

ILRI INFORMATION SERVICES IN SUPPORT OF LIVESTOCK RESEARCH IN AFRICA

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ABSTRACT

The International Livestock Research Institute (ILRI) is the newest among the international research centers supported by the Consultative Group on International Agricultural Research (CGIAR). It has inherited mandates and resources of the two former livestock research centers of CGIAR, ILCA and ILRAD. Information management and the provision of information services form a vital element of ILRI's activities. The combination of ILCA and ILRAD information programmes is being used to develop an integrated global information service in support of livestock research. Both ILCA and ILRAD had established substantial information resources targeted at Africa. These resources, now part of ILRI, continue to serve Africa and are being further expanded to make them global in scope. The paper describes ILRI information services oriented towards Africa. A special mention is made of the project of the former ILCA initiated to collect and conserve gray literature on livestock produced in sub-Saharan Africa and disseminate information among the potential users. A new information model developed and implemented by ILRI to provide support to global research on livestock is also described.

INTRODUCTION

The Consultative Group on International Agricultural Research (CGIAR) decided, in October 1993, to revise the strategic approach to livestock research within the CGIAR system. The group called for an overall global strategy for the CGIAR and the establishment of a single broadly based livestock research entity with a global mandate. As a result of this decision, a new livestock research entity, named The International Livestock Research Institute (ILRI), was established in January 1995. It inherited the mandates and resources of the two former livestock research centers of CGIAR, ILRAD, Kenya and ILCA, Ethiopia. The previous centers have had a focus of research on animal health and production problems

largely within Africa. ILRI will continue to conduct research programmes in Ethiopia and Kenya and at other sites on the African continent. However, the ILRI strategy document makes clear the requirement for ILRI to more effectively address the problems of livestock improvement, and their contribution to mixed farming systems, in all developing country regions. Importantly, ILRI will expand its research agenda to include Asia, Latin America and the Caribbean (LAC) and West Asia and North Africa (WANA). The specific research opportunities for the new centre in the improvement of animal agriculture in developing regions are principally in five areas:

	Work area	Goal
1	Animal health	Increase productivity by reducing impact of animal diseases
2	Animal genetics	Conserve animal genetic diversity and improve animal performance
3	Production systems	Improve productivity of livestock & crop-livestock production systems
4	Livestock policy analysis	Improve technical and economic performance of livestock sector
5	Institution building & technology transfer	Interact with NARS through training and cooperation to help improve technology transfer

Information management and the provision of information services constitute a vital element of ILRI's activities. ILRI has a mandate to develop an integrated information system in support of the livestock research world wide. The strategy

adopted to fulfill this objective is to establish partnerships with relevant national, regional and international information systems and networks from all over the world.

INFORMATION RESOURCES AND SERVICES

Both ILCA and ILRAD had established substantial information resources targeted at Africa. They had followed a policy of building their information services to support NARS research in sub-Saharan Africa, their own scientists, and an ever-growing demand for information on livestock from the scientists of other regions of the world. The resources and services of these centers have now been merged and a new integrated information service is evolved by ILRI to support livestock research in Africa and elsewhere. ILRI now holds a collection of over 53,000 books and bound volumes, 31,000 microfiches containing mostly non-conventional documents collected from the countries of sub-Saharan Africa and 1,600 specialist journal subscriptions in its libraries at two principal sites, Nairobi and Addis Ababa. Its range of information services includes SDI, current awareness lists, literature search, bibliography compilation, statistical data and document delivery services. These services are based on the bibliographic and timeseries databases of ILRI and external databases obtained on CD-ROM disks.

ILRI bibliographic database, ILRIB, has been built with the regular input of data from two international sources, CABI and AGRIS of FAO, and from ILRI itself. The size of the database is presently 82,984 records and is growing at the rate of about 550 records a month. The contribution of three sources to the ILRIB is shown in the following table.

Table 2: Contributions to ILRI database

Source	Percentage
CABI	31.3
AGRIS	33.4
ILRI	35.3

The ILRI contribution primarily consists of information collected from the countries of sub-Saharan Africa. Input is also provided for the documents published by ILRI and acquired for its library. As shown in the table, ILRI contributes more to its database than the two international agricultural databases. These figures point towards the inadequacy in the coverage of agricultural literature, particularly produced in Africa, by the two international databases and signify the importance of ILRI's effort to collect documents from the countries of SSA to make its database more comprehensive. ILRI has more than 18,000 non-conventional documents of animal agriculture collected from twenty-five countries of SSA. These documents are conserved on microfiche. The subject coverage of the ILRI database is presented in Table 2. As shown, the database has a global representation of literature on almost all subjects related to animal agriculture. It covers both conventional and non-conventional documents and forms one of the most comprehensive databases on animal agriculture in the world.

Table 3: Subject-wise distribution of records in ILRIB

Subject Heading	No. of Records
Animal Husbandry	8,293
Animal Nutrition	9,314
Animal Genetics and Breeding	4,666
Animal Ecology	496
Animal Physiology	2,650
Animal diseases and Pests	9,242
Animal Traction	1,794
Livestock Economics and Rural Sociology	11,651
Livestock Trade, Marketing and Distribution	2,490
Plant Science (related to animal production)	8,255
Soil science and Management (related to animal production)	3,350
Natural Resources and Management	1,561
Processing of Agricultural Products	2,010
Agriculture (general)	
Agricultural Research	796
Methodologies	2,450
Education, training and Extension	1,201
Plant Breeding, Cropping Systems and Plant Protection (related to animal Prod.)	4,080
Meteorology	934
Agroforestry	693
Miscellaneous	7,085
Total	82,984

ILRI database is organized using Micro CDS/ISIS and it resides on the ILRI LAN. Its structure conforms to the CCF format of UNESCO. The HEURISKO front-end to the database provides ease in its use to occasional users.

ILRI has organized a global time-series database using Micro CDS/ISIS. Interface programs have been developed to load search output to dBASE, SAS and/or LOTUS for conducting statistical calculations and graphic display of the data. The database provides country and region-wise statistical information on:

- cattle, goat and sheep populations;
- output, growth rates, yield per animal, consumption, import and export of beef, mutton and goat meat and cow and goat milk
- GDP share of agriculture and livestock; and
- number of researchers in the fields of agriculture and livestock

This database has now more than 370,000 records covering yearly data of 232 countries of the world starting from 1961 onwards. It is structured to include district and subdistrict level data also from a country. Besides providing factual data to scientists, the database is used to compile fact-sheets and *Handbook of African Livestock Statistics*.

ILRI has augmented its information resources further by the regular acquisition of data on CD-ROMs from all the major agricultural database producers of the world. These databases have helped ILRI to make global information on livestock accessible to its clients from Africa and other parts of the world.

ILRI provides a variety of information services to meet the information needs of livestock scientists. These services, described in the following table, are built around the databases, both internal and external, available in-house.

Table 4

1	Current Awareness Services: to keep scientists alert of the new developments in their fields of interest <ul style="list-style-type: none"> ○ Computer based monthly Selective Dissemination of Information (SDI) service ○ Current Contents service ○ Announcements of forthcoming conferences, seminars, workshops, etc. ○ Weekly list of current literature on animal diseases
2	Literature Search Services: to provide a comprehensive review of work done on a particular subject <ul style="list-style-type: none"> ○ Literature Search in hard copy form; and ○ Datasets in machine readable form
3	Bibliography Services: provided in hard copy as well as machine readable form. <ul style="list-style-type: none"> ○ ILRI-in-Print (lists ILRI publications); ○ Country Catalogues (country-wise catalogue of non-conventional documents collected from sub-Saharan African countries by ILRI); and ○ Bibliographies (contain citations and abstracts of documents on selected topics)
4	Document Delivery Service
5	Factual data service <ul style="list-style-type: none"> ○ Fact sheet ○ Handbook of African Livestock Statistics

All these services are computerized using the Micro CDS/ISIS and locally developed application software packages.

BENEFICIARIES OF ILRI INFORMATION RESOURCES AND SERVICES

ILRI information resources and services are open to all scientists. The user group consists of scientists, planners, government officials, academicians, students, extension workers and agriculturists. They come mostly from Africa, but the number of users from the other parts of the world is increasing. Table 5 shows the recipients of information services from the countries of SSA in 1994. The region-wise distribution of the services is presented in Table 6.

Table 5: Information Services to SSA in 1994

Type of Institution	SDI service	Current Contents	Literature Search	Bibliography	Document Delivery
Nat. Agric. Res System (NARS)	209	29	123	422	3630
Academic Inst.	125	14	117	264	1369
NGOs	11	-	42	73	11
Govt. organizations	13	13	30	115	22
International organizations operating in SSA	35	26	74	16	1161
Private entrepreneurs	-	4	-	61	-
Total	393	86	386	951	1664

Table 6: Region-wise Distribution of Information Services

Region	Percentage
1 Africa	70.6
2 America	8.6
3 Asia	7.2
4 Europe	10.2
5 Oceania	3.4

COLLABORATIVE INFORMATION ACTIVITIES

ILRI is a user of FAO's AGRIS and CIRADS's SESAME databases. It is, therefore, in the ILRI's interest to contribute data to these databases. Input to the AGRIS database presently consists of the documents produced by ILRI. During the third consultation of AGRIS and CARIS held at Rome, ILRI was requested to contribute to AGRIS its data on gray

literature. A formal method of providing this data is being negotiated with FAO. To the SESAME database, ILRI provides inputs of the documents in French produced by it and collected from the countries to sub-Saharan Africa.

UNESCO has recognized ILRI's expertise in handling its Micro CDS/ISIS software and given it the right to distribute this software package world wide. UNESCO has also agreed to provide updates and new versions of this software to ILRI when produced.

Training the information workers of African NARS forms an important component of ILRI's information activity. ILRI cooperated with ICRAF in 1993 and 1994 to present training courses on computer-based management of agricultural information to over 40 participants from the countries of east and southern Africa. A similar course is planned for 1995. ILRI and ICRAF have agreed to conduct such courses in future also and develop training materials jointly with a donor support.

Under a special project, former ILCA collaborated with twenty-five countries of SSA to collect and conserve more than 18,000 non-conventional documents on animal agriculture produced by them. These documents are stored at present on microfiche but likely to be digitized and transferred on CD-ROM disks. Collection and conservation of gray literature will continue to be a priority for ILRI and this activity will be expanded to cover such literature from other parts of the world. ILRI proposes to do it in collaboration with relevant national, regional and international institutions and information networks.

ILRI MODEL FOR GLOBAL INFORMATION ON ANIMAL AGRICULTURE

The model makes a distinction between a formal network and networking functions. It assumes that instead of diverting resources to the design, development,

management and administration of a formal network, many benefits of networking, like, increased collaboration, resource sharing, problem solving and technical support, can be fostered through informal networking and partnerships with relevant national, regional and international information systems and networks. This type of linkage will help to use resources more purposefully on specific tasks and achieve the common objective of providing effective information support to researchers. The partners which ILRI has in mind are CGIAR Centers, international agricultural database producers (e.g., CABI, FAO, CIRAD, etc.), relevant international information and research networks (e.g. International Network of Feed Information Centers, Cattle Research Network, etc.), regional information centers (e.g., Bio-agricultural and Forestry Information Centre, Argentina, etc.) and NARS information centers. Participation of NARS information centers will enable NARS scientists to gain direct access to the world literature on animal agriculture without having to invest in the collection of this information.

We envisage that this sort of arrangement will enable partners to play to their strengths (for example, in abstracting & indexing, or the provision of information services to users, or unique information resources on particular livestock species/ecoregional areas) and avoid duplication of effort, capabilities and resources. The role of ILRI would be as a major provider of information services and as a coordinator to stimulate and catalyze necessary linkages between the partners. The specific task that ILRI proposes to achieve through partnerships are:

- creation of a repository of ongoing and planned information activities of partners;
- preparing an inventory of resources to locate needed items and minimize duplication;
- assessment to information requirements of livestock researchers of different regions and mechanisms to

satisfy these requirements through pertinent information services already in existence;

- identification of gaps in the existing information provided to researchers and the design and development of new information services and products to bridge the gaps;
- consistency in information services and products
- switching capability to ensure optimal communication path for a piece of information to reach to its destination;
- enhanced end users' ability to make more effective use of information to improve the quality of their research.

This is not an exhaustive list of tasks to be accomplished but they are the basic ones which ILRI will attempt to achieve in collaboration with its partners. ILRI and its partners will seek donor support, wherever necessary, for accomplishment of these tasks and explore appropriate mechanisms for cost recovery.

The model does not exclude the possibility of eventually developing a formal network on livestock or on any aspect provide sufficient resources are available and it is possible to sustain such a network.

The model envisages, as a first step, the creation of a global database of important national, regional and international information centers and networks providing information on livestock. This is to identify partners and seek partnerships.

The success of the system described in the model will largely depend on the active cooperation between the partners. The system will enhance the ability of the participating members to deliver better information to users and demonstrate to their staff and management the importance and value of information.

The factors contributing to the success of such a system will be:

- enhancement of the institutional resource base by the provision of information exchange with the partners;
- better, more comprehensive and faster information services to users;
- avoidance of duplication of efforts and resources;
- more efficient information services will encourage better management support to information activities;
- expansion of user base; and
- better chance of donor support for some information projects with wider utility to researchers and scientists.

Existing telecommunication facilities which are likely to become better in the future will also be instrumental in sustaining the system.

The model is designed to promote and help access to information on animal agriculture for those who use and need this information. The attainment of this goal requires cooperation between the partners. By working together they will achieve far more than they can do as separate entities.

The model, though developed for informal linkages between the partners and use of resources on specific tasks, it can be remodeled relatively easily later if a more formal global information network on animal agriculture is thought to be desirable.