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Item 3.1(c) of the Draft Provisional Agenda

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Eleventh Regular Session

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THE STATE OF THE WORLD'S ANIMAL GENETIC RESOURCES FOR FOOD AND AGRICULTURE

FINAL VERSION

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Listing every person by name is not easy, and carries with it the risk that someone may be overlooked. Apologies are conveyed to anyone who may have provided assistance whose name has been inadvertently omitted. Any errors or omissions in this work are the responsibility of those who compiled it. None of the contributors should be considered responsible for such defects. In this regard, FAO appreciates any corrections.

Part / Section	Authors	Reviewers
PART 1: The state of agricultural biodiversity in the livestock sector		
Origin and history of livestock diversity	Olivier Hanotte	Ilse Koehler-Rollefson
Status of animal genetic resources	Barbara Rischkowsky, Dafydd Pilling, Beate Scherf	Mateusz Wieczorek
Flows of animal genetic resources	Evelyn Mathias, Ilse Koehler-Rollefson, Paul Mundy	Beate Scherf, Annette von Lossau
Uses and values of animal genetic resources	Dafydd Pilling, Barbara Rischkowsky with Manuel Luque Cuesta	
Animal genetic resources and disease resistance	Dafydd Pilling, Barbara Rischkowsky	Steve Bishop, Jan Slingenbergh
Threats to livestock genetic diversity	Dafydd Pilling, Claire Heffernan, Michael Goe	Anni McLeod, Simon Mack, Jan Slingenbergh
PART 2: Livestock sector trends		
	Pierre Gerber, Dafydd Pilling, Barbara Rischkowsky	Hans Schiere
PART 3: The state of capacities in animal genetic resource management		
Institutions and stakeholders	Maria Brockhaus	Irene Hoffmann, Beate Scherf,, Ricardo Cardellino, Jean Boyazoglu, Annette von Lossau, Ilse Koehler-Rollefson
Structured breeding programmes	Olaf Thieme	Juhani Mäki-Hokkonen
Conservation programmes	Kor Oldenbroek with Milan Zjalic	
Reproductive and molecular biotechnology	Dafydd Pilling with Milan Zjalic	Salah Galal

Part / Section	Authors	Reviewers
Legislation and regulation		
International legal framework - major instruments	Dafydd Pilling drawing on FAO legislative study No 89	Clive Stannard, Niels Louwaars
Patenting – an emerging legal issue	Dafydd Pilling with Claudio Chiarolla	Niels Louwaars, Morten Walløe Tvedt
Regulatory frameworks at regional level	Dafydd Pilling drawing on FAO legislative study No 89	Olivier Diana, Sipke Joost Hiemstra, Danielle Manzella, Hermann Schulte-Coerne, Kai-Uwe Sprenger
National legislation and policy	Susette Biber-Klemm with Cari Rincker	
PART 4: The state of the art in animal genetic resources management		
Basic concepts	Barbara Rischkowsky, Dafydd Pilling	Beate Scherf, Ricardo Cardellino
Methods for characterization	Workneh Ayalew, Beate Scherf, Barbara Rischkowsky	Ed Rege
Molecular markers – a tool for exploring genetic diversity	Paolo Ajmone Marsan with Kor Oldenbroek	Han Jianlin Paul Boettcher
Genetic improvement methods to support sustainable utilization	Badi Besbes, Victor Olori, Jim Sanders	Beate Scherf, Ricardo Cardellino, Keith Hammond
Methods for economic valuation	Adam Drucker	Gianni Cicia
Methods for conservation	Jean-Pierre Brillard, Gustavo Gandini John Gibson David Notter Dafydd Pilling Barbara Rischkowsky Henner Simianer	Workneh Ayalew, Harvey Blackburn, Jean Boyazoglu, Ricardo Cardellino, Coralie Danchin, Sipke Joost Hiemstra, Elzbieta Martyniuk, Roger Pullin, Beate Scherf, Michele Tixier-Boichard
Research priorities	all authors	all reviewers
PART 5: Needs and challenges in animal genetic resources management		
	Barbara Rischkowsky Irene Hoffmann	Animal Genetic Resources Group and CGRFA Secretariat

Preface

Agricultural biodiversity is the product of thousands of years of activity during which humans have sought to meet their needs in a wide range of climatic and ecological conditions. Well-adapted livestock have been an essential element of agricultural production systems, particularly important in harsh environments where crop farming is difficult or impossible.

The capacity of agro-ecosystems to maintain and increase their productivity, and to adapt to changing circumstances, remains vital to the food security of the world's population. For livestock keepers, animal genetic diversity is a resource to be drawn upon to select stocks and develop new breeds. More broadly, genetically diverse livestock populations provide society with a greater range of options to meet future challenges.

The Food and Agriculture Organization of the United Nations (FAO) has, since the early 1960s, provided assistance to countries to characterize their animal genetic resources for food and agriculture (AnGR) and develop conservation strategies. In 1990, FAO's Council recommended the development of a comprehensive programme for the sustainable management of AnGR at the global level. A meeting of experts in 1992, and subsequent sessions of FAO's governing bodies, provided impetus to the development of the Global Strategy for the Management of Farm Animal Genetic Resources, which was initiated in 1993. The Animal Production and Health Division of FAO was designated as the Global Focal Point for Animal Genetic Resources, and given the role of coordinating further development of the Global Strategy. In 1995, the Twenty-eighth Session of the FAO Conference took the decision to broaden the mandate of the Commission on Plant Genetic Resources to cover all aspects of agro-biodiversity of relevance to food and agriculture; (the Commission, originally established in 1983, was the first permanent intergovernmental forum dealing with agricultural genetic resources). Work on AnGR was the first element of this expanded role. The Commission was renamed the Commission on Genetic Resources for Food and Agriculture (CGRFA).

The international agenda

FAO's commitment to maintaining agricultural biodiversity is consistent with the increasing prominence of biodiversity on the agenda of the international community. This development is the result of a recognition that threats to biodiversity are increasing, whether measured in terms of the extinction of species, the destruction of ecosystems and habitats, or the loss of genetic diversity within the species utilized for agriculture. The 1992 United Nations Conference on Environment and Development (Earth Summit) held in Rio de Janeiro was an important landmark. The Convention on Biological Diversity (CBD), signed in Rio by 150 governments, committed the nations of the world to conserve their biodiversity, to ensure its sustainable use, and to provide for equitable sharing of the benefits arising from its use. By 2005, 188 countries had become Parties to the CBD. The Conference of Parties (COP) of the CBD (the governing body of the convention) has specifically recognized the special nature of agricultural biodiversity and the need for distinctive solutions in this field (see for example decision V/5, taken at the Fifth Meeting of the COP in 2000).

Agenda 21, adopted by 179 governments at the time at Rio Earth Summit in 1992, is a plan of action to be undertaken at global, national and local levels by governments, the organizations of the United Nations System and other stakeholders, to address all areas of human impact on the environment. The Agenda's Chapter 14, "Promoting Sustainable Agriculture and Rural Development", addressed the question of increasing food production and enhancing food security in a sustainable way. It included programme areas related to the conservation and development of AnGR.

The threat to food security posed by the loss of biodiversity was noted in the Plan of Action adopted at the 1996 World Food Summit held in Rome. Under Objective 3.2(f) of the Rome Declaration, the governments of the world affirmed that they would "promote the conservation and sustainable utilization of animal genetic resources."

Meeting the Millennium Development Goals, adopted by the United Nations in 2000, presents another great challenge to the international community. The adverse effects of biodiversity loss on progress

towards the achievement of these goals are cause for concern (UNDP, 2002)[1]. As well as underpinning food security, biological diversity is the basis of many economic activities, and is vital to ecosystem functioning. Declining biodiversity tends to be associated with greater shocks and fluctuations in ecosystems, and it is the poor that are usually the most vulnerable to these effects. Many poor people are closely dependent on natural resources for their livelihoods, and frequently have a wealth of knowledge regarding the plants and animals with which they work. It has been suggested that this knowledge could be a source of income for the poor if it leads to the development and marketing of unique biological products. In reality, the extent to which the benefits of such developments actually accrue to the poor is often limited – highlighting the need not only for conservation of biodiversity, but for equitable frameworks for its utilization.

Within the international framework for the management and conservation of biological diversity, the work of CGRFA focuses on the particular features and problems associated with the management of agro-biodiversity, and the need for distinctive solutions for this field.

[1] UNDP. 2002. *Building on hidden opportunities to achieve the Millenium Development Goals. Poverty reduction through sustainable biodiversity use*. by I Koziell & C.I. McNeill. New York.

The reporting and preparatory process

In 1999, the CGRFA during its Eighth Regular Session agreed that FAO should coordinate the preparation of a country-driven report on the State of the World's Animal Genetic Resources for Food and Agriculture (SoW-AnGR)[2]. In 2004, the Intergovernmental Technical Working Group on Animal Genetic Resources (ITWG-AnGR) – a subsidiary body established by the Commission to address issues relevant to the conservation and sustainable use of AnGR, reviewed progress in the preparation of the SoW-AnGR and endorsed a draft outline including a Report on Strategic Priorities for Action. The CGRFA subsequently endorsed this outline at its Tenth Regular Session. The agreed timetable for the preparation of the SoW-AnGR was that a draft would be available for review by the CGRFA at its Eleventh Regular Session in 2007, and that the report would be finalized at the first International Technical Conference on Animal Genetic Resources.

The first draft of the SoW-AnGR was made available to the Fourth Session of the ITWG-AnGR in December 2006. The Working Group requested more time to undertake a review of the report. It was agreed that members of the Working Group would provide comments on the draft to FAO by 31 January 2007, in order for FAO to undertake any necessary revisions prior to the presentation of the SoW-AnGR to the CGRFA at its Eleventh Regular Session. The Working Group further agreed that the review process should be open to all Member Countries of the Commission. FAO, therefore, invited all CGRFA Member Countries to submit comments within the agreed time frame.

Inputs to the State of the World's Animal Genetic Resources reporting process

The process of preparing the SoW-AnGR included a number of elements through which the information required was gathered and analysed.

Country Reports

In order to ensure the country-driven nature of the process, FAO in March 2001, invited 188 countries to submit Country Reports assessing their AnGR. Guidelines for the preparation of the Country Reports were produced, including a proposed structure. Regional training and follow-up workshops were conducted between July 2001 and November 2004. The overall objectives of the Country Reports were to analyse and report on the state of AnGR, on the status and trends of these resources, and on their current and potential contribution to food, agriculture and rural development; to assess the state of countries' capacity to manage AnGR, in order to determine priorities for future capacity building; and to identify national priorities for action in the field of conservation and sustainable utilization of AnGR, and related requirements for international cooperation. The first Country Reports were received in the second half of 2002, with the majority being submitted during 2003 and 2004. The latest Country Report was submitted in October 2005, bringing the total to 169 (Tables 1 and 2).

The fact that the submission of the Country Reports was spread over several years meant that as the process of preparing the SoW-AnGR progressed, more information became available for analysis. For this reason, it should be noted that the latest arrivals among the Country Reports could not be fully included in the process of analysis and report preparation. The length of the reporting process also means that the information presented in the SoW-AnGR does not necessarily reflect the very latest developments in the state of institutions and capacity at the national level.

[2] The term animal genetic resources (AnGR) as applied throughout the report is an abbreviation of animal genetic resources used for food and agriculture and excludes fish.

Table 1
Regional overview of Country Reports

Region[3]	**COUNTRY REPORTS**		
	Submitted		**Total**
	Final	Draft	
Africa	45	4	**49**
Asia	22	4	**26**
Europe and the Caucasus	38	3	**41**
Latin America and the Caribbean	21	9	**30**
Near and Middle East	6	3	**9**
North America	2	0	**2**
Southwest Pacific	9	3	**12**
Total	**143**	**26**	**169**

Reports received by 31 December 2005

[3] Note that these regions do not correspond to the usual FAO regions; see below for further explanation.

Table 2
Country Reports received

Region	Countries
Africa (49)	Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Swaziland, Togo, Tunisia, Uganda, United Republic of Tanzania, Zambia, Zimbabwe
Asia (26)	Afghanistan, Bangladesh, Bhutan, Cambodia, China, India, Indonesia, Iran (Islamic Republic of), Japan, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Sri Lanka, Tajikistan, Turkmenistan, Uzbekistan, Viet Nam
Europe and the Caucasus (41)	Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russian Federation, Serbia and Montenegro[4], Slovakia, Slovenia, Spain, Sweden, Switzerland, The former Yugoslav Republic of Macedonia, Turkey, Ukraine, United Kingdom
Latin America and the Caribbean (30)	Antigua and Barbuda, Argentina, Barbados, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Lucia, Suriname, Trinidad and Tobago, Uruguay, Venezuela (Bolivarian Republic of)
Near and Middle East (9)	Egypt, Iraq, Jordan, Lebanon, Libyan Arab Jamahiriya, Oman, Sudan, Syrian Arab Republic, Yemen
North America (2)	Canada, United States of America
Southwest Pacific (12)	Australia, Cook Islands, Fiji, Kiribati, Niue, Northern Mariana Islands, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu

Reports received by 31 December 2005

[4] Since June 2006 Serbia and Montenegro have become independent states. However, in the SoW-AnGR they are still treated as one country as in Country Report submitted to FAO.

Reports from international organizations

Following a request from the ITWG, in August 2004, FAO invited 77 international organizations to submit a report of their work in the field of AnGR as a contribution to the SoW-AnGR. These reports were to cover activities such as research, extension, education, training, public awareness, communications and advocacy, and also to include a description of the organization and information on institutional capacities which support activities in AnGR. Specific subjects to be described included (if applicable) inventory and characterization, sustainable use and development, conservation, valuation, policy and legislation, documentation and information databases, animal and human health, and food safety, as well as opportunities and proposals for interaction with other organizations and United Nations agencies. As of June 2006, nine organizations had submitted reports (Table 3). Reports were received from four international non-governmental organizations, three intergovernmental organizations, and two research organizations. A further three international organizations informed FAO that they were not engaged in AnGR-related activities.

Table 3
Reports from international organisations

Organization	Title of the submission	Received
CGIAR Centres	Consultative Group on International Agricultural Research (CGIAR) Centres Report to FAO for input into the SoW and the draft report on strategic priorities for action on FAnGR Section I: Description of the CGIAR Institutes and Programmes	May 2004
SAVE Foundation	SAVE Foundation (Safeguard for Agricultural Varieties in Europe) Brief Portrait April 2004	May 2004
D8 Countries	Report on Animal Genetic Resources in the D-8 Countries – Strategic Priorities for Action; and Reports D8 Seminar on Conservation of Farm Animal Genetic Resources Cairo, Egypt, 11–13 January 2004 D8 Seminar on Conservation of Farm Animal Genetic Resources, Islamabad, Pakistan, 1–3 August 2003; Report on Workshop on Food Security in D 8 countries, Babolsar, Islamic Republic of Iran, 16–20 October 2000 Report on Workshop on Food Security in D 8 countries, Islamabad, Pakistan, 24–26 November 1999	June 2004 September 2004
LPP	League for Pastoral Peoples Report on Activities of the League for Pastoral Peoples	November 2004
OIE	World Organisation for Animal Health (OIE) Oral presentation to the Commission on Genetic Resources for Food and Agriculture, 10th Session (to be used thereafter as the OIE input in reply to the FAO AN21/47 request)	November 2004
ACSAD	Arab Center for the Studies of Arid zones and Dry lands (ACSAD) The Activities of the Arab Center for the Studies of Arid zones and Dry lands concerning the Animal Genetic Resources	December 2004
IAMZ	The Mediterranean Agronomic Institute of Zaragoza (IAMZ) Report on Training activities	January 2005
EAAP	EAAP (European Association for Animal Production) Report of the Working Group on Animal Genetic Resources	February 2005
ISAG	International Society for Animal Genetics (ISAG) Report of the ISAG/FAO advisory group on animal genetic diversity	March 2005

Thematic studies

In addition to the Country Reports and the reports from international organizations, a number of thematic studies were commissioned by FAO. These studies were intended to contribute to the understanding of specific topics likely not to be covered in Country Reports, but relevant to the preparation of the SoW-AnGR. During the period 2002 to 2006, 12 thematic studies were prepared:

- *Opportunities for incorporating genetic elements into the management of farm animal diseases: policy issues*. A review paper on the potential of genetic elements in the management of disease, technical opportunities, and benefits arising from the incorporation of these elements in effective disease management[5] (2002);
- *Measurement of domestic animal diversity (MoDAD) – a review of recent diversity studies*. A survey evaluating the current status of molecular genetic research in domestic animal species, with emphasis on characterization of AnGR[6] (2004);
- *The economics of farm animal genetic resource conservation and sustainable use: why is it important and what have we learned?* A study on the valuation of AnGR, summarizing methodological approaches and knowledge gaps[7] (2004);
- *Conservation strategies for animal genetic resources.* A study contrasting opportunities, challenges, biological characteristics, institutional infrastructure and operational considerations influencing management of plant and animal genetic resources[8] (2004);
- *Environmental effects on animal genetic resources.* An evaluation and synthesis of the evidence available on a spectrum of environmental factors and their effects on AnGR at the individual animal and the breeding population levels[9] (2004);
- *The legal framework for the management of animal genetic resources*. An introductory study of policy and legal frameworks for the management of AnGR including a survey of countries in different world regions[10] (2004, printed revised version 2005);
- *The impact of disasters and emergencies on animal genetic resources.* A study which provides an overview of potential disasters and their possible impact on AnGR. It also provides an analysis of the effects of emergency responses. It proposes decision support guidelines for disaster management[11] (2006);
- *The state of development of biotechnologies as they relate to the management of animal genetic resources and their potential application in developing countries.* An introductory study of biotechnology applications and their use in developing countries, which includes information provided in Country Reports[12] (2006);
- *Exchange, use and conservation of animal genetic resources: policy and regulatory options.* A study which identifies how exchange practices related to AnGR affect the various stakeholders in the livestock sector (2006);
- *A strategic approach for conservation and continued use of farm animal genetic resources.* A study which outlines patterns of change in AnGR use and their impact on conservation. It summarizes current experience, and the capacity of alternative conservation measures, considering the needs and aspirations of the various stakeholders whose livelihoods depend on animal production[13] (2006);

[5] Background Study Paper No. 18
[6] CGRFA/WG-AnGR-3/04 inf. 3
[7] Background Study Paper No. 21
[8] Background Study Paper No. 22
[9] Background Study Paper No.28
[10] Background Study Paper No. 24
[11] Background Study Paper No. 32
[12] Background Study Paper No. 33
[13] CGRFA/WG-AnGR-4/06/Inf.6

- *People and animals. Traditional livestock keepers: guardians of domestic animal diversity.* A documentation of 13 case studies from all over the world on how communities manage their local AnGR, demonstrating the value of local knowledge in preserving the equilibrium between farmers, animals and environment[14] (2007);
- *Gene flow in animal genetic resources. A study on status, impact and trends.* A study providing analysis of the magnitude and direction of movement of genetic material of the four major farm animal species: cattle, pigs, goats, and sheep. Determining factors are identified and selected; examples of impacts on economic development, poverty reduction and biodiversity in developing countries are presented (2007).

Preparation of the report

Sources of information

Different sections of the SoW-AnGR required different approaches. Some sections were largely based on the information provided in the 148 Country Reports available by June 2005. Other sections drew heavily on the wider literature or on expert knowledge rather than on the information gathered specifically for the SoW-AnGR process. FAO's Domestic Animal Diversity Information System (DAD-IS)[15] and the FAOSTAT[16] statistical database were also utilized. Regional e-mail consultations, organized by FAO in late 2005 to review the draft Report on Strategic Priorities for Action, provided an additional source of information, particularly on institutional capacities.

Part 1 describes the state of agricultural diversity in the livestock sector. The chapter draws on a number of sources. The description of AnGR inventory and of the extent of genetic erosion is based on information drawn from DAD-IS. This information system, which was launched in 1996, enables National Coordinators to update their national breed databank via the Internet. The guidelines for the development of Country Reports encouraged countries to report breed-related data and information directly to DAD-IS, and not to include details on breeds in the Country Reports. Nonetheless, the Country Reports contained a wealth of breed-related information that was not reported to DAD-IS. As a result of this development, and in order to ensure that the analysis for the SoW-AnGR was based on the most up-to-date information available, FAO provided for the extraction of these data from Country Reports and their entry into DAD-IS. National Coordinators were then requested to validate and further complete their national breed databanks. It was also thought desirable to enable the analysis for the SoW-AnGR to be based on breeds and not only on national breed populations; i.e. so that populations of the same breed in different countries were not counted as separate breeds. To this end, linkages between breed populations in different countries were introduced into the Global Databank, based on information on names, origin and development, importation and geographic location. Lists of all national breed populations and their proposed linkages were sent to National Coordinators for review. The analysis of the data for the purposes of the SoW-AnGR was carried out in January 2006, by which time data from all 169 Country Reports had been entered into the system.

The section on uses and values of AnGR is based on FAOSTAT for population and production statistics, and on the Country Reports for more qualitative information on livestock functions. The section on genetic resistance to disease draws on DAD-IS and the wider scientific literature. Broader sources were also used to describe the origin and domestication of AnGR, sharing and exchange of AnGR, and threats to AnGR.

Part 2 describes livestock sector trends and their implications for AnGR, and draws on a wide range of literature and statistics.

Part 3 describes the state of human capacity, breeding and conservation strategies, legislation and the use of biotechnologies. This part of the report is largely based on the information in the Country Reports. However, the sections on regional and international legislation, and emerging legal and policy issues draw on wider sources.

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[14] FAO Inter-Departmental Working Group on Biological Diversity for Food and Agriculture
[15] http://www.fao.org/dad-is/
[16] http://faostat.fao.org/

Part 4 on the state of the art in AnGR management is largely based on the wider scientific literature. For the preparation of the section on the state of the art in the AnGR conservation, an expert meeting was convened at FAO in Rome, in July 2005. The participants discussed the approach to the section and allocated writing tasks. The first draft was reviewed by all members in the writing group in October 2005. In November 2005, a workshop "Options and Strategies for the Conservation of Farm Animal Genetic Resources" took place in Montpellier, France. The participants at this workshop were given the opportunity to review the revised version of the conservation section.

Part 5 analyses the needs and challenges for AnGR management, based on the evidence provided in the other chapters of the report. This analysis relates the current state of erosion and threats to AnGR to current capacities in AnGR management, and the state of knowledge regarding methodologies and their application.

Regional classification of countries

The assignment of countries to the regions and subregions used for the purposes of the SoW-AnGR was based on a number of factors that influence biodiversity, including production environments, cultural specificities and the distribution of shared AnGR. Future collaboration in the establishment of Regional Focal Points was also considered, as was the experience gained from the process of convening SoW-AnGR subregional follow-up workshops in 2003 and 2004. Thus, the assignments do not follow exactly the standard FAO regions used in FAO statistics or for FAO election purposes (although for most countries the assignment does not differ from the standard classification). The proposed classification was reviewed at a meeting of Regional Facilitators on "Strategy for Regional Consultations" held in August 2005. The resulting classification distinguishes seven regions, of which three regions were further subdivided: Africa (East Africa, North and West Africa, Southern Africa); Asia (Central Asia, East Asia, Southeast Asia, South Asia); Europe and the Caucasus; Latin America and the Caribbean (Caribbean, Central America, South America); the Near and Middle East; North America; and the Southwest Pacific.

Figure 1
Assignment of countries to regions and subregions in this report