Rationale

Information has always been an important component of economic development, but it is becoming even more so as the world moves towards an information-based economy. Livestock agriculture is no different: Systematic information on existing genetic diversity, characteristics and use of indigenous farm animal genetic resources in developing countries is the basis for their present and future sustainable use.

In developing countries, lack of accurate information on the diversity and status of existing farm animal genetic resources is believed to exacerbate the alarming rate of irreversible loss of genetic diversity. Such losses reduce opportunities to improve food security, alleviate poverty and attain sustainable agricultural practices. The other known threats to their conservation are droughts, post-drought livestock restocking schemes that do not take account of undesirable impacts on indigenous genetic resources, civil strife, well-meant crossbreeding programs that get out of control, lack of markets and gradual shifts in socio-economic settings of traditional communities. The situation is alarming because 16% of the 7000 unique animal populations (breeds/strains/ecotypes) have been lost since the beginning of the 19th century. A further 32% are at risk.

The idea to establish regional Animal Genetic Resource (AnGR) databanks for developing countries emerged from the FAO/UNEP Joint Expert Panel...
on AnGR Conservation and Management meeting in Rome in October 1983 (FAO, 1986a; 1999). The reason behind this move was the recognition that some 70% of global livestock biodiversity is in the hands of smallholder farmers who do not necessarily share global concerns to maintain livestock biodiversity. Furthermore, countries and their governments lack the capacity to respond adequately and effectively to the irreversible loss of genetic diversity.

Databases can help monitor and report on the status of AnGR. Comprehensive information sources in organized databases help in priority setting and targeting of specific interventions. As a contribution to this agenda, ILRI established the Domestic Animal Genetic Resources Information System (DAGRIS) in 1999 with the following objectives.

- Compile and organize information on farm animal genetic resources from all available sources;
- Maintain the integrity and validity of the information, and
- Disseminate the information in a readily accessible way to all key stakeholders.

**Features of DAGRIS**

The development of DAGRIS was prompted by the lack of a comprehensive source of information on the extent and status of existing diversity, characteristics and uses of indigenous farm animal genetic resources in developing countries. Unique features of the system are:

- It provides essential bibliographic information linked to all breed-specific information in the database;
- It helps to identify information gaps in characterization information at breed level;
- It uses available relevant breed characterization information from unpublished literature;
- It retains the original integrity of scientific information because results are captured ‘as published’; the original data is available to the user, including the source; and
- It provides options to summarize available information; this is strengthened further through the development of decision support tools.

**Further development**

- While the African research and academic community welcomed DAGRIS, they called for long-term mechanisms to ensure its continuous updating. Users also provided many suggestions on features of the system, requesting enhanced geo-referencing, and further development of decision support tools for different stakeholders.
- Consistent with the Convention on Biological Diversity (CBD), countries also want to have full control of technical information on their genetic resources.
- This latter demand has led to efforts to develop ‘country’ versions of DAGRIS in which the contents would be updated and managed locally, and shared globally (a prototype was produced in October 2011).
- To this end, the next generation of DAGRIS is being developed in several parallel strands:

**DAGRIS**

DAGRIS (http://dagris.ilri.cgiar.org) is an electronic source of systematic information on indigenous farm animal genetic resources. Initial development of the system focused on three priority farm animal species in Africa - cattle, sheep and goats. It was subsequently expanded to include other livestock species (chicken, pigs, buffalo and yak) and developing countries in Africa and Asia.

The database currently comprises 24,536 trait records on 176 cattle, 170 sheep, 82 goat, 124 chicken, 165 pigs, 30 yak and 141 buffalo breeds. Most information is on African breeds.

Version 1 of the database was published on the Internet released in April 2003; Version 2 was launched in late 2008. The same resource is available on CD-ROM.
The existing ‘global’ interface is being re-designed as an open platform, drawing on open standards and using open source software, with content that can be easily interrogated, analyzed and updated. The new platform will have extended features and functionalities – forming part of a wider AnGR knowledge base of ILRI and partners.

Country versions of DAGRIS are being developed using existing content from the global database. The overall system will be designed to allow local updating and management – through a country ‘dashboard’ – which will simultaneously update the global components. This work started in 2011 and will include training, creative partnership arrangements, and different ways of working. It should extend the reach of the system at the country level, and address updating challenges: Such a system can no longer be totally managed from one place; and moreover digital applications are now available to much more easily build such decentralized systems.

Organizing the various types of DAGRIS content and linking this with a ‘virtual library’ of full text documents and reports (http://cgspace.cgiar.org/handle/10568/3545), the Animal Genetics Training Resource (http://agtr.ilri.cgiar.org), and other related resources of ILRI and its partners.

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**References**


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On 9 and 10 November 2011, the ILRI Board of Trustees hosted a 2-day ‘liveSTOCK Exchange’ to discuss and reflect on livestock research for development.
Welcome to DAGRIS Sri Lanka

The working objectives of DAGRIS are:

- Compile and organize information on farm animal genetic resources from all available sources;
- Maintain the integrity and validity of the information, and
- Disseminate the information in a readily accessible way to all key stakeholders.

What's New!

In Global DAGRIS database, the total number of trait-level records has now reached to 26,666 Trait Records. More particularly, in the last three months 121, 1811, 137 and 60 physical, production, reproduction and genetic traits from cattle, sheep, goat and pig breeds of Africa and Asia, respectively, are included.

Useful links

1. Farm Animal Genetic Resources (FAnGR) Asia
2. International Livestock Research Institute
3. Food and Agriculture Organization of the United Nations
4. Domestic Animal Diversity Information System
5. Animal Genetics Training Resource

Non-curtative data

Non-curtative data available for Sri Lanka are:

- Farm Animal Genetic Resources
- Characteristics of cattle farming system in Sri Lanka
- Prepuberal and postpuberal growth and development of Zebu cattle

Contact Information:

DAGRIS Project
Animal Genetic Resources (FAnGR)
International Livestock Research Institute (ILRI)
P.O. Box 5689, Addis Ababa, Ethiopia
Tel: +251-11-6172000 Fax: +251-11-6172001
Web: http://www.ilri.org

Correct Citation:

www.ilri.org

P O Box 5689, Addis Ababa, Ethiopia
Phone: +251 11 617 2000
Fax: +251 11 617 2001
Email: ILRI-Ethiopia@cgiar.org

P O Box 30709, Nairobi 00100, Kenya
Phone: + 254 20 422 3000
Fax: +254 20 422 3001
Email: ILRI-Kenya@cgiar.org

‘Better lives through livestock’
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