ELBARN

GUIDELINES

photo: C. Simantke

euronatur

STEUNPUNT LEVEND ERFGOED • ONS LOKAAL GENETISCH ERFGOED •

R.A.R.E.

photo: M. Schneider-Jacoby

Turopolje pig found in Croatia (land of origin) and Austria. The story of the Turopolje rescue action was one of the foundation stones for the European Ark and Rescue Net. The Turopolje pig is an important partner in nature conservation projects, the swamp areas of the Sava Plains in Croatia are kept free from scrub growth by these free-ranging pigs. Many bird species, insects and small mammals benefit from its work.

Introduction

The SAVE Foundation has long lobbied for the establishment of Rescue Stations for rare breeds. Experience has shown that, in acute cases, rescue of animals threatened by slaughter is only possible when an existing network is in place.

- Rescue operations in Switzerland were successful because, through personal networks, emergency placements of endangered animals or herds were possible.

- The rescue operation of the Turopolje-pigs during the civil war in Croatia 1992 was successful because Zagreb Zoo had already declared itself prepared to take animals at short notice (in the Quarantine Station due to space restrictions).

- With the dissolving of the Rumanian Genebank for Poultry in Moseni at the end of the 1990s (due to economic reasons) the, in some cases genetically extremely valuable birds, were distributed to farmers as there was no other possibility to place them. This genetic material was subsequently lost.

The above examples show that there is an urgent necessity for a functioning network of Ark and Rescue Centres which can act as Rescue Stations, Ark Farms for conservation and breeding purposes and farm-animal parks open for public viewing. Thus, it becomes possible to achieve competent rescue of the right animals at the right time, competent breeding overseen by experts and a competent show of animals and products.

With the inclusion of Ark Farms in Council Regulation (EC) No. 870/2004 it is possible to launch the ELBARN project as a concerted action. In collaboration with the four project partners - Euronatur, GEH, SLE and RARE – a workshop was held in Kutna Hora, Czech Republic in February 2008. This workshop was attended by a number of experts in the field of animal genetic resources as well as related fields. At the workshop the themes Rescue and Quarantine, Ark Farms, Breeding and Marketing/Sustainable Use were discussed in work groups and in plenary sessions. These discussions are the basis of the guidelines that follow.

We would like to thank everyone who took part in the workshop and, also, those who helped in the long process required to move from ideas and questions to usable guidelines. This is, however, not the end of the process, a functioning network of Ark and Rescue Centres is strived for – from the technical and coordination aspects (with funding from the EU) to future practical action on the ground. Until this is achieved the work will continue to ensure the in-situ/on-farm survival of Europe's traditional livestock breeds.

Elli Broxham, ELBARN Project Manager
SAVE Foundation

February 2009

photo: C. Simantke

Walachen Sheep – Zackel-type sheep found in eastern Moravia, Czech Republic and Slovakia

ELBARN Guidelines for Rescue Actions and Rescue in the Case of an Outbreak of Disease

Introduction

The ability to act rapidly to protect endangered livestock breeds in emergencies or unforeseen circumstances is the central theme of ELBARN. For this to be possible, much prior planning is required. A review of existing laws and regulations is required to make sure that they are compatible with this idea. It is also necessary to raise awareness of the importance of animal genetic diversity amongst veterinaries and official bodies. The ELBARN Ark and Rescue Centres (A&RCs) can provide a framework for successful rescue actions – but this has to be supported by adequate regulation and knowledgeable practitioners.

The following guidelines have been prepared to set out the process of rescue, review the current legal situation and outline needs for successful action. The guidelines have been set in motion by the contributors to "Work Group 1: Rescue and Quarantine" at the ELBARN Workshop in Kutna Hora, Czech Republic in February 2008. They have been completed by the staff of the SAVE Foundation in consultation with the World Organisation for Animal Health (OIE) and the European Commission's Directorate General for Health and Consumer Affairs (DG SANCO).

Principles of Rescue

Rescue is a temporary act

This means that action takes place in cases of emergency. Rehabilitation of a breed includes a long term breeding programme, informative advertising, promotion of products and services.

Professional accomplishment

Rescuing should act in a most professional way. Therefore a net of experts and stakeholders is needed for identification of the needs, knowledge of the breeds and varieties taken into consideration, planning and implementation.

Set up emergency funds

Emergency funds are necessary during a monitoring process in a country or region, but also in countries where the conservation structure is doing well. Here also cases of emergency can take place, e.g. when a breeder gives up breeding and keeping, in case of natural disasters or diseases. Here money currently available for culling animals or as compensation for culled animals could be used for emergency measures in cases of outbreaks of disease.

Verification of the rescued breed

The breed needs to be verified. In some cases there might not be time for verification. An expert should make a preliminary identification. An exact verification should take place as soon after the rescue action as possible.

Ex situ conservation (in gene banks)

Ex-situ conservation (storage, collection and cryoconservation of semen, ova, embryos etc.) are required in all circumstances as last resort and insurance.

Needs for Successful Rescue of a Rare Breed

Preventive action

It is important to act before a rescue action is necessary: Breeds should be characterised, a complete census should take place and long-term monitoring should be in place in each country or region (see Breeding Guidelines for more details). A decentralized system for identification of local breeds and varieties is necessary. For characterisation, morphologic, genetic, functional and cultural aspects need to be taken into consideration.

National Committee

Identification of the breeds and varieties should be undertaken by a National Committee for AnGR. The composition of this committee needs to be multidisciplinary, including the officially appointed National Coordinator for the Management of AnGR by each country, NGO stakeholders, stakeholders of nature conservation and cultural heritage organisations. This committee should be in interaction with ELBARN.

Reference point
A National (or regional) reference point or contact person is needed, with all available information of breeds and varieties of a country. This point should be communicated also to veterinarian / sanitary services and the public. This reference point should be in close interaction with ELBARN.

Training of veterinarians
Veterinarians should be educated about rare breeds in order to be able to identify important breeds and to provide information to the public.

Conservation Value
The conservation value of the farm animal sometimes cannot be verified immediately. Therefore a verification of the conservation value is necessary as soon as possible after the rescue action.

Threshold for a rescue action
The lowest threshold for an action needs to be defined. This cannot be done within a general definition. Different factors have an influence in the threshold for a need of action. In case of rare breeds, extinction takes place before the last remaining animals have died. For the lowest threshold, factors such as the situation of the herd and their keepers, numbers of males and females in reproduction, natural, historical and cultural factors play a role. Therefore the above mentioned National committee and or the National reference point are important decision-making units.

Rescue Centres – Requirements

As it was defined before, a Rescue Centre is any centre / station with free space for hosting rare breeds (for a certain number of animals of a certain species) in a short time period for emergency reasons. This places need to be identified to re-place a breed, a herd or a group of rare farm animals.

Requirements are:

- Free space
- Flexibility in terms of sanitary status, possibilities for isolation
- Readiness for collaboration - agreement
- Registration as a rescue centre

A rescue centre should have the character of an A&RC with free facilities (see A&RC Guidelines). Officially running farms like state farms, university farms etc often have space for hosting animals on a shot-term basis. This information needs to be stored in the ELBARN database. There is a need for a written agreement with the rescue centre. This agreement should include requirement to inform about any changes in status, availability of places and so forth. A sample agreement could be worked out by ELBARN (within the area actions).

The official sanitary status of the rescue centre as a whole could be endangered in case of hosting animals with an unknown sanitary status. This is important in several cases of diseases like Maedi Visna, CAE, Brucellosis, Tuberculosis etc. The related authorities for sanitary rules and –management must be included in the process. Also the related authorities for the starting of the rehabilitation process should be identified (breed association, governmental authorities).

After the rescue operation, the re-integration process of the breed into e.g. a breeding programme should start immediately after valuation.

Process of rescue

The process of rescue depends on the needs and facts discussed above. An ideal scenario looks like this:

- A herd or animal at risk is identified.
- This person calls e.g. a veterinarian.
- The veterinarian calls the national contact point and uses the ELBARN database to find more information and decide if this is an endangered breed.
- If a Rescue action is needed, the best A&RC nearby will be identified and an agreement with the farmer will be made.
- The herd is re-located.
- Afterwards, a precise valuation follows and a permanent place needs to be found. A herdbook will be established or the animals included in an already existing herdbook and the re-integration process can start. Possibilities for herdbook keeping and data collection will be available at all A&RCs.

photo: A. Feldmann

Pommern Duck – found in Germany, this type of duck was once found all over Europe.

Rescue in the Case of an Outbreak of a Disease

Introduction

Foot-and-mouth disease (FMD) is a highly contagious viral disease of biungulates. FMD has no public health importance, however, due to its exceptional economic importance, it is on the top of list A diseases of the World Organisation for Animal Health (OIE). Because of this fact, these guidelines focus on FMD.

Necessary measures to protect animals indispensable for the survival of a specific breed are identified as follows:

Measures BEFORE an outbreak

A list of holdings (approved centres)

Here animals are kept for purposes related to the conservation of animals that are indispensable for the survival of that breed (rare breeds, nucleus groups), so that they may benefit from any special measures that may apply at the time of an FMD outbreak.

- A list of registered holdings (approved centres) must be established (by the state):
- These holdings should be located in different regions of a country, to be in place when outbreaks occur
- Conditions for an approved centre (EU Council Directive 92/65 Annex C):
    - holdings should be clearly demarcated and separated from surroundings or the animals confined and located so as not to pose a health risk to agricultural holdings whose health status might be jeopardised
    - have adequate means for
        - capture
        - confining and isolating animals
        - have available adequate quarantine facilities (for at least 30 days)
        - approved procedures for animals coming from non-approved sources

Infrastructural factors (OIE Terrestrial Animal Health Code, Art. 4.4.3.2)

Structural aspects of the establishments within a compartment contribute to the effectiveness of its biosecurity. Consideration should be given to:

- fencing or other effective means of physical separation
- facilities for people entry including access control, changing area and showers
- vehicle access including washing and disinfection procedures
- unloading and loading facilities
- isolation facilities for newly introduced animals
- facilities for the introduction of material and equipment
- infrastructure to store feed and veterinary products
- disposal of carcasses, manure and waste
- water supply
- measures to prevent exposure to living mechanical or biological vectors such as insects, rodents and wild birds
- air supply
- feed supply/source

Breed at risk register

A register of breeds at risk needs to be compiled to identify the animals, which should benefit from special measures in case of an outbreak (of FMD).
(Therefore a herdbook is a pre-condition, also in the case of vaccination to identify the offspring).

Transport

Animals are usually not allowed to enter or to leave the holding. By way of derogation from the prohibitions provided for, the competent authority may authorise movements onto and off the holding, subject to all conditions necessary in order to avoid the spread of the disease and/or virus.
Further, the transport comes under the EU rules for transportation of animals (e.g. EU regulation 1/2005). Facilities to be in place are:

- leak proof trailer
- sealed trailer to prevent spread of germs

Contract with the registered Holding

A contract with all details about the necessary equipment and appointments should be made with the place which comes into consideration is important. This contract should be made with the appropriate governmental authority of the country. The contract must include (according to annex C, Council directive 92/65):

- general information about holding
- animals: kind of animals and health status
- detailed information of the holding
- holdings should be clearly demarcated and separated from surroundings or the animals confined and located so as not to pose a health risk to agricultural holdings whose health status might be jeopardised
- have adequate means for
    - capture
    - confining and isolating animals
    - have available adequate quarantine facilities (for at least 30 days)
    - approved procedures for animals coming from non-approved sources
- duration of the agreement
- financial agreements
    - to keep the free space
    - in case of activation of the facilities of the holding

Contingency plan

- Contingency plans specify the national measures
- Contingency plans shall include the access to all facilities, equipment, personnel and other appropriate measures. Coordination with neighbouring states shall also be secured in advance
- Contingency plans ensure access to emergency funds, budgetary means and financial resources
- Detailed plans for emergency vaccinations shall be available
- An up-to-date operations manual shall be available
- All preventive measures (above) needs to be in place
- Information about the measures (preventive and acute measures) shall be given to all relevant stakeholders in advance (Holdings, Governmental and Non-Governmental institutions working on rare and autochthonous breeds)

Minimum Measures necessary in the Case of an Outbreak

The above mentioned preventive measures will come into force in the case of an outbreak:

Census

The holding stands under official surveillance. It should be ensured that a census is made. All stocks of meat, milk, semen, slurry and animal feed have to be recorded.

Disinfection

Appropriate means of disinfection and biosecurity are used at the entrances and exits at all buildings or places housing animals of susceptible species and of the holding itself. Inquiries and samples will be taken according to directive 2003/85 EG.

Animal movement

Animals are usually not allowed to enter or to leave the holding, except of holdings consisting of different epidemiological production units. The animals of susceptible species on the holding are kept in their living quarters or another place, where they can be isolated.

By way of derogation from the prohibitions provided for, the competent authority may authorise movements onto and off the holding, subject to all conditions necessary in order to avoid the spread of the disease virus.

Control zones

The competent authority shall establish a protection zone based on a minimum radius of 3km and a surveillance zone based on a minimum radius of 10 km centred on the outbreak of FMD.

Restricted zone and free zone - when FMD is only in one region: The restricted zone shall, as far as possible, be delimited on the basis of administrative boundaries or geographical barriers.

Conclusion

Rescue is only going to be successful with prior planning. Both animals and holdings need to be recorded and registered and contingency plans need to be made. ELBARN should be active in promoting these ideas and help to identify and/or set up establishments that can act as rescue centres.

Training about rare breeds is needed for any person in a decision-making capacity during a livestock epidemic. All new regulations concerning disease should include rare breeds. Lobbying should take place to ensure this and also ensure that rare breeds, as genetically valuable stock, are included into the Terrestrial Animal Health Code.

Further Information

Relevant EU regulations:
Directive 2003/85 FMD (especially Art. 15, 64 and 77)
Directive 92/65, directive 2005/94 (Avian Influenza)

Other:
OIE Terrestrial Animal Health Code, Chapter 4 (traceability and concept of compartmentalisation)

photo: www.SLE.be

Flemish goat – this picture was taken at the annual "Living Heritage" exhibition organised by SLE in Wachtebeke. This exhibition provides a good opportunity for the public to see the "living heritage" of their country.

Annex 1: OIE

Concept of Compartmentalisation

Rare autochthonous breeds and their nucleus groups should be included in this concept:

- OIE concept of compartmentalisation: Compartment: one or more establishments under a common biosecurity management system containing an animal subpopulation with a distinct health status with respect to a specific disease or specific diseases for which required surveillance, control and biosecurity measures have been applied for the purpose of international trade.
- OIE "collecting centres": an establishment or place where animals for breeding or rearing or animals for slaughter from different establishments or markets are collected together.

Design and implementation of identification systems to achieve full animal traceability

(See Chapter 4.2. of the OIE Terrestrial Animal Health Code)
"Animal traceability" means the ability to follow an animal or group of animals during all stages of its life. "Animal identification system" means the inclusion and linking of components such as identification of establishments/owners, the person(s) responsible for the animal(s), movements and other records with animal identification.

In designing animal identification systems it is useful to conduct preliminary studies, which should take into account:

- animal populations, species, distribution, herd management
- farming and industry structures, production and location
- animal health
- public health
- trade issues
- aspects of animal husbandry
- zoning and compartmentalisation
- animal movement patterns (including transhumance)
- information management and communication
- availability of resources (human and financial)
- social and cultural aspects
- stakeholder knowledge of the issues and expectations
- gaps between current enabling legislation and what is
- needed long term
- international experience
- national experience
- available technology options
- existing identification system(s)
- expected benefits from the animal identification systems and animal traceability and to whom they accrue

Annex 2: Vaccination (in case of FMD)

Holdings and animals must be registered.
The application of the principle of regionalisation should allow the implementation of strict control measures, including emergency vaccination, in a defined part of the Community without endangering general Community interests. Dairy and meat products from vaccinated animals may be placed on the market in accordance with the relevant Community legislation and Directive 2003/85 in particular.

photo: Beißwenger

photo: B. Milerski

Top: Ark farm Beißwenger in South Germany (Allgäu) - conserving traditional breeds helps to preserve traditional farming cultures.
Bottom: Poitou Donkey – large donkey popular due to its shaggy coat, very rare.

ELBARN Guidelines for Characterisation of Ark and Rescue Centres (A&RCs)

Introduction

The primary goal of ELBARN is to network existing "Ark Centres" and to provide a policy framework within which they can provide a professional service for conservation of the breeds (through breed management and emergency provisions). This service also includes the promotion of the products and services of rare breeds along with raising awareness within the public sphere of the importance of animal genetic diversity. Awareness raising and the inclusion of endangered traditional livestock breeds into agricultural production are important tools for safeguarding their future.

For this purpose the ELBARN Ark and Rescue Centres (A&RCs) need to be clearly defined: what is an Ark and Rescue Centre? The following guidelines have been prepared to answer this question. The guidelines were created by the "Work Group 2: Characterisation of Ark and Rescue Centres" at the ELBARN Workshop in Kutna Hora, Czech Republic in February 2008. The knowledge and experience of the ELBARN project partners have added to this process in order to complete the guidelines.

National Requirements

- Rare breeds should be identified, described and population size recorded. This information will be stored for public access in the ELBARN database.
- Furthermore, breeders should be identified and animals registered. National governments should be lobbied to support this work as part of their obligations under Strategic Priority Area 1 of the Global Plan of Action for Animal Genetic Resources.
- National governments should be included in the process of setting up ELBARN.
- The different types of A&RCs have to be identified, described, classified and recorded in a standardised manner. Characteristics to be taken into consideration are:
    - type of establishment
    - sanitary status
    - capacity to take on (additional) animals
    - animal species kept
    - human capacity
    - period of keeping the animals
- Need for A&RCS – how many are needed in the country? This depends upon breeds per country or upon the number of animals per breed, etc. this may differ regionally.
- Contingency planning for animals endangered by emergency scenarios have to be established. This includes epidemics as well as natural disasters. National governments should be lobbied to support this action under Strategic Priority Area 3 of the Global Plan of Action for Animal Genetic Resources.
- All stakeholders need to be identified and involved in the development of such plans, for example, via an advisory–board which reflects a balanced representation of the stakeholders affected: National Coordinators, Breed Organisations, NGOs, Chief Veterinary Officer, Ministry of Agriculture, Local Authorities, Research Institutes. This type of stakeholder networking is suggested as part of the Global Plan of Action for Animal Genetic Resources.
- Executives at the National Sanitary Funds (funds for animal health) should be made aware of the issues and be lobbied to dedicate funds principally for keeping animals alive, rather than for compensating farmers for animals that are culled. Quarantine centres should be financed out of these funds. Further discussion of disease and quarantine needs can be found in the guidelines for rescue and quarantine.

How to locate A&RCs

- Using Arca-Net and the results from the ELBARN Questionnaire (see: Useful Websites).
- Contacting national networks and organisations, including veterinary authorities.
- Contacting the SAVE Network.

General Comments

Quarantine stations should only be considered as a solution of last resort. Disease prevention measures, including vaccination and early warning systems have to be considered and implemented in order to protect animals from diseases and prevent diseases from spreading. Mass culling of animals as a measure of controlling the spreading of contagious diseases (policy of stamping out) should be abolished, especially in the case of rare breeds. This requires preparation of action plans to be discussed with the Veterinary Authorities and lobbying with politicians and administrations on local and European level. Animal welfare groups, consumer organisations and breeding associations should also be included in this action.

Ideally, Ark and Rescue Centres will be able to perform more than one of the above functions in order to make use of similarities and combine infrastructures.

Conclusion

A&RCs can provide a hub and focus for conservation activities in a country. A functioning ELBARN requires a number of A&RCs committed to showing animals, providing information and activities and also marketing products. ELBARN seeks to support farmers in their activities by providing an internet platform through Arca-Net, a source of information about breeds and examples of best practice through the ELBARN website. A network of established A&RCs can share knowledge and ideas and support the establishment of new A&RCs where none yet exist.

ELBARN also intends to provide for emergency situations, by creating "rescue" places within A&RCs and, also, by lobbying for changes in regulation and more awareness of the needs rare breeds within Europe.

Overview, need for action:

- Each country should have a national committee on animal genetic resources that includes all stakeholders. This committee should work out national standards for A&RCs, within the context of the Area Action plans and the development of National Action Plans (required for the implementation of the FAO Global Plan of Action).
    - minimum requirements (financial, personnel and capacity)
    - quality standards
    - controlling body
- Networking, on regional level, for action plans and collaboration concerning regional cross-border breeds is strongly recommended.
- A pan-European lobbying group should be established to address the EU about the needs of rare breeds, e.g:
    - registered A&RCs should be afforded a special status
    - protection against slaughtering,
    - medical treatment e.g. vaccination,
    - ease of transportation in case of emergency
    - protected marketing of products from local, autochthonous breeds (label)
- Networking through out Europe, in favour of endangered breeds, is crucial.

Further Information

Useful Websites:

ELBARN: www.elbarn.net

Arca-Net: www.arca-net.info

SAVE Foundation: www.save-foundation.net

European Farm Animal Information System: http://efabis.tzv.fal.de/

Types of possible A&RCs

Type 1: Educational A&RCs

Purposes	Requirements	Type of facilities
- public awareness, special information programmes for schools, organisations of farmers, scientists, hobby breeders, consumer groups - safeguard the knowledge of breeding rare breeds, including traditional and cultural aspects of animal breeding	- have a representative sample of endangered, typical, local farm animals - provide guide-facilities, documentation, well equipped meeting rooms - equipped to offer "learning by doing" programmes such as working with products of traditional farming (e.g. baking, cheese making, weaving)	- farm parks, model farms - school farms, university research farms - city farms - zoo's and zoological gardens - open air museums - information centres at: national parks, in-situ conservation parks, biosphere reserves

Type 2: Farm A&RCs

Purposes	Requirements	Type of facilities
- breeding of endangered farm animals keeping of breeding males - production and sale of (labelled) local breeds products - sustainable farming with local breeds - farming in combination with nature protection - farm tourism (bed and breakfast)	- professionally run farms ("working farms") - farms should be economically sustainable - majority of animals present on the farms should belong to local endangered breeds - highest animal welfare standards to be applied on the farm - open to the public and provide guided tours on request	- ark farms, organic farms, state farms, prison farms - grazing projects or other nature conservation projects - community care farms connected with - therapy or sheltered workshops - farms with Bed and Breakfast facilities

Type 3: Rescue stations

Purposes	Requirements	Type of facilities
- to save herds of endangered farm animals from slaughtering in case last remaining breeder(s) (have to) stop breeding activity - to save animals in case of political unrest, military conflicts, flooding, etc.	- facilities that are acquainted with caring for animals and have room, time and personnel available to welcome additional animals - ease of transportation regulation to and from rescue stations - suitable sanitary status and contingency plans to take unknown animals at short notice and also, if necessary, to provide for isolation of incoming animals and can take care of farm animals during a certain period of time at short notice	- all type of facilities that are equipped

Type 4: Quarantine stations

Purposes	Requirements	Type of facilities
- voluntary isolation to save endangered breeds of farm animals in case of outbreak of contagious diseases	- contract with ELBARN and also relevant governmental body (e.g. Veterinary Authorities) to perform this role. See Guidelines for Rescue in Case of Disease for more details	- any registered establishment, willing to take on the role, that fulfils criteria for quarantine

photo: R. Fortina

Pontremolese - perhaps the rarest of all Italian cattle breeds. It was once used to work in the marble quarries of Tuscany.

ELBARN Guidelines for managing small populations of domestic animals

Introduction

Managing the breeding of endangered traditional livestock breeds is the most important tool for safeguarding genetic variety, especially if the population is a small one. The ELBARN Ark and Rescue Centres (A&RCs) can provide a framework for this management where there is none already in place. By keeping nucleus herds and coordinating breeding with other farms and A&RCs, an essential part of the work for in-situ conservation will be achieved.

The following guidelines have been prepared to be used by owners of A&RCs. The guidelines have been set in motion by the contributors to "Work Group 3: Breeding" at the ELBARN Workshop in Kutna Hora, Czech Republic in February 2008. The experience in conservation breeding of the staff and management committee of the SAVE Foundation has also been used in order to complete the guidelines.

Assessing the Situation: Census and Monitoring

A preliminary condition for conservation work is good monitoring. Monitoring begins with an initial population census. These first results can be used to determine the status on the basis of objective criteria, for these purposes the endangerment criteria of the FAO or of the country the animals are found in can be used. This is then used (in combination with developmental trends) to determine the interval required between further census'. Regularly updating of the data is essential and, for severely endangered breeds, must be carried out every year.

Monitoring of Traditional Breeds

If there is no breeding programme running and no data is available, conservation activities have to start from scratch. This is why monitoring programs have been developed. Monitoring programs collate an overview of traditional breeds from old agricultural literature and also conduct search tours to find remnant populations. In monitoring programs one cannot and should not rely on commonly available statistics. Usually the figures are too high and, sometimes, remnants of a breed can be found that officially is considered long extinct.

The procedure of monitoring can be summarized schematically:

- Inventory of former diversity (regional or national):
  - Evaluation of old agricultural literature
  - Search for old veterinary dissertations and other special reports
  - Interviews with specialists, old farmers, chroniclers etc (use photos and/or illustrations found in old literature)
- Specific search:
  - in former locations (according to research)
  - indications from interviews
  - in places where other relicts have been found.
- Random search:
  - with ethnic minorities within countries
  - who may have different agricultural systems and traditions
  - in remote, inaccessible regions in borderline locations (altitude, topography, exposed positions etc.).

The need for action can then be assessed based on the results of „scouting trips" in the area. If there is little need for action, the monitoring has to be established or institutionalised for a longer time period. In the case of greater need for action a conservation program has to be set up. In case of urgent need a fast "rescue action" may be necessary.

Monitoring standard breeds (data recorded)

Basic information

Procedures should be put in place to make regular census of the population. The demographic structure should also be obtained: number of herds, distribution of herd size etc, also geographical locations. Such information is important for planning purposes to show the possibilities, and the associated problems, of efficiently organising a breeding programme. This should consider both the nucleus stock and those individuals outside of the nucleus.

Rate of inbreeding
Where pedigree recording is in operation the inbreeding coefficients of animals in the population and the apparent rate of increase in inbreeding should be calculated.

In the absence of pedigree recording the monitoring process should examine all the demographic information available. In these circumstances, the capacities of the farmers involved in the proposed programmes have to be taken into account and the construction of nucleus herds made accordingly. Any change in the human system (e.g. death of a farmer) might critically affect the effective population size. Therefore the monitoring process should be alert to this and, if appropriate, re-examine the design of the scheme with expert help, if required.

Fitness
The fitness of the population should be considered. In this context this means the ability of the breeding individuals to produce offspring that survive to maturity and are fertile. This incorporates such considerations as conception rates, litter sizes, offspring mortality. Whilst these traits may not be formally recorded the experience of farmers should give an indication of problem. Where problems are encountered they should be recorded and the cause should be investigated.

Selection
Where appropriate, selection strategy should be considered. If new selection procedures are to be introduced in the programme will these have an impact on the effective population size? Is the selection goal still appropriate for the population? Is there evidence that selection has led to outcomes that were not anticipated and which may be undesirable? These questions can be best addressed using properly recorded data and should, ideally, be discussed with a livestock geneticist.

If the population is not solely maintained in-situ but is (also) located outside the environment in which the breed was developed, some consideration should be given to the possibility of phenotypic adaptations being lost.

Breed Management

Methods
The conservation of genetic reserves should proceed with the following priorities:

- Live conservation in-situ (with integration into mainstream agriculture and production)
- Live conservation ex-situ (nucleus herds, rescue stations, zoos, etc.)
- Cryoconservation

The last method is a useful supplementary measure but does not allow for continued development and adaptation of a breed.

Strategies

Once all available stock has been collected and recorded and a breed standard agreed upon, the animal group should be divided: those that fulfil ALL of the breed standard are "group A", those that fulfil roughly 75% of the standard become "group B" and those that only fulfil about 50% of the standard become "group C". Animals can then be "bred up" by crossing, for example, a "group A" animal with a "group C". After three generations of crossing with a "group A" animal, females can be considered purebred. It is advisable to cross for four generations for a sire-line.

The optimal structure of an in-situ nucleus population is an equal proportion of unrelated breeding animals of both sexes. Ideally, an equal number of unrelated sires and dams should be present and, from each of them, a son or daughter, respectively, as reserve. Thus, the planned mating of „each with each" approximates the ideal case of casual mating. This is usually not possible, however; as the keeping of sires is often difficult and the male lines are limited. As a result, it is important to:

- ensure sperm samples from every original sire
- include as many sons from each sire as possible in the breeding program; these sons should be by different dams
- use planned rotation mating and extension of the generation interval through artificial insemination

Conservation in-situ and ex-situ can, through spatial separation of the population, lead in time to the formation of new genetic lines.

The aim must be to achieve a minimal optimum; for a nucleus population of ruminants, for example, this should be 20:200 (20 males, 200 females).

In-situ live conservation should be given the highest priority because of its inclusion of traditional animal use in regional environmental and climatic conditions. This is why it is important that ELBARN A&RCs become breeding centres. This is necessary in order to integrate remnant populations outside the breeding area and those held by „hobby farmers" into the general breeding population.

Decentralised in-situ conservation offers the greatest security against epidemics and other dangers. All available animals should be brought into the breeding programme from the outset and then divided into geographically separated groups. These groups should be kept on different A&RCs but the breeding management programme should be coordinated centrally, treating the animals as one population. With coordinated exchange of males between groups, genetic diversity can be maintained. This management should take place on a farmer/breed organisation level with advice and resources available from expert NGOs and relevant governmental organisations. It can be argued that an endogenous development of breed management systems, with expert support, has the most chance of long-term success.

Management

It is important to constantly question the breed standard and the breeding goal. This task often exceeds the capabilities of breeding associations and requires the help of experts or NGOs. Special working groups need to be established to deal with these questions about breeds.

No one can predict the future. In principle, every nucleus herd should be kept on a long-term basis. Long-term, in this case, means an unforeseeable time period until the day when conditions have changed and, for example, the nucleus herd is no longer significant for conserving the breed because of a large breeding population on farms. Even under these conditions, however, it is often useful to continue supporting the nucleus herd; it is often the only place to conserve a breed without breeding changes. A breed that is no longer endangered may well be released from conservation programs, if the requirements are fulfilled. This could take as many as 10 generations!

Stock Multiplication

To rapidly increase the herd population whilst maintaining the total existing gene-pool requires a great organisational effort. Artificial insemination and embryo transfer would be ideal supplementary techniques to the controlled mating every dam with every sire. Initially, simple reproduction is called for and selection for a phenotype is much less important. At the same time, carefully organised structures must be established to assure long-term survival.

Any surplus of offspring from nucleus herds should, whenever not needed for further conservation herds, be given to enthusiastic farmers on a contract basis. Only animals suitable for breeding should be passed on.

Basic Measures:

- increase the population size
- create security doubles
- decentralise the breed and distribute as many sires as possible
- extend the interval between generations
- use cryoconservation as additional security

Rescue

In the event of Rescue of animals, two basic principles are necessary:

- If the group to be rescued is too large for the emergency accommodation available, a wide-ranging selection of healthy animals should be made. This wide range should include all possible morphological and generational differences.
- As many animals as possible should be taken.
- As many unrelated males as possible should be included in the selection.

Further details about the definition and process of Rescue can be found in the Rescue Guidelines.

Integration into Agricultural Production

The integration of traditional breeds into agricultural production systems, where possible, is desirable. Often breeds have unique characteristics that can be used to create niche products or provide a particular service.

This subject is developed further in the Marketing Guidelines.

Conclusion

On-farm conservation requires the mobilisation of all stakeholders: farmers, organisations, government agencies and research institutes. These stakeholders need to create a coordinated breeding programme. This programme should begin with population census and recording of basic data and move on to create a procedure for long-term monitoring, develop breeding goals and also provide on the ground, practical action for successful conservation. Below is an overview of the principles of such a programme.

Overview

- The breeding programme should be managed by a group of interested and knowledgeable people, including all stakeholder levels.
- Breeds that are not already officially recognised by governments should be investigated and, where appropriate, should achieve official recognition.
- Cross-border programmes should be established where necessary.
- Census, registration and long-term monitoring are a prerequisite for success.
- Nucleus herds should be split into geographically distinct groups.
- As many male-lines should be established as is possible.
- Recording of basis data is essential (see Annex 1).
- Animals should be integrated into agricultural production.

Further Information

Literature resources:

"Community-Based Management of Animal Genetic Resources", FAO Publication, 2001

"Draft Guidelines for Establishing Animal Breeding Strategies in Low- and Medium Production Systems", Intergovernmental Technical Working Group on Animal Genetic Resources for Food and Agriculture, FAO Commission on Genetic Resources for Food and Agriculture, Rome, January 2009

"Secondary guidelines: Management of small populations at risk", FAO Publication, 2000

"Utilisation and Conservation of Farm Animal Genetic Resources", Oldenbroek, K., (ed.), Wageningen Academic Publishers, January 2007, ISBN: 978-9086860326

Useful Websites:

ELBARN: www.elbarn.net

SAVE Foundation: www.save-foundation.net

European Farm Animal Information System: http://efabis.tzv.fal.de/

photo: M. Schneider-Jacoby

Simmental - cattle grazing in nature reserves can help wildlife conservation.

photo: B. Milerski

Swabian-Hall – German saddleback pig, bred in late 19th century from a local landrace crossed with Berkshires and Essex breeds.

Annex 1: Minimum data required for each animal

- Species and breed
- Breed Name (local name or synonym)
- Sex
- Sire
- Dam
- Identification number, if available
- Date of Birth
- Origin (which farm?) and current location
- Date of slaughter/natural death

See http://www.save-foundation.net/docu/en/Pedigree_Analysis_Software.pdf for an overview of various breed management software available for recording data of small populations.

Annex 2: Work Plan for On-Farm Conservation Breeding

1st Phase:
Monitoring: census, methods of husbandry and usage, breed characteristics.
Result: assessment of needs.

2nd Phase:
Securing all of remnant population through purchase or support at present location.
Securing or creating at least 10 male lines.
Building up of nucleus herds and sperm banks.
Creation of an NGO herd book including minimum data
Scientific research (e.g. distance analysis).
Founding of management group for breed, if not already in existence.

3rd Phase:
Development of a long-term conservation plan for the breed, taking into account potential to integrate breed into agricultural production and/or other uses.

4th Phase:
Integration of the breed in agricultural production/usage.

photo: J. Grasegger

photo: www.S.E.be

Top: Brown Mountain Sheep – a breed found in the Alps. The Brown Mountain Sheep lambs easily and has an arrhythmical season.
Bottom: Ronquières Turkey – a hardy Belgian turkey breed, resistant to many of the diseases that plague its modern cousins.

photo: A. Feldmann

Traditional products from the Swabian-Hall Pig – Reintroducing traditional breeds into agricultural production allows farmers to fill an exclusive product-niche.

ELBARN Marketing Strategies for Ark & Rescue Centres

Introduction

Marketing is an important part of the process to find ways to finance Ark and Rescue Centres (A&RCs). A&RCs should be as self-sufficient as possible, as dependence on state subsidies can be dangerous in times of cutback. Besides marketing the actual products from rare breeds like milk, meat and wool, it is possible to market services such as landscape management, promoting tourism and education. The marketing strategies strongly depend on the type of A&RC, its location and market potential, end customers and outlets. These marketing strategies should be seen as general guidelines for marketing, labelling and financing.

After identifying possible A&RCs in the regional areas with the focal points "Educational A&RC", "Farm A&RC", "Rescue station" or "Quarantine station" (see Guidelines for Characterisation) an overview of the individual marketing possibilities is necessary.

- The various European countries have vast difference in marketing, culture, income, purchasing parity and consumer behaviour, which results in a complex and diverse starting point for setting out generally accepted guidelines.
- In spite of this it is possible to isolate general consumer requirements and general marketing tools for the producer.

To promote product marketing SAVE Foundation is, within the framework of ELBARN, currently developing a trademark as a general tool to support rare breeds (in the long run such a trademark should become an EU label and also support products from plants). As certification is a crucial point for a small organisation, the new trademark will be an add-on to labels already in use.

The following guidelines were set in motion by the "Work Group 4: Marketing of Products and Services" at the ELBARN Workshop in Kutna Hora, Czech Republic in February 2008. A small working group, made up of members of the project partner organisations and other interested colleagues, have continued the process that has led to these guidelines.

Product Marketing

- search for a broad marketing base
- pay attention of the continuity on every level
- combine diverse marketing strategies: preferably direct marketing from farm shop but search for partners, e.g. also sell products such as bread, milk products, fruit and vegetables from partners
- combination of various products to obtain added value
- search for contact to the high class restaurants (e.g. marketing via http://www.rungisexpress.com/)
- through ELBARN it can be arranged that interested farms participate in an online webshop portal (e.g. www.agroviva.de) where products can be sold directly (cost: 20€/month for 50 participants),
- promote existing initiatives (see Annex 1)
- use the knowledge gained by other farmers (see Annex 2)
- check funding for assistance with local marketing strategies
- link agriculture with biodiversity! (target consumer group: Lifestyle of health and sustainability [LOHAS])
- use USPs (Unique selling points) for different levels: e.g. Grey Steppe cattle on regional level and Camarque horses on landscape level
- make contact with existing eco labels and other associations
- a responsible person should be appointed for each area to coordinate the whole marketing scheme and activities to promote A&RCs

photo: Oetmann

Consumers like to "know the story" behind what they are buying – selling farm products makes conservation breeding financially sustainable.

Tourism & Education

- support tourism with information campaigns (image, products, riding, observation, visits, product tasting)
- in tourism and education the focus lies in raising awareness for the importance of conserving rare breeds and the positive aspects in their use as preserver of cultural and natural heritage
- promote farm park visits for children and adults through Arca-Net, but also by advertising, course materials for schools, information leaflets etc. Prepare lesson plans for teachers to use in schools
- identify suitable breeds for landscape management (see Annex 3)

Labelling

- make use of the new trademark for small scale, extensive production from local breeds and plant varieties using traditional manufacturing and respecting animal welfare
- respect the conditions for the trademark/label and make sure that certification via a national certifying body is guaranteed
- make sure that the labelled products really come from small scale, extensive production from autochthonous and locally adapted breeds
- help to promote the trademark by using it on your A&RCs products
- look for cooperation with regional, national or international institutions and programmes (e.g. restaurants, "Mountain Farmer" programmes, biosphere products, Slow Food)
- products should be traceable with a comprehensible animal/farm/product number "from farm to fork"
- identify possible institutions and/or programmes for cooperating with the labelling of an A&RC label
- identify regional, national or European-wide institutions who can support nature conservation with rare breeds

Providing services

- identify suitable breeds for services (pack horse/ donkey, grazing, cultivator, etc)
- promote the using of animals for services (see Annex 3)
- these services should be hired out on a contractual basis and be paid for

Recommended Action

Marketing is crucial for the sustainable conservation of rare breeds and the financing of A&RCs. An overall aspect is the development of a label which could be applied to A&RCs in the whole of Europe. A label will add value for the producer and give consumers confidence in the product. It is also necessary to connect regional, national and European marketing initiatives and also lobby for additional funds from other, interested institutions. On a more regional level the first step is to identify the different kinds of A&RCs and their location and then develop a special marketing scheme for one or more of these centres.

The ELBARN A&RCs may be supported by providing a webshop utility (e.g. www.agroviva.de) for promoting product information. This must be accompanied by education of tourists and the local population to promote the importance of conserving rare breeds. This conservation is accompanied by positive aspects in their use, as preservers of cultural and natural heritage.

A list of "best practise" examples can be used to provide information of how to establish a successful marketing idea to the interested A&RCs. This might be in the field of product marketing, tourism or providing services like grazing projects (www.grazing-animalsproject.org.uk) for landscape management. These examples are online in form of a "Best Practise List" for marketing products, tourism & education and services: www.elbarn.net

A&RCs focused on "Rescue" or "Quarantine" have limited opportunities for product marketing as they need to keep space free for emergencies and animals stay there only for a short period. Therefore, lobbying for rescue funds on regional, national and/or EU level should be pursued.

Finally, through marketing, it must be possible that long-term sustainability for the conservation of old and endangered breeds as a source of valuable Animal Genetic Resources is achieved.

Conditions for use of trademark by ELBARN A&RCs

(These are divided into "Basic" and "Additional" conditions so that regional differences can be allowed for)

Basic Conditions (all must be fulfilled):

- the livestock must belong to an autochthonous breed (or breed traditional to that region)
- livestock must be kept in a free range, extensive environment
- the production must be local, extensive and small scale livestock must be a valuable part of the cultural heritage
- specifications for Animal welfare must be respected, see:
  http://ec.europa.eu/food/animal/welfare/index_en.htm
  http://ec.europa.eu/food/animal/welfare/transport/index_en.htm
  http://ec.europa.eu/food/animal/welfare/slaughter/index_en.htm
- participating A&RCs should run a herd book or should be a member of a breeding organisation which runs a herd book

Additional Conditions (at least half must be fulfilled):

- The livestock should be pure breeds and that should be documented
- quality should be guaranteed (seasonal fluctuations are accepted for natural products but feeding guidelines have to be respected)
- traditional, artisan processing should be used
- the distribution should respect rules of fair trade
- manufacturing should regard as minimum EU Bio regulations (Council Regulation (EC) No 967/2008 of 29 September 2008 amending Regulation (EC) No 834/2007 on organic production and labelling of organic products

Useful Websites

www.agroviva.de

www.elbarn.net

www.grazinganimalsproject.org.uk

www.rungisexpress.com

http://ec.europa.eu/food/animal/welfare/index_en.htm

http://ec.europa.eu/food/animal/welfare/transport/index_en.htm

http://ec.europa.eu/food/animal/welfare/slaughter/index_en.htm

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008R0967:EN:NOT

Annex 1: Best practise – Tourism/ Education

See: www.arca-net.info

Arca-Net is both travelling guide and information portal
Rare and endangered livestock breeds and old cultivated plants may have disappeared from agricultural production units but they continue to live on numerous Arkfarms, livestock parks, open-air museums and other institutions.
Arca-Net makes these institutions known and promotes visits. Moreover, Arca-Net offers simple background information and raises awareness of the need for conservation.

Publicly accessible institutions with rare breeds and/or endangered cultivated plants use this internet portal to inform the wider public about their establishment and to encourage visits. They can also use the portal to advertise their products.
The inclusion into Arca-Net is free.

Arca-Net today
Arca-Net is available in English, French, German and Italian. It contains today (February 2009) over 300 institutions in 34 European countries from Iceland to Malta North-South and from the Azores to Ukraine West-East.

Annex 2: Best practise list – Marketing products (also includes plant products)

Animal/Plant	Address	Person/Initiative	web	Description
Ass	France	Asinerie de Feillet	www.asinus.fr/lait/info.html	internet platform for powdered donkey milk and cosmetic products
Ass	Italy	Materia	http://www.lattediasina.it/	
Ass	Croatia		www.hssc.hr	milk products
Cow	France		http://www.patrimoine biologique.midipyrenees.fr/fiche.asp?FK_cat_animal=2&tpage=4Laguiole	Laguiole cheese
Cow	United Kingdom	Traditional Breeds Meat Marketing Company	http://www.tbmm.co.uk/	internet platform for meat marketing

Annex 2: Best practise list – Marketing products (also includes plant products)

Animal/Plant	Address	Person/Initiative	web	Description
Cow	United Kingdom		http://www.defra.gov.uk/foodrin/foodname/pfn/products/registered/single_g.htm	Single Gloucester
Cow	Germany	Urvieh Ferdinand	http://agro00.agroserver.net/urviehferdinand/	internet platform for meat marketing
Maize	Switzerland		http://www.ribelmais.ch/	Rheintaler Ribelmais
Pig	Germany		http://www.bunte-bentheimer-schweine.de/index.php?id=386	Buntes Bentheimer Schwein
Pig	Hungary	Gyulahus	http://www.gyulahus.hu/cgi-bin/termekeken/termekekal/index.php?dir=mangalica	Mangalica pig products
Pig	Germany, Baden Württemberg		http://www.besh.de/html/produkte/schweingga.htm	Schwäbisch Hällisches Schwein with international marketing strategy, Mainly sold to high class restaurants
Potatoes	Germany, Wendtland	Carsten Ellenberg	www.kartoffelvielfalt.de	marketing of old potato varieties
Pigs/Cattle	Germany, Schleswig Holstein	„Schleswig-Holstein isst lecker" in Cooperation with Bruhn´s Deichhotel	http://www.schleswig-holstein.de/UmweltLandwirtschaft/DE/LebensmittelTierGesundheit/01__Lebensmittel/IsstLecker/IsstLecker__node.html__nnn=true	regional products with label of origin
Sheep	Bosnia Herzogovina	cooperative for implementing a protected geographical denomination is carried out by Cincar, an association of sheep breeders and cheese producers and supported by an Italian Non-Governmental Organization (UCODEP).	http://www.utlsarajevo.org/	the Livno cheese qualification process was initiated in 2005 with the project "Flavours of Herzegovina" for preservation of the very particular landscape of the Livanjsko Polje
Sheep	Germany	Arbeitsgemeinschaft Diepholz	www.moorschnucke.de	Diepholzer Moorschnucke with meat marketing
Tomatoes	Austria	Stekovic	http://www.dinsesculinarium.de/erich-stekovics-gemuesevielfalt/index.html	3200 old varieties of tomatoes, open to public
Various	Germany	Land Brandenburg	http://www.rmp-handelsplatz-brandenburg.de/	regional products online portal
			www.pastoralpeoples.org	a best practice list is in research
			www.eldev.net	a best practice list is in research

photo: A. Feldmann

Traditional products made from local breeds connect consumers to their local culture.

ELBARN

Publication Details:

Published within the framework of the ELBARN Project

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Photos:
cover: Traditional animal husbandry systems such as the shepherds of the Rhön sheep are perfect for the conservation of diverse cultural landscapes.
back side: Thuringian Forest Goat - the original goats were from Alpine stock as can be seen in their badger face-markings.

Published by: EuroNatur
Guideline Editor: Elli Broxham, SAVE Foundation
Art Direction: Kerstin Sauer, EuroNatur Service GmbH
Printed by: Druckcentrum Singen,100% recycled paper

Action 066 - ELBARN - receives financial support from the European Commission, Directorate-General for Agriculture and Rural Development, under Council Regulation (EC) No 870/2004

Supported by the European Commission

photo: A. Feldmann

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