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Продовольственная и
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организация
Объединенных
Наций

Organización
de las
Naciones
Unidas
para la
Agricultura
y la
Alimentación

Item 3.3 of the Provisional Agenda

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON ANIMAL GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Sixth Session

Rome, 24-26 November 2010

RESULTS OF INFORMAL SURVEYS ON PROGRESS IN COUNTRY IMPLEMENTATION OF THE *GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES*

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**RESULTS OF INFORMAL SURVEYS ON PROGRESS IN
COUNTRY IMPLEMENTATION OF THE
GLOBAL PLAN OF ACTION FOR ANIMAL GENETIC RESOURCES**

I. INTRODUCTION

1. The *Global Plan of Action for Animal Genetic Resources (Global Plan of Action)* recognizes that the main responsibility for its implementing rests with national governments¹. The Funding Strategy for the implementation of the Global Plan of Action for Animal Genetic Resources (Funding Strategy) lists four different types of resources, two of which relate to resources not under FAO control²: i.e. support to countries from national, bilateral, regional and multilateral sources.

2. There are many activities at the national level in which FAO is not involved. In order to get a first glimpse of such activities, FAO developed a simple electronic questionnaire, which was widely disseminated in March 2010. Thirty countries – spread across all geographical regions – replied. In addition to the questionnaire, annual reports provided by the officially nominated National Coordinators for the Management of Animal Genetic Resources of 25 European countries (Annual Country Reports, 2010) were analysed. FAO had no direct role in most country activities highlighted in this document. The results presented in this document, therefore, provide only a very incomplete snapshot. The official country progress reports prepared in 2011 will provide wider coverage and more in-depth reporting on funding sources and activities.

**II. FIRST COUNTRY REPORTING ON ACTIVITIES TO IMPLEMENT
THE GLOBAL PLAN OF ACTION**

3. The *Global Plan of Action* and the *State of the World* report have been published in all UN languages, and several National Coordinators have prepared national language versions of the *State of the World* “in brief”, the *Global Plan of Action* and the *Interlaken Declaration* for awareness raising and policy-making at national level (Austria, Denmark, Germany, Japan, Norway, Poland, and Switzerland); a further 17 countries are in the process of preparing local language versions of one or both documents.

4. Development of a national strategy and action plan is seen as the first step in the implementation of the *Global Plan of Action*. More than 80% of the responding countries indicated that they are either planning, currently developing, have already endorsed, or are implementing their national action plans. Countries were also asked to indicate, for each of the four strategic priority areas, activities that are currently being undertaken in research and capacity-building, institutional and technical support, and awareness raising and information. Table 1 shows that a large percentage of the 30 countries that responded to the questionnaire are undertaking such activities and that these are quite equally distributed across the four strategic priority areas.

¹ Global Plan of Action for Animal Genetic Resources, Interlaken Declaration on Animal Genetic Resources, para. 18.

² Funding Strategy for the implementation of the Global Plan of Action for Animal Genetic Resources, Article 3.

Table 1: Country activities undertaken to implement Strategic Priority Areas of the *Global Plan of Action*

	Strategic Priority Area			
	1 Characterization, inventory and monitoring of trends and associated risk	2 Sustainable use and development	3 Conservation	4 Policies, institutions and capacity building
Research and capacity-building	73%	77%	73%	63%
Institutional and technical support	53%	60%	70%	70%
Awareness raising and information	63%	57%	60%	67%

Source: FAO questionnaire: responses from 30 countries, multiple replies allowed.

5. Since 2007, several countries have undertaken one-off or regular awareness raising activities, such as expositions and fairs, workshops, web sites and publications for the general public and policy-makers: Albania, Austria, Bhutan, Burundi, China, Croatia, Germany, Hungary, Iceland, Nepal, and NORDGEN (an institution under the Nordic Council of Ministers covering Denmark, Finland, Iceland, Norway, and Sweden), Poland, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine and United Kingdom. National workshops with the participation of stakeholders have taken place in many countries, including Armenia, Angola, Chile, China, Cuba, Denmark, Ethiopia, Fiji, Hungary, India, Ireland, Malawi, Malaysia, the Netherlands, Nicaragua, Pakistan, the Plurinational State of Bolivia, Poland, Slovakia, Switzerland and Thailand. Countries have continued to develop institutions for national implementation of the Global Plan of Action. For example, France has established a national commission for genetics which brings together stakeholders from the Ministry of Agriculture and Fisheries, research and technical institutes, companies and breeders, organized by species or group of species (see also Table 2). Its national agricultural research institute (INRA) and the French Foundation for Research on Biodiversity (FRB) work jointly on AnGR, especially on characterization.

Table 2 Summary of annual reports provided by 25 European countries reporting on their activities implementing the *Global Plan of Action* from September 2009 to August 2010

Country	No. of breeds reported to DAD-IS ³	Strategic Priority 1 Characterization, inventory and monitoring of trends and associated risk	Strategic Priority 2 Sustainable use and development	Strategic Priority 3 Conservation	Strategic Priority 1 Policies, institutions and capacity building	National strategy or/and action plan planned for 2010/11/under development or adopted	National advisory committee to guide national implementation of GPA established	National law planned to review/harmonize or adopted in view of GPA	Cryobank for national AnGR planned for 2010/11/ under development or operational
Albania	42	+	+	++	++	√			√
Belgium	71	+	+	++	++			√	√
Croatia	33	++	+	++	++			√	√
Cyprus	18	++	+	++	+				√
Czech Republic	100	+	+	+++	++	√		√	√
Finland	23	++	++	+++	++	√			√
Germany	185	++++	++	++++	+++	√	√	√	√
Greece	37	++	++	+++	++	√	√		√
Hungary	91	++	++	+++	+++		√	√	√
Iceland	6	++	+++	+++	+++	√	√		√
Ireland	34	++	++	++	+++		√		√
Italy	263	++	+	+++	not reported			√	√
Latvia	10	+	++	++	not reported				
Montenegro	6	++	+	++	+	√	√	√	
Poland	114	+++	++	++++	+++	√	√		
Romania	114	+	+	+	+	√			
Serbia	41	+++	++	+	+			√	
Slovakia	39	++	not reported	++	+++			√	√
Slovenia	63	+++	+	+++	+			√	√
Spain	203	++++	++++	++++	++++	√	√	√	√
Sweden	50	+	+	++	+	√			√
Switzerland	38	++++	++	++++	++			√	√
Turkey	92	++	+	++++	++	√	√		
Ukraine	163	+	+	+	+			√	√
United Kingdom	264***	+++	++	++++	++	√	√	√	√

Actions described as (+) initiated to (+++++) if all actions are fully implemented and regular monitoring is undertaken.

³ Extracted from DAD-IS (<http://www.fao.org/dad-is/>) on 8 September 2010.

Strategic Priority Area 1: Characterization, inventory and monitoring of trends and associated risks

6. National activities under Strategic Priority Area 1 are diverse, encompassing inventories, censuses, and phenotypic and molecular genetic characterization. In most countries, work on inventories has been staggered, either by species (e.g. Belgium surveyed endangered sheep breeds in 2008–2010, cattle in 2010 and pigs in 2011, with a view to selecting donors for a cryobank; the Plurinational State of Bolivia started with camelids and guinea pigs, which will be followed by criollo cattle, sheep, goats, and pigs; Chile started with cattle in 2009, followed by sheep and goats) or by activity (Ukraine agreed on breed definitions first and is planning inventory and monitoring). China has completed its second national breed census, the results of which will be published in 2010. In Spain, breeds have been inventoried and described in the official catalogue of Spanish breeds (currently 178 breeds, covering breeding programmes of 159 associations) (Ministerio de Medio Ambiente y Medio Rural y Marino, 2008).

7. Kenya included livestock species in its last human population census and plans for a breed survey in 2010. It has already characterized some ruminant breeds. The Plurinational State of Bolivia has undertaken a national mapping of production systems and the related AnGR. Montenegro is working on breed morphological characterization and investigation of some productive traits, the identification of breeds at risk and their geographical distribution and population size. Slovakia is conducting research on molecular characterization of breeds, and its central livestock register and pedigree systems are operational. It is currently developing a national inventory of AnGR, linked to regional and global information systems. Oman and Nepal have phenotypically characterized their local breeds; Oman is now planning for molecular characterization, while in Nepal research projects are already underway for the molecular characterization of some breeds. Costa Rica has set up a biotechnology laboratory to advance molecular characterization. Ghana considers breed characterization an important area for which students are being trained at national universities. The Secretariat of the Pacific Community coordinated the genetic characterization of pigs and chickens in six countries (Fiji, Niue, Samoa, Solomon Islands, Tonga, and Vanuatu). Sixteen European countries (Austria,⁴ Cyprus,⁵ Estonia,⁶ Finland,⁷ Georgia,⁸ Greece,⁹ Hungary,¹⁰ Iceland,¹¹ Ireland,¹² Italy,¹³ the Netherlands,¹⁴ Poland,¹⁵ Slovakia,¹⁶ Slovenia,¹⁷ Switzerland¹⁸, and the United Kingdom¹⁹) maintain operational national information systems, both in their respective local languages and in English, within the EFABIS network, and automatically exchange data with the European regional information system EFABIS²⁰ and DAD-IS. In addition, Romania and Republic of Moldova have requested installation of national systems.

⁴ <http://efabis.raumberg-gumpenstein.at/>

⁵ <http://efabis.ari.gov.cy/>

⁶ <http://efabis.vet.agri.ee/>

⁷ <http://efabis.mtt.fi/>

⁸ <http://www.efabis-georgia.ge/>

⁹ <http://www.efabis-greece.gr/>

¹⁰ <http://efabis.univet.hu>

¹¹ <http://efabis.bondi.is/>

¹² <http://www.efabis.gov.ie/>

¹³ <http://85.35.185.58/>

¹⁴ http://efabis_nl.cgn.wur.nl/

¹⁵ <http://efabis.izoo.krakow.pl/>

¹⁶ <http://efabis-sk.scpv.sk/>

¹⁷ http://efabis_si.bfro.uni-lj.si/

¹⁸ <http://www.efabis.ch/>

¹⁹ <http://efabis-uk.adas.co.uk/>

²⁰ <http://efabis.tzv.fal.de/>

Strategic Priority Area 2: Sustainable use and development

8. The results of the questionnaire show a wide range of activities in this Strategic Priority Area. While developing countries aim to strengthen the linkages between genetic diversity, livelihoods and food security, several developed countries highlighted the links between genetic diversity and landscapes, and focus their activities on development, labelling and marketing of high-value products.
9. Togo has set targets for productivity increases in its livestock sector, and evaluated the status of its national ranches and livestock stations in 2009 with the aim of their future rehabilitation. Nepal prepared a draft national animal breeding policy and initiated a dairy cattle crossbreeding scheme, including performance recording and semen collection, with FAO support. It now plans for the collection and processing of semen from goats and pigs to support the sustainable use of these species. In Kenya, the national livestock extension services promote the sustainable use and development of AnGR; the East African Semen and Embryo Transfer Association was formed to promote these biotechnologies. Various crossbreeding programmes are underway for dairy cattle.
10. Chile and Costa Rica involve the livestock industry in the national livestock genetic improvement plans. Costa Rica has a national programme for beef cattle evaluation, including testing of crossbreeding for dual-purpose breeds. Chile has developed different approaches for commercial and subsistence sectors: the national policy for cattle and sheep genetic improvement aims at improving the competitiveness of beef and lamb production along the whole value chain. The goal is to increase productivity and generate higher value added animal products by improving management, production and manufacturing practices as well as facilitating access to new and competitive markets. The main strategies are a) developing an institutional framework to coordinate and address the national action plan for livestock genetic improvement, including the implementation of breeding and marker-assisted selection mechanisms for different production systems and products, and b) implementing a national capacity-building strategy to promote the development of human resources and institutional capabilities on animal breeding and genetics. For the subsistence sector, Chile works on the development of participatory programmes to improve local breeds in poor communities to contribute to food security and poverty alleviation strategies, as well as initiatives that promote the trade of local and underutilized products from indigenous communities in the south of Chile.
11. The Plurinational State of Bolivia links breed characterization with community mobilization, and focuses its breeding efforts on camelids and guinea pigs; both play a crucial role in the livelihoods of poor indigenous communities. Bhutan is implementing a link between breeding and conservation activities.
12. In Zimbabwe, research institutions are currently busy in maintaining breeding animals. Resources are needed to increase the population of purebred animals for distribution to farmers. Nucleus herds are also being established in Oman.
13. In Europe (Annual Country Reports, 2010), the work focuses rather on marketing and labelling of high-value products than on genetic improvement. Several countries have programmes that promote local breeds through special products, landscape valuation and agritourism (Montenegro, Slovakia and Spain), special and Geographical Indication products (Austria, Belgium and Spain). In 2009, Slovakia endorsed legislation to promote direct sale of local livestock products to consumers as long as veterinary requirements are respected. Austria holds annual national information workshops for breeding organizations that are in charge of local endangered breeds. Spain has put in place specific legislation supporting native breeds in extensive production systems that fulfil certain environmental prerequisites, and supporting the development of quality products, in particular from native breeds, to improve their competitiveness. It also monitors the implementation of breeding programmes for native breeds. It

plans to support companies that produce local and traditional products and to encourage the use of native breeds for maintaining ecosystems.

Strategic Priority Area 3: Conservation

14. Conservation measures taken by countries encompass *in situ* and *ex situ* measures. The results of a FAO questionnaire on conservation are reported in detail in document *Current arrangements for existing national and multi-country storage systems for the conservation of animal genetic resources*²¹.

15. China publicly announced 138 indigenous breeds as national key-protected breeds. It further certified and made public 119 conservation farms/areas/genebanks at state level and allocated 30 million yuan (app. 3 million euro) regular budget for AnGR conservation. Ghana makes efforts to recruit and train people for the conservation of indigenous breeds. Six national breeding stations are involved in the conservation of indigenous breeds (cattle, sheep, goats, and pigs). Nucleus herds, partially on government farms, have also been established for *in situ* conservation in the Islamic Republic of Iran, Montenegro, Oman, the Russian Federation, Rwanda, and Zimbabwe. The Plurinational State of Bolivia focuses on *in situ* conservation of native camelids, guinea pigs and criollo breeds of the other main species because of their crucial role in food security, and therefore stresses community involvement into conservation activities. It charged a newly established research institute with AnGR conservation.

16. Among 25 European countries (Annual Country Reports, 2010), 72% have established cryobank(s) for national AnGR or have planned their establishment for 2010/11. In general, the work of the 25 reporting countries focuses mainly on indigenous breeds, particularly on breeds with small populations. Activities focus on the creation or completion of genebanks, either at national level or distributed across the country, and on subsidy schemes to support rare breeds. In connection to the national information systems established in European countries, national genebank documentation systems are operational in 11 countries (Austria, Estonia, Finland, Georgia, Greece, Iceland, Italy, the Netherlands, Slovakia, Slovenia, and Switzerland).

17. National cryobanks that already existed in France, the Netherlands and Austria are kept updated. A cryobank will be set up in Belgium progressively from April 2010; breeding organizations are associated with the cryobank project in order to raise their awareness of AnGR conservation. The establishment of a reserve collection of semen and embryos is also underway in Ukraine (cattle, pigs, sheep, horses, and fish) and Slovakia. Costa Rica has prepared a feasibility study for a cryobank of semen and embryos and prepared a project proposal for donors. The animal genebank of Bhutan has started the process of cryoconservation of sheep, poultry and cattle and envisions working with other species such as horses, pigs and yak.

18. Many European countries use the national allocation from the European Union Rural Development Programme (RDP) (Council Regulation 1698/2005) to support conservation of animal breeds within their jurisdiction. A survey undertaken by the United Kingdom, which covered 21 European countries, showed that only five of them do not have RDP measures for the support of AnGR. Most countries paid on a headage (11 schemes) or livestock unit (5 schemes) basis. They pay breeders of breeds at risk, but the breeders may have to fulfil criteria such as being a member of the relevant breed society and/or participating in approved breeding programmes. Some countries fund breed societies or rare breed conservation organizations, again linked to approved breeding programmes. The United Kingdom is unique in linking support for AnGR to agri-environment schemes; thus support is only provided for grazing animals (cattle, sheep, equines, and goats) (Small and Hosking, 2010).

²¹ CGRFA/WG-AnGR-6/10/Inf.4.

19. The Annual Country Reports (2010) from Europe mentioned repeatedly that erosion of indigenous breeds has been slowed down; the ongoing updating of breed data in DAD-IS will help to verify the situation.

Strategic Priority Area 4: Policies, institutions and capacity-building

20. Several countries are currently revising their livestock or breeding policies and strategies (Table 5). Regional organizations, for example in Africa, have included use and conservation of genetic resources in their newly developed strategic plans (AU-IBAR, 2009). Bhutan has developed, involving all relevant stakeholders, a biodiversity policy with a specific chapter on AnGR. Three European country reports (Greece, Ireland and Serbia) (Annual Country Reports, 2010) mentioned the involvement of the National Coordinators in updating their respective National Biodiversity Plans. Nepal has developed an agricultural biodiversity policy and reviewed its national agricultural policies; it has also proposed an Animal Breeding Policy for the sustainable use of AnGR.

21. Ghana included indigenous breeds in a widely circulated livestock development policy document and in its five-year national agricultural development document, which also serves as national strategy for donor investment. Chile, Colombia and Peru have started the development of national strategies and action plans with FAO support, and Republic of Moldova requested FAO's assistance (TCP facility) in the development of a national information system on animal genetic resources that will start later this year.

Table 3: Countries that are developing and implementing national strategies and action plans for the management of animal genetic resources

Status	No.	Countries
Not yet planned	5	Burundi, Costa Rica, Ghana, Tunisia, Zimbabwe
Planned	15	Bangladesh, Bolivia (Plurinational State of), Cambodia, China, Iran (Islamic Republic of), Lao People's Democratic Republic, Myanmar, Nepal, Papua New Guinea, Poland, Philippines, Republic of Moldova*, Rwanda, Sri Lanka, Viet Nam
Under development	21	Belgium, Bhutan, Burkina Faso, Chile*, Colombia*, France, India, Kenya, Malawi, Malaysia, Mongolia, the Netherlands, Nigeria, Oman, Peru*, Russian Federation, Slovakia, Syrian Arab Republic, Togo, Turkey, Ukraine
Endorsed	7	Armenia*, Denmark, Finland, Iceland, Norway, Romania, Sweden
Being implemented	9	Albania*, Austria, Canada, Czech Republic, Germany**, Montenegro, Spain, United Kingdom**, United States of America

Source: FAO questionnaire and technical reports.

* with FAO support as TCPF or TCP.

** developed prior to endorsement of *Global Plan of Action*.

22. Sixty percent of the 25 European countries (Annual Country Reports, 2010) have either adopted their national strategy and action plan or have its development planned for 2010/11; 40% have established a national advisory committee to guide the national implementation of the *Global Plan of Action*; 46% have adopted a national legal instrument reflecting the needs of AnGR management or planned to review or harmonize such a legal instrument in 2010/11.

23. The Plurinational State of Bolivia plans to develop a national conservation strategy as the first crucial step in the development of a national action plan for AnGR. In Burkina Faso, the national strategy for the management of AnGR is currently under development and will cover the

period from 2010 to 2025. It is intended that the strategy will be reviewed and updated based on the results achieved.

24. A number of countries have or are in the process of reviewing and harmonizing their legislative frameworks to reflect the *Global Plan of Action* (Bangladesh, Belgium, China, Croatia, Czech Republic, Germany, Greece, Hungary, India, Italy, Montenegro, the Philippines, Serbia, Slovakia, Slovenia, Spain, Switzerland, Thailand, Ukraine and the United Kingdom). China is currently drafting its Twelfth National Five-Year Plan (2011–2015) which will include a Strategic Plan for Conservation and Sustainable Utilization of AnGR. Nigeria is formulating policy guidelines for the use of livestock species nationwide and in particular production systems, focusing particularly on breeding, selection and multiplication of indigenous breeds of cattle, sheep and goats in the ecological zones to which they are adapted. In Slovakia, the agenda on AnGR has been clarified in the latest amendments of the animal breeding act (not yet in force).

25. Some national funding was reported to have been secured in China, the Islamic Republic of Iran and Togo. Several countries mentioned AnGR policies that take into account their many linkages to other sectors: Oman stressed links with trade and zoosanitary issues. Ghana and the Plurinational State of Bolivia emphasized links with poverty reduction policy. Togo has defined a production increase target for its livestock sector, evaluated the functioning of its markets, and is developing transhumance codes. Nigeria is reviewing policies that positively affect the use of AnGR, such as establishment of parks, game and grazing reserves and protected grazing in reserves, and places AnGR in a broad livestock-policy context. Some European countries emphasize the links between AnGR and rural development (Austria, Montenegro, Slovakia and Spain).

26. The Annual Country Reports (2010) from Europe also revealed the differences between the activities undertaken by National Coordinators based in ministries and those based in universities or research institutes. The latter clearly focus on research, whereas the group working in ministries work more strategically for the country.

III. CONCLUSION AND OUTLOOK

27. The technical and policy achievements of the Interlaken Conference – the result of over a decade of intergovernmental work – have significantly advanced the animal genetic resources agenda and increased recognition of the crucial role that these resources play in food security and rural development. The *Global Plan of Action* provides an opportunity for all stakeholders to ensure that their efforts converge around an agreed set of common goals and to share experiences. Although only the country progress reports to be prepared in 2011 and information reported to DAD-IS will give a full picture of activities undertaken and their outputs and impacts, the informal questionnaire results reported in this paper indicate that there is new and unprecedented momentum to enhance the wise management of animal genetic resources as a means to promote food security and sustainable development worldwide. Several national and international actors in relevant areas have started to reflect on how their programmes can contribute to the implementation of the *Global Plan of Action*, and are adjusting their agendas where needed. The activities reported in this document show that countries are taking steps at different speeds and with different priorities, suited to their own particular conditions and capacities, based on national funds and other funding sources. The country experiences imply that countries have made strategic use of national, bilateral and multilateral resources to advance the implementation of the *Global Plan of Action*. Flexibility in national approaches while aiming at a common outcome is an inbuilt strength of the *Global Plan of Action*. Sharing experiences and learning from each other are important components of such a flexible and outcome-oriented process. Implicitly, the achievements described above reflect efforts of passionate people to use and conserve AnGR in a sustainable way. However, providing adequate support to livestock keepers and breeders, particularly in developing countries, will continue to be central to this endeavour.

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