

**THE STATE OF GLOBAL ANIMAL GENETIC RESOURCES AND
A NEW FAO PROGRAMME OF MANAGEMENT (2 nd part)****K. Hammond***The conservation imperatives for livestock*

The domestic animal conservation imperatives for humankind may be stated then as:

1. Identify and understand those unique genetic resources which collectively comprise the global gene pools for each of the 40+ species domesticated and used to provide food and agriculture.
2. Develop and properly utilise the associated diversity, to increase production and productivity, achieve sustainable agricultural systems and meet demands for specific product types.
3. Monitor particularly those resources which are currently represented by small populations of animals; or which are otherwise being displaced by one or other breed replacement strategies.
4. Preserve the unique resources which are not currently in demand.
5. Train and involve people in management of these resources, including their best use and development, and in the maintenance of diversity.
6. Communicate to the world community the importance of our domestic animal genetic resources and of the associated diversity, its current exposure to lose and its irreplaceability.

The FAO programme structure and work elements

Given these imperatives, what is known of the current state of domestic animal genetic resources globally, the developing responsibilities under The Convention, and the mandate from its governing bodies, FAO is developing a structure for and the elements of a comprehensive global programme for the conservation of domestic animal diversity. Some aspects of the programme are already being implemented although complete implementation will take some years and will depend on strong collaborative support for the programme.

The plan is directed at establishing as quickly as possible a sound primary global infrastructure which will actively involve a large number of nations and lead to the

Rad je priopćen na **FOURTH EAAP ROUND TABLE ON LIVESTOCK PRODUCTION IN CENTRAL AND EASTERN EUROPE, ZAGREB, 1994.**

Dr. Keith Hammond, Animal Production and Health Division Food and Agriculture Organization of the United Nations, Via delle Terme di Caracalla, 00100 - Rome, Italy

early implementation of the necessary range of activities to successfully respond to the imperatives and be consistent with The Convention. Scarce financial resources must be concentrated on initiating the key infrastructure required for the programme, rather than on projects aimed at conserving a small number of rare breeds - the latter is a totally inadequate approach when more than 1,000 breed resources are at high risk of loss. The specific design of the programme will perhaps receive more FAO budgetary funding once it has been formally accepted by Member Governments, but it is clear that the majority of the funding required to support this comprehensive programme will need to come from extra-budgetary sources; with FAO either as executing agency for particular grants or at least being involved in the design and operation of projects in an advisory capacity to ensure the integrity of the programme's global distributed operations.

The global programme involves two components: (1) an intergovernmental support mechanism for enabling direct government involvement and ensuring continuity of policy advice, and (2) the technical programme, which will develop seven work elements.

Some key features of this programme are:

- A geographically distributed structure, comprising: (1) One or two umbrella projects in each major region of the world, to properly locate the global activity and to more effectively involve and assist governments and NGOs in designing and implementing national action plans; (2) a coordinating institution within each country, committed by the national government, linked strongly to the regional umbrella project, with an active country coordinator chosen with the assistance of the participating government, and community action groups; and (3) a global focus in Rome to develop, coordinate and communicate the global effort and secure the essential involvement and support for the programme. The first regional umbrella project has been executed; for Asia & the Pacific, funded by the Government of Japan.

- Rapid development of FAO's Global Databank on Animal Genetic Resources and rapid expansion of the World Watch List for Domestic Animal Diversity to form a Global Information System for Domestic Animal Diversity (DAD-IS), which will operate through Internet. DAD-IS will overlay the above-mentioned distributed structure and will serve: (1) as the global early warning system for domestic animal genetic resources; (2) to lower the cost and increase the amount and effectiveness of training and education in conservation genetics and procedures; (3) to make widely available a set of well designed and supported experimental design and data analysis aids, to increase research capacity and cost-effectiveness; (4) to provide a global bibliography for animal genetic resources; (5) to link and coordinate with specific genetic databases under development, (6) to facilitate the essential wide and active involvement of the world community in the programme; and (7) to help manage /coordinate execution of its global plan of activities. The conceptual design and primary specification of DAD-IS has been completed.

- Quickly executing a set of regional project identification missions, to establish a global portfolio of most effective conservation activities, ready for formulation,

funding and execution; and for use in developing the global action plan under The Convention. One of the intended two regional project identification missions for Central and Eastern Europe is funded (UNDP) and hopefully can be conducted this autumn, and the proposal for the second has been drafted.

- Fostering an in-situ conservation strategy which emphasises the development and expanded use of indigenous genetic resources.

- Introducing an ex-situ conservation strategy based primarily on cryopreservation and combining within-country genebanks with global gene repositories of last resort; more in keeping with The Convention. Of course, interested governments, NGOs, research institutions, and private enterprises will also be encouraged to maintain in vivo samples of breeds at risk, for in this form the genetic resources are directly available for use and study.

- Introducing ongoing monitoring of populations at risk through the within-country coordinating institutions and DAD-IS, to be aware of what exists, their status and loss rates. A key requirement for this operation is the establishment of one active contact point in each country.

- Implementing a specific global research activity in genetic distancing, utilising microsatellites, and aimed at establishing the amount of diversity in each domestic species, and each breed's relative contribution to this, to introduce more objectivity to the global effort, reduce longer term costs, and initiate field work in each country. If this activity were undertaken for the major domestic species of Central and Eastern Europe it would immediately identify priority indigenous breeds for further conservation effort.

- The development and dissemination of recommended training and education curricula in conservation genetics and procedures, and expanded communications and training activities; directed at increasing understanding and involvement.

- Developing guidelines to assist participating governments establish national action plans of management; drafting the global action plan for the domestic animal segment of biodiversity, to also cover immediate wild relatives, and to encompass the overall global effort by all parties.

- Receive policy advice from and regularly report to the Intergovernmental support mechanisms of FAO and The Convention.

This programme can be viewed as an addition to all efforts to date to understand and manipulate animal genetic variation to meet our needs for food and agriculture. The programme introduces some changes of emphasis to our (long-accepted) approach to Animal Breeding principles and practice, to harmonize with the decisions of a large section of the world community. Some researchers have already assisted with the development of this programme. Hopefully opportunities for involvement will soon be available to all concerned with the application of genetics to livestock production. FAO is giving high priority to the early implementation of the first stage of DAD-IS, as the programme's key for achieving wide and effective involvement. The outcomes being sought by the programme are better understanding; more effective use of unique resources; major reduction in the number of breeds at high risk of loss; and the maintenance of domestic animal diversity: to achieve food security for all, now and for our replacement generations.

K. Hammond: The state of global animal genetic resources and a new FAO programme of management
(2 nd part)

REFERENCES

1. FAO, (1992): The management of global animal genetic resources. FAO Animal Production and Health Paper No 104.
2. FAO, (1993): An integrated global programme to establish the genetic relationships among the breeds of each domestic animal species. Report of an Informal Working Group. AGA, FAO, Rome.
3. FAO/UNEP, (1993): World Watch List for Domestic Animal Diversity, First Edition. (Eds.: Loftus, R. and Scherf, B.), FAO, Rome.
4. IUCN-UNEP-WWF & FAO-UNESCO, (1980): World Conservation Strategy. Living Resources Conservation for Sustainable Development. IUCN, Switzerland.

Primljeno: 19. 5. 1994.