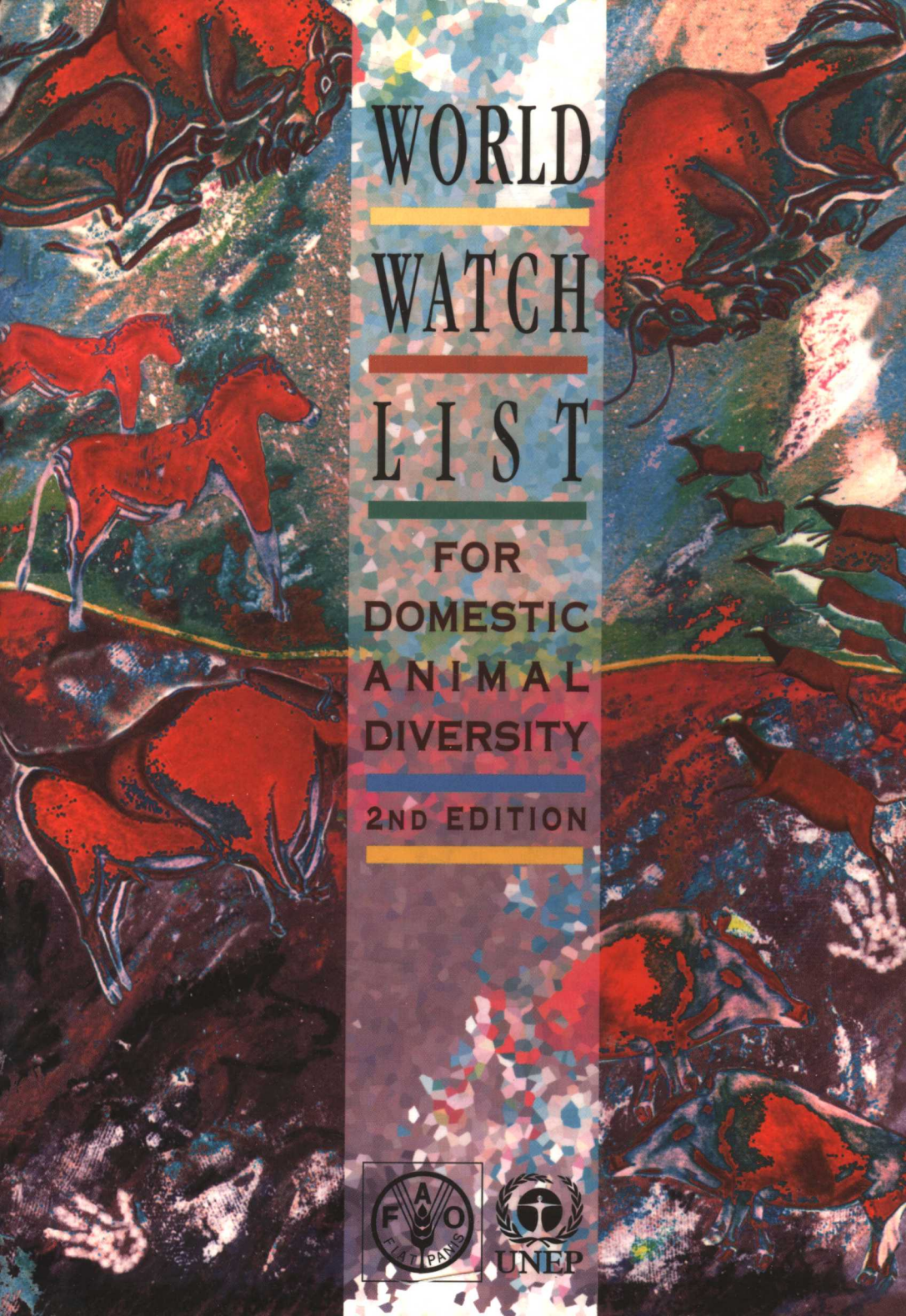

WORLD
WATCH
LIST
FOR
DOMESTIC
ANIMAL
DIVERSITY
2ND EDITION
FAO
FAI PANIS
UNEP

WORLD WATCH LIST

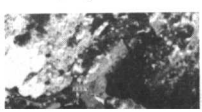
FOR DOMESTIC ANIMAL DIVERSITY

2nd EDITION

EDITED BY
BEATE D. SCHERF

FOOD AND AGRICULTURE
ORGANIZATION OF THE
UNITED NATIONS

ROME, September 1995



ACKNOWLEDGEMENTS

The production of this second edition of the World Watch List for Domestic Animal Diversity has been based largely upon The Global Databank for Farm Animal Genetic Resources being developed and maintained by FAO. The extensive information in this Databank is predominantly from global breed surveys. The cooperation of individuals and organizations throughout the world providing better information is greatly appreciated. Particular gratification is extended to the country contacts in 181 countries, dependent territories and overseas departments who provided breed data through these global surveys. A listing of these appears in Annex 2.2 and 2.3.

The global surveys, The Global Databank and this WWL-DAD, form the key components of The Global Early Warning System for Animal Genetic Resources. This serves to underscore the important contributions of those providing breed data.

Substantial contributions were made by a range of people to complete this second edition of WWL-DAD; particularly Daniela Scicchigno in developing software for the improvement of FAO's Global Databank for Farm Animal Genetic Resources and assisting in preparing the manuscript; Sandro Sovani in validating and entering much of the recent data and in assisting with the manuscript; and Nicholas Rubery in designing the colour plates and providing technical assistance.

PREFACE

World food production and agriculture utilize only a few animal species, within which many breeds with unique characteristics exist. These genetic resources form the pool of domestic animal diversity available to meet the increasing massive global demand for food and agriculture. This component of biodiversity is essential for efficient and sustainable production of food from the great range of production environments in the world, and to satisfy the many different needs of human societies.

This biological diversity is being lost as human population and economic pressures accelerate the pace of change in traditional agricultural systems. As a result, more and more breeds of domestic animals are in danger of becoming extinct. Greater efforts in the conservation and sustainable use of these irreplaceable resources are required to prevent, stop and reverse this trend of erosion of diversity. Conservation is not simply preservation of those breeds currently not in use. It also encompasses the monitoring, characterization and well-managed development and utilization over time of the gene pool of each species.

Within its Global Programme for the Management of Farm Animal Genetic Resources FAO has established The Global Early Warning System for this sector of biological diversity. The basis of this system are databases for breed inventory and description, and for monitoring the preservation of animal genetic material. At this stage The Databank incorporates information on 3 882 breeds comprising twenty-eight species. This information has been used to prepare this second edition of the World Watch List for Domestic Animal Diversity (WWL-DAD:2).

Information on wild relatives of domestic animal genetic resources is also provided. The diversity represented in the wild relatives has the potential to make important contributions to food and agricultural production.

The WWL-DAD acts as the voice of the Global Early Warning System by providing inventory basic description information on domestic breeds at risk. The list will serve to monitor their stability and conservation needs overtime. Undoubtedly this list will be used in a range of ways by many governmental and non-governmental organizations at the local, national and international levels. Opportunities for action arising from this second edition of WWL-DAD are listed at the start of PART 1 (section 1.2).

WWL-DAD:2 contains not only information on a large number of species and breeds, but also provides additional information on breeds included in the first edition. WWL-DAD:2 provides further evidence that genetic diver-

sity is being eroded. More than 30% of all remaining animal genetic resources are now classified either on the critical, critical-maintained, endangered or endangered-maintained list. These lists are presented here based on criteria established by FAO.

FAO and UNEP consider the communication of this most up to date information on the state of global animal genetic resources as important. Eventually all 40+ animal species in use, involving some 4 000 to 5 000 breeds, will be included in FAO's Global Databank for Farm Animal Genetic Resources. Future editions of WWL-DAD will be extended to reflect this additional information.

As The Global Databank for Farm Animal Genetic Resources is expanded and updated, further issues of WWL-DAD will be produced, to record and monitor global animal diversity. In this process, FAO will continue to rely on receiving data and information from the networks of country contacts throughout the world. If you are able to assist with new information on one or more breeds this would be appreciated. Please respond using a copy of the pro-forma in Annex 2.1 (Part 2) of this publication, forwarding completed forms either to your country's National Coordinator, listed in Annex 2.3 or where governments have not yet been invited to identify a National Coordinating Institute for contact with FAO's Global Programme for the Management of Farm Animal Genetic Resources by forwarding completed forms direct to FAO.

ACRONYMS & ABBREVIATIONS

AnGR	Animal Genetic Resources
AGRI	Animal Genetic Resources Information Bulletin
AI	Artificial Insemination
ARS	Agricultural Research Service
CIS	Commonwealth of Independent States
CDAD	Centre for Domestic Animal Diversity
CENARGEN	National Genetic Resources and Biotechnology Programme
CGIAR	Consultative Group on International Agricultural Research
DAD	Domestic Animal Diversity
DAD-IS	Domestic Animal Diversity Information System
EAAP	European Association of Animal Production
FAO	Food and Agriculture Organization of the United Nations
GRIN	Germplasm Resources Information Network
IARC	International Agriculture Research Centres
ICA	Informal Country Contact - Avian Species
ICC	Informal Country Contact - Camel Species
ICM	Informal Country Contact - Mammalian Species
IICA	Inter-American Institute for Cooperation in Agriculture
ILCA	International Livestock Centre for Africa
ILRAD	International Laboratory for Animal Diseases
ILRI	International Livestock Research Institute
IPGRI	International Plant Genetic Resources Institute
NC	Country Official National Coordinator
NGO	Non–Governmental Organization
RENEGAL	Latin American and Caribbean Network for Animal Genetic Resources
UNEP	United Nations Environment Programme
USDA	United States Department of Agriculture
WWL-DAD:1	World Watch List for Domestic Animal Diversity: 1st edition
WWL-DAD:2	World Watch List for Domestic Animal Diversity: 2nd edition

RISK STATUS CATEGORIES:

C Critical	**CM Critical-Maintained**
D Endangered	**DM Endangered-Maintained**

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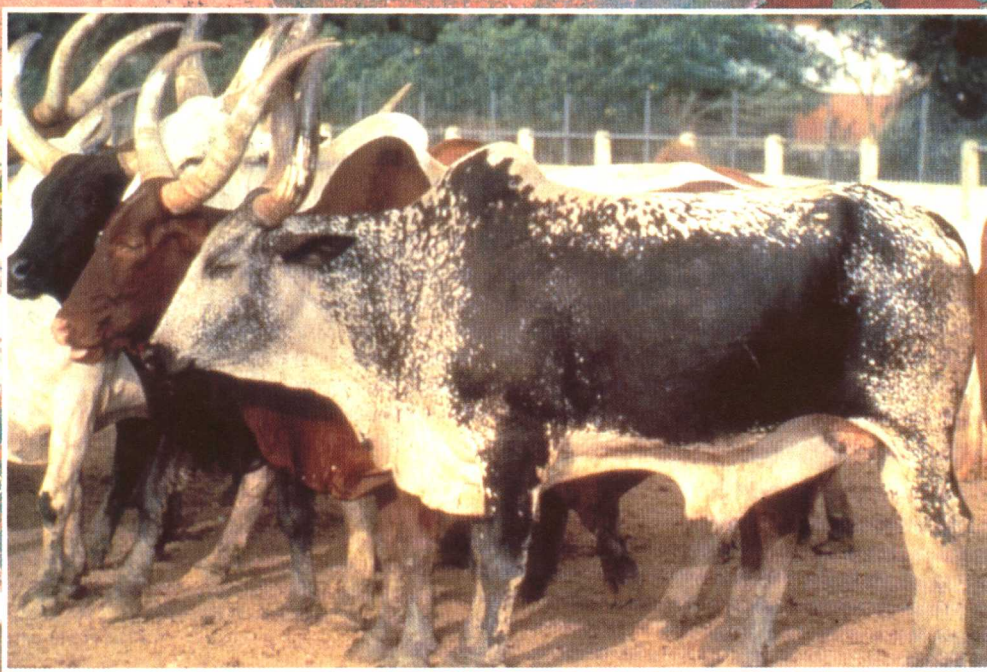
Part 1

USING WWL-DAD:2



Zebu cattle in Chad

1.1 THE PURPOSE OF WWL-DAD:2

The World Watch List for Domestic Animal Diversity (WWL-DAD) is the voice of The Global Early Warning System for Farm Animal Genetic Resources. Based on survey data, a system of monitoring has been put in place as part of FAO's Global Program for the Management of Farm Animal Genetic Resources. Analysis of this data, which has been collated in The FAO Global Databank on Farm Animal Genetic Resources and is part of The Domestic Animal Diversity Information System, enables identification of domestic animal resources at risk of loss.

The goal of the WWL-DAD is to communicate the state of these genetic resources, and to further serve as a catalyst to stop and reverse the trend of erosion of genetic diversity. These domestic animal resources and the genetic diversity they represent, have developed over 12 000 years of domestication as a result of selection by human communities and adaptation to new environments. Because of their major contributions to food and agriculture production and their important role in sustainable production systems, a threat to domestic animal resources is a major threat to global food security.

Part 2 of this second edition of the WWL-DAD includes information on 28 mammalian and avian species of domestic animals. A listing of species included appears in Table 1.1.1.

Not to be overlooked are the wild relatives of domestic species and their current or future role as animal genetic resources important for food and agriculture production. Part 3 of the WWL-DAD is devoted to the wild relatives of domestic species.

TABLE 1.1.1 SPECIES INCLUDED IN WWL-DAD:2

The MAMMALIAN species	The AVIAN species
Buffalo	Chicken
Cattle[1]	Domestic Duck
Yak	Turkey
Goat	Muscovy duck
Sheep	Domestic Goose
Pig	Guineafowl
Ass	Partridge
Horse	Pheasant
	Quail
Dromedary	
Bactrian Camel	Pigeon
Alpaca	
Llama	Cassowary
	Emu
Guanaco	Ñandu
Vicuña	Ostrich

[1] *The term cattle is used in the broad sense to include Bos indicus, Bos taurus, Banteng, Mithan.*

THE WWL-DAD:

▣ Is a central communications tool for The Global Early Warning System for Farm Animal Genetic Resources.

▣ Will focus attention on the very large number of breed populations currently at high risk of loss.

▣ Provides a risk status assessment as a tool for all those concerned with biodiversity and the production of food.

▣ Is also developed as an aid for use by country, regional and global NGOs concerned with conserving endangered farm animal breeds and with the sustainable utilization of animal genetic diversity.

▣ Identifies areas where action (conservation, sustainable use and research requirements) from governments and concerned institutions and organizations is needed.

▣ Facilitates education on and awareness of the status of domestic animal breeds and of their conservation and sustainable use, thus leading to more effective management of these resources.

▣ Identifies key country contacts and national coordinating institutes, which are in the best position to assist with local information and advise on the status of animal breeds of all species used for food and agriculture, and their conservation and sustainable use. These contacts are developing within-country networks responsible for providing quality data to upgrading and continually updating The Global Databank, enabling it to develop as the ongoing global monitoring mechanism for domestic animal diversity.

▣ Contributes to better global communication and collaboration in conservation, encourage more efficient, effective and sustainable use of the remaining resources, and it will facilitate project development.

▣ Brings to public attention the importance of the wild relatives of domestic livestock. These wild relatives are important for several reasons. They may be domesticated in their own right and used to produce similar or new products in modified production systems, or possibly in new production environments. In future, unique genes may be extracted from them and introgressed into domesticants to improve production, productivity or sustainability and possibly to change product quality.

1.2 OPPORTUNITIES FOR ACTION

To assist the necessary country, regional and global conservation effort, governments and other relevant bodies should consider the following opportunities for using and contributing to the information in WWL-DAD:2.

1. Treat animal genetic resources and domestic animal diversity, including the wild relatives of domestic farm animals, as an essential component of global biodiversity which requires good management both for its most effective short-term use, and to ensure its future availability.

2. Take into account the many breeds classified as critical and endangered when formulating, adopting and implementing management policies and strategies for their sustainable use and conservation. Also to be considered are the wild relatives of farm animals classified as endangered, vulnerable, rare, indeterminate or threatened. For further information refer to FAO's Guidelines for the Design of Management Action Plans for Animal Genetic Resources.

3. Implement appropriate conservation measures to maintain breeds, or populations of wild relatives of farm animals included in WWL-DAD:2, in cooperation with neighbouring countries sharing a similar goal. All breed populations should be regularly monitored, whether currently under threat or not. A current and reliable description of the status of each animal genetic resource is fundamental to good management and sustainable development.

4. Undertake the preparation of comprehensive national Watch Lists for farm animal species and their wild relatives using the recommended status categories (see section 1.6). Particular emphasis should be given to indigenous native breeds and wild relatives that are not yet well described. The FAO Domestic Animal Diversity Information System (DAD-IS) - the Global Surveys and Databanks, provide the means for collecting and reporting data.

5. Strengthen national programmes for surveying and monitoring farm animals. Particular emphasis should be given to: breeds listed in the WWL-DAD:2 as critical or endangered; and wild relatives of farm animals at risk.

6. Maintain national databases integrated with FAO's global Domestic Animal Diversity Information System (DAD-IS) with emphasis as listed in point 5 above.

7. Regularly provide data to FAO on the status of national domestic breeds and their wild relatives', to contribute to the maintenance of The Global Early Warning System for Animal Genetic Resources.

8. Identify incentives and possibilities encouraging the more effective development, use and maintenance of breeds under threat, and manage animal breeding initiatives to ensure the conservation of diversity. Sustainable, well-managed utilization of a genetic resource (*in-situ* conservation) is likely to be the most cost-effective means of also maintaining it for future use. For further information refer to FAO's Guidelines for the Sustainable Development and Use of Farm Animal Genetic Resources.

9. Support the development and maintenance of genebanks to insure cryo-preservation of adequate samples of each animal genetic resource not currently being effectively maintained via *in-situ* conservation activities. For further information refer to FAO's Guidelines for the Management of Farm Animal Genetic Resources at Risk.

1.3 THE STRUCTURE OF WWL-DAD:2

STRUCTURE OF PART 2

The most important information provided are the descriptive lists of animal breeds currently at risk and the resulting summary tables presented by species and region. This information is provided in Part 2 (see Tables 2.1.1.1 to 2.1.1.4.). Breeds are categorized in the lists as either 'critical' or 'endangered' according to criteria described in section 1.6. Risk status was assessed only for breeds for which population information was available on FAO's Global Databank for Farm Animal Genetic Resources.

Breeds are listed according to FAO's regional structure: Africa, Near East, Asia and the Pacific, Europe, Latin America and the Caribbean, and North America. This categorization is based on climatic, agro-ecological and cultural considerations.

A chapter is devoted to each region, highlighting the countries included, and presenting an outline of the regions. Geography, demography, agro-ecology, and special factors affecting the development of breeds are also described. Examples are included to illustrate the diversity and utility of breeds at the local level.

Within each region, breed descriptions are sorted alphabetically, first by country, then by species group (see Table 1.3.1) and risk status (see section 1.6) and finally by breed name. Colour varieties especially of avian species, are listed under the breed name. Breeds are referred to using the name by which they are most commonly known. If a breed is found in more than one country, its description may be located under the country of origin (see section 2.4).