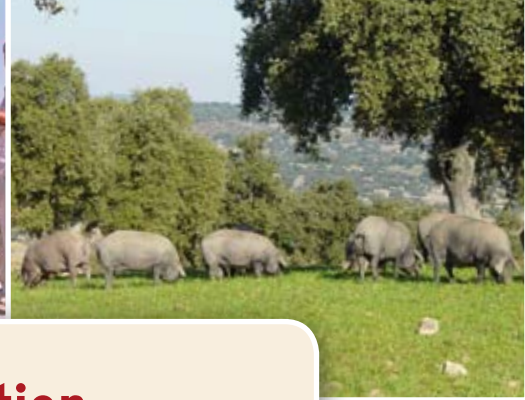


Protecting animal genetic diversity for food and agriculture



TIME FOR ACTION





National priorities for action

The Report on Strategic Priorities for Action, discussed in 14 sub-regional consultations, summarizes reports prepared by individual countries. It lays out in detail what steps countries should take:

- ◉ Complete breed inventories and implement monitoring.
- ◉ Enhance breed characterization.
- ◉ Establish national conservation programmes.
- ◉ Maintain traditional knowledge, practices and lifestyles that support conservation efforts.
- ◉ Integrate genetic resource management into livestock development planning.
- ◉ Improve management, research and institutional capacity for inventory, monitoring and characterization.
- ◉ Improve policy development and legal frameworks for animal genetic resources to address the complex driving forces that affect the livestock sector.
- ◉ Increase public awareness of the roles and values of animal genetic resources to encourage further investment in this sector.

Action at international level

- ◉ Encourage collaborative arrangements to help countries improve their inventories, and better conserve, use and develop their animal genetic resources.
- ◉ Improve the process of determining risk status for animal genetic resources.
- ◉ Collaborate on research into better methodologies for characterization, economic valuation and improved use of animal genetic resources.
- ◉ Bring together recipients and donors to mobilize greater support.
- ◉ Establish regional focal points for improved regional collaboration.
- ◉ Strengthen the role of international organizations for national programmes.

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Domestic animal diversity under siege

Thousands of farm animal breeds have been developed over millennia to thrive in specific locations. Today, many countries are losing these genetic resources, which are critical for both food security and sustainable development.

FAO estimates that industrial livestock operations are growing twice as fast as traditional mixed farming systems and six times as fast as traditional grazing systems. As a result, only a limited number of species and breeds now provides most of the world's livestock production.

At the same time, the livestock industry is under pressure to manage animal wastes, decrease emissions from intensive livestock production and reduce the release of greenhouse gases.

The rate of loss is alarming

Currently more than 20 percent of the breeds documented with population figures have been identified as being at risk of extinction. During the last five years 60 breeds were lost – an average of one breed per month. Many others have yet to be formally identified and may disappear before anything is known about them.

Why protect diversity?

Livestock keepers need a broad gene pool to draw upon if they are to improve the characteristics of their animals under changing conditions. Traditional breeds, suited to local conditions, survive times of drought and distress better than exotic breeds and, therefore, frequently offer poor farmers better protection against hunger.

Consumers in the developed world – and increasingly also in developing countries – care about product origins and production conditions. They are creating a demand for high-quality niche products including indigenous breeds raised in traditional ways.

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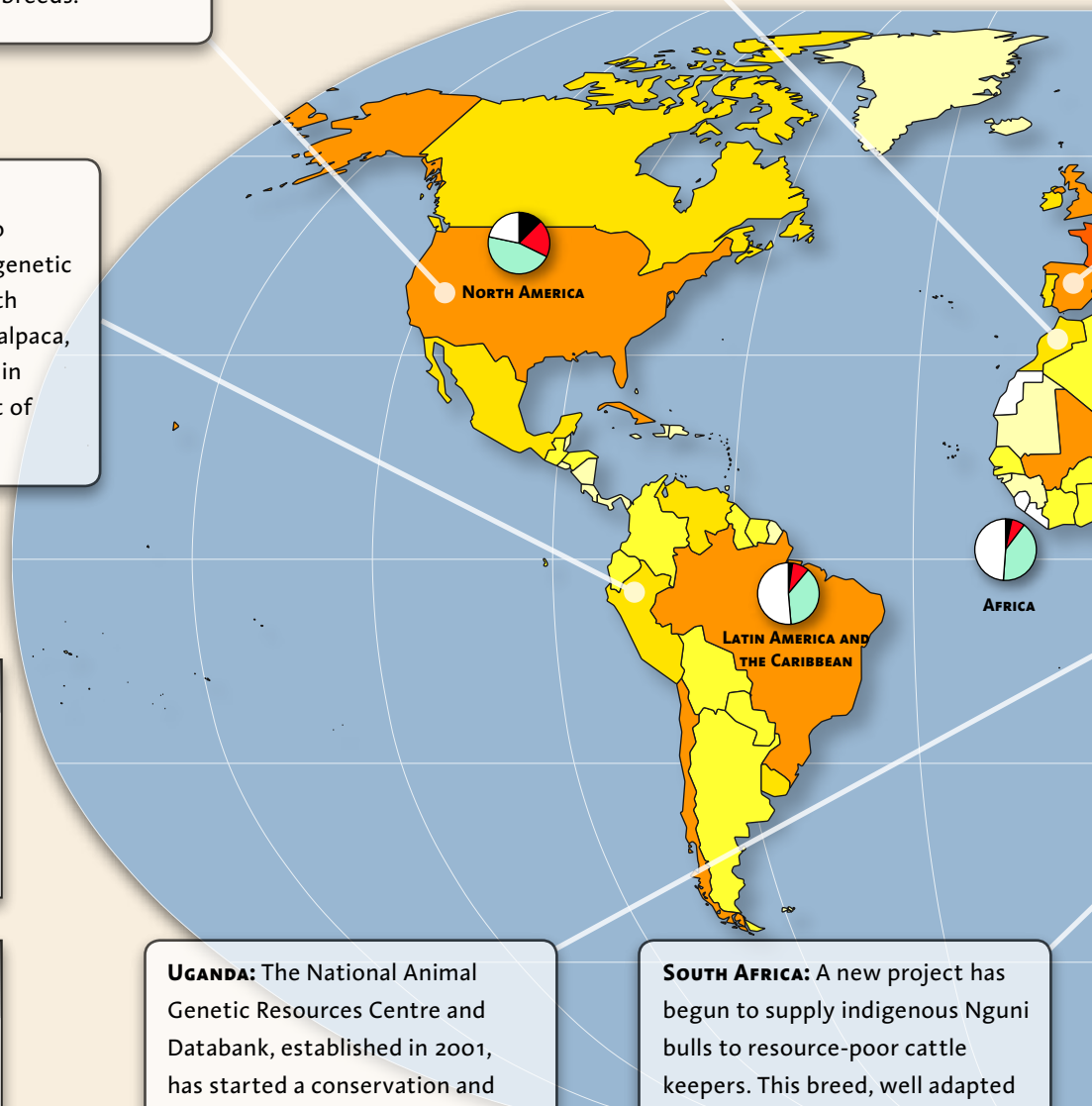


MANAGING ANIMAL DIVERSITY

UNITED STATES OF AMERICA: Since its establishment in 1999, the National Animal Germplasm Program has focused on setting up a central repository for cryo-conserved breed collections, understanding breed population trends and evaluating the status of genetic diversity within breeds.

MOROCCO: Since 1980, sheep breeding has been organized by breeding zone. Only specified indigenous breeds are permitted in each zone, and crossbreeding with imported breeds is restricted to zones designated for this purpose. As a result, exotic genetic resources have had little impact on local breeds.

PERU: Advanced molecular methods have been used to investigate the origin and genetic relationships between South American camelid species (alpaca, llama, guanaco and vicuña) in order to explore the extent of hybridization.



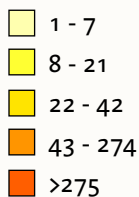
Regional risk status of breeds

(transboundary breeds not included, mammalian and avian combined)



Number of livestock breeds per country

(transboundary breeds not included, mammalian and avian combined)



□ Data not available

UGANDA: The National Animal Genetic Resources Centre and Databank, established in 2001, has started a conservation and improvement programme for indigenous livestock such as Ankole cattle. Activities include breeding schemes, breed characterization and fostering the development of breed societies.

SOUTH AFRICA: A new project has begun to supply indigenous Nguni bulls to resource-poor cattle keepers. This breed, well adapted to local production conditions, was previously in decline because of inappropriate crossbreeding, and past government policies favouring the introduction of exotic breeds.

SPAIN: The Iberian pig, a breed fed on oak-wooded pastures, was in decline until the 1980s, but has recovered thanks to successful marketing. In 1982, the number of sows was around 66 000, a figure that rose to roughly 193 000 by 2002. Meat from these pigs can fetch prices of up to 160 percent higher than conventional pig meat. The main constraint to increasing production is not lack of demand, but the limited range of the breed's wooded habitat.

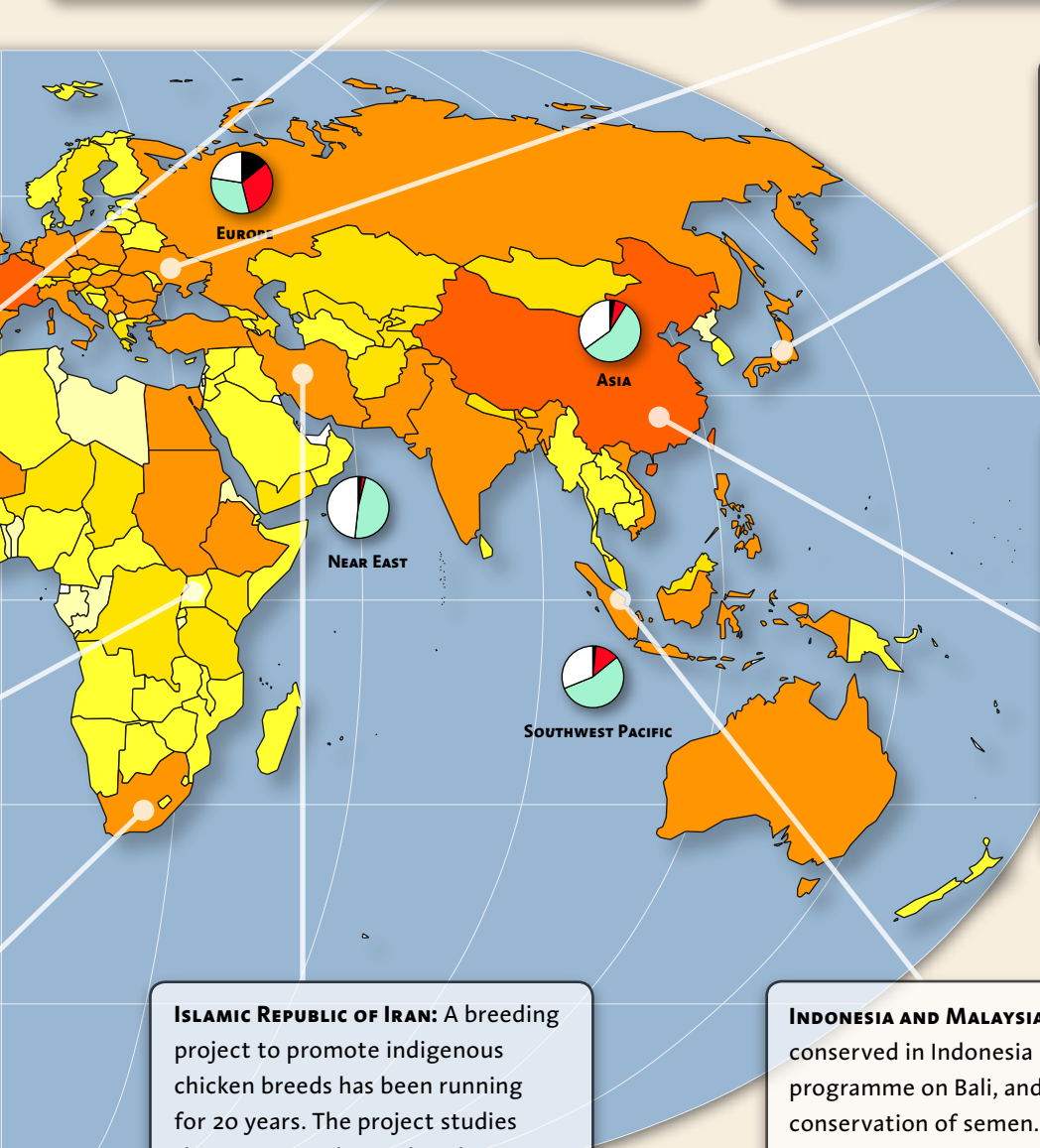
UKRAINE: The Ministry of Agrarian Policy made a comparative study of the country's main pig breeds. This included an assessment of their productive and economic potential and identified future work required to improve Ukraine's pig breeding systems.

JAPAN: Native cattle breeds such as Mishima, Kagoshima Black, Agoh, Hinaidori and Tosa Jidori are being conserved by marketing them as specific brands. Consumers are eager to buy these local livestock products.

CHINA: Since the mid 1990s, China has funded many measures related to breed conservation. In 1999, a survey in North Western and South Western Provinces identified 79 previously unknown breeds. The government has established state breeding farms, conservation areas and gene banks for cryo-conservation.

ISLAMIC REPUBLIC OF IRAN: A breeding project to promote indigenous chicken breeds has been running for 20 years. The project studies the genetic relationships between breeds and the economics of producing them commercially. Selective breeding programmes are conducted, chicks are raised on extension farms and vaccinated birds are supplied to rural families.

INDONESIA AND MALAYSIA: Bali cattle are conserved in Indonesia by an *in situ* programme on Bali, and also by cryo-conservation of semen. In Malaysia, a conservation herd of about 60 animals is kept at a research institute. A number of bulls from this herd have been transferred to the National Institute of Animal Biotechnology and are used to supply frozen semen to farmers for pure-breeding and crossbreeding purposes.



From assessment to action

In 2001, FAO invited 188 countries to submit reports as a basis for the first report on *The State of the World's Animal Genetic Resources*. Since then, 170 countries have responded with country reports that detail the enormous contribution to food security and economic development made by a large diversity of farm animals. The high response rate is an indicator of countries' interest in conserving and managing their animal genetic resources.

These country reports have contributed much to knowledge about the state of animal genetic resources around the world. They constitute the core of FAO's Domestic Animal Diversity Information System, or DAD-IS. The system provides a much clearer picture than ever before, though some of the data – on the size and structure of breed populations, for example – are still insufficient. Thorough information is required for countries to make informed decisions about the future management of their animal genetic resources.

It is clear, in any case, that these

resources are eroding and that local breeds are being underused or ignored in favour of exotic breeds that appear to hold out the promise of increased productivity. Short-term economic growth has taken precedence over sustainable management of genetic resources for the future.

The global assessment and the establishment of DAD-IS were essential first steps, but now it is time to act.

Some countries have already developed national action plans. Others have increased their budgets for managing genetic resources. But there must be a coherent and coordinated effort to stop the erosion of animal genetic resources.

Sustainable management of animal genetic resources is important for meeting future needs for food, fibre, fertilizer, draught power and to ensure that farmers have the flexibility to respond to changing production environments.

National governments must balance their priorities. It is time to begin putting policies in place to protect the animal genetic resources remaining – before too many are lost forever.

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