



<p style="text-align: center;">Case Study: Institutional Information System, Peru AGRORED¹</p>

EXECUTIVE SUMMARY

This case study describes the creation of AGRORED Peru, a decentralized and multi-stakeholder open network for public and private institutions to identify and exchange scientific and technical information related to the agricultural sector in Peru. AGRORED is based on common technologies and international standards, as well as the use of a meta-search engine.

The study focuses in particular on the development of a shared vision and strategic framework for the network. The Declaration of Principles, the Code of Ethics, and Institutional Agreements guide institutions and individuals working in AGRORED to build capacity and promote technical exchange in areas such as copyright, standards and norms for information management in areas such as natural resources, cleaner production, agricultural finance, and food safety, among others. Progress to date indicates that Peru is moving towards adoption of modern technologies to enable sharing of information in agricultural science and innovation.

1. BACKGROUND

Reason for establishment

Although there are many information resources in Peru for science and technology related to the agricultural sector, they are disseminated by the variety of institutions (public and private) that produce them and then mostly only in print format. This situation makes it difficult to access and share information amongst the agricultural research stakeholders in Peru. A group of organizations agreed to collaborate on development of a decentralized and multi-stakeholder open network, called AGRORED Peru, through which information resources related to the agricultural sector could be shared among stakeholders involved in research and innovation inside and outside Peru. Discussions on collaboration began in November 2005, and the network was founded in February 2006 (see section 2).

Organizers

The six founding institutions from the agriculture and science sectors that agreed to create an information network, and became the founding "Promotion Committee" of the initiative, otherwise known as AGRORED-FOCAL, were:

- The INCAGRO² Project;
- The General Division of Agricultural and Livestock Information (DGIA) from the Ministry of Agriculture (MINAG);

¹ Agricultural Information Network

² Project financed by the Government of Peru and the World Bank: Innovación y Competitividad para el Agro Peruano / Innovation and Competitiveness in Peruvian Agriculture.

- The Network of Agricultural, Livestock and Ecological Libraries (REBIAPE) lead by the National Agricultural Library of Universidad Agraria La Molina;
- The Peruvian Chapter of the Interamerican Association of Agricultural Librarians Documentalists, and Information Specialists (AIBDA-Perú);
- The National Council of Science and Technology (CONCYTEC);
- The National Council of South American Camelids (CONACS).

Funding sources

Each institution participating in the network agreed to contribute its specialist personnel and its information content, and in addition:

- INCAGRO finances activities related to management, planning, promotion, and development of the technical platform.
- CONCYTEC provides and maintains the information technology infrastructure, which includes the AGRORED server and the necessary Internet connectivity.
- AIBDA-Peru provides technical expertise and facilitates collaborative activities.
- FAO provides technical guidance and assists with the organization of technical workshops.

Summary time path

During the first half of 2006, representatives of 45 public and private institutions gathered to draft the main principles for AGRORED. Subjects debated included the identity of the network and the criteria for membership. The former was necessary develop a shared vision for the development of the network and to establish the subject scope, and the latter was necessary to identify users and products. FAO's Regional Office for Latin America and the Caribbean provided advice and guidance. The subject themes to be covered by the network included among others: agrarian technology, agricultural economics, bio-business, biotechnology, camelids, cleaner production, ecology, eco-business, environment, environmental services, food safety, gender, hydrometeorology, information and communication, intermediate technology, land development, land tenure, legislation, livestock, natural resources, rural development, trade, wild fauna. Next, two task forces were created (i) to promote the initiative and create awareness among information specialists and managers, and (ii) to start the development of a prototype web site.

INCAGRO and DGIA staff promoted the institutionalization of AGRORED at senior levels within MINAG, and succeeded in obtaining a Ministerial Resolution allowing formal participation of public agricultural institutions. The initiative and its website were launched in June 2006 (www.agroredperu.org), with the participation of state officials, members of civil society, and the media.

An AGRORED workshop on strategic planning and capacity building was organized in November 2006, with participation of a FAO expert on technical methodologies and tools. Materials from the Information Management Resource Kit (IMARK) were used for the workshop. AGRORED members and individual information specialists in Peru have also used IMARK materials for self-paced learning.

AGRORED-FOCAL maintains communication with each network partner, and organizes monthly working meetings hosted in rotation by members. These meetings serve to develop and monitor the Plan of Action for the network, and provide opportunities for each institution to present its current work, for participation of individual information professionals and representatives from specialist international organizations such as FAO and IICA.

2. OBJECTIVES

The objectives of AGRORED Peru are:

- exchange of information on agricultural science and technology between researchers, academia, technology transfer agents, rural and agricultural development agents, industry, producers and university students;
- cooperation between public and private institutions for mutual benefit.

3. STAKEHOLDERS

AGRORED Peru is based on free membership of institutions committed to contributing information content for agricultural research. The requirements for joining the network include signature of an institutional agreement and complying with a code of ethics.

The three principal members of AGRORED are MINAG, INCAGRO and Instituto Nacional de Investigación Agraria (INIA - National Institute for Agricultural Research). More than 20 other institutions have actively contributed human resources and institutional capacity (Annex 1), and all of them generate, compile, disseminate and promote agricultural information in Peru.

AGRORED Peru is developing a model for decentralized and participatory management where all the stakeholders share responsibilities. The principal bodies are:

- Promotion Committee, in charge of coordination, including policy- and decision-making.
- Technical Committee, including information and library specialists, in charge of developing the technological platform and the management of agricultural information, respectively.
- Decentralized Regional Units, including the recently created AGRORED Norte (Piura).

4. PROCESS

The first tasks were to develop a common strategy for AGRORED and to begin to create awareness of and commitment to the network components, thus making it multi-institutional and multidisciplinary. Consequently, all the stakeholders would be working on gathering scientific and technological information in agriculture using a common approach. The AGRORED-FOCAL leads the strategic planning process.

A short-term Plan of Action for 2006 was formulated immediately, allowing the creation of operating norms to formally establish the network initiative and to set up institutional arrangements. That same year, the Ministerial Resolution, the Declaration of Principles, and the Code of Ethics were finalized. In addition, institutional agreements were defined in order to formalize institutional involvement. Network members participated in a workshop on strategic planning, held in November of that year, to establish annual plans to facilitate planning of activities at the national level.

The annual plan for 2006-07 includes a plan for capacity building; one of the components is an awareness campaign for AGRORED Peru at the national level. Opportunities for collaboration with FAO were identified to address needs such as "Digital Libraries", "Open Archives for Development" and "Investing in Information for Development". Technical exchanges in areas such as copyright, standards and norms for information management were also developed.

The strategy emphasizes the development of capacities and attitudes of network members so they can identify themselves with AGRORED Peru and have a strong sense of belonging to the network. Emphasis is also given to the design of effective policies for information management in the respective organizations, and the adoption of methodologies, standards and common tools for sharing and accessing information in agricultural sciences and technology.

At the technical level, specifications and requirements are being defined for the development of a clearinghouse based on web technology and common standards based on international norms. It is expected that each network node will establish the access mechanisms for its own metadata and information resources. The search will be dynamic between nodes, and bases will be distributed in servers from associated institutions.

The technical team validates the information that matches the profile of the network users in order to include it immediately. Levels of access and content rights are set by each participant. Public information is available without restrictions; private information has some exclusivity for the user requiring it but with time and place restrictions.

Implementation methods for the strategy

Periodic meetings are held to increase awareness among decision makers in the agricultural sector. Technology transfer activities take place between technology specialists to create a technical information support group. Additionally, there are rotating meetings for decision making among the focal points involved in the development of the network. An implementation schedule is defined and each representative assumes shared responsibility, with tasks documented and monitored through an email listserve³.

Timeline for the process

It was difficult to comply with the initially proposed timeline due to political instability, including constant rotation of politicians and technical staff in charge, thus delaying the development of planned activities. Additionally, public sector austerity measures within the sector established by the Government caused delays.

Outputs of the strategic planning process

The outputs of the process have been:

- a Ministerial Resolution;
- promotion of the initiative among 100 organizations at the national level;
- a directory of researchers;
- a total of 120 participants trained in capacity building workshops;
- a prototype website (www.agroredperu.org) that includes a meta-search engine for the main online resources of agricultural scientific and technological information in Peru;
- more than 3,000 documents in digital format accessible through the website.

Relationship between strategies and national and institutional policies

AGRORED Peru has shares objectives with the World Bank INCAGRO project, which is a key part of the national agricultural sector policy. INCAGRO's purpose is to contribute to the establishment of a modern system of science, technology and innovation, decentralized and involving the participation of many stakeholders, including the private sector, and demand-oriented, through the generation and adoption of sustainable and environmentally safe technologies.

³ Email list: agroredfocal@yahoogroups

AGRORED Peru is also linked to other institutional relevant networking initiatives such as: (i) SIAMAZONIA⁴, a biodiversity clearinghouse; (ii) REBIAPE, (iii) SINFA⁵, a communication network for agricultural producers incorporating public and private radios containing educational material and information content.

5. FINANCIAL ASPECTS

A summary of the budget for AGRORED activities to date is given below:

2006

<u>Consultancies and Contracts</u>	<u>Contribution (US\$)</u>	<u>Contribution (HR)</u>
Consultancies	\$20,000	3 months/3 persons
Promotion	\$10,000	12 months/ person
Editing	\$ 5,000	3 months/ person
 <u>Capacity Building</u>		
Workshops (2)	\$11,000	four weeks/person

2007 (estimated)

<u>Consultancies and Contracts</u>	
Software development	\$60,000
Technical assessment	\$30,000
Capacity building	\$20,000
Consultancies	\$20,000
Decentralized meetings	\$10,000

6. BENEFITS AND CHALLENGES

Motivation for stakeholders participation

Stakeholders are motivated since AGRORED Peru will improve the visibility, access to and exchange of information resources in agricultural science and technology available in each organization. Their participation through knowledge-sharing networks makes it possible to work in collaboration with others and to generate new knowledge in agricultural innovation and technology. Additionally, the network will allow the sharing of resources and participation in continuing education activities education, thereby strengthening technical capacities.

Empowerment of information professionals

Among information managers, empowerment is high and their participation is very active. Interest remains, at the political level, to develop the Network. AGRORED Peru's promoting group is constantly working in strengthen institutional commitments that provide support to the collaborative work of stakeholders involved in the management of the Network. The Ministry of Agriculture is finalizing the process to consolidate institutional alliances at the

⁴ SIAMAZONIA - Sistema de información de la diversidad biológica y ambiental de la amazonía peruana

⁵ SINFA - Sistema de Información Agrícola

national level. Capacity-building activities promote participation and technical exchange among specialist leading different technical processes in their organizations.

Institutional Commitment

In spite of the motivation as above, the consolidation of the AGRORED network has not been easy. Inter-institutional competition could have jeopardized the network and its objectives. The main challenge was to obtain the commitment of the directors of each institution, particularly during this period of time, when Peru was experiencing a national decentralization process. The awareness campaign among stakeholders actively participating in an "Open Network" was a slow process. It has been necessary to:

- strengthen the development of public policies for the management of scientific and technological information.
- achieve an information-based culture among its members and users so they can contribute with information under new paradigms of "Open Access" and among others, re-evaluate intellectual copyrights and related matters.

Institutional Culture

A mid-term challenge is promotion of an institutional culture based on the use of scientific and technical information. The objective is to develop means and incentives to facilitate information sharing among institutions (public and private), the establishment of appropriate information services according to supply and demand, and delivery of content in the appropriate language for different users. This involves adopting, applying and improving existing methodologies to facilitate an effective management of available resources in AGRORED Peru.

Capacity building

There are major constraints in some locations outside Lima, for example in Costa, Sierra and Selva del Peru, with the lack of skilled human resources for the management of agricultural information, not to mention the burden of scarce financial resources and the digital divide of poor connectivity and access to the Internet. Therefore, one of the defined objectives for 2007 is to build capacity through different methods and focused on different public objectives, in addition to the development of the technical platform for AGRORED Peru. To support the creation of the decentralized network, an integrated 15 month programme of capacity building was implemented.

Common Norms and Standards

It has been necessary to promote the use of norms and standards for sharing information and to establish clear and formal procedures for its application. This involved strengthening the technical capacities of the members.

Financial challenges

The principal financial challenge has been to obtain budgetary support from the Government and the formal establishment of an entity (Patronato) to lead the development of AGRORED Peru. The other main challenge is to sensitize the institutional members to the need to invest financially in the activities of the network and in organization and digitization of their own information.

Annex 2

AGRORED Members

- AIBDA-Perú – Asociación Interamericana de Bibliotecarios, Documentalistas y Especialistas en Información Agrícola, Capítulo Perú (Interamerican Association of Agricultural Librarians, Documentalists and Information Specialists – Peruvian Chapter).
- BAN - Biblioteca Agrícola Nacional (UNALM) (National Agricultural Library)
- CDC - Centro de Datos para la Conservación (UNALM) (Centre for Conservation Data)
- CEDEP – Centro de Estudios para el Desarrollo y la Participación (Study Centre for Development and Participation)
- CEDIFOR – Centro de Información Forestal (UNALM) (Forestry Information Centre)
- CEPES – Centro Peruano de Estudios Sociales (Peruvian Centre for Social Studies)
- CIP – Centro Internacional de la Papa (International Potato Centre)
- CNR - Congreso de la República del Perú (Peruvian Congress)
- CONACS – Consejo Nacional de Camélidos Sudamericanos (National Council of South American Camelids)
- CONCYTEC – Consejo Nacional de Ciencia y Tecnología (National Council for Science and Technology)
- INCAGRO – Programa de Innovación y Competitividad para el Agro Peruano (Innovation and Competitiveness Programme for Peruvian Agriculture)
- INDECOPI – Instituto Nacional de Defensa de la Competencia y de la Propiedad Intelectual (National Institute for the Defence of Competency and Intellectual Property)
- INIA – Instituto Nacional de Investigación Agraria (National Institute for Agricultural Research)
- INRENA – Instituto Nacional de Recursos Naturales (National Institute of Natural Resources)
- ITACAB – Instituto de Transferencia de Tecnologías Apropriadas para Sectores Marginales (Technology-transfer Institute for Marginalized Sectors)
- ITDG – Soluciones Prácticas para la Pobreza (Practical Solutions for Poverty)
- MINAG – Ministerio de Agricultura del Perú (Ministry of Agriculture of Peru)
- UNALM – Universidad Nacional Agraria La Molina (La Molina National Agricultural University)
- UNAP - Universidad Nacional del Altiplano (Puno) (Altiplano National University)
- UNAP – Universidad Nacional de la Amazonia Peruana (National University of the Peruvian Amazon)
- UNAS - Universidad Nacional Agraria de la Selva (National Agricultural University for Wildlife)
- UNC - Universidad Nacional del Centro del Perú (National University of Central Peru)

Annex 2 STRATEGY CONTENT

General description of the strategy

A web-based meta-search engine that facilitates access to innovations in agricultural science and technology is the proposed strategy that will facilitate: (i) enhanced knowledge sharing through different channels and media; (ii) capacity building; and (iii) decision making for the development of the sector.

To achieve these objectives, it will be necessary to develop repositories of information content designed to facilitate access and exchange with open access platforms, open standards for content description, and open software licenses. FAO standards will be applied.

A draft proposal for the development of a meta-search engine and information management capacities at the institutional level has been formulated. The approach is a clearinghouse-type system, which involves standards that specify the metadata (descriptors used in the characterization of blocks of information) and the thesaurus (systematization of descriptors). Norms for the data exchange protocol and access format have also been defined.

Specific objectives

- To achieve the identity of AGRORED Peru, and the sense of ownership and participation by the stakeholders involved.
- To strengthen information management capacities of network participants.
- To stimulate and strengthen the development of public policies and institutional strategies for information management in partner institutions.
- To build a decentralized "meta-search engine" able to deliver relevant content under standards that guarantee free access to digital resources and their intellectual property.
- To apply international norms promoted by FAO for the description of scientific and technological information of the sector.
- To develop information market services for agricultural research and innovation.
- To expand and distribute the AGRORED model in the provinces of Peru interested in facilitating access to and use of information.