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The social management of water

The Peruvian experience



IICA 

The potential of IICA's technical cooperation with PROCISUR

The partnership involving the NARIs and IICA is a “win-win” mechanism, an arrangement from which all the participants stand to benefit.

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ious arrangements. Its partners are the national agricultural research institutes (NARIs) of Argentina (INTA), Bolivia (MACIA), Brazil (EMBRAPA), Chile (INIA), Paraguay (DIA) and Uruguay (INIA). As a mechanism for regional articulation, PROCISUR has always shown a remarkable capacity to meet the growing demands of integration, and to adapt to the changes taking place around it.

Through a number of stages, the Program's regional cooperation efforts have produced benefits for the member countries, enabling them to take action on issues and in areas that would have been beyond their capabilities working separately. The partnership involving the NARIs and IICA, in which each partner contributes its strengths, is a win-win mechanism, an arrangement from which all the participants stand to benefit.

IICA benefits from its participation in PROCISUR in a number of ways. The objective of this document is to identify exactly what IICA gains from being involved in these regional activities, particu-

The Cooperative Program for the Development of Agri-food and Agroindustrial Technology in the Southern Cone (PROCISUR) is celebrating 25 years of continuous activity. IICA has been involved in this joint initiative since its inception, under var-

¹ When this document was written, G. Toro was IICA's Director of Operations for the Southern Region.

² The authors wish to thank Miguel Carriquiry for compiling and analyzing the documentation on which this document is based.



Improved grazing land for livestock systems in Uruguay

larly under the present arrangement. In this case, the benefits are the opportunities created by IICA's participation, the enormous potential for the growth of its activities. In some cases, it would be a question of expanding existing opportunities, while in others new avenues are opening up that could be especially important in the medium term. All these opportunities have arisen due to IICA's participation in PROCISUR.

1. IICA's increasing involvement in science and technology issues at the regional and international levels

IICA's participation in PROCISUR opens up many new opportunities for its involvement in science and technology activities at the regional and international levels. This, in turn, creates interesting opportunities for cooperation activities in other areas, since the agricultural research models in use today are increasingly moving away from the traditional notion of a vertical and self-sufficient organization. The emphasis now is on networks and multidisciplinary teams that include the NARIs, the core research institutes, universities and private-sector organizations.

2.1 The region

PROCISUR was created by means of a cooperation agreement that established a mechanism for articulating the agricultural innovation systems of one of the world's most important regions for stock raising and agriculture, with IICA as the other key

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player. The PROCISUR member countries are some of the world's biggest producers and marketers of products such as soybeans, corn, beef and poultry, milk and dairy products, fruits and wines.

These countries account for nearly 11% of the world's agricultural soils, around 49% of world soybean production and 11% of the corn produced around the globe. They also have 12% of the world's grazing land and almost 19% of its cattle stocks, which enables them to produce over 19% of the world's meat and nearly 11% of its milk (FAOSTAT 2003).

Grouped under the banner of PROCISUR, the region's NARIs make up a system of some 4200 professional researchers - 3100 of whom have postgraduate qualifications - working in 70 research centers. The combined annual budget of these institutes is around US\$470-480 million.

IICA helps articulate and, in some ways, exercises the leadership of this system, which permits its members to take action in scenarios and on issues that would have been beyond their capabilities working separately. IICA's institutional advantages (information, technical and political links, the dissemination of research findings, the promotion and facilitation of horizontal cooperation among the Program's member countries, etc.) allows it to perform these roles and create important opportunities for the implementation of technical cooperation activities.

2.2 The international scenario

"The globalization of science and the growing complexity and cost of agricultural research mean that it is increasingly important for developing countries to be articulated with international science and take full advantage of the technological spillovers" (Piñeiro, 2005).

PROCISUR provides a means of combining and coordinating the enormous installed capacity of

the NARIs and IICA. Together, they carry weight in the international scenario, attracting high-level strategic partners and the attention of the main sources of financing. IICA plays a key role in the Program's relations with these institutions, acting as an "enabler" in technical and legal matters, representing the group, signing agreements and contracts, and channeling the contributions of strategic partners and funding agencies.

A good example of the value added by this capacity to pool and articulate efforts is the "Lotassa" project, officially known as "Bridging Genomics and Agrosystem Management: Resources for Adaptation and Sustainable Production of forage Lotus species in Environmentally Constrained South-American Soils." The project is truly ground-breaking, because:

- It is one of the first attempts to transfer basic knowledge developed in a model plant (*Lotus japonicus*) to important agricultural crops (*Lotus* spp.) anywhere in the world; and,
- An integrated European-Latin American team is being used to tackle the problem, adopting a multidisciplinary approach to include plant breeders, geneticists, molecular biologists, soil microbiologists, agronomists and biochemists.

First-rate European institutions are participating in the project, such as Spain's Higher Scientific Research Council (Microbiology and Plant Nutrition departments); the University of Aarhus, Denmark; the Max Planck Institute of Molecular Plant Physiology, Germany; the University of Seville, Spain; the Slovak Academy of Science, Slovakia; and the University of Munich, Germany.

The following Latin American institutions are also involved: the INIA, Uruguay; the University of the Republic, Uruguay; the INIA, Chile; the Southern University, Chile; CONICET and IIB-INTECH, Argentina; the INTA and IFFIVE, Argentina; the Federal University of Rio Grande do Sul (Soils and Forage Plants and Agro-meteorology departments), Brazil; the Ministry of Livestock,



Facilities of the Tropical Agricultural Research Center, Santa Cruz, Bolivia

Agriculture and Fisheries (Soil Microbiology Laboratory), Uruguay; and PROCISUR.

It was the existence of PROCISUR that made it feasible to set up a consortium of seven European and eight Latin American institutions for joint work over a three-year period, with an approved budget of two million Euros. The results could potentially be applied on 45 million hectares of grassland with environmentally constrained soils in Latin America.

This is not the only PROCISUR project to have attracted interest from important institutions. Strategic partnerships - to which IICA has access - have been established with the University of Yale, the University of Buenos Aires, the University of Concepción, the INRA, CIRAD, CIAT, CIMMYT and ISNAR.

3. IICA's increasing involvement in the new research funding mechanisms

The use of competitive financing systems to fund agricultural research has increased considerably. Some examples of this trend are regional mechanisms like FONTAGRO, the funds available from multilateral and international cooperation agencies, and the allocation of resources from the budgets of the NARIs themselves in some countries.

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among other things, makes it possible to leverage FONTAGRO resources by creating consortia that meet its requirements and can compete successfully for its funds. This capability also makes it possible to apply for other international funds for research.

The model used by PROCISUR makes it possible to draw up and reach agreement on important regional agendas and partnerships that are attractive to high-level science and technology organizations, and the agencies that finance such initiatives. First-rate sources of funding for regional cooperative projects, such as the World Bank, the cooperation agency of the European Union and FONTAGRO are interested in forming part of the innovation networks organized around the cooperative projects promoted by PROCISUR.

The resources that the member countries and IICA contribute to PROCISUR - around US\$478,000 per year - have enabled the Program to link up with a series of international projects that will be receiving US\$4,324,800 in external funds over a three-year period. The European Union is financing a project on mycotoxins in the grains chain and another on new technologies in the genetic improvement of pasture legumes, while the World Bank is financing a project on climate change and rural poverty. FONTAGRO is supporting four projects: i) Rough Grazing; ii) Biological Control of Fruit Tree Pests; iii) Plant Health in Rice; and iv) Soil Biology in Alfalfa.

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Furthermore, an assessment of PROCISUR's economic impact showed that the "spill in" of technology among member countries has increased significantly due to the cooperative program's existence. The economic return on the resources invested in the program is also extraordinarily high, showing that programs of this kind are highly effective. (Rodríguez da Cruz and Evenson, 1997).

4. IICA's increasing involvement in the new regional institutional framework

As already mentioned, PROCISUR has undergone a series of transformations over the course of its existence, becoming a large, second-floor virtual body for regional research that is supporting the evolution of the national institutions and the emergence of a new regional institutional framework, related in some areas to the integration processes.

IICA is a key player in this regional technological integration process through its participation in PROCISUR, which is opening up new opportunities for the Institute's involvement in this and other fields, through various mechanisms.

PROCISUR is underpinned by a cooperation agreement signed by the NARIs and IICA that establishes the conditions and ensures the means for cooperation among the parties, with the possible participation of other institutions linked to the national research and development and technological innovation systems.

The agreement establishes the Program's organizational structure, including the Board of Directors, the Executive Secretariat and the Technical and Institutional Articulation Committee. The Board of Directors is PROCISUR's governing body and com-



High-tech irrigation for grapevines in the arid north of Chile

prises the heads of the NARIs and the Director General of IICA or his representative. The Executive Secretariat is responsible for managing and administering the Program. The Technical Articulation Committee provides support and advice to the Board of Directors and the Executive Secretariat.

PROCISUR is organized in accordance with the most modern institutional paradigms, having a streamlined, flexible horizontal structure and very few administrators. Wherever possible, it makes use of the latest information and communication technologies (ICTs), placing the emphasis on online communication and work.

The cooperation agreement signed by the parties in 2003 establishing PROCISUR's legal and operational underpinnings made some important changes to the Cooperative Program's previous organizational structure. IICA became a full member of the Program and the position of Executive Secretary of PROCISUR was combined with that of IICA Regional Specialist in Technology and Innovation, "promoting the articulation of national and hemispheric needs with PROCISUR's strategies" (Agreement of the Cooperative Program for the Development of Agri-food and Agroindustrial Technology in the Southern Cone, Montevideo, Uruguay, July 2003).

4.1 The Executive Secretary as the Regional Specialist

Having one person do both jobs has major implications for IICA's institutional relationship with the NARIs, which are its partners in PROCISUR and the main counterparts for the cooperation

activities of the Area of Technology and Innovation in the region.

For organizational purposes, the IICA Regional Specialist/Executive Secretary of the PROCISUR acts as a linchpin, connecting IICA's Area of Technology and Innovation and Offices in the countries with the region's science and technology systems and enabling them to serve as a high-powered mechanism for activating cooperation processes at the three geographic levels on which IICA operates.

4.2 IICA as a partner in PROCISUR

It is clearly to IICA's advantage to consolidate its active, permanent participation in mechanisms such as the ones created under PROCISUR and similar agreements. Among other things, they allow the Institute to develop and strengthen its capacity to establish external linkages, as opposed to inward-looking operating arrangements.

Cooperative programs are a special and innovative form of institutional partnership that differ from traditional cooperation, which is, by definition, temporary in nature. Under conventional agreements, once the objectives are achieved and the mechanisms envisaged have been implemented IICA ceases to be involved, so it can move on to new programs and projects. However, in the case of mechanisms like PROCISUR and the CAS, it is possible and advisable to establish lasting partnerships. A special institutional framework is created whose permanent existence is justified by the nature and objective of the partnership concerned. In the specific case of PROCISUR, it would be a strategic error for IICA to give up the ground gained in this field.

5. IICA's increasing involvement in the value chain of innovation

The NARIs, and their equivalents in Bolivia and Paraguay, are regarded as the most important pub-

PROCISUR's current management model places special emphasis on technological forward thinking, to prioritize strategic lines of action around which regional technological platforms are developed. This, in turn, leads to the organization of one or more innovation networks and the execution of cooperative projects with a regional impact.

lic components of the sectoral innovation systems. These institutes, created mainly in the 1960s and 1970s, have evolved and undergone profound transformations to adapt to the changes that have taken place around them, e.g., the role of the State, budgetary constraints, the growing importance of the private sector and the development of biotechnology.

The NARIs may continue to be the cornerstone of the innovation system but, following the changes that have occurred in the productive, institutional and scientific and technological environment, many public and private actors are now involved in its operation. In order to adapt to these changes, the NARIs have had to make not only far-reaching "internal" adjustments (organization, structure, operation, focus on new areas) but also changes in the way they interact with the environment (within and outside the national system) and in their links at the regional and international levels.

PROCISUR's current management model places special emphasis on technological forward thinking, to prioritize strategic lines of action around which regional technological platforms are developed. This, in turn, leads to the organization of one or more innovation networks and the execution of cooperative projects with a regional impact.

This management model is underpinned by a strategy for funding joint ventures and consolidating the innovation networks. The contributions made by the members of PROCISUR each year provide the core funds needed to negotiate external resources and implement a number of cooperative projects to consolidate a minimum regional capability and scale of operation.

Operationally speaking, the regional technological platforms are the main component of the new management model. The concept of "technological platforms" is a recent development, arising out of the need for a participatory strategic planning instrument for science and technology activities with a systemic approach, to harness a large amount of public and private resources. It is an instrument that allows for a wide range of designs

and possibilities, keyed to the needs of the actors, with a flexible methodology that permits a combination of seminars, studies, working groups, technical visits and negotiating bodies. (Gianoni, 2005).



The regional technological platforms are mechanisms for integrating, coordinating and articulating the different public and private actors involved in agribusiness and the innovation system (companies and public and private institutions, universities, NGOs, business organizations and specialized areas of governments). The platforms enable them to undertake specific cooperative ventures to promote technology development and innovation in an area of common concern. Within the framework of the platform, it is possible to create partnerships, mechanisms for sharing resources and cooperation, and business options and, basically, to identify the possible ways of articulating and consolidating innovation networks through the implementation of cooperative projects. The platform leads to the preparation of collective undertakings that enjoy institutional and sectoral legitimacy because they represent all the parties involved, guarantee access to financing (given the commitment among the parties) and have a regional impact.

Ultimately, the platforms should give rise to the creation of one or more innovation networks, which would then be consolidated through the execution of cooperative projects with a regional impact.

IICA's links with high-level political decision makers has been strengthened due to the importance attached to IICA by the ministers in the Southern Region, who requested technical and administrative support for the operation of the Southern Agricultural Council (CAS).

6. IICA's higher political profile

IICA is linked to the ministers of agriculture and their cabinets, which include senior administrators of the agricultural sector and the NARIs, through the work of its Representatives in the countries. This relationship is extremely important for strengthening the Institute and for providing first-rate technical cooperation that is valued highly at the national level. This is also achieved by demonstrating the positive results and effects of the activities carried out, as in the case of PROCISUR.

In recent years, this link with high-level political decision makers has grown stronger, because the ministers in the Southern Region attach great importance to IICA's contribution. The Institute was asked to provide technical and administrative support for the operation of the Southern Agricultural Council (CAS) and this had the effect of extending its relationship with the sectoral political institutional framework from the national to the regional level.

The close relationship that usually exists between the ministerial authorities and the administrators of the NARIs in the region creates opportunities for promoting the relationship between IICA and PROCISUR in political circles and strengthening the Program's ties with the CAS, consolidating its position as the Council's innovation body. IICA appears, then, as a promoter and core component of the scientific and technological development of the countries and the region, and of agribusiness innovation processes, areas that are increasingly recognized as being essential components of any national development strategy.

The recognition of IICA's capabilities in political circles is crucial if the Institute is to realize all its potential in contributing to the development of its member countries, establishing a virtuous circle of cooperation and growth. The Institute's presence in mechanisms such as PROCISUR enhances its positioning in this area.

7. Final thoughts

PROCISUR is a "win-win" mechanism, as all the participants benefit from its high value added.

It is a model that promotes cooperation among its members within a framework of solidarity, as the participants make their contributions bearing in mind their different capabilities. However, their access to the benefits is not limited by their contributions but rather by the institutional capabilities that exist for harnessing the results obtained.

Ultimately, all the members benefit from participating in this mechanism, which is actually a large-scale work instrument that permits mutual cooperation and the projection of its activities at the world level. However, experience suggests that some NARIs take more advantage of the possibilities offered by the system than others. In the future, therefore, greater efforts should be made to boost the capabilities of the relatively less developed NARIs, so they can reap the benefits of the system more effectively and make better use of them. This could be an important aspect of IICA's regional cooperation agenda, in keeping with its active participation in PROCISUR.

This model provides IICA with an opportunity to develop new cooperation mechanisms, different from the ones it usually employs in working with counterparts. PROCISUR operates on the basis of institutional partnerships, underpinned by an agreement that clearly establishes the rights and responsibilities of the parties.

This type of partnership has led to the development of a management model that has proven successful for cooperation in the technological field, one that could be implemented in other regions of the hemisphere. It could even serve as a yardstick for new ways of managing technical cooperation in the other thematic areas in which IICA operates, as there is a "genuine" regional cooperation agenda, with the various relevant actors in the region being actively involved in its design and execution. The regional activities defined in this way add value to the national coop-

eration agendas, thus boosting IICA's presence and impact in the development of its member countries.

Participating in mechanisms like PROCISUR has also made IICA a key player in the creation and operation of the new regional institutional framework, working shoulder to shoulder with its member countries to build a better future for the hemisphere's agriculture and rural population.

So, IICA's participation in PROCISUR opens up a wide range of opportunities for cooperation with enormous potential for the future work of the institution, many of which have yet to be fully explored. Tapping this potential would significantly increase the Institute's influence and its contribution to the development of the member countries.

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www.procisur.org.uy

Acronyms

CAS	Southern Agricultural Council
CIAT	International Center for Tropical Agriculture
CIMMYT	International Maize and Wheat Improvement Center
CIRAD	La Recherche Agronomique au service des Pays du Sud
CONICET	National Scientific and Technical Research Council
DIA	Directorate of Agricultural Research
FONTAGRO	Regional Fund for Agricultural Technology
IIB-INTECH	Biotechnology Research Institute
IFFIVE	Institute of Phytopathology and Plant Physiology
IICA	Inter-American Institute for Cooperation on Agriculture
NARIS	National agricultural research institutes
INRA	National Institute for Agricultural Research
ISNAR	International Service for National Agricultural Research
INTA	National Agricultural Technology Institute
MACIA	Ministry of Rural, Indigenous and Agricultural Affairs
PROCISUR	Cooperative Program for the Development of Agri-food and Agroindustrial Technology in the Southern Cone
SAA	Agri-food and agroindustrial system