

Animal Genetic Resource Management Policies and Regulations

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Convention on Biodiversity

- Only legally binding international agreement on biodiversity
- Clearly includes agriculture and livestock
- Defines various aspects – *'in-situ'* and *'ex-situ'*
- All countries signing CBD have ratified EXCEPT USA – be aware of the implications of this!

Other Related Aspects 1

- Nagoya Agreement on Access and Benefit Sharing
- Areas for further discussion re AnGR
- Clearly requires Prior Informed Consent for movement of AnGR BUT who gives this may be contentious – Government or private owner?
- Clear that government is responsible for all AnGR within its boundaries

Other Related Aspects 2

- Intellectual Property Rights – still contentious but important
- Patents – again contentious but initial flurry has now reduced as countries reconsider
- GMOs of animals and of feed crops
- International Trade Agreements (WTO etc)
- International Health agreements (OIE)

Commission on Genetic Resources for Food and Agriculture (CGRFA)

- Established by FAO some 30 years ago (plants)
- Included Farm Animals about 20 years ago
- Makes recommendations to FAO governance
- Through FAO, it is responsible for Plant and Animal biodiversity reporting to CBD
- FAO published 'Legal Framework for management of AnGR' in 2007 – still useful

FAO International Technical Conference 2007 (Interlaken)

- First “State of the world’s FAnGR” presented
- Global Plan of Action agreed – FAO accepted
- Global Plan of Action (GPA) provides 23 Strategic Priorities in 4 groups with detailed action listed for each.
- Not a legally binding document and this causes real difficulties (countries not fully committed)
- DAD-IS is the database for all AnGR reporting

Management of FAnGR

- Government responsibility under CBD
- GPA recommends a global structure that includes Regional and National Focal Points
- National Focal Point – support for the person nominated as National Coordinator who is responsible for all data entry to DAD-IS
- National Advisory Committee of relevant parties but relatively a small number in total

National Focal Points(NFP)

- National Coordinator (NC) is responsible for all activities and liaison with all relevant parties

BUT often considered part-time with low priority resulting in major problems – low activity, poor liaison with other departments.

IF high level NC - problem of time allocation and specialisation!

Needs high government support – possibly by regulation.

National Advisory Committee

- Needs to be Technical but include **all** levels
- Needs to meet regularly, set a specific time workplan ,review and update as required.
- **Needs direct access to Minister responsible**
- Needs to be involved in communications with all interested parties and in general publicity
- Needs to recommend research, development and training

Institutional Capacity

- A major area for improvement in most places
- Education, Knowledge and Research are crucial elements but often underfunded
- Basics may not be prioritised compared to the new technologies.
- Animal Identification, recording, surveys are not valued against the 'magic' of genomics but without the former, latter not implemented

Basic Elements for FAnGR Management

- Management includes USE and Conservation-
most ignore first and consider only second!
- Surveying and Characterisation of breeds is
priority BUT surveys require repeating and
usually not done – needs regulations.
- USE is often achieved simply by importing
exotics **BUT without Impact Assessment!?**
- Aid agencies also guilty of this. Country needs
clear regulations re Impact Assessment

Use of Local Breeds 1

- Where does the breed fit in production cycle?
- Selection goals – specific to breed and local needs. Involve keepers of the breed. Do not copy “developed” country goals (big is best??)
- Only regulations worth considering are (a) the involvement of the farmers in decision making re goals and structure of scheme and (b) use of contracted farms to operate conservation programmes (monitoring operations etc)

Use of local breeds 2

- Need to consider market **before** starting – any niche market opportunities? Preferences for local products?
- Any payments for maintaining specific environments? Agro-ecological benefits?
- Cost of maintenance of rural population versus cost of urbanisation (usually ignored)

In vivo - In Situ and/or Ex situ

- *In situ* enables breed to be selected and adapt to environmental challenges but exposes breed to risk including genetic drift, disease etc
- *Ex situ* offers insurance against changes and allows research, better control of selection BUT fails to help breed adapt in own environment and to more sustainable use.

Cryoconservation

- Provides insurance against changes in conditions (Prod Env), disease and disasters
- Minimises genetic drift and simplifies genomic research
- BUT no selection (**zero** improvement or adaptation) and does not contribute either to rural development or to maintenance of agro-ecological systems

Essential Regulations for genebanks

- Sampling / Acquisition of germplasm /tissues
- Dispersal of same – access by whom?
- Replacement/ updating of material
- Donor/property rights (IPR?)
- Veterinary/sanitary requirements
- Quality assurance and storage sites
- Data protection

Issues of future relevance to FAnGR

- Climate change (CC)– how fast? how much?
- How fast can breeds adapt? What changes to Prod Environment are possible/economic?
- What feeds will be available? IPCC predicts reduced yields of food crops – consequences?
- How much human food will the industry be allowed to use for animal production and for how long?

In Summary

- Management needs government commitment and the integration of several ministry departments for certain activities (rare!)
- Regulations can contribute to success BUT can often be counterproductive even if well intentioned eg sale or slaughter restrictions
- The usual limiting factors are proper funding and longterm commitment to the programme