international obligations like CBD and national rules.
- In-situ / on farm conservation started much earlier than cryoconservation methods.
- For in situ conservation there are support programs on place in (almost) all European countries based on the European Agricultural Fund for Rural Development (EAFRD).
- National Programs for the conservation of Animal Genetic Resources including in situ und ex situ conservation started with the ratification of the CBD.
- There are subsidy regulations for herding and transhumance (agro-ecological measures).
- The total costs of conservation are not really covered by subsidies. Without the enthusiasm of breeders (often smallholder farmers) in situ conservation would not be possible. Financial support is caused by:
    - The breeder himself (through livestock products, breeding animals, environmental services).
    - Governmental subsidies for breeders and breeding organisations
    - EU agro-ecological measures (herding, transhumance)

- Costs depend on:
    - Initial acquisition of breeding animals
    - Shepherding, pastoralism, transportation (free ranging causes losses by carnivores or accidents)
    - Keeping and feeding costs
    - Stage of conservation work (beginning, on progress)
    - Stage of a market for products (and services)
  - Transhumance: A loss of natural pastoral habitats and urbanizing hinders transhumance routes and seasonal pastures. On the other hand taxes have to be paid for grazing and pasturing in these territories. In this view on-farm management without transhumance is less risky, but is also less compliant with the character of the respective breed. A change of the economic, political and cultural conditions is necessary.
  - Often it is difficult for farmers to get subsidies because of a complicated application procedure.

Genebank conservation

- Cryoconservation takes place either on national or on private level. Storage and collection of material is often depending on the cooperation of the regional or county governmental rules, countrywide regulations are missing up to now in several EU states. Because of this, breeders and NGOs often have problems to get back the stored genetic material. A well-structured program of cryoconservation for all breeds on governmental level is needed.
- The legislation in many European states distinguishes between support for in situ conservation according to EAFRD and ex situ conservation.
- Private breeding organisations collaborate with AI centres to get and store breeding material like semen and embryos. The interest on rare breeds is very small in AI centres because the market is too small. Private breeding associations have to look for the economic aspect and like to get males with best breeding parameters on production level. Therefore old and rare breeding lines have no chance to be stored, even if breeders would need the old bloodlines to avoid inbreeding and to widen genetic variability within the population.
- Farmers, especially small farmers, are not able to cover ex situ conservation costs. Breeding organisations for rare breeds mostly are too small in number of breeders and in number of animals to cover the conservation costs.
- The costs need to be divided into the process of extraction of the material and the long term storage.
- Private ownership on stored genetic material is a potential obstacle to access of this material. A loss of important breeding material could be a risk for sustainable conservation breeding.
- The economic view on breeding material corresponds closely to the sanitary rules: If the sanitary rules do not allow the use of the stored material as it is, it could be lost.
- The costs of testing of “old” material need to be covered. Because the state has the obligation to keep animal genetic resources, these costs of testing need to be covered by the state – without trade-off to in-situ conservation subsidies.
- For each breed a collection of different males (and females) which characterise the genepool of the population is needed. It is necessary to store material fluently parallel to the running breeding process.

- Current information on the value of genetic resources is fragmented and very context specific.

In-libro conservation: Traditional knowledge

The concept on in-libro-conservation (in libro conservatio in causa emoriendi) means another dimension of conservation: the collection and conservation of characteristics of existing and extinct breeds, which means the conservation of knowledge, keepsake, documents and material inheritance of a still living rare breed.
The collection of traditional knowledge becomes more and more important for the in-situ-on-farm conservation, but also for cryoconservation it is important to keep as much information of the material stored as possible.

Multipurpose use of traditional livestock breeds

The traditional multipurpose breeds have a versatile utilisation. Up to now there is a concentration of a unilateral view on performance of livestock like milk, meat egg production. Experience is missing for other "performances" of rare livestock breeds like adaptation to the environment, cultural value and other purposed the breed was adapted for. Furthermore the economic value of a breed can increase through new applications like pet, trophy hunting, therapy (tölt), social therapy, environmental services (furniture the landscape).

Example of the real conservation costs for cattle (Germany)

• Purchase of a bull	2500-4000 €
• Transport to AI centre:	150-200 €
• 4-6 weeks quarantine:	250-400 €
• Collecting of 1000 straws of semen	1500-2500 €
• Storage of 1000 straws per year	150-200 €
• Slaughtering / selling (4,80 €/kg)	300 €
Total	**6000-7000 €**

Ex situ conservation (including In-vitro and In-vivo storage of material) is about 5250 € per year. In-situ on farm conservation costs about 5000 € per year in Lativa.

Remark

During the last years the interest of breeders of commercial breeds for semen of old cattle breeds is increasing to get a better condition and health resistance for the modern breeds.