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With the contribution of the National Office, Managers and delegates of the Programmatic and Operational Committee (CCPO): Agronomist (PhD) Alfredo Picerno, Agronomist (M Sc.) Marcelo Salvagno, Psychologist Mónica Cantileno, Accountant Leonardo Hespanhol, Agronomist (M Sc.) Sergio Ceretta, Agronomist (M Sc.) Enrique Fernández, Agronomist (M Sc.) Agustín Giménez, Agronomist (PhD) Fabio Montossi, Agronomist (PhD) Roberto Zoppolo, Agronomist (PhD) Jorge Sawchik.

Edited by INIA's Communication and Technology Transfer Unit
Andes 1365, Piso 12 Montevideo - Uruguay
<http://www.inia.org.uy>

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FOREWORD

Upon determination of the need to integrate several processes developed by the institution, it was considered pertinent to incorporate all these processes into a comprehensive proposal. This was the origin of the Integrated Policy on Communication, Technology Transfer and Technological Business Management, which purpose is "to promote and integrate these processes with those related to the generation of knowledge, technological development and institutional services, contributing to the compliance of the Mission, Vision, Objectives and Strategic Guidelines" of the institution, with a view to improving the impact of INIA's activities on its target audiences.

This comprehensive approach also focuses on the "articulation of effective transfer of the technology generated with technical assistance organizations and extension institutions at public and private level", as established by the law that created INIA.

From this point of view, this Integrated Policy is an open platform to search for ways to effectively articulate capacities among public and private players within the agrifood world.

The policy was developed with extensive cooperation of INIA staff and international consultants. The contribution of Dr. Wilson Correa da Fonseca (EMBRAPA) was particularly outstanding for consolidation of the strategy.

There is no doubt that this proposal, which defines and standardizes concepts, procedures and strategic actions on Communication, Technology Transfer and Technological Business Management, will contribute to improve institutional actions in these areas upon consideration of the fast changes occurred in the agricultural field and the emergence of new agricultural players.

DOCUMENT 1 - Integrated Policy on Communication, Technology Transfer and Technological Business Management of the National Agricultural Research Institute

Authors: **María Marta Albicette¹**
Raúl Gómez Miller²

Collaborators: **Ernesto Restaino³**
Magdalena Rocanova⁴
Horacio Saravia⁵

¹ Agronomist, Communication and Technology Transfer Unit

² Agronomist, Communication and Technology Transfer Unit

³ Agronomist (M.Sc.), Communication and Technology Transfer Unit, INIA La Estanzuela

⁴ Mag., Communication and Technology Transfer Unit, INIA Tacuarembó.

⁵ Agronomist (M.Sc.), Communication and Technology Transfer Unit, INIA Treinta y Tres

INTEGRATED POLICY ON COMMUNICATION, TECHNOLOGY TRANSFER AND TECHNOLOGICAL BUSINESS MANAGEMENT OF THE NATIONAL AGRICULTURAL RESEARCH INSTITUTE

EXECUTIVE SUMMARY

Given the fast changes occurring in the agricultural world and the new agricultural players, INIA has generated a new Integrated Policy on Communication, Technology Transfer and Technological Business Management. Several sources were considered: Proposed Communication and Technology Transfer Strategy, International Cooperation - Strategic Planning 2006-2010, Seeds Unit - PIMP 2006-2010, Development Plan by the Technological Business Management Management Office- PIMP 2006-2010, Analysis of INIA's Organizational Structure - 2006, consultancy by Dr. Wilson Correa da Fonseca (EMBRAPA) and Dr. Neels Botha (AgResearch), contributions made at meetings of the Programmatic and Operational Committee (CCPO) and the Communication and Technology Transfer Unit (UCTT).

The analyzed documents show some aspects that transcend those directly related to this new integrated policy, but are considered fundamental pillars for its construction, contributing to clearly define the scope of the policy and the scope of management of the institutional processes.

There were three processes functioning separately, i.e., Communication, Technology Transfer and Technological Business Management, and it was deemed fit to align similar processes into the same integrated proposal with the purpose of improving the impact of INIA's activities on its target audiences and complying more adequately with the institutional mission. The proposal also addresses the changes occurred in the institution, where several links with the public and private institutional network of technology transfer, technical assistance and extension articulate and develop.

The integration of the above-mentioned processes leads to the definition of the Integrated Policy and to the corresponding redefinition of the Communication (C), Technology Transfer (TT) and Technological Business Management (TC) strategies, resulting in the document entitled "Management Strategies for the Integrated Policy on Communication, Technology Transfer and Technological Business Management of the National Agricultural Research Institute - 2010", which are briefly summarized in the following paragraphs.

The objective of the **Integrated Policy** is «to promote and integrate strategies and actions on Communication, Technology Transfer and Technological Business Management with the processes of generation of knowledge, technological development and institutional services, contributing to the compliance of the Mission, Vision, Objectives and Strategic Guidelines».

The main concepts of this policy are based on the institutional values (Institutional Strategic Plan 2007), and specific features are added, such as customer focus, participation, professionalism in

management, networking, cooperation and integration, reliability, loyalty and respect for diversity and plurality. Emphasis is made on strategic guidelines, such as strengthening INIA's brand, process integration, consistency of procedures and work through agreements, associations and outsourcing.

This integrated approach does not only apply to INIA itself, but will also be promoted and developed regarding other players and the sector, as these commitments are established by the law that created INIA. Such law states that one of INIA's commitments is "to articulate the effective transfer of the knowledge generated with public and private organizations of technical assistance and extension".

While INIA's main objective is to further scientific and technological development in agricultural production, the institution is fully aware that technology is not an end in itself, but becomes a factor of competitive and innovative development when producers incorporate it to the production process.

It is pertinent to consider that the process of generation, adoption and innovation involves a complex system, where technology is one of the important variables of a system that should be considered from a global and comprehensive perspective. In this context, this issue becomes a challenge for all the agricultural institutions in the country. In this sense, this Integrated Policy is an open platform to continuously search for the best ways to articulate capacities among public and private players within the agrifood world.

One of most important aspects is the prioritization of target audiences when developing strategies and activities of Communication, Transfer of Technology and Technological Business Management, considering that it is not possible to address all audiences and meet all demands. A typology of target audiences is developed based on the type of information to provide and/or the form of articulation among the players to be developed by INIA with each group. INIA's target audience is thus divided into three main groups: Institutional Group, Productive Group and Internal Group.

Each process addressed by the Integrated Policy - Communication, Technology Transfer and Technological Business Management - is defined, describing the main activities, instruments and professional skills required. Reference is made in all cases to the need to do research on the respective processes in order to provide feedback efficiently. A multidisciplinary group shall be created with this purpose.

The general purpose of the **Communication Strategy** is the following: «To create and maintain information flows and reciprocal communication among INIA and its diverse target audiences, contributing to the compliance of its Mission, Vision and Objectives». The term "communication" refers to institutional and internal communication to respond to the questions "What is INIA?" and "What does INIA do?"

The priority target audience is the institutional group and the internal group, without neglecting the productive group. The audience is extensive and diverse. Priorities must be set so that the activities achieve the impact sought of improving and expanding INIA's image. The main strategy components are the use of existing and new communication channels, the standardization of INIA's visual identity, the development of communication products according

to different audiences, the performance of image studies and surveys and the improvement of customer service.

Activities include relationships with the political sector and the extensive use of new ICTs. It also addresses the standardization of communication processes through different manuals, and the development of institutional communication products that serve at the same time to support and further internal communication. In this sense, a specific institutional communication area shall be created, which actions shall be strongly coordinated with technology transfer and technological business management actions. Internal communication shall be developed under the leadership of the Human Resources Management Office, in coordination and cooperation with the Communication Area.

The objective of the **Technology Transfer Strategy** is the following: "To develop knowledge and technologies generated and applied with the participation of the productive and social actors involved, both regarding the choice of issues and their development and implementation. Transfer is not an end in itself. Its objective is to improve the quality of life of the players within the agrifood area, promoting innovation, and improving competitiveness and rural development".

This implies leveraging the actions performed so far to relate with the target audience with which the institution has generally interacted. New methods are added to those already used to forecast demand (Regional Advisory Councils, Working Groups and Technology Tables): future prospection team, planning team, scenario management team, special studies team, etc. The information generated must be made available in articulation with related agents (public and private transfer, technical assistance and extension players) for the proper flow of the technological information generated at the Institute. Each regional office shall have a team for implementation of the Strategy, acting in coordination with the Communication and Technological Business Management Area, promoting the efficient use of different communication channels.

The priority audience are technicians, producers and agricultural industries. Priorities must be properly set in articulation with the players, in order to achieve high efficiency and strong impact. The strategy shall be based on the model of several intervention modes. Seven modes are planned to promote the relationships of INIA with different players.

The combination of tools (journeys, conferences, diffusion materials related to the communication area, etc.) and the monitoring and evaluation of activities, results and impacts shall be defined for each particular case.

The range of actions in the technology transfer area is very wide, including diffusion journeys, participatory research, technology transfer agreements with public or private institutions for specific audiences, and the active role of the Institute as a player in rural development process.

The purpose of the **Technological Business Management Strategy** is to establish links with the National and International System of Science, Technology and Innovation, articulating and coordinating actions among public and private players. It furthers cooperation between science, technology and the market, promoting innovation with the creation of new products, the development of new processes and the provision of new services, in order to foster economic activities in the agribusiness and the generation of employment at the national level, as well as

the marketing of national technologies at the international level. Some of the actions to develop in this field are advisory services, analytical services, consultancies, technology licensing, commercialization of patents, etc.

These actions of technological development through the market are complemented with the implementation of institutional relations, which imply development with an active policy of network creation and participation, alliances and national, regional and international exchange that allow us to complement, strengthen and maximize the current resources of INIA and our country. The main instruments applied at the national or international level shall be alliances, networks, forums, cooperation agreements, technological innovation consortia, national, regional and international clusters, exchange of scientists, etc.

The plan is to insert INIA with renewed strength into the agricultural and agroindustrial activities as a center of excellence in agrifood research at the national, regional and global level.

The prioritized audience for Institutional Cooperation is fundamentally the national, regional and international Institutional Group and the Productive Group, which will be addressed according to the actions of each National Research Program.

The implementation of the strategy shall require coordinated actions with the Communication and Technology Transfer Areas.

In order to implement the new Integrated Policy and develop the activities provided by the Communication, Technology Transfer and Technological Business Management Strategies, the specialization of staff in each area will be strengthened and an integrated management system will be established. There will be a Coordination Committee for the implementation of the Integrated Policy, a Research Group on socio-economics, communication and marketing, an Information Management Group and an Editing Committee for INIA's publications. This group will be made up of persons who are currently editors of *Agrociencia* magazine and the internal scientific quality group.

In order to comply with its roles and the scope of its actions, the Communication and Technology Transfer Unit shall have a team of communication and transfer experts at the national level to coordinate and support regional activities. Each Regional Unit, on its turn, shall have a Technology Transfer Team and will be supported by communication experts.

Human resources for the activities related to the Technological Business Management Management Office and the International Cooperation and Seeds Technical Units within it shall be focused on the articulation with public and private players. Capacities are required for valuation of R&D results, negotiation, development and commercialization of technological products, including copyright and formulation of the respective agreements and their monitoring. At the same time, it is necessary to strengthen the national coverage of the actions carried out by the Seeds Unit.

An Annex containing an institutional glossary is provided for better understanding of the concepts and definitions related to the Integrated Policy.

INTRODUCTION

Since its creation, INIA has maintained a strategy of extensive cooperation with different players in the agricultural sector and the society as a whole. The law that created INIA⁶ clearly states that one of the purposes of the Institute is **«to promote the effective transfer of the knowledge generated, articulating the components of the process of generation with public and private systems of technology transfer and adoption.»**

Its Vision also establishes the need to transfer technology in articulation with other institutions: **«To consolidate as a national and regional referential institution renowned for: The excellence of its scientific and technological achievements, in coordination with other institutions, in order to produce, develop and transfer knowledge and technology, while keeping up a pro-active attitude towards the needs of the agricultural sector and consumer demands ...».**

The institutional objectives and strategic guidelines clearly prioritize the concepts of diffusion, technology transfer, articulation, strategic alliances, networks, prospection of demand, development of agriculture with social equity, etc. In this sense, the Integrated Policy is an open platform to permanently search for the most appropriate forms to articulate different capacities among the diverse public and private players related to the agrifood⁷ world.

The Technological Business Management Management Office and the Communication and Technology Transfer Unit are created according to the definitions contained in the Institutional Strategic Plan 2006 – 2010 and the new Organizational Structure of INIA approved in 2006. During the redefinition of the communication, technology transfer and technological business management policies and strategies of the Institute, it was determined that it was necessary to develop a new global proposal on these issues, given the fast dynamic changes in the agricultural field and the requirements of agricultural players and the general public.

This process was supported by two consultancy reports that contributed to the definition of the Integrated Policy and the Communication and Technology Transfer Strategies. These consultancy services were provided by Dr. Neels Botha of AgResearch and Dr. Wilson Correa da Fonseca Jr. of EMBRAPA. Such reports contain some aspects that are beyond the issues addressed in these documents, but are nevertheless considered important as they refer to political and institutional management definitions, with delimitation of the roles of direction and management.

The above-mentioned reports, the documents developed by the Communication and Technology Transfer Unit (UCTT) and the Technological Business Management Management Office (VT), the image surveys performed by expert companies, and the elements provided by staff of the Programmatic and Operational Committee were the basis for elaboration of the Integrated Policy on Communication, Technology Transfer and Technological Business Management and the Communication, Technology Transfer and Technological Business Management Strategies, which are presented in the document entitled "Management Strategies for the Integrated Policy

⁶ Law No. 16,065 of October 6, 1989.

⁷ <http://www.inia.org.uy/online/site/19644411.php>

on Communication, Technology Transfer and Technological Business Management of the National Agricultural Research Institute - 2010".

INTEGRATED POLICY ON COMMUNICATION, TECHNOLOGY TRANSFER AND TECHNOLOGICAL BUSINESS MANAGEMENT

1. General Definition of the Integrated Policy

The Integrated Policy is a guiding document based on the organizational diagnosis and on internal discussions that defines concepts, principles, values, procedures and strategic actions regarding Communication, Technology Transfer and Technological Business Management.

2. Characteristics of the Integrated Policy

Singularity: The main characteristic of any organizational policy is its singularity, that is, it must be in agreement with the culture of the organization to which it relates. It must be applied to a specific reality and may not be extrapolated to other situations for which it was not originally conceived.

Transience: Any organizational policy is inevitably limited by time, and adjustments must be made according to organizational changes and/or changes in its field in order to keep it updated. In this sense, this Integrated Policy is in agreement with the historical moment when it was conceived, and must be revised with each edition of a new strategic plan to meet new expectations, demands and challenges.

Process: Although it is consolidated in a document, the implementation of this Policy should mark the beginning of a process of construction of an integrated culture on Communication, Technology Transfer and Technological Business Management in the organization. This process may develop at INIA at different paces according to the characteristics of each operating unit. The joint efforts of all INIA components are required to build this culture, which shall benefit the whole institutional system.

3. Concepts of the Integrated Policy

System: Upon consideration of INIA's constitution and integration of processes, it is necessary to incorporate the notion of System. This vision assumes that the relations between whole and parts must be implemented through interaction. This term is very important because it incorporates the idea of action among the parts of a system.

The concept of organization provides constructive consistency, regulation and structure to interactions. Therefore, the organization may be conceived at the same time as an entity (companies, areas, departments, etc.) and as an action that focuses such entity.

Order and disorder: These concepts are antagonistic and complementary at the same time. At INIA's external environment, order is shown in the organization of the State, the Government policies and the laws in force, while disorder is shown in conflicts of interest in society, the government and the production systems. At INIA's internal environment, order is shown through its institutional configuration, while disorder is shown through communication noise, divergent ideas and questionings on INIA's actions by the society. The development of this policy is an initiative to order the current state of affairs. It is also pertinent to consider that within its

management process, there may be conflicts among areas, audiences and interests, being both perspectives necessary. The absence of regulation also contributes to an excessive disorder, which makes it difficult to align objectives. The absence of conflict, on the other hand, contributes to institutional stagnation and does not promote innovation. It is important that all events of order and disorder are analyzed and managed for the benefit of the institution.

4. Values of the Integrated Policy

The Integrated Policy is aligned with the institutional values defined in the Strategic Plan 2006 – 2010, and some specific values are added.

Customer focus: A customer service attitude is important as the Institution addresses different audiences.

Participation: Participatory processes are promoted where the recipients of products and services have the possibility to contribute to the decision-making process. The participatory work of technicians in multidisciplinary teams is also valued.

Professionalism in management: The need to act with professionalism and responsibility in the different processes carried out in the Institute is acknowledged.

Networking, cooperation and integration: Interdisciplinary and multidisciplinary work and interinstitutional actions are important to promote networking and knowledge integration.

Reliability: The generation of confidence among those related to INIA is important to guarantee its proper operation.

Loyalty: Institutional actions are carried out within the framework of legality, transparency and fidelity.

Respect for diversity and plurality: Institutional actions acknowledge and consider diversity, differences, controversies and opposition of interests of the target audiences.

5. Assumptions of the Integrated Policy

These assumptions are based on the opinion surveys carried out by the Communication and Transfer Unit and the above-mentioned consultants.

- INIA has a good image and background at scientific and technical level among the producers and the industry, but is less well-known by the general public.
- With the new science and technology promotion policy in course in Uruguay, the National Science, Technology and Innovation System on these areas has become more competitive as regards the assignment of public and private funds.
- Producers and their organizations have confidence in INIA and acknowledge their good relationships with the institution, but perceive that its response is somehow slow.

- Customer service quality varies depending on skills and disposition, which adversely impacts INIA's reputation and institutional image.
- The demand has increased and diversified, and requires increasingly faster and more effective responses. This has generated an overload of communication activities and actions (meetings, field days, seminars, events, publications, website, trade shows, etc.), where it is not always possible to respond as expected by the target audience and where quality control becomes more complex.
- In order to meet the increasing demand and be able to comply with communication, transfer and research objectives related to these areas, it is necessary to set priorities about the audiences to address, to focus tasks on specific communication and transfer areas and to count on adequate human resources and materials.

6. General Objective of the Integrated Policy

The intention is to align similar processes that are carried out separately or with little coordination in the Communication, Technology Transfer and Technological Business Management areas, articulating them in a comprehensive manner to improve the impact of INIA's activities on its target audiences and comply more adequately with the institutional mission.

The **general objective** of this Policy is to promote and integrate strategies and actions on Communication, Technology Transfer and Technological Business Management with the remaining institutional processes, contributing to the compliance of the Mission, Vision, Objectives and Strategic Guidelines.

7. General Guidelines of the Integrated Policy

Strengthening INIA Brand

INIA brand is the most valuable wealth of the Institution. It is not only a name or a logo, but also a concept and a value based on INIA's technical capacities, the quality of its products and services and its insertion in the market and in the society. A large part of INIA's actions in this regard is therefore the result of the quality of the links, behaviors and activities related to the Communication, Technology Transfer and Technological Business Management processes generated in the organization. For this reason, it is the commitment of all members of INIA to ensure that these processes help strengthening INIA brand. For brand positioning, it is important that INIA communicates the activities it performs together with other players. This contributes to strengthen links with all the players of the National Agricultural Innovation System, while strengthening INIA's image inside and outside this system.

Integration of processes

Integration must be sought among the diverse areas and actions of the Institute, particularly regarding Communication, Technology Transfer and Technological Business Management, and between these and the other sectors of the organization, in order to promote links with its varied audiences and the incorporation of technologies into the productive systems. This integrated

approach does not only apply to INIA itself, but will also be promoted and developed regarding other players and the sector. It should mainly address the changes in the institutional environment related to processes covered by the Policy, in order to generate the links, agreements or networks needed for joining actions.

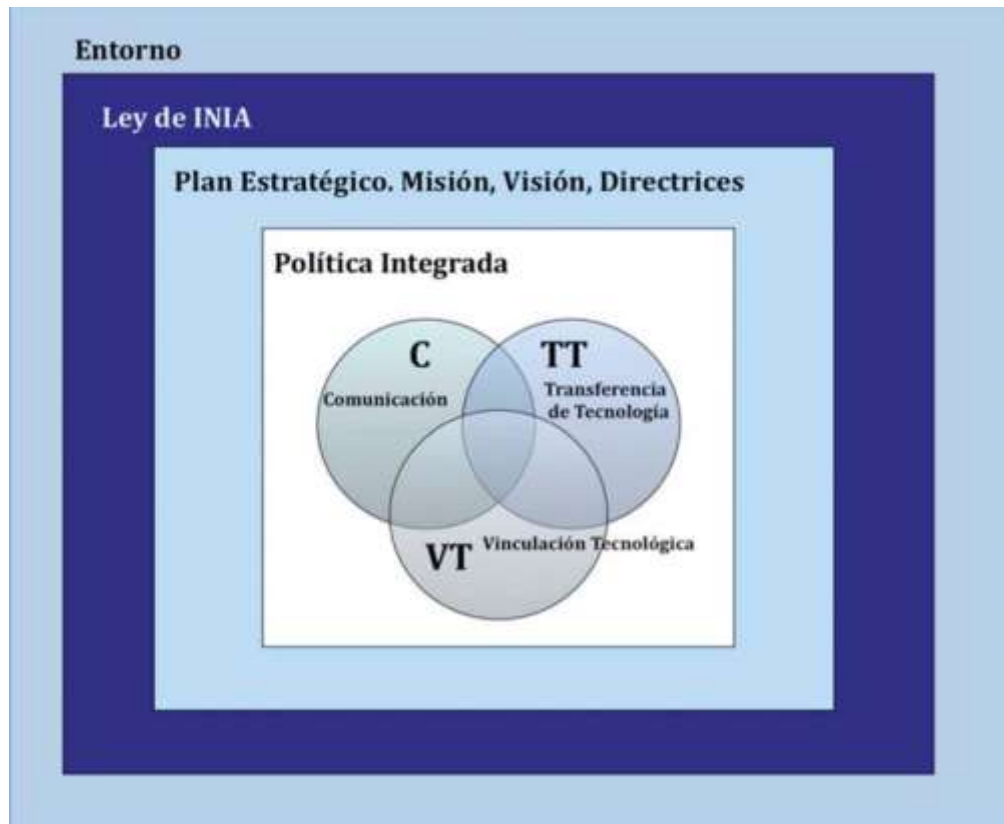


Figure 1 - Representation of the Integrated Policy on Communication, Technology Transfer and Technological Business Management

Uniform procedures

INIA's relationships with the society and the market, the incorporation of technological information into the productive systems and the negotiation of products and services, as well as processes developed inside the organization, shall comply with uniform procedures, in order to ensure consistency and the preservation of the interests of the Institute.

Agreements, associations and outsourcing

The concept of production chain applies to all the processes covered in this Policy, including a variety of articulation and production forms, specialization levels and specific skills, which

exceed the support capacity of some areas, regional offices or the organization itself. Thus, internal and external associations must be promoted and carried out.

Considering the technical capacities of the market and the need to perform routine activities on the processes covered by this Integrated Policy, the possibility to outsource these activities must be evaluated as a way to improve the performance of the institution and ensure the execution of more managerial and strategic activities.

8. Definition of Target Audiences

INIA's audience is very wide and the responses differ in a specific moment.

Therefore, a typology of target audiences is presented for consideration of INIA when developing its Communication, Technology Transfer and Technological Business Management Strategies. Priorities shall be set to define annual plans, activities and actions, as it is not possible to address all audiences and meet all demands. The typology is based on the type of cooperation and/or information to be provided by INIA to each sector.

The following typology has been defined:

8.1. Institutional Group:

- General public
- Press
- Rural associations
- Other institutions, organizations, commissions, committees, etc.
- Educational sector
- Universities and scientific community
- Government and political sector
- Opinion shapers

8.2. Productive Group:

Agricultural Sector: Sector that produces cattle, agriculture and forestry-related products.

- **Companies:** High autonomy in the search for technological solutions, with a focus on agribusiness.
- **Commercial producers:**
 - **With higher demand of technology:** Producers who systematically incorporate technology, attend journeys and understand that the results achieved by their establishments depend fundamentally on their decisions.
 - **With lower demand of technology:** Producers who do not generally manage technological information or attend journeys, and who expect their future income to be the same or lower than their current income. They believe that the results of their establishments depend more on external factors (E.g.: weather and market).

- **Family farmers:**
 - **Consolidated family farmers:** Medium-sized farms operated by family members and temporary workforce. With the capital available they make certain investments and participate in the agricultural market, which may yield some profits and allow them to reinvest in order to increase production. These producers are generally addressed by the Value Chain Programs.
 - **Transitional family farmers:** These producers work with their families in medium or small-sized farms and with little capital. They generally carry out agricultural activities and/or raise cattle, and their production goes partly to feed their families (personal consumption) and partly for sale in the market. The income they obtain for the sale of their products is not enough to meet their basic needs, so they generally work outside their farms in other agricultural activities or even perform urban activities. These producers are addressed by the Family Production Program.
 - **Subsistence family farmers:** These producers work with their families in small farms and with very little capital. They carry out agricultural activities and/or raise cattle, and their production goes to feed their families (personal consumption). They show little participation in the market and generally work outside their farms in other agricultural activities or even perform urban activities. They are the target audience of other public organizations, such as Ministries, NGOs, etc.

Agro-Industrial Sector: Sector that transforms the produce of agriculture, cattle-breeding and forestry in elaborate products, including quality selection processes, classification, packaging-packing and storage.

Services Sector:

- **Technical Advisors:** Sector that provides information and technical support to the members of agricultural production chains, through individuals, groups or associations of duly qualified people.
- **Suppliers:** Sector that offers and markets the supplies required for agricultural production activities.
- **Contractors:** Sector that offers and markets the services required for agricultural production activities.

8.3. Internal Group:

- Board of Directors
- Managerial Committee
- Programmatic and Operational Committee
- Regional Coordination Committee
- Regional Advisory Councils
- Working Groups
- Technical Staff

- Staff

9. Processes related to Communication

The communication process refers to the relationships of INIA with its external and internal environment. Its fundamental responsibilities are to create and maintain the information flows and the reciprocal influence flows within the institution and among it and its target audiences and the society. It is defined by the integration of all communication activities so that consensed uniform actions are carried out throughout the organization to avoid the potential fragmentation of INIA's image. The keywords that identify this aspect of the policy are "institutional communication".

Main Activities: Strengthening the institutional image. Promotion of the brand, products, services and interests of the Institution. Public relations. Adaptation of the communication products according to the different audiences. Research on related issues (profile of users and recipient audience). Standardization of communication instruments (journals, events, etc.). Articulation with opinion shapers: press, political sector, businesspeople, etc. Coordination radio, TV and Internet shows for production, channelling and publication of information and communication products. Execution of initiatives that promote the popularization of science. Promotion of internal communication improvement at all the stages of the organization. Promotion of new information and communication products. Development of Web 2.0: youtube, twitter, blogs, etc. Exploration of new data processing modes for the generation, collection and distribution of information and contents. These issues are not related to technological aspects, so they must be addressed from a comprehensive approach.

Main Instruments: Organizational image and environment surveys, press management, development of manuals (events, edition of publications, visual identity, etc.), radio and television space to promote institutional image, organization of institutional events, maintenance of database and image base, elaboration of institutional communication products (e.g.: yearbook, brochures, institutional videos, web page, institutional articles for magazines). Many of these instruments will be used in coordination with the Technology Transfer and Technological Business Management Units.

Professional Profiles: Specialized communicator, journalist, public relations officer, advertiser, librarian, photographer, graphic designer, teacher, agronomist and/or veterinarian.

10. Processes Related to Technology Transfer

The Technology Transfer process refers to the technological development of the agricultural sector from a social perspective. It covers from the transfer of knowledge, inputs and services to production players to the joint development of innovations. The generation of knowledge and technologies is carried out in articulation with rural extension agents and public and private organizations providing technical assistance through the implementation of diffusion networks, participatory research processes, etc.

This area covers processes related to rural development with a territorial approach and involving multiple players, where there are instances of co-generation of knowledge and technologies with

direct participation of the involved players. The closest players act maximizing comprehensive capacities: doing R&D in this context, reapplying the knowledge created in other fields, promoting communication and exchange of knowledge among rural players and scientific-technological players, creating individual or collective infrastructures, creating commercial capacities, etc.

Main Activities: Diffusion and validation of technologies. New technology refreshment activities. Articulation with extension organizations and associations of producers. Promotion of technology transfer networks with public and private institutions. Training of technical field staff. Implementation of participatory research processes. Participation in rural development processes. Adaptation of information channels and development and edition of content of communication products, demand forecast and research on related issues.

Main Instruments: Research on issues related to technological adoption/technical change. Publications, refreshment courses, seminars, journeys, field days, workshops, videos, Internet, videoconferences, management of mass media in coordination with the communication area. The keywords are "development of the productive systems", being an open platform to search for ways to effectively articulate capacities among public and private players related with the target audiences addressed by the Policy.

Professional Profiles: Agronomist, veterinarian, social science professional related to the agricultural sector.

11. Processes Related to Technological Business Management

The objective of the Technological Business Management process is to articulate with the National and International Science, Technology and Innovation System. It conveys two complementary visions: one referring to the agricultural technological development from the agribusiness perspective and one related to institutional relationships.

Both require increasingly higher interaction between private initiatives and public R&D organizations, where INIA must play a leading role in the creation of national and international institutionality related to the agrifood sector and its challenges, acting as a center of excellence of agrifood research in Uruguay.

The links with the productive sector take place through the negotiation of technological projects, products, processes and services. It covers licensing, consortia, alliances, direct sale and other modalities, such as consultancy services and advisory services. It seeks to develop competitive and innovative value chains. This approach generally covers activities for directors and technical staff, and a wide range of presential and virtual instruments. The related players are generally highly educated, know the scientific-technical jargon, and have diverse skills (economic, infrastructure, etc.), which allows them to interpret and apply what is developed in research centers in agreement with their objectives and interests. The keywords that identify this process are "technological business".

At the same time, it is essential to proactively promote the creation of networks, agreements, alliances and other forms of cooperation that are considered fit with national and international players that complement, strengthen and maximize the existing capacities of INIA and Uruguay. The keywords are: networks-agreements-alliances.

Main Activities: Prospection of markets and opportunities for new agribusiness. Production of seeds and propagation materials. Cultivar development, production and licensing. Obtention of resources for research projects, commercialization of technologies and highly specialized courses. Training and consultancy to transfer *know-how* to other players. Launch of products and services. Elaboration of communication products in agreement with the communication area (seeds catalogues, brochures, web page, technical articles). Research on related issues. Research on related issues. Identification of institutes and scientists of excellence with whom to establish different cooperation modes, such as joint R&D projects, exchange of scientists, creation of joint platforms, networks, consortia, etc.

Main Instruments: Marketing plan, showcases of technologies, catalogue and campaigns to promote products and services in coordination with the Communication and Technology Transfer Areas. Monitoring and identification of players of excellence, dialog and negotiation processes, framework agreements, etc.

Professional Profiles: Agribusiness expert, copyright expert, marketing expert, agricultural sciences professional trained in technological business management. This person is complemented by an expert in international relations, in network and partnership management, and in negotiation processes management.

Chart 1. Profile of the processes of communication, technology transfer and technological business management.

ISSUES/AREAS	COMMUNICATION	TECHNOLOGY TRANSFER	TECHNOLOGICAL BUSINESS MANAGEMENT
ENVIRONMENT	Society, Market and Institution	Productive Systems	Productive Systems National and International Institutions of Science and Technology – Market
KEYWORDS	Institutional communication	Development of productive systems	Technological business, networks, alliances, agreements
FOCUS	Institutional, Social, Economic and Environmental	Economic, Social and Environmental	Institutional, Economic, Social and Environmental
INSTITUTIONAL PROCESS	Institutional strategies	R&D process	Institutional development, R&D process and innovation development
MAIN AUDIENCE	Institutional Group and Internal Group.	Productive Group	Productive Group and Institutional Group - national and international
OBJECTIVES	Information flows with different internal and external audiences. Institutional promotion.	Technological development Rural development	<i>Development of competitive value chains</i> , Promotion and negotiation of projects, products, processes and services, Strengthening of the National Agricultural Innovation System
INFORMATION MANAGEMENT	Internal communication - public and private field	Public field	Institutional information - public field; third party information - private field
CONTENT	Institutional and technical	Technical and specialized	Technical and specialized
RESULTS	Image, Products and Services. Relationships. Ownership	Products, Services and Relationships	Products, Services, Business and Relationships, Trust
INTERACTIONS	Good reputation and good products strengthen development and reputation.	Good development strengthens products, services and reputation.	Good relations, based on the confidence and good products and services, strengthen development and reputation.
MAIN ACTIVITIES	Publicity, Public Relations, Media Relations, Information and Knowledge Management, Editorial Production, Electronic Production. Surveys.	Diffusion, Articulation, Validation, Participatory Dynamics, Training, Knowledge Management	Articulation, Networks, Negotiations, Market Research, Marketing, Training, Knowledge Management, etc,

Source: Adapted of Correa Da Fonseca Junior; W. 2008.

12. Actions to implement the Integrated Policy

The implementation of the Integrated Policy on Communication, Technology Transfer and Technological Business Management has been approved by INIA's Board. There are three basic requirements for its effective implementation: A) Commitment of INIA's Board; B) Establishment of a basic plan with a schedule for implementation of the Integrated Policy; and C) Creation of an Integrated Management System of Communication, Technology Transfer and Technological Business Management.

A. *Commitment of INIA's Board*

INIA's Board of Directors has committed to an Integrated Policy on Communication, Technology Transfer and Technological Business Management assuming it as a strategic management instrument. It has been defined as a priority project to establish human, material and financial resources ensuring its implementation, through the respective Communication, Technology Transfer and Technological Business Management Strategies.

B. *Basic Plan for implementation of the Integrated Policy*

The Basic Plan is a document that establishes a set of phases and strategic actions to be carried out for implementation of the Integrated Policy. This Plan must be drafted by a working group of professionals of INIA's Communication, Technology Transfer and Technological Business Management areas within a term of three months following the approval of the Integrated Policy. Some activities are the following:

- Editing, publishing and distributing the Integrated Policy contained in this document through the Temas Institucionales series of publications.
- Publishing all the regulations regarding the Integrated Policy (creation of Committees, Groups, etc.) through the usual means of institutional communication.
- Organizing Seminars in the 5 Regional Offices and in the National Office for dissemination of the Integrated Policy to INIA's Managers, Directors, Coordinators, scientists and staff.
- Carrying out an institutional campaign with the purpose of internalization of the Integrated Policy by all members of staff.
- Editing, publishing and distributing documents in the Temas Institucionales series of publications, containing the Communication, Technology Transfer and Technological Business Management Strategies, and ensuring their distribution.

C. *Integrated Management System of Communication, Technology Transfer and Technological Business Management*

For proper implementation of the Integrated Policy and in order to achieve the expected results, all the functional and professional areas involved in Communication, Technology Transfer and Technological Business Management activities shall become part of an Integrated System.

Based on global planning and on the articulation of joint actions on information exchange, training, activity planning and production, the final objectives of this System are the following:

- Establishing minimum performance patterns and leveling professional skills
- Standardizing regulations, operational routines, products and strategic visions

- Sharing opportunities, knowledge and solutions
- Systematizing surveys, processing and diffusion of strategic information
- Optimizing conditions and operating costs

This system is viable as long as a set of human, physical or material resources, databases (customer or institution profiles, mass media, etc.), and related vehicles, methods and products is available for INIA's Communication, Transfer and Technological Business Management activities. This implies an integrated work while defining the use of professionals specialized in the development of specific actions, such as technology transfer, public relations, press management, training of trainers, institutional articulation, social research, negotiation and marketing, among others.

The adoption of operational mechanisms is essential for the effective implementation of the Integrated Management System:

- **Integrated Policy Coordination Committee (CCPI)**

Under the coordination of the National Director, the members of the Coordination Committee are the Programmatic and Operational Manager, the Technological Business Manager, the Coordinator of the Communication and Technology Transfer Unit, a Regional Director and a Program Director. The Committee may call other managers, directors, etc., if it deems it fit.

Under a resolution of INIA's Board, its functions are the following:

- a) Planning the global strategic actions on Communication, Technology Transfer and Technological Business Management;
- b) Focusing actions for interaction of the areas within INIA's Integrated Management System, connecting all the functional processes and professionals involved from a technical and regulatory perspective;
- c) Promoting actions to internalize INIA's Integrated Policy and monitor its implementation;
- d) Supporting the execution of the Basic Plan for implementation of the Integrated Policy and the Strategies of its three components;
- e) Coordinating support actions with the tools available for internal communication actions developed by the Human Resources Management Office;
- f) Calling the ad-hoc groups for:

Research on socio-economic, communication and marketing issues– Generate a multidisciplinary work environment focused on research activities on socio-economic, communication, transfer-adoption and marketing issues, with the purpose of consolidating, strengthening and providing feedback to the Integrated Policy, continuously improving the processes it covers. Projects may be executed with INIA's and external technicians, under different modes. These activities may later be incorporated into a future research program on these issues.

Information management – Create a multidisciplinary working group under the Communication and Technology Transfer Unit, focused on managing the information produced by the Institute in the fields of research, technology transfer, technological business management and communication. The objective of this group is to adapt the information to provide to different target audiences. That initiative may be the basis of a future Technological Information Area of INIA.

g) Suggesting changes in INIA's organizational structure for better implementation of the Integrated Policy.

- **Formal Structure of the Communication and Technology Transfer Unit** - INIA's basic communication and transfer structure emphasizes on the productive specialization of the staff, maintaining a coordination hub of Technology Transfer at central level and creating an Institutional Communication hub. The latter shall be composed at least of two professionals with profiles of communicator and journalist. At the level of the Regional Offices, the communication and technology transfer areas are programmatically linked to the communication and transfer hubs at the central level and to the Regional Director's Office at the local level. At the regional level, there will be at least one transfer professional in each regional office, and communication experts will provide support.
- **Editing Committee for INIA's publications** - Create an Editing Committee with the purpose of reviewing the contents of INIA's main publications (Serie Técnica, Boletín de Divulgación, books and manuals), to ensure their quality and consistency, and to check that they comply with the pertinent regulations in order to be considered by the National Science, Technology and Innovation System.

INIA's publications shall follow a roadmap ensuring that Managers, Program Directors, Regional Directors and the Editing Committee approve their dissemination.

Agent	Type of Approval
Editing Committee / peer technicians	Review of contents
Program Director	Technical approval
Regional Director / Managers	Political approval
Editing Committee / Librarian	Framing according to defined standards
Editing Committee / Editor	Final adjustment of style according to the type of publication.

***DOCUMENT 2 - Management Strategies
for the Integrated Policy on
Communication, Technology Transfer
and Technological Business
Management of the National
Agricultural Research Institute***

Chapter 1. Communication Strategy

Authors: **María Marta Albicette⁸**
 Raúl Gómez Miller⁹
 Magdalena Rocanova¹⁰

⁸ Agronomist, Communication and Technology Transfer Unit

⁹ Agronomist, Communication and Technology Transfer Unit

¹⁰ Lic. Mag., Communication and Technology Transfer Unit, INIA Tacuarembó.

1. BACKGROUND

Communication, transfer and diffusion of information and technology are part of INIA's mission and vision. Significant changes have occurred in research, innovation and science and technology transfer at the international level, and also at the national level, where new players have been incorporated. Thus, communication is very important for institutional sustainability as an area of knowledge for understanding and intervening on the communication flows within the Institute and between it and its external stakeholders.

Within the framework of the communication strategy, work will be performed in articulation with those responsible for technology transfer and technological business management at the Institute, for example, for generation of specific products, information management and development of modes to relate with collaborators, producers and technicians in the sector.

It is necessary to address INIA's communication strategically, reformulating and optimizing the external and internal processes arising from it, in order to face new contexts and challenges more effectively.

This proposal suggests defining priorities for INIA's communication in alignment with the institutional objectives.

2. OBJECTIVES OF THE COMMUNICATION STRATEGY

2.1 General Objective

To create and maintain information flows and reciprocal communication among INIA and its diverse target audiences, contributing to the compliance of its Mission, Vision and Objectives.

2.2 Specific Objectives

Strengthening INIA's reputation and institutional image so that its different audiences achieve greater knowledge of the institution.

Optimizing INIA's communication by maximizing the interaction with its diverse audiences through greater and more effective dissemination, prioritizing activities, adapting communication products to different audience types and selecting the most suitable instruments.

Improving the internal communication processes, offering backup and support to the actions developed by the Human Resources Management Office, promoting a spirit of work in teams, cooperation and ownership to create awareness at all levels about the fact that INIA's image is also built through the behavior of each member of the Institution.

The **reputation** of an institution is an intangible asset built by the users and the general public based on the organization's image and the direct experience of such users and public with the

organization. Besides these two aspects, reputation also involves a comparison made by the audiences with other organizations in the sector, as well as references, recommendations, media agenda, etc.

INIA's **image** has been built in the long time and has been nourished by the opinions about the Institute of all its audiences: producers, technicians, national and international scientific community, public and private institutions, educational system, political system and the general public. It should be widened for better knowledge of INIA by the public. Thus, strengthening the institutional image implies the elaboration, execution and evaluation of mechanisms that operate on the positioning of the organization in the scheme of perceptions and information of the different related audiences. The **direct experience** is built daily, with institutional absence and presence, answers and lack of answers by its staff, results and lack of results regarding the expectations of the audiences which the institution has committed to meet.

In this sense, for this intangible capital to really favor the success of INIA, the **image** and the **direct experience** of the users should be monitored by the institution establishing specific plans on these issues.

3. PRIORITY AUDIENCES OF THE COMMUNICATION STRATEGY

The priority audience of the communication strategy is the institutional group defined in the Integrated Policy (general public, press, rural associations, institutions and organizations, educational sector, universities and scientific community, government and political sector, opinion shapers) and the internal group of INIA's authorities and staff.

Although the way to relate with the audience defined as "productive group" shall be mainly through technology transfer activities and technological business management, this group shall also be the target audience of the communication strategy.

4. COMMUNICATION MODES

Communication at INIA is carried out through the implementation of processes and actions, products and channels for different communication activities that articulate in a global system for dissemination of the Institute's image, compliance with its strategic objectives and maintenance of its corporate identity. The communication modes are organized under two complementary focuses: institutional and technological. The technological focus refers to the relationships of the organization with the production systems, which shall be addressed by the Technology Transfer Strategy and the Technological Business Management Strategy.

The objective of the institutional focus is to strengthen information flows and relationships to make INIA known and promote the institute before its different audiences.

The main communication modes are:

4.1 Administrative Communication

It consists in the flow of official communication inside INIA that is established between the organization Directors and its diverse audiences, particularly collaborators, and the diverse

instances present in the organizational structure. In the case of INIA, this type of communication is headed by the Political Area, with the participation of the Programmatic and Operational Area and other Management Offices. The extensive flow of information through formal documents and administrative acts is fundamental for the adequate operation of the Institute, as it allows it to communicate decisions, regulations and guidelines. The Managers and Directors must periodically promote meetings with the purpose of updating the administrative information so that all members of staff are aware of their responsibilities and any ambiguous or unclear interpretation of a specific administrative act may be clarified, furthering internal transparency. This communication mode relates to internal communication actions and social communication.

4.2 Internal Communication

Internal Communication is the management process that promotes dialog, information flows and participation of all internal audiences. Internal communication at INIA is the responsibility of the National Office and the Human Resources Management Office, with the support of the Communication and Technology Transfer Unit. It is necessary to implement an agile and efficient communication flow that favors the free circulation of information and the free expression of ideas, suggestions and discrepancies, promoting the exchange of knowledge, as all this shows the creative and innovative spirit of INIA. In order to facilitate the exchange of ideas, upper management and directors must create formal and informal communication opportunities, so that everybody may democratically and spontaneously state and share opinions.

4.3 Scientific Communication

It is the process by which the Institution scientists interact mostly with their peers, to execute and disseminate their scientific research work and the development of knowledge, products and technological processes. It includes the regular publication of articles in nationally and internationally renowned magazines, the participation in technical events (congresses, seminars, workshops, etc.) and the interaction with specific audiences, such as the press and technicians related to technical support and rural extension. At INIA, scientific communication is headed by the Programmatic and Operational Area and its respective Research Programs. Procedures and regulations must be developed in compliance with international regulations and intellectual protection rules.

4.4 Communication to the political sector

It is the process of interaction of INIA with the executive and legislative power at the national and departmental level, with the purpose of defining means, goals and priorities, the magnitude of the actions and the strategic position regarding the set of governmental power structures. At INIA, the interaction related to this type of communication is the responsibility of the Political Area, with the support of the Regional Directors.

4.5 Social Communication

It includes several processes and practices for INIA's interaction with numerous audiences, such as the press, companies, business leaders, NGOs, students, consumers and the general public, so that the society understands the role of the institution in all its scope and supports the

activities performed by it, thus shaping an institutional concept. At INIA, this type of communication is the responsibility of the Communication and Technology Transfer Unit.

5. MAIN COMPONENTS OF THE COMMUNICATION STRATEGY

Some of these components are currently implemented by the Human Resources Management Office and the Communication and Technology Transfer Unit. We propose a specialization in the specific area of communication, according to the provisions of the Integrated Policy. Thus, the following is suggested:

- Creating an area specialized in INIA's institutional communication, endowing it of the necessary suitable staff. That area would be part of the organizational system and should define adequate plans, projects and instruments to execute its activities.
- Evaluating and strengthening the existing specialized communication channels and re-dimensioning them for different audiences.
- Strengthening current links and coordinating future plans with radio, television and Internet programs and networks, for effective diffusion of the institutional information.
- Standardizing INIA's visual identity, in order to transmit institutional consistency and unity to its different audiences (logo, slogan).
- Improving the skills of the communication technicians and/or coordinating the outsourcing of information production according to different audiences (students, opinion shapers, general public, press, etc.)
- Systematically evaluating INIA's communication actions through surveys.
- Developing a customer service improvement program.
- Coordinating actions with the Technology Transfer, Technological Business Management and Human Resources Areas, as well as with any other areas of INIA as deemed fit.

6. COMMUNICATION ACTIVITIES:

- Strengthening INIA brand, relating it to those ideas or concepts that the Institute wishes to transmit.
- Developing and executing an annual communication plan which target audience is that set as a priority within the institutional audience.
- Using different audiovisual media (magazine, radio, TV, videos, website, etc.) and planning campaigns to promote the institutional image according to the different audiences.
- Consolidating other complementary media in different backups, adapting the language according to the audience segmentation. For example: SMS for diffusion of activities; audiovisual materials; bulletins; new interactive developments in the Web (forums, students sites, virtual conferences and seminars, etc.).
- Systematizing and formalizing the technology transfer and internal and external communication processes through institutional communication manuals, events, edition of publications, internal procedures, etc.
- Creating the Editing Committee for standardization of all INIA's publications.
- Developing innovative written material for institutional communication, brochures, press notes and reports, virtual library and press room.
- Developing and maintaining databases of information, users and images.

- Cooperating with the Human Resources area in the development of communication skills and capacities by INIA staff, as well as internal communication tools (bulletins, mailboxes, etc.).
- Participating actively in the ad-hoc group managing institutional information.
- Participating in the ad-hoc group doing research on socio-economic issues, communication and marketing, promoting research projects, surveys and polls on the institutional image, which may be a solid contribution for future institutional communication activities.
- Coordinating with INIA's political and technical area for cooperation on the above-mentioned communication modes.
- Coordinating with the Technology Transfer area the technical contents of the communication materials to develop.
- Coordinating with the Technological Business Management area those aspects related to the strengthening of INIA brand and the communication of issues that are important for society.

7. COMMUNICATION STRATEGY TOOLS

INIA shall use different procedures and channels in its Communication Strategy. Communication activities are usually associated with interdisciplinary processes that are not directly related to the Institute's Communication Unit, Division or Area. They are generally the responsibility of two or more units acting jointly, with the participation of all the employees, considering the target audience determined. Based on this, general procedures shall be established, as well as procedures by communication mode, and several channels shall be combined for institutional communication according to the prioritization of audiences.

A plan to be present in mass media shall be developed. As a general aspect, a multimedia strategy shall be undertaken, that is, the same issue shall be addressed through different channels. The different media to use are the following:

7.1 Mass media and/or media with wide coverage:

7.1.1 Press

Used for public awareness and institutional marketing.

7.1.2 Specialized Press

Used to mark institutional presence in agricultural magazines or journals.

7.1.3 Television

National and local television is used to address the audience through agricultural programs.

The presence in such programs may be through:

- News presentations

- Technical interviews
- Broadcast of INIA's videos

Besides, the Institute will be present in non-agricultural programs, providing wide information about its actions with the purpose of raising the awareness of society and promoting the institution.

7.1.4 Audiovisual Products

Development of institutional audiovisual products related to the institutional image and/or technological issues in coordination with the Technology Transfer and Technological Business Management teams.

7.1.5 Radio

Interviews in national and local agricultural shows will be used and institutional marketing will be carried out.

7.1.6 Website

The website will be used as a channel to make institutional information on activities and services available to different audiences and to perform opinion surveys.

7.1.7 Trade shows

These are important to show INIA's presence and for institutional diffusion among the general public through an institutional stand, either in a trade show organized by INIA or where INIA is invited to participate.

7.2 Publications

Publications are an important component of the Communication Strategy. The types of publications to use are the following:

7.2.1 Revista INIA

Revista INIA (in English, "INIA's magazine") is available by subscription and published periodically to present institutional information together with technical information.

7.2.2 Yearbook

Institutional publication summarizing the annual activities in different Management Offices, Programs, Regional Units, Services, etc.

7.2.3 Temas Institucionales

Temas Institucionales (which title in English means "Institutional Issues") is a publication which purpose is to provide information on the organization and institutional operation strategies.

7.2.4 Brochures

Printed brochures for mass distribution containing information on institutional issues or to support dissemination initiatives together with other products or services.

7.2.5 CDs

Alternative means to compile institutional information.

7.2.6 Manuals

Publication for standardization of institutional procedures (E.g.: Manual on Use of Logo, events, etc.).

7.2.7 Books

Unit publication printed and published by INIA in one or various volumes, fascicles or issues.

7.2.8 Special Publications

Special publications for any issue of particular interest at a certain time.

7.2.9 Other Publications

Publications not included above.

7.3 Presential Activities

INIA's main presential activities for institutional communication are the following:

7.3.1 Press Conference

Presentation to the press on a specific issue of institutional interest, carried out at INIA or outside the institution.

7.3.2 Visit

Scheduled visit to Experimental Stations or Experimental Units.

7.3.3 Meeting with groups

Activity with the purpose of providing specific information to formal groups addressing specific requirements.

7.3.4 Teleconference

Remote live exchange by TV or computer.

7.3.5 Trade Shows

Participation in shows and activities for general diffusion of INIA's technological proposal using stands, among other tools.

7.4 Advertising campaigns

Extensive advertising plan for a series of related advertisements to appear in different media for a specific period. The campaign shall be strategically designed to achieve several objectives.

Participation in external campaigns or initiatives is also planned as sponsorship, support or promotion, if it is considered of institutional interest.

7.5 New communication channels

A proactive attitude shall be maintained toward the search for opportunities and development of new communication channels to support technological development.

Chapter 2. Technology Transfer Strategy

Authors: **María Marta Albicette¹¹**
Raúl Gómez Miller¹²

¹¹ Agronomist, Communication and Technology Transfer Unit

¹² Agronomist, Communication and Technology Transfer Unit

1. INTRODUCTION

The objective of the Technology Transfer Strategy is to perform activities to transmit technological information, make available products that improve the production systems or promote the joint development of innovations. As established in the Integrated Policy, this must be carried out considering the target audience, the research programs and the territorial scope, and in articulation with public or private transfer or extension agents.

The background of this Strategy are the Diffusion Strategy in force (Temas Institucionales No. 6, 2003), the intervention modes defined according to each National Program (Communication Strategy Draft, 2007), the surveys carried out with the internal and external audience and the contributions of the consultancy services provided by Dr. Neels Botha and Dr. Wilson Correa da Fonseca. This Strategy includes the scope of concepts and definitions of work modes, demand forecast modes and use of indicators.

2. OBJECTIVES OF THE TECHNOLOGY TRANSFER STRATEGY

2.1 General Objective

Improving aspects related to the internalization of knowledge and technologies by the productive sector in a broad sense.

2.2 Specific Objectives

- Forecasting demand correctly through the reactivation of working groups and the use of complementary mechanisms.
- Articulating actions with extension agents and private and public technical support agents to improve the flow of the information and technological products generated among the diverse audiences.
- Developing tools to make the information generated available.
- Generating lines of work in socio-economic research, technical change and adoption of technology in order to provide feedback to the system.

3. PRIORITY AUDIENCES OF THE TECHNOLOGY TRANSFER STRATEGY

The priority audience where to focus technology transfer is the productive group defined in the Integrated Policy (technicians, rural producers and agroindustries), and audiences of the institutional group, such as rural associations, organizations, institutions, commissions, etc.

The activities to develop must be properly focused to ensure efficient coverage. Thus, it is necessary to prioritize audiences using the audience typology defined in the Integrated Policy. This must be done at the Research Program level in accordance with the different regions.

An aspect that associates this strategy to the Communication Strategy is the need to maintain institutional visibility with the producers, so activities of institutional promotion will also be carried out with the productive group.

The Internal Group defined in the Integrated Policy shall be kept informed.

4. MODES OF INTERVENTION OF THE TECHNOLOGY TRANSFER AUDIENCE

INIA's technology transfer modes correspond to the main reference models in technological communication, and are implemented through processes, actions and channels in its different activities. These modes integrate and articulate in a global system focused on the development of production systems, considering the economic, social and environmental perspectives. This integration is carried out under a "fan" model comprising seven intervention modes (Figure 2).



Figure 2 - Modes of intervention of INIA in its sector (Albicette, MM; Gómez Miller, R. 2007).

4.1 Diffusion/Communication of Technological Information

The purpose of technological information diffusion is to raise the awareness of technicians and producers about the results of research. Research must be done using the appropriate instruments for each audience: presential activities for technicians (seminars, journeys, etc.) and for producers (field days, journeys, etc.); dissemination through mass media for technicians and producers (radio, TV, press, web page). In the case of technicians, the purpose is to generate

instances of exchange among the recipients; in the second case, the objective is to raise the interest of producers for the use of technology. For this mechanism to be effective, the potential demand that might be generated with the dissemination of new technologies must be properly forecast. This is why it is important to plan activities ahead.

4.2 Scientific Communication

This refers to the communication of scientific information established in item 4.3 of the Communication Strategy.

4.3 Technology Validation

This is the last stage of the technology generation process, which allows researchers, the producer concerned and the advising technician to adjust the technology before it is made available to the rest of the producers.

Technology validation is usually the last stage to verify the results of research. Depending on the target audience, for example, in the case of family producers, this stage may be part of the research project itself. This technology transfer mode implies interaction among researchers, producers and technicians. INIA must disseminate the technical definition and its modes of acting as regards technology validation in different internal and external environments through diverse channels and instruments (bulletins, seminars, meetings, etc.) This process must be planned from the stage of writing the description of the research project with the participation of technicians of the Unit, as a way to plan well ahead the type of actions to be taken by INIA in this regard.

4.4 Technology Transfer Articulation

This refers to specific technology transfer projects between INIA and public or private organizations of technical assistance or extension. Projects shall be carried out with said institutions and with groups of family producers and small- and medium-sized producers networking with agricultural institutions.

This Technology Transfer mode is important for INIA because it enables proper interaction between research projects and the incorporation of technologies by the production systems. This work is attempted as specific projects addressing the main technical problems faced by production systems, with clear objectives and pertinent indicators, and promoting inter-institutional integration for Technology Transfer.

4.5 Agribusinesses with companies or institutions

This implies a vision of agriculture as agribusiness. The main audience according to this vision are state-of-the-art or innovative producers, companies or agroindustries.

This mode represents the agricultural technological development vision under a market perspective. It is the result of the growing interaction of private initiatives with public R&D institutions, both as partners and as customers. This interaction is carried out through the

demand of products and services, financing research products, commercializing technologies, etc.

A strong link between the Technology Transfer Area and the Technological Business Management Area is required, considering the different socio-economic profiles of the productive players and the different levels of integration of the agrifood chains. This diversity requires different technology transfer and technological business management solutions. Among these solutions, it is pertinent to highlight the Regional Innovation Consortia managed by the Technological Business Management Management Office. This model of public-private interinstitutional linking model implies a strategy of alliances to find interests in common among the diverse players in the chains, complementing resources to reach objectives that players would not reach individually.

4.6 Training

This implies the articulation of INIA with diverse governmental institutions related to education and further training. From a wide perspective, it also implies the participation of postgraduate students and interns in different research projects developed at the Institute, and the participation of INIA's scientists in regular courses given by universities, technical schools and tertiary education institutions. The training of trainers is also established, mostly of technicians participating in different programs organized by the Ministry of Agriculture and technical assistance institutions. Another important aspect of this mode are the distance courses organized with other national and international organizations.

These activities may contribute to the consolidation of INIA's role in the development of a public system of rural extension, training of students, professionals and technicians, that is, in a work market focused on the innovation of productive systems, contributing to the growth of the technology transfer, technical assistance and rural extension market.

4.7 Participation in rural development processes

Although it is not INIA's role to lead rural development processes, the institution shall participate in those processes as an important player contributing with technology from its different research programs. Rural development projects led by Ministries, Municipal Governments or other Institutions shall be supported in different territories and regions, making reference to the area of influence of the different Regional Offices.

5. MAIN COMPONENTS OF THE TECHNOLOGY TRANSFER STRATEGY

- Standardizing concepts, definitions and scopes of the different technology transfer processes where INIA is involved (diffusion, transfer, development, etc.).
- Implementing actions, taking the "productive group" as a reference (see item 8.2 of the Integrated Policy), focusing on advisors, companies, business producers, family producers and agroindustries to make the generated information available. The activities shall be carried out directly by INIA or in agreement with other public or private technology transfer, technical assistance or extension Institutions/Organizations.

- For the different audiences, the Technology Transfer Strategy shall be based on the model of intervention "fans", which includes six modes to promote the flow of information in the rural environment (see Figure 2). The combination of tools and the activity plan shall be defined for each case, and a systematic periodic evaluation of transfer activities shall be performed, assessing the level of satisfaction, results and impacts.
- Adapting the technology transfer strategy to each National Research Program and Regional Office, upon consideration of the recipient audience.
- Consolidating the planning of technology transfer processes when developing research projects, and adjusting this annually for each programmatic or regional project, defining audiences, activities and products.
- Making the information already generated by Research Programs, and any requested information available through different written and audiovisual documents addressed to different audiences, for fast and effective diffusion.
- Strengthening and generating networks to facilitate the connection of the Institute with producers organizations using group techniques.
- Supporting the actions of Working Teams and Regional Advisory Councils as INIA's instruments to forecast demand, as a way to determine in advance any technological information requirements, according to the guidelines (INIA, 2007).
- Incorporating new demand forecast methods (forecast team and planning team) complementing the work mentioned above, in order to anticipate demands, predict events and future events, prioritize research, diffusion and technology transfer related issues.
- Complementing the demand forecast with research activities that may be performed in agreement with other institutions/organizations or producers.
- Participating in the ad-hoc group of socio-economic research mentioned in the Integrated Policy, in order to improve the knowledge about users and their needs, carrying out the corresponding intervention proposals.
- Strengthening INIA's Technology Transfer Area, setting up a specialized team at each Regional Office that works in coordination with the Communication Area.
- Participating in the ad-hoc information group managing information, editing and organization, together with the Communication Area, the Technological Business Management area and other areas.

6. TECHNOLOGY TRANSFER ACTIVITIES

- Defining and prioritizing the target audience for each National Research Program and all five Regional Offices, in coordination with their technicians.

- Developing an institutional mapping per region/production chain to improve knowledge of the environment and contribute to the execution of Technology Transfer and Validation agreements and early cooperation with public or private technical assistance and extension institutions.
- Organizing an event that provides a "national look" at the prioritization of audiences at the Program and Regional Office levels, and also at transfer, validation and early cooperation agreements that have been prioritized, in order to make the processes more effective and avoid the duplication of efforts.
- Performing an inventory of the technology available and requested regarding each Research Program. Developing a plan to make the information generated available in different formats according to the prioritized audiences, and determining the intervention modes at the regional level for the information that is being generated.
- Carrying out and executing an Annual Plan of Technology Transfer Activities adapted to the reality of each National Research Program / Regional Office, generating mechanisms to monitor activities and evaluate results and impacts.
- The plans must be carried out in strong coordination, rationalizing the use of resources and the development of activities, in order to avoid a dispersion of efforts.
- Any activities to be developed that are not included in the Plan must be explicitly approved by the Regional Director.
- Defining an adequate combination of tools to use in the Technology Transfer Strategy, according to each situation (audience, region, area). The use of traditional tools (field days, seminars, mass media) in combination with innovative tools (ICTs, group techniques, participatory research, etc.) is suggested.
- Dynamizing the operation of the Working Groups and Regional Advisory Councils through the development of the annual plan of meetings, jointly with the Program Directors and the Regional Directors.
- Carrying out an annual schedule of visits or meetings, including the Departmental Agricultural Councils, to tighten links with institutions related to the Regional Offices, with a focus on the development of each area.
- Participating in the group that devises and executes research projects related to adoption, technical change problems and decision-making logics, in order to contribute with more solid bases for future intervention proposals.
- Participating actively in the ad-hoc group managing institutional information.
- Creating the Editing Committee for standardization of all INIA's publications.
- Adjusting the transfer activities to carry out in coordination with the Communication Area

- Using new communication tools (ICTs) in agreement with the requirements specified, in coordination with the Information Technology Unit (distance training, Web conferences, etc.).
 - Developing technical contents for the elaboration of audiovisual products of diffusion of technologies.
 - Developing technical contents for the edition of diverse publications: articles in agricultural journals, INIA's magazine, technical bulletins, technical series of publications, other INIA publications, arbitrated publications, etc., adapting the language to the target audience.
 - Contributing with technical contents for mass media within the framework of the multimedia strategy: press, TV, audiovisuals, radio, exhibitions, for extensive diffusion of the technology generated.
 - Providing technical contents for new developments of the web page, in coordination with the Information Technology Unit.
- Coordinating with the Technological Business Management area the activities to promote networks and consortia, demonstrations and development of technologies and promotion of innovations.

7. TECHNOLOGY TRANSFER STRATEGY TOOLS

INIA shall use different channels or tools in its Technology Transfer Strategy.

During annual planning, each Regional Unit and each Program and/or Project shall determine the priorities and combination of the channels to use to make information available for its adoption and adaptation, in accordance with the institutional objectives and guidelines.

A plan to be present in mass media shall be developed. As a general aspect, a multimedia strategy shall be undertaken, that is, the same issue shall be addressed through different channels. The different media to use are the following:

7.1 Mass media and/or media with wide coverage:

7.1.1 Press

Used for public awareness and dissemination of activities.

7.1.2 Specialized Press

Used to mark institutional presence in agricultural magazines or journals.

7.1.3 Television

National and local television is used to address the audience through agricultural programs.

The presence in such programs may be through:

- News presentations
- Technical interviews
- Broadcast of INIA's videos

Besides, the Institute will be present in non-agricultural programs, providing wide information about its actions with the purpose of raising the awareness of society and promote the institution.

7.1.4 Audiovisual Products

Development of institutional audiovisual products related to the institutional image and/or technological issues in coordination with the Technology Transfer and Technological Business Management teams.

7.1.5 Radio

This is a suitable means to address messages to producers mostly. This means will be used to disseminate information on activities, products and processes, such as the launch of new technologies, to stir up interest in the potential adoption of such technologies

Interviews in national and local agricultural shows will be used.

7.1.6 Website

The website will be used to make the information on research projects, technical services (for example, weather information), activities and publications available to the public.

7.1.7 Electronic Bulletin

Its purpose is to inform the users about any updates in the website, and to submit invitations to participate in INIA's activities.

7.1.8 Agricultural Trade Shows

These will be used to inform on the progress made on different research projects undertaken by INIA.

7.2 Publications

Publications are an important component of the Technology Transfer Strategy.

INIA will offer varied publications to meet the needs of different audiences:

7.2.1 Serie Actividades de Difusión

Publication used at INIA's presential activities for better understanding and provision of further information.

7.2.2 Serie Técnica

Publication for easy transfer of technological information for recommendation formulation and/or adjustment, mostly addressed to technicians. The contents of this type of publications are experimental papers of reference, notes on technical seminars or journeys and bibliography.

7.2.3 Boletín de Divulgación

Publication addressed chiefly to producers, to provide practical and easily applicable technological information as support to their decision-making processes.

7.2.4 Hoja de Divulgación

Publication to provide information mostly to producers, as practical and specific recommendations.

7.2.5 Revista INIA

INIA's magazine is available by subscription and published periodically to present information on progress made in research works in different areas, with a balanced technical and journalistic approach.

7.2.6 Serie FPTA

Publication providing information on the results of projects carried out with resources from the Fund for Promotion of Agricultural Technology (FPTA) and other competitive funds.

7.2.7 Yearbook

Publication summarizing the annual activities in different Management Offices, Programs, Regional Units, Other Units, Services, etc.

7.2.8 Temas Institucionales

Publication which purpose is to provide information on the organization and institutional operation strategies.

7.2.9 Book

Unit publication printed and published by INIA in one or various volumes, fascicles or issues.

7.2.10 Revista Agrociencia

Publication edited jointly with the School of Agronomy of the University of the Republic. It is a channel for presentation of scientific papers, as it is the only arbitrated agricultural magazine of national coverage.

7.2.11 Article in arbitrated magazine or referenced international publications

INIA shall facilitate the publication of articles in national or foreign arbitrated scientific magazines and congresses. This is being used as a national and international indicator in the scientific world, and is currently promoted in Uruguay by the National Research System. These articles are an indicator of the productivity of scientists and institutions, and are also used to validate research, as an extensive bibliographic review, adequate statistical design and data processing, and a clear summarized description of the results and conclusions are required.

This international peer validation method is globally applied but it is not the only validation method. There are other validation mechanisms associated to the effects and impacts of such results on the development of value chains and/or on rural development.

7.2.12 Posters

Format to present technological information in Congresses or International Conferences.

7.2.13 Brochures

Printed leaflet for mass diffusion of INIA's products (new materials, cultivars, etc.) or to raise awareness about specific management technologies.

7.2.14 CDs

Alternative means to compile information to present in Congresses or Seminars.

7.2.15 Inserts

A single sheet (two pages) containing a practical description of certain technology. These are mainly addressed to producers.

7.2.16 Catalog

Annual publication containing the genetic evaluation of breeders of different breeds.

7.2.17 Manual

Compilation of techniques that addresses certain production system in a systematic way.

7.2.18 Guide

Brief publication to be used during a field day, containing a map and a general description of field tests or an Experimental Unit.

7.2.19 Special Publication

Special publication for any issue of particular interest at a certain time.

7.2.20 Calendar of Activities

Table calendar containing all the presential activities planned for the year.

7.2.21 Other Publications

Publications not included above.

7.3 Presential Activities

INIA's presential activities for technology are the following:

7.3.1 Field Day

Activity carried out in the open air to show methods, new developments or results.

7.3.2 Technical Journey

Scheduled activity for technicians that may take place at trade shows inside or in the open air, including demonstrations.

7.3.3 Information Journey

Scheduled activity for producers that may take place at trade shows inside or in the open air, including demonstrations.

7.3.4 Technical Meeting

Non-scheduled activity organized upon demand for technicians that may take place at trade shows inside or in the open air, including demonstrations.

7.3.5 Information Meeting

Non-scheduled activity organized upon demand for producers that may take place at trade shows inside or in the open air, including demonstrations.

7.3.6 Conference

Presentation lasting two or three hours on a specific issue, carried out at INIA or outside it.

7.3.7 Workshop

Group activity based on the discussion and exchange of ideas among the participants, by means of which a specific product is obtained (diagnostic, suggestions, recommendations, proposals).

7.3.8 Technical Update Seminar

Activity addressed to technicians where several experts provide updated information on a specific issue. It includes an evaluation and certification or certificate of attendance.

7.3.9 Workshop-Seminar

Activity addressed to a relatively small number of persons with presentations of experts who provide updated information on certain issues to a group of participants, and group work or discussions among participants.

7.3.10 Congress

National or international activity organized or supported by INIA for presentation of papers on an issue.

7.3.11 Course

Activity addressed to technicians or producers, where a group of experts provides systematically practical and updated information to a reduced number of participants.

It includes an evaluation and certification or certificate of attendance.

7.3.12 Visit

Scheduled visit to Experimental Stations or Experimental Units, both by institutions and stakeholders.

7.3.13 Meeting with groups

Activity with the purpose of providing specific information to formal groups addressing specific requirements.

7.3.14 Teleconference

Remote live exchange by TV or computer.

7.3.15 Distance course

Non-presential course where the attendants receive printed publications, digital files, CDs, videos or other tools to follow the course schedule. There is a supervision and queries system implemented by e-mail.

7.4 New communication channels

Maintain a proactive attitude toward the search for opportunities and development of new communication channels to improve technology transfer.

Chapter 3. Technological Business Management Strategy

Authors: **José A. Silva¹³**
 Miguel Sierra¹⁴

¹³ Agronomist (M.Sc.), Manager, Technological Business Management

¹⁴ Agronomist (PhD.), Manager, Technological Business Management

1. INTRODUCTION

The main point of the strategy is the focus on innovation, so that INIA's guidelines and policies promote stronger efforts on the articulation and coordination of actions among public and private players, fostering links between science, technology and market. In this sense, the articulation with the National Science, Technology and Innovation System becomes relevant to strengthen links and coordination with research institutes, universities, producers and industrial associations, and those responsible for the management of the scientific and technological policies in the country.

It is important to highlight that the strategy consists in involving in the innovation process in a selective manner, prioritizing alliances, avoiding the dispersion of efforts and working more precisely on INIA's specific R&D + I profile, as defined in its strategic plan. In other words, involving itself selectively means adopting a proactive attitude to search and promote alliances, without neglecting the capacities applied to the compliance of those actions set as a priority in the institutional strategy.

2. OBJECTIVES OF THE TECHNOLOGICAL BUSINESS MANAGEMENT STRATEGY

2.1 General Objective

Articulating with the National Science, Technology and Innovation System and fostering stronger efforts to cooperate and coordinate actions among public and private players, promoting the links between science, technology and the market, and furthering innovation with the creation of new products, the development of new processes and the provision of new services, with the purpose of fostering agribusiness activities and the generation of employment, while contributing to insert INIA into agricultural and agroindustrial activities with renewed strength.

2.2 Specific Objectives

Establishing the guidelines and general procedures to develop institutional cooperation in accordance with the strategic definitions established in the institutional plan, contributing to integrating INIA with renewed strength to the economic activities of national agribusiness.

Performing an inventory of organizations, players and public and private parties related to the institutional strategic objectives. Defining which are the relevant "partners" to comply with the strategic guidelines defined.

Promoting an institutional space for private companies and entrepreneurs related to INIA who wish to innovate, under different forms of cooperation, for development and financing of R&D + I projects.

Expanding the scope of institutional action, both regarding territory and issues, generating critical mass, expanding the approach and managing and articulating alliances.

Continuing and strengthening actions on early alliances for breeding projects, market surveys, business plans, development of technological products, development, validation, release, licensing and commercial monitoring of new cultivars and other technological products.

Focusing International Cooperation actions on the implementation of a "technological antenna", in the framework of the new institutional strategic guidelines, activating a hierarchical policy on international strategic alliances for INIA.

Strengthening efficient mechanisms to protect INIA's intellectual property rights.

Promoting institutional consultancies at the national and international levels, in order to transfer know-how to the productive sectors and governmental sectors who wish to innovate.

Forecasting new agribusiness with the purpose of capturing opportunities for new technological developments of interest for the national agricultural sector.

3. TARGET AUDIENCES OF THE TECHNOLOGICAL BUSINESS MANAGEMENT STRATEGY

The main target audiences of the Technological Business Management Strategy, according to those established in the Integrated Policy, are the following:

In the Institutional Group, the priority are the links with the government, rural associations, institutions and organizations, as well as universities, the scientific community and the general society.

In the Productive Group, all the audiences defined in the Integrated Policy are addressed, setting priorities according to the actions developed by each National Research Program.

In the Internal Group, all the audiences defined in the Integrated Policy are considered.

4. MAIN COMPONENTS OF THE TECHNOLOGICAL BUSINESS MANAGEMENT STRATEGY

4.1 Promoting innovation

One of the most important actions of the strategy is to manage, incorporate and develop capacities so that INIA acts as a catalyzer of technological change. This means that beyond INIA's functions related to technological research and diffusion, its actions must be focused on technological business management, to present INIA as a "technological partner", seeking that the majority of the results of scientific and technological research done by INIA or any third parties become effective through new processes, products or services that, either commercialized or not commercialized, benefit the quality of life of the society, contributing to responsible environmental management and social equity.

4.2 Strengthening INIA brand

The purpose of these actions is to increase the presence of INIA in the market of technological products, including the identification of the brand with INIA's logo, in order to establish the technological support of the product. The brand is a strategic tool that strengthens an organizational communication approach towards the institutional and productive sector where the Institute and its customers develop their actions.

The strategy is to promote INIA brand as a synonym of excellence regarding agricultural technology, with the view of a brand open to the society and promoting continuous development, thus differentiating itself from other companies or public institutions.

4.3 Managing intellectual property rights (IPR)

Intellectual property is particularly important to create and operate alliances, as it is one of the main incentives for joint participation in research projects by the private and public sectors.

IPR protection policies are in furtherance of the efforts made by national scientists, promote private investment and innovation alliances, and facilitate the incorporation and diffusion of state-of-the-art technology in the country, so that the sector benefits from the the latest developments and technological achievements, thus increasing competitiveness.

4.4 Promoting alliances with the public and private sectors

The scenario where agribusiness develops requires greater innovations to be sustainable and competitive in economic, social and environmental terms. Comprehensive and harmonic development is a complex process that requires diverse efforts from all players involved. The main question seems to be the coordination of actions in a multi-directional environment covering regulatory and technological aspects and organizational management in order to promote innovation using the capacities available more efficiently and effectively.

This leads to promoting higher coordination among players, furthering the articulation among science, technology and market. In this sense, the National Innovation System becomes more important, involving the generation and diffusion of cooperation agreements, networks, consortia and public-private alliances contributing to the development of new technologies.

4.5 Promoting international cooperation

INIA acknowledges that it is strategically important to develop and maintain a strong and active cooperation with the most relevant regional and international science, technology and innovation sectors for efficient and effective resolution of the problems faced by its R&D Programs and for its organizational development.

The institutional strategy privileges international cooperation through alliances formalized by agreements or memorandums of understanding, and materializing its implementation through the exchange of scientists, genetic information and resources, training, consultancies, and mostly through the development of joint R&D projects. These increasingly include agreements

on commercialization of technologies and products generated or transferred under a joint project. Other cooperation modes are regional and international networking and regular programs of international centers and institutions.

The promotion of scientific cooperation, technological development and innovation require a strong impulse as the essential support of innovative development at the national level.

International cooperation is increasingly becoming an instrument to extend capacities among different countries, generating solid bases for transfer and incorporation of modern technologies from the most advanced countries, thus reducing the technological gap.

4.6 Promoting leadership in technological business management

INIA assumes the commitment inherent to public institutions of becoming the initial leader of the technological business management process, articulating and coordinating actions with the players of the National Agricultural Innovation System, contributing to rationalize the investments in R&D made by the society, giving clear signals to mobilize the private sector and strengthening the social responsibility of each player.

In order to improve capacities and increase the efficiency of the R&D process, the new articulation model requires greater interweaving between the research world and the production sector, particularly that with a greater technological base. The purpose is to focus the generation of knowledge and use it in the development of product innovations and productive processes. Knowledge management, with a focus on increasing competitiveness, requires leading "intelligent" strategies to achieve effective changes.

In this context, the role of INIA in the articulation and development of associations must be strengthened, and leading and managing must become a new proposal of organizational model of public/private articulation in the country.

4.7 Promoting technological business

INIA conceives the development of agriculture as the promotion of agribusiness. From this perspective, it is necessary to offer new answers to the production of food and natural fibers for the markets. These times require the provision of more demanding services to consumers to sustain the markets and maintain or increase the income of different players in the chain, contributing to promote rural work and mitigate the environmental impacts of the productive systems.

Due to the comprehensive perspective of agribusiness, INIA faces the important challenge of developing a new institutional cooperation model promoting the coordination of the actions of different players involved in the process of technological change. It is necessary to articulate the process around demand-focused productive chains, seeking for greater economic efficiency in accordance with the specific features of the territory and social equity as the main factors of sustainable development.

4.8 Promoting networks and alliances

Advancing in the search for interinstitutional synergies, with varied cooperation models, for proper management of the heterogeneity of players and their different demands. Maximizing the institutional experience acquired, the availability of instruments as the FPTA and other funds, positioning INIA in a privileged place to participate in, activate and negotiate innovation networks. In this sense, the Institute will attempt to position itself, while strengthening its institutional development and maintaining the specificity of its objectives, by focusing on prioritized issues within the framework of the public policies and governmental guidelines, and shall try to contribute with and articulate its capacities with other institutions, in order to complement specificities with different players. Besides, given the importance of external cooperation to capture the latest technological scientific knowledge, it shall develop a strategy of technological forecast and surveillance for identification and selection of partners, project international cooperation as a way to respond to the changes in the international scenario, and to the changes in the national policies on external cooperation, in order to facilitate and duly incorporate the technical and scientific developments generated in other countries.

4.9 Addressing aspects that are important to the society

It is evident that cultural and social values affect scientific research and technological innovation, and these, at the same time, affect cultural and social development in a specific territory.

INIA emphasizes on technological business management by integrating and articulating institutional capacities in education and training in alignment with social demands. The Institute promotes the settlement of well trained human resources who are able to generate changes in the environment in different places in the country, other than the capital, thus opening real possibilities for human development and social equity.

Likewise, it is necessary to strengthen capacities to solve specific problems, in order to address the needs of the society and meet the increasing demands of the market, which permanent dynamics is the rule of the globalization game and the information society, which is in constant evolution.

5. TECHNOLOGICAL BUSINESS MANAGEMENT ACTIVITIES

5.1 Activities related to alliances with the public and private sector

The following actions might be taken to strengthen alliances:

- Developing capacities to implement R&D + I projects together with INIA.
- Developing alliances with the institutions under the National Innovation System at the national and regional level, with the participation of municipal governments.
- Promoting forums, committees, tables and spaces of participation and understanding among the players in different chains, with public and private participation.
- Promoting private investment in public-private alliances, prioritizing the creation of innovation consortia.

- Creating "seed funds" for initial activities.
- Proposing the strategy and the development of technological business at the national and international level.
- Promoting alliances granting licenses for the commercial exploitation of technologies.
- Training scientists on issues related to copyright and negotiation with private parties.
- Promoting the integration of INIA's scientists into national and international networks specialized in R&D, as an instrument to maximize the capacities of the Institute.
- Diffusing widely any successful cases and experiences.

5.2 Activities related to the management of intellectual property rights (IPR)

Some IPR actions to strengthen cooperation are the following:

- Defining intellectual property rights before achieving results of R&D projects, as negotiation of this issue may be more difficult and might be a point of conflict if it is not addressed on time.
- Reinforcing the importance of and raising the interest in IPR among INIA scientists.
- Promoting and providing training on the adequate IPR management policy, in particular on the enforcement of regulations on protection of inventions.
- Promoting spaces of defense of IPR.

5.3 Activities related to international cooperation

Some international cooperation actions to comply with this objective are the following:

- Identifying opportunities, promoting and supporting the development of alliances and scientific and technological business management actions with international institutions.
- Supporting the implementation of INIA's "strategic antenna" to capture new technological and scientific know-how through forecasting actions and technical exchange programs, and prompting the development of joint research projects with institutions of excellence at the international level.
- Supporting and promoting the development of consultancies abroad.
- Promoting the development of these aspects in articulation with the National Science, Technology and Innovation System

5.4 Technological Business Management activities to carry out in coordination with the Communication Area

- Strengthening the institutional image.
- Communicating aspects that are important to the society

5.5 Technological Business Management activities to carry out in coordination with the Technology Transfer Area

- Alliances, networks and consortia.
- Demonstration and development of technologies.
- Promotion of innovations

6. TECHNOLOGICAL BUSINESS MANAGEMENT STRATEGY TOOLS

Licensing of INIA's technology nationally and internationally.

Development of R&D+I alliances generating new products with INIA's technology at the national and international level.

Promotion of INIA's technology stimulating transfer in specific agreements with companies. The diffusion of the technological offer enables to incorporate new customers with specific requirements for development of business based on new services and/or products.

Managing intellectual property rights.

Using and developing INIA brand in the identification of products and/or services with added value and identity to communicate with the customers.

Managing and protecting the portfolio of INIA brands, which includes the core «INIA» brand, at the national and international level.

Commercialization of products and technological services at the national and international level.

Facilitating relationships among national and foreign players promoting business channels through international technological business management.

GLOSSARY

Adopt: To receive methods, doctrines, ideologies, fashion, etc. which have been created by other people or communities, making them one's own (DRAE - Dictionary of the Royal Spanish Academy).

Adoption Technology adoption is a key aspect and depends on an individual decision of the producer. It is affected by the available financial and physical resources owned by the producer, and also by his level of knowledge, skills and abilities, as well as his willingness to change his production methods. This change is complex in nature; it includes changes in knowledge, attitude and behavior (Arrieta, 1995).

Innovation adoption in productive organizations may be of various types (Rogers, 1995):

- Technological adoption (Production and information)
- Work organization adoption (New forms, flexibility)
- Organizational know-how adoption
- Organizational communication adoption
- Administration and finance adoption

Adoption Survey: Field study designed to determine the rate of adoption of the technologies recommended for the project by the target group, and to explain the reasons for different adoption patterns (Horton, *et al.*, 1994).

Agrarian Development: This term adds the concepts of development and agricultural development to the study of the economical, social, cultural and political factors that have an influence on agricultural production. Their analysis must be performed from a historical perspective (Trigo, personal communication).

Agribusiness: All activities of production, processing, and marketing of products whose main raw material is of agricultural origin (Caputti, 2007).

Agricultural Development: It includes the understanding of the agricultural and economic aspects of agricultural production, in order to improve productivity and the agricultural produce. It focuses on the study of production systems and the dynamics within an agricultural production unit. This concept is associated with the classic agronomic meaning of production, which focuses almost exclusively on the technical problems of agricultural production (Trigo, personal communication).

Agricultural Extension: This teaching/learning process focuses on production, food safety in farms and in the city, and the competitiveness of the companies operating fully or in part in the country (Alarcón *et al.*, 1997).

Agricultural Research: Service which results must be referred to the development of the country, the economic feasibility of their application and the social characteristics of the final recipients of research. Thus, research is not an end in itself, but is referred to the community to which it is intended (Araújo, 1974).

Applied Research: This term includes the activities normally identified as research and development (R&D). It includes the activities focused on the transformation of the results of basic research into new goods and services, and on those activities aimed at improving processes (Trigo *et al.*, 1985).

Baseline/Baseline Study: Description of a situation before the implementation of an activity or project. It is used to measure results and achievements and serves as a benchmark for subsequent evaluations (Horton, *et al.*, 1994).

Beneficiaries: Individuals, households, organizations, communities or other units affected positively by a program or activity (Horton, *et al.*, 1994).

Communication: Communication may be defined as the process which, through the creation and exchange of signs, reproduces or modifies the values of a society. (Calvelo Ríos, 1998). From the organizational standpoint, communication processes allow the system to interact with its environment through mechanisms that work and flow continuously from the inside out through the organizational dynamics. Thus, communication is considered a strategic area of intervention, as it acts as an articulation node that provides organized systems the approach and articulation aimed at the development of standardized courses for joint action from the organizational mission and the plurality of the audiences that relate to it (Cozzi, Ferrero, 2004).

Consortium: An economic association in which a number of companies seek to develop a joint activity by creating a new partnership. Consortium means also the agreement whereby the shareholders of independent companies agree to relinquish control of their shares in exchange for partnership certificates entitling them to participate in the joint profits of the consortium. Participants in the consortium are called partners (<http://es.wikipedia.org/wiki/Consortio>).

Coverage: Ratio between the population that is part of the target group, which has the need and receives the services of the project, and the total population of the target group who has the need that the project intends to address (Cohen and Franco, 1993).

Culture (Organizational Culture): "Culture consists of a series of common values, knowledge and perceptions, but also and above all, of fundamental assumptions. (...) Represents the knowledge base on which to act, analyze and decide. (...) These shared beliefs and assumptions are common to a group of people, the fact of sharing is the criterion of their belonging to the culture." (Thevenet, 1992) Thus, the organizational culture appears as semantic space of coexistence among that which its members wish, what they feel as necessary and what they consider possible and correct to think, say and do. Behaves as an area in which there are expectations shared by its members who, from their daily actions, produce a network of meanings in relation to their functions, to their network of relationships and to the rules within their objectives in the work environment. Therefore, one speaks of a structure of meanings that marks the collective use and management of symbols, expressions and rules, which are articulated in a specific manner and settle into a system of beliefs and values, as well as patterns of behavior, relationships and material productions (Rocanova, 2007).

Development: Progressive and sustained change to achieve individual and collective interests through a better use of resources. It means that there is a change, technical or institutional, that

can increase production and improve distribution. There may also be a change in technology, institutional or socio-cultural framework, specifically in the attitudes and values of the population. It refers to the ability of the community to adapt to changes (Shaffer, et al, 2004), expanding the capacity to act, innovate and deal with new circumstances (Liechtenstein, Lyons, 2001).

It simultaneously involves, in its broadest sense, social, economic and environmental changes to improve the quality of life of the population. It is a multidimensional concept that incorporates the concerns about equity and social well-being. (Shaffer, et al, 2004). Complex process that implies the economic, social, cultural and political improvement of people and society; situation where the society is capable of meeting the physical, emotional and creative needs of the population at an acceptable historical level (Balarezo, 1994).

Diffusion: Process by which information, research results, technology or an innovation is communicated through certain channels over time among the members of a social system (Rogers, 1995). There is a focus on the concept of information transmission, which is different from the concept of communication.

Diffusion of Innovations: Process by which an innovation is communicated among the members of a social system. The pattern of communication among these individuals is a social network. The communication network is one of the factors determining how fast an innovation is diffused. (Rogers, 1995)

Diffusion of Innovations Theory: This theory seeks to explain the process of social change. Its four main elements are innovation, communication channels, time and social system (Rogers, 1995).

Diffusion of Technology: Dissemination of the existence of technological information, which does not imply the explicit responsibility of the producer to incorporate new technology into his production system. Diffusion strategies are field journeys, development of written material, demonstration fields, etc. (De Hegedüs, 1999).

Extension: The most common meaning of this term involves the conscious use of information communication to help people form their own opinions and make better decisions. (It may be conceived as an instrument to strengthen the self-learning and continuous innovation capacity of the rural communities toward competitiveness and sustainability. (Alarcón *et al.*, 1997).

The term is also understood as a non formal educational system that acts within the communities and through the teaching/learning process seeks changes in the knowledge, skills, attitudes and values of the population, in order to facilitate their participation as a development subject and object. With the learning process, any person, through his own attitude, changes his behavior thanks to an increase in knowledge, the acquisition of skills and the adoption of attitudes and values (Beltrán; Ramsay, 1997).

This process seeks the improvement of individuals as subjects and objects of development. Its purpose is to improve living conditions by modernizing work methods. Thus, it has economic, social, cultural and political goals, influencing the educational level and the overall level of rural life by meeting the specific needs of men, women and children (Beltrán; Ramsay, 1997).

Focus: This term refers to the basic planning philosophy followed for an intervention (Leeuwis, 2004.).

"Focused" Discussion Group: Qualitative technique to collect information. It is a meeting of a small group of people (6 to 10). Participants discuss ideas, know-how and experiences. Each person is free to comment, criticize or express points of view. A moderator guides the discussion. Participants are selected based on criteria that vary according to the objective of the meeting (Casley; Kumar, 1990).

Gap: Difference between products obtained and products expected, between existing and required inputs and between the current processes that need to be improved and those recommended to overcome their limitations. In this regard, an organization or a project may have gaps in products, inputs or processes (Bojanic, *et al.*, 1995).

Identity: "Identity is the set of invariable features that constitute the organization, making it singular and unique to the eyes of the individuals. (...) It is constituted for those features that the organization builds for itself, chooses as its fundamental strategy and preserves along time" (Schvarstein, 1991).

Image: "(...) there are as many classes of images as media to create it. An image is a figured representation, a visual, sound, poetic, literary, fixed, animated, material, mental or other figure of an original model. (...) The image should be understood as a subjective fact, a registration or representation formed in the mind of the person that perceives it.

Any real or ideal entity generates images to those who perceive it, so it is actually not only composed of things, but also – and fundamentally – of images." (Scheinson, 1993).

Information: "A datum is an original and not interpreted representation of a phenomena, while information is a set of one or more data that are memorized, classified, organized, related and interpreted in the framework of a context as a way to acquire meaning." (Cozzi, Ferrero, 2004) Thus, information is "(...) the result of a process of transformation of data, which purpose is to make them interpretable and usable as efficiently as possible to understand a phenomenon and to make the corresponding decisions" (Cozzi, Ferrero, 2004).

Innovation: Successful introduction of ideas perceived as new into a community or as the first commercial or genuine application of some new advance apart from research. (Shaffer, et al, 2004) «Sequence of activities by which a new element is introduced in a social unit with the intention to benefit the unit, a part of it or the society as a whole. The element does not need to be entirely new or unknown to the members of the unit, but must imply some discernible change" (James; West, 1990).

Local development: Process focused on efforts to strengthen the capacities of local societies, which covers a voluntary dimension, an organizational dimension, a design dimension and the implementation of local development policies and strategies. Development appears as a new way of thinking and acting in the context of globalization based on a local stance. Local societies face the challenge of how to insert themselves globally in a competitive way, leveraging their local and regional capacities through the strategies of different players. The local development approach necessarily requires considering multiple dimensions interacting in a certain territory:

economic, social, political, institutional, environmental and cultural dimensions that are mutually conditioned.

This approach articulates local and global aspects. The process requires development players and focuses on cooperation and negotiation among players (CLAEH, 1998).

Media: Mass media, interpersonal media and hybrid media under any form helping to combine different communication channels for "transportation" and exchange of visual, auditory, olfactory and/or tactile signs. Varied media may be used within the context of methods and methodologies (Leeuwis, 2004).

Method: From Greek: to seek specific objectives. The meaning evolved and is currently the following: A set of systematic procedures and techniques to address specific issues or problems. (Senge, 1994) Rational and systematic organization of means to reach objectives. Methods may be seen as a particular way to use mass media and their combination in the context of an activity. A method may be (but not always is) an element of a methodology. Some examples of methods are the following: Workshop, field day, group discussion (Leeuwis, 2004).

Methodology: Several methodologies are available for each innovation communication strategy. A methodology is a preset series of steps, procedures and activities for which one or more methods are used. Methodologies are generally labeled: Rapid Rural Diagnosis, Participatory Rural Diagnosis (Leeuwis, 2004).

Participation: Process by which communities or different social sectors, mostly marginalized or excluded, with legitimate interest in a project, program or development policy, influence them and become involved in decision-making and management of resources, thus becoming players in their own development (Alberdi J and Murguialday).

Participatory Development: Development conceived as the participation of people in an experience of mutual learning to which they are committed. It considers that people can only develop by themselves through their participation in the decision-making process and in cooperative activities affecting their well-being (Oakley *et al.*, 1993).

Participatory Research: Process that aims at the generation of knowledge, articulating in a critical way the contributions of science and popular knowledge, in order to refocus them on actions that transform reality. It uses research techniques that cause constructive exchanges between the scientist and the community, where all the stages of the process of research and social intervention are addressed jointly (Durstun and Miranda, 2002).

Rate of Diffusion: The theory of diffusion of innovations seeks to explain how a new idea or innovation spreads through a social group. It proposes that diffusion of a phenomenon initially follows an S curve, which shows the slow adoption of an innovation at an initial stage. The curve of diffusion increases as the number of adopters increases. As a result, the total diffusion of an innovation will actually follow a regular curve. (Rogers, 2005)

Rural Development: Sequential process of social change based on productive self-sustainability, with the purpose of improving the conditions of life of the community involved.

(Psychologist Antonio Lapalma, personal communication) This concept incorporates a concern for aspects that are not necessarily agriculture-related, such as public health, education, services, and production and marketing activities not directly associated with agricultural production (rural industry, crafts and commerce, etc.). It is a more comprehensive approach of agrarian problems and agrarian development. (Trigo, personal communication)

Rural Extension: This term focuses on teaching/learning processes regarding equity, governance and preservation of local culture and natural resources. An "interdisciplinary curricular space" and a "cross section of transversal disciplines", understanding the curriculum space as a place of confluence of knowledge coming from different disciplines and specific issues, based on reality or on the level of analysis under way (Rotondi, F. 2007).

Rural Territorial Development (RTD): Productive and institutional transformation process in a certain rural space, whose goal is to reduce rural poverty. The purpose of productive transformation is to articulate the economy of the territory in a competitive and sustainable manner. This concept highlights the importance of human capital. It seeks to achieve institutional development with the purpose of stimulating and facilitating the interaction and coordination of local players among themselves and with relevant external agents, and of increasing the opportunities for the population to participate in the process and obtain its benefits (Schetjman and Berdegué, 2004).

Social Capital: This term refers to institutions in their broadest sense, including social structures, political institutions, rules of the game, organizations, interests and motivations of the players in the economic and political reality. It preserves the importance of social organizational forms, including networks and non-formal mechanisms of participation, and particularly its institutional expression, as central to models of democratization, decentralization and strengthening (IICA, 2000).

Social networks, associations and social relationships that people have and from which they can obtain support for the maintenance and reproduction of their way of life (Ellis, 2000).

Technical Assistance Advisory service where the producer tends to play a passive role, as a receiver of information that is provided by the technical advisor. The goal of intervention is to solve technical problems, thereby increasing production, income or profit margin. The focus is the individual producer (Beltrán and Ramsay, 1997).

Technique: This term refers to the set of procedures of an art or science, and also to the expertise in the use of procedures (Arrieta, 1995). Just like tools, techniques are particular ways to operate a method (Leewis, 2004).

Technological Paradigm: Model and pattern to solve technological problems, based on principles derived from natural science and material technologies (Kuhn, 1962). Perspective that defines the importance of problems, models or research patterns (Dosi, 1982).

Technology: In its simplest sense, technology is the way how land, labor and capital combine to produce goods and services. Another way to understand technology is through the products obtained. The final form of technology is technology of processes, which focuses on how things are done or on the different forms of organization to reach a specific result. Technology is an

important component of the agricultural production process, including the progress of scientific knowledge and the incorporation of this knowledge into products, processes and improvements in decision-making.

(Shaffer, et al, 2004) Technology is a set of knowledge elements, both practical and theoretical, **know-how**, methods, procedures, success and failure experience, and of course, physical devices and equipment (Dosi, 1984).

Technology Trajectory: Pattern of technological evolution (of a company or sector) as a result of the interaction among the "routinized" decisions of agents limited by the possibilities offered by the technological paradigm (Dosi, 1984).

Technology Transfer: "In a broad sense, it may be defined as the transfer of a technology, technique or knowledge developed in an organization, to another where it is adopted and used". (Melkers et al, 1993) The purpose sought through transfer is to replace a system of concepts or models by other systems. It seeks to perfect technical operations to obtain better results. By extension, the term may also refer to the stages of generation, diffusion and final use or adoption (Beltrán and Ramsay, 1997).

Territory: Dynamic space where productive, cultural, social and political processes occur. It is also the point of intersection among agents, markets and public intervention policies (Otero, 2003).

Theory: Fundamental set of propositions regarding the functioning of the world, which has been subject to repeated verifications (Senge, 1994). New theories penetrate in the world of practical affairs when translated into methods and tools.

Tools: Object used for manual works. By extension, the term refers to any mental "utensil" that allows us to perform a task. (Senge, 1994) A tool is a particular way to make a method operate. For example, a prioritization matrix may be developed on the sand, marking priorities with stones, or on a sheet of paper, marking priorities with a cross (Leeuwis, 2004).

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