A Latinoamerican experience in the conservation of zoogenetic resources and traditional management systems

J. V. Delgado¹, M. E. Camacho²

¹ Department of Genetics. University of Córdoba. Córdoba, Spain
² IFAPA, Córdoba. Spain

Corresponding author: Juan Vincente Delgado. Department of Genetics. University of Córdoba. Red CYTED XII-H. Campus de Rabanales, Ed.C-5, 14071 Córdoba, Spain - E-mail id1debej@uco.es

ABSTRACT: The Iberoamerican Network on the Conservation of Local Domestic Animal Biodiversity for the Sustainable Rural Development (Network XII-H) was constituted inside the CYTED in 1999, in order to coordinate international activities on research, development, innovation, formation and transference of technology related to the conservation of domestic zoogenetic resources and the traditional productive systems, taking into special account their social and ecological repercussions. Today this network has developed symposia, seminars, workshops, meetings, training courses, PhD formation, publications and many other activities in cooperation among 24 teams from 16 countries presently involved (around 300 researchers). The present paper describes our activities.

Key words: Zoogenetic Resources, management systems, Iberoamerican Co-operation.

INTRODUCTION - In the 15th century, after the 2nd Columbus trip, Spanish and Portuguese introduced in America zoogenetic resources of almost all the species bred in Europe. Also, the turkey was introduced in Europe from Mexico (Rodero et al., 1992). The zootechnic panorama of Iberoamerica was completed with some additional local species like andinian camelids. This introduction was followed by the dispersive effect of the genetic drift and other genetic systematic effects that produced, five hundred years, a lot of local breeds known as “Creoles” (Primo, 1992). Also farm practices, management systems and other sociological aspects were spread from the Iberian Peninsula to a wide area (from the Southern of the USA to Patagonia). This affected the culture of the regions, defining a different way of life. Today, Iberoamerica is a dynamic part of the world that offers its cultural patrimony to the humanity, also in farming. We find in this moment many related breeds in both sides of the Atlantic Ocean, but also a lot of cultural aspects, some of them in risk of extinction. We have stated in 1999 a Network initially with the funding of the Iberoamerican Program of Science and Technology for the Development (CYTED), organization formed by the United Iberamerican Nation. CYTED was sensible of the role of the local breeds in the sustainable development and the social and ecological equilibrium. This Network has achieved a good success maintaining its activities from 2004 with own resources.

MATERIAL AND METHODS - In 1999 the Network was constituted with nine groups of six countries, but several new groups were incorporated until reach twenty four from Argentina, Uruguay, Chile, Brazil, Bolivia, Peru, Ecuador, Venezuela, Colombia, El Salvador, Mexico, Cuba, Portugal and Spain, and two observer countries: Italy and United States (Delgado et al. 2005). The procedure of incorporation consists in the study of the solicitude, specially the scientific profile of the group, what must be related to the objectives of the network. The teams are represented by one coordinator, belonging to one institution considered as reference point, but it could be integrated by researchers of several other institutions. Those countries with several groups form a national focal point.

RESULTS AND CONCLUSIONS - Conservation of zoogenetic resources is justified by the necessity for the maintenance of the genetic variability and other historical, social and cultural reasons, but we cannot separate this of the “utilisation”, an important issue when we work in developing countries. For this reason, the fundamentals of our network are centred in investigating on all aspects related to the maintenance of the equilibrium among the
human populations, their genetic resources and the environment, as unique way to ensure the sustainability.

We study four aspects, the first is the domestic animal biodiversity, as primary patrimony at the service of the development. We are centred in the characterisation of local breeds, and the development of programmes of genetic conservation and breeding.

The second are the traditional management systems which shown their sustainability along centuries. We characterise the systems, and determine critical points of improvement, but saving their fundamentals. The third aspect is the evaluation of the social impact of the biodiversity and the systems in the maintenance of people on land, the promotion of the cultural diversity and the influence on the quality of life.

These are approached through participative methods. Finally, the fourth aspect is related to the ecological impact of the biodiversity and the systems with the evaluation of their ecological role as starting point of the study of their sustainability. We investigate here the cyclic pastureable capacity of the areas and the interactions with the environment in terms of land degradation.

Our main objective is the contribution to the maintenance of the biological, social and ecological equilibrium with the conservation and utilisation of the local domestic animal biodiversity and the traditional productive systems.

In the last nine years we have obtained the following results:

1. Organisation of the exchanging of research results among teams and to all Iberoamérica (http://www.uco.es/grupos/cyted). We favoured the contact among groups with coordination meetings every year: Mérida 1999 (México); Corumbá 2000 (Brazil); Coro 2001 (Venezuela); San Miguel 2002 (Uruguay); Recife 2003 (Brazil); Puno 2004 (Peru); San Cristobal de las Casas 2005 (México); and Cochabamba 2006 (Bolivia). The next will be in Quevedo (Ecuador 2007).

2. Creation of discussion forum: workshops (9), seminars (5) and general symposia (8).

The workshops are usually focused on subjects of maximum actuality related to the network. The seminars disseminates the advances obtained in concrete areas where our working groups have obtained relevant informations. The symposia are scientific meetings in which our researchers present the results of their investigation, but also they are open to all the scientific community.

3. Formation of researchers and exchange of experiences. More than three hundred researchers have got high level formation on the Network contents through 15 postgraduate training courses in 6 countries. Also nine PhD studies have been developed inside the activities of the Network.

4. Shared investigation and development of international I+D projects are going on.

5. Development of formative material (books, CD-ROM, etc.). Firstly, research publications destined to disseminate our findings: 9 Proceedings, 1 Scientific books, more than one hundred articles in scientific journals. Secondly, the “formation of formers” with 14 teaching publications.

6. Sensitization of the decision-makers on the conservation and use of local genetic resources and traditional productive systems, as a source of sustainable rural development.

We have concluded: 1. Iberoamérica has wide domestic animal diversity, but the breeds are not well known. Many breeds are enclosed under the umbrella of the term “Creole”. An important richness is disposable to be used in future rural development. Governments must be informed and sensitised about this patrimony and its potentiality in development. 2. Iberoamérica needs to develop its own criteria and technology for conservation, breeding and use of their breeds, more appropriate to its reality than those coming from developed countries. Graduates specialised in its context are needed, to become independent of the influence of the multinational enterprises that usually makes business in the area. 3. Native Species as andinian camelds, cuies, etc., must be specially studied.

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