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AN EXAMINATION OF THE REGIONAL ADVISORY COUNCILS OF THE NATIONAL AGRICULTURAL RESEARCH INSTITUTE (INIA) OF URUGUAY: A CASE STUDY OF "INIA LA ESTANZUELA" RESEARCH STATION

presented by

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has been accepted towards fulfillment
of the requirements for the

M. S. degree in AGRICULTURAL AND EXTENSION EDUCATION

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An Examination of the Regional Advisory Councils of the National Agricultural Research Institute (INIA) of Uruguay: A Case Study of "INIA La Estanzuela" Research Station

By

Ernesto Restaino Galup

A THESIS

Submitted to
Michigan State University
In partial fulfillment of the requirements
For the degree of

MASTER OF SCIENCE

Department of Agriculture Natural Resources
Education and Communication Systems

2003

ABSTRACT

An Examination of the Regional Advisory Councils of the National Agricultural Research Institute (INIA) of Uruguay: A Case Study of "INIA La Estanzuela" Research Station

By

Ernesto Restaino Galup

The National Agricultural Research Institute (INIA) is a public non-governmental, agricultural research institution located in Uruguay. The Law creating INIA specifies the installation of Regional Advisory Councils (RAC) as a participatory and collaborative mechanism to involve stakeholders in the planning and prioritization of agriculture research agenga. RAC members represent farmers, and agricultural organizations. This study was conducted to assess the perception of RAC members and research staff as to their participation in this system. This study followed a combination of mail survey and personal interviews to ascertain the perceptions of RAC members and research staff about RAC members' selection, representation, linkages, major perceived barriers, major areas of responsibilities, and relevance of the councils. Findings indicate that the RAC are relevant instruments in guiding research and in providing linkages. A large representation of major stakeholders was reported. Lack of operational guidelines prior to joining the councils, broad meeting objectives, lack of prior knowledge of meeting purposes, and lack of timely communication were reported as major procedural barriers. Confusion regarding membership status, involvement of young people, and length of services of council members in the various functions was also reported as weaknesses.

DEDICATION

To my parents, for their life of hard work and sacrifice

to support my education.

To my wife Daniela, for her love, unconditional support, encouragement,

and for sharing her life with me.

To my loving, creative and little crazy children, Silvina and Joaquín, for being

my source of energy and constant motivation.

ACKNOWLEDGEMENTS

My deep appreciation and thanks are expresed to Dr. Murari Suvedi, who served as my academic advisor, for his guidance and valuable teaching.

Many thanks are extended to Dr. Manuel Chavez and Dr. Frank Brewer, members of my committee, for their support and constructive suggestions.

I owe a deep gratitude to Dr. Joe Levine, for his friendship, guidance, valuable encouragement, and empowerment. Thanks, Joe!

Many thanks are expressed to all the farmers, stakeholders and INIA researchers that participated in this study; to Ms. Benedetto, Mr. Vergara, Pam Bartholomew, and Linda Swain for their important help in this study.

I wish to thank to my organization, INIA, for this opportunity of professional development, permitted by the valuable financial support of INIA/IDB project.

Special thanks are extended to the Tinker Field Research Grant of the Latin American and Caribbean Studies for granting this study the travel cost to conduct the data collection in Uruguay.

My gratitude is extended to the Office of the Vice President for Research and Graduate Studies and to the Graduate School, for awarding this research with the Research Enhancement Award.

Finally, my deepest gratitude is extended to Dr. Israel Cuéllar, Director of the Julian Samora Research Institute, for providing me with an instrumental and very timely assistantship allowing the conclusion of my Master of Science degree, and providing me also with a powerful, and rich work experience.

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CHAPTER I

Introduction

This research is about the study of institutions called "Regional Advisory Councils"(RAC) of the National Agricultural Research Institute (INIA) of Uruguay. RAC are considered as important mechanism to assess agricultural demands and as a customer linkage by national agricultural research organizations. More specifically, this study will examine the factors and the relationships that affect the performance of the "*Consejos Asesores Regionales*" (Regional Advisory Councils) at the National Agricultural Research Institute of Uruguay.

Assessment, evaluation, and prioritization of need of the clientele are the primary objectives for demand-driven agricultural research models (Allegri, 1999). The major challenge for the agricultural research organizations is to develop accurate methodologies that allow to collects needs from their clientele and update these needs periodically. Moreover, generally resources are limited; therefore those needs also should be prioritized in order to fit the needs and resources in research programs.

The National Agriculture Research Institute of Uruguay (INIA) is the main applied agricultural research institution in this country. INIA is a paraestatal institution created in 1989 over the existing base of the previous agricultural research institution, the "*Centro de Investigaciones Agrícolas Alberto Boerger*" (CIAAB). The CIAAB was reorganized in 1989 by a congressional law (Law 16.065, December, 1989), which transferred the entire CIAAB's patrimony and responsibilities to this new organization.

The four major changes in this new organization were: a) the farmers participation in the INIA Board, b) the funding sources, c) the new management style, and d) the mandate to create Regional Advisory Councils, which serve as instruments for need assessments and customer linkages.

The *Consejos Asesores Regionales* are considered by INIA as an important instrument to assess farmers' needs and to prioritize its applied research programs. Allegri (1999) stated that,

> *"Regional Advisory Councils at each Experiment Station provide an important forum for regular exchange of views and close contacts between farmers and INIA staff. They are the places where actual exchanges and participation occur."*
> (p.p. 115)

Farmers' participation in the Regional Advisory Councils has been emphasized for the last ten years. No studies have been made to assess the performance of the councils, yet there appears to be several limitations in their performance [1]. Therefore, it has been felt that a study on the contribution of the Regional Advisory Councils would be helpful to INIA and to strengthen the Regional Advisory Councils.

The objectives to be addressed by this research are: a) to identify the perceptions of INIA Regional Advisory Council members regarding the selection process of members and their contributions to INIA with respect to research needs assessment, b) to identify the perceptions of INIA research and programmatic staff regarding the Regional Advisory Council members, their selection, contributions, and performance, c) to compare and contrast the

[1] The researcher of this study has been member of the team responsible to work with six Regional Advisory Councils at the INIA Research Station "INIA La Estanzuela", for ten years (1990-2000).

perceptions of the Regional Advisory Council members and INIA Staff, and d) to develop recommendations for INIA to improve the operation and performance of the Regional Advisory Councils.

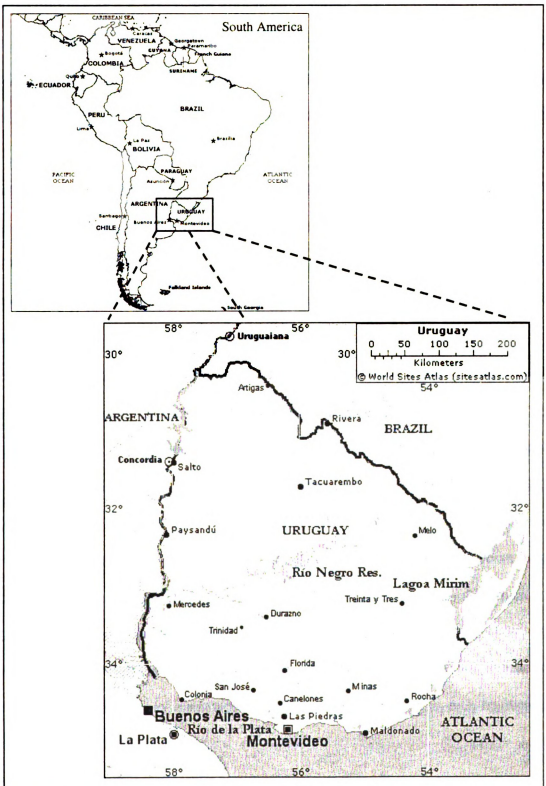
1.1. Overview of Uruguay

Uruguay is one of the smallest countries in South America (176,215 Km^2). In comparison with the United States, its area is about the size of the state of Florida. It borders to the north with Brazil, to the east with the Atlantic Ocean, to the south with the River Plate and to the west with Argentina. The country is characterized by a mildly rolling surface, with a maximum altitude of 140 meters, yet 90% of the land is suitable for agriculture (including about 9% of arable land).

Uruguay can be classified as humid subtropical. Its predominant vegetation is natural plain pasture, and the average annual rainfall is between 1100 and 1300 mm with minor seasonal variations; less rain in summer than winter. Uruguay has four seasons with averages temperature about 21 C (70 F) and 10 C (50 F) for summer and winter, respectively.

The total population of Uruguay is 3,400,000 (INE, 2002), 90.8% is urban and 9.2% is rural. In relation to education, 49% of the population completed elementary school, 34.5% high school, and 12.6% university level. The general literacy rate is 96.9% (rural 93.8%) (Presidencia de la República del Uruguay, 2001). Life expectancy at birth is 74 years, and the infant mortality rate is 15 per 1,000 live births (World Bank, 2001), which represents some of the higher social indicators in South America.

Figure 1.1 Geographic location of Uruguay.
Maps Source: Word Sites Atlas 2002.



Uruguay does not have important mineral sources. The economy of Uruguay depends on its agricultural sector. This sector has contributed an average of 9% to the gross national product (GNP) in the last ten years. However, for the year 2002 the contribution was 6.2% (Banco Central del Uruguay, 2002). Uruguay has traditionally been an exporter of agricultural products. In fact, agricultural production in Uruguay accounts for about 60 to 70% of exports revenues, and more than 90% of the food consumed by its population (OPYPA, 2002). Approximately 65% of the Agricultural Gross National Product comes from animal production (meats, wool, and milk) and 35% comes from crop production.

Total exports (goods and services) in the year 2000, accounted for US $ 2.3 billion and total imports were estimated at US $3.5 billions indicating a negative balance of payments for the country (Banco Central del Uruguay, 2002).

The official number of farms in 1990 was 60,000. Today there are about 57,000 farmers, due to the loss of small-scale farms (DIEA, 2002). Fifty-one percent of the farms are less than 50 hectares, 35% are between 50 and 500 hectares and the remainder (14%) are larger than 2,500 hectares (DIEA, 2002). Uruguayan farmers are both, full- or part-time farmers. In general, the full-time farmers live with their families on the farms, and the part-time farmers allow time for complementary employment activities and travel to the farms only to organize the work (IPA, 2002).

1.2. The National Agricultural Research Institute (INIA)

The National Agricultural Research Institute of Uruguay (INIA) is a relatively new national research institution oriented by a clientele demand model. In 1989, the Congress approved a government proposal based on ideas of some researchers, farmer organizations, professional associations and the scientific community. Accordingly, an autonomous, non-public, non-profit organization was created (Delpiazzo, 1993).

This new institution was created over the basis of the existent public research organization, called "Centro de Investigaciones Agricolas Alberto Boerguer" (CIAAB).

The main objectives of this new institution are a), to promote and execute applied agricultural research activities in order to contribute to sustainable development of the agricultural sector, and b) to articulate an effective transfer of technology generated through the technical assistance and extension organizations belonging to the public or private system. INIA is a decentralized institution, public non-governmental, and non-profit organization co-funded by farmers and government. Moreover, according to the actual research-technology transfer-extension system in Uruguay, INIA is responsible for 90% of the agricultural research (Allegri, 1999). INIA's status and structure allow it to act under private administrative regulations and as a private organization.

With the INIA's creation, farmers were involved formally, for the first time, in the management of the INIA organization through two representatives appointed by farmer organizations to the INIA Board. In addition, the *Consejos*

Asesores Regionales (Regional Advisory Councils) were created as broad-based vehicles for gaining additional farmer involvement. The INIA's Law creation also determines a farm tax (0.4%) to support the research operation, representing about 41% of the total budget of INIA. The total basic budget is derived from this tax, and similar amount is matched by Government funds.

1.3. The Regional Advisory Councils

The Law of INIA creation determines the existence of *Regional Advisory Councils (RAC).* According to Delpiazzo (1996), the Article 10 of the INIA's creation Law mandates the creation of Regional Advisory Councils, which will be composed by representatives of public and private institutions linked with the more significant agricultural activities developed in the region of the each research station. In addition, outstanding and well-recognized agricultural professionals with experience in extension will be included in the council. Consequently, farmers, technicians, and representatives from the main professional associations comprise those advisory councils. The major areas of concern are technological problems, research priority setting, and the identification of possible educational activities (such as field days, seminars, farmer visits, etc).

At present the INIA has five Regional Advisory Councils (RAC), with permanent and alternative members. RAC members are not remunerated by INIA. Permanent members could reach fifteen in number in each RAC.

Alternative members are invited to participate when their contribution is deemed appropriate according to the agenda (Delpiazzo, 1996).

The INIA's Law indicates a basic composition of these RAC, determining that each council should include: a) one or two members for each major commodity products produced under the research station area, b) three members with outstanding regional development and involvement representing the farmers community working in the area, c) one outstanding member representing the university, and d) one outstanding member representing the scientific agricultural community. Moreover, it is important to point out that one member of the group must be elected by the council as a president of the Regional Advisory Council (RAC).

The Article 31 of the INIA's Law, dictates that no new RAC can be created where no research station exists.

The Board of INIA, in the understanding that the Regional Advisory Councils do not have sufficient members base to provide a broad-based opinion from the clientele, requires the creation of commodity groups or *Working Groups (WGs).* There is no limitation in the number of WGs associated with each research station, nor in the number of participants. The linkage between a WG and within a RAC is due to the participation of the president and/or vice-president of the WG within the RAC as a permanent member. In the first year of INIA work (1990-1991), 24 WG were installed according to the major commodity products or productive systems. According to Albicette (2000), 26 WGs are actually operative due to some changes occurring according to the increment in the

relative importance of some goods and/or the closing or merging of some of them.

These two institutions, the RAC and the WG, are one of the most important elements used by INIA to address the clientele's needs. Moreover, they represent an important linkage with farmers and relevant agricultural actors.

1.4. Problem Background

Profound and permanent global changes are affecting the characteristics and the variability of problems. Market globalization and market protection increase the complexity of those problems and challenge farmers to obtain new technology in order to solve technological problems and to become efficient in the art of food production. These two previous statements are more important yet for a country like Uruguay, where the agricultural sector plays a substantial role in the general economy.

Agricultural research institutions are increasingly affected by global changes and the complexity of the external context, which increases the interdependence of economic sectors, higher technological requirements, and environmental and sustainable issues (Allegri, 1999).

With this environment in mind, it is essential to strengthen the linkages of all the actors involved in the agricultural sector to be successful. Therefore, participation, involvement and collaborative modes become essential. Participation and involvement requires the implementation of tools and skills to

drive and internalize the resulting inputs. Resources are limited, which requires the necessity of prioritizing.

The RAC and WG are considered by INIA as important ways to assess clientele needs. They work as "antennas" prospecting technological demands and at the same time, informing others external actors about research activities, assuring importance of INIA's decisions, and facilitating the communication flow process in both directions (Allegri, 1999). The RACs were created in the INIA's foundation law to include stakeholders' opinions in the agricultural research activities at the regional level. The INIA Board created the WGs as additional instruments in order to analyze the main technological limitations in depth, oriented by commodities or by production systems.

These original RACs, once defined, were responsible together with the Regional Director and the Transfer Technology Unit for the formation of the Work Groups (Commodity Groups).

The WGs do not limit the number of members. The connection between each RAC and the different WGs working in one region is achieved basically through to the participation in the RAC of one or two WG representatives.

After ten years of operation, those advisory councils have shown many limitations in their performance. INIA recognizes the importance of those groups, but feels the necessity to strengthen the relationships and identify methodologies to with which work. How to drive and empower those advisory councils (RAC and WGs) to establish rich, productive, and effective relationships is one of the mayor chalenges (Allegri, 1999, Restaino 1998)

1.5. Problem Statement

The problem to be addressed by this study is to identify and analyze the factors that affect the stakeholders' participation and functioning of the Regional Advisory Councils (RAC and WG). Moreover, the INIA's perceptions, behaviors and attitudes that affect their involvement with those stakeholders groups will be identified and analyzed.

The failure and/or the lack of methodology to work with those groups determine low stakeholder involvement. Moreover, over time those RACs and WGs suffer from low motivation, participation and lack of trust (Albicette, 2000; M. A. Allegri, 1999; Restaino, 1998). Besides, researchers feel that the feedback and inputs from RACs and GTs are feeble, and are affected by current problems

Johnson (1998) examines the experience of a stakeholder advisory group's attempt to guide a land grant's research priorities. This author states that the failure of a broad-based, statewide advisory group raises serious concerns for proponents of stakeholder involvement in research priority making. According to INIA's experience, the selection of RAC and WGs participants is an important factor related to the validity and reliability of those stakeholders' opinions (Restaino, 1998).

Hoefner (1998), argues that there is little published on stakeholder advisory processes and, therefore, little is known about which methods are useful and which are not.

The objectives to be addressed by this research are: a) to identify the perceptions of INIA La Estanzuela research station Regional Advisory Councils (RAC and WGs) members regarding the selection process of members and their contributions to INIA with respect to research needs, b) to identify the perceptions of INIA La Estanzuela research staff regarding the Regional Advisory Councils, their selection, contributions, and performance, c) to compare and contrast the perceptions of the Regional Advisory Councils members and INIA La Estanzuela staff, and d) to develop recommendations for INIA to improve the operation and performance of the Regional Advisory Councils of INIA La Estanzuela research station.

1.6. Research Questions

This study will seek to answer the following research questions:

1. What is the demographic and socio profile of Regional Advisory Councils members?
2. How were Regional Advisory Councils members selected?
3. What are the linkages between the Regional Advisory Councils participants and the major farmer organizations in Uruguay?
4. How do the Regional Advisory Councils participants perceive the methodology that INIA uses to work with those stakeholder groups?
5. What do Regional Advisory Councils members perceive as barriers, if any, in the functioning of the advisory councils?

6. What do INIA staff and managers perceive as barriers, if any, in the functioning of the advisory councils?
7. According to INIA, what are the areas of work for the Regional Advisory Councils?
8. According to the Regional Advisory Councils members, what are the areas of work for the advisory councils?
9. What is the relevance that Regional Advisory Councils members give to RAC and WGs in terms of identifying farmer research needs, farmer linkages, and farmer educational programs?
10. What is the relevance that INIA gives to RAC and WGs in terms of identifying farmer research needs, farmer linkages, and farmer educational programs?

1.7. Importance of the Study

This study becomes relevant in order to determine what the major barriers are to a better development of Regional Advisory Councils (RAC and WG).

It is expected that an examination of the related literature and the data analysis from this study will provide rich results and conclusions in order to generate a set of recommendations to improve the action of these important instruments and to strengthen the relationship between the INIA and its stakeholders.

In addition, it is the researcher's intention to contribute new information to other similar demand-driven models using stakeholder councils and/or to develop similar systems.

1.8. Definition of Terms

National Agricultural Research Institute (INIA) of Uruguay (Instituto Nacional de Investigacion Agropecuaria). This is the apex agriculture research organization in Uruguay created by the Law 16.065 in 1989. It headquarter is located in the capital city of Uruguay (Montevideo) and has five research stations distributed among the country.

Regional Advisory Councils (RAC) of INIA: groups of qualified informants (ten to fifteen) who functions as advisors and discussants concerning needs of farmers and the setting of priorities for research programs with INIA.

*Working Group (WG) of INIA: c*ommodity groups formed by knowledgeable members (twelve to twenty) who functioning to discuss technological problems. This environment provides a more homogeneous environment with which to discuss technological problems. Depending on the commodity production, one or two representatives of each WG are appointed to the RAC.

Advisory groups – Groups of knowledgeable people who will give advice concerning specific issues. For the scope of this study, this term can be extended to the RAC and WGs.

Clientele – Farmers, agricultural professionals, agri-industry and agri-business representatives and others agricultural actors who receive service from INIA.

Stakeholder – Groups of people who share a common interest in a particular issue or system, for instance: farmers.

Commodity – Agricultural product, such as milk, corn, or soybean produced directly by farmers, and without industrialization

CHAPTER II

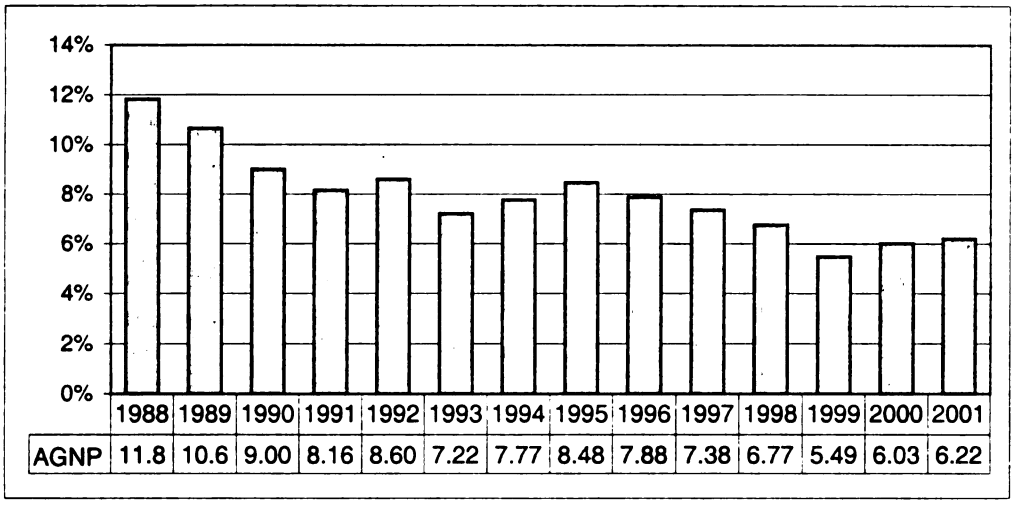
Literature Review

This chapter analyzes relevant bibliography related to the field study. The chapter describes the background of the agricultural sector of Uruguay, the Common Market of the South (MERCOSUR), the agricultural research and technology transfer system in Uruguay, the National Agricultural Research Institute (INIA), the INIA La Estanzuela research station, the Regional Advisory Councils of INIA, the use of advisory councils in agriculture, stakeholder participation in agriculture research, the concept of clientele, and team and group dynamics.

2.1. Agricultural Sector of Uruguay

Uruguayan economy is largely based on agriculture. In average, it is possible to indicate that more than two-third of the export revenues came from the agricultural sector (i.e., 62% for year 2000, Table 2.1). The agricultural Gross National Product (AGNP) was approximately 11% in the 1980's. However, this important contribution has shown a constant decline in the last twenty years, especially during the last decade. In the year 2001, the agricultural GNP contributed to 6.2% of the US $ 25 billion gross national product (Banco Central del Uruguay, 2002). Figure 2.1 shows the contribution of the agricultural GNP to the gross national product in a series of fourteen years (1988-2001).

Figure 2.1 Agricultural GNP percentages of the National Gross Product. Selected years: 1988-2001



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
AGNP	11.8	10.6	9.00	8.16	8.60	7.22	7.77	8.48	7.88	7.38	6.77	5.49	6.03	6.22

Source: Banco Central del Uruguay, 2002

Even with this reduction in the AGNP contribution, agricultural exports still account for over 60% of the total Uruguayan exports, including the contribution of the various agricultural processing industries. As indicated in Table 2.1, beef and sheep production, arable crops, fruit production, and forestry represent the main agricultural activities of Uruguay. In the year 2000, the country exported approximately US $ 360 million in beef cattle (16% of total exports revenues). Wool and wool products exports accounted for more than US $ 150 millions for the same year (7.6% of total exports revenues), and dairy production contributed a value of US $ 127 millions (6% of exports).

The main arable crops are: rice, wheat, barley, oats, maize, sorghum, sunflower, and a small volume of soybean. For the year 2000, this component

accounted for about 9% of the total export revenues; in particular rice was responsible for 7% of the total crop production (DIEA 2002)

Table 2.1 Products and percentage of contribution of the Uruguayan total exports for year 2000.

Product	Thousand US $	Percentage Of the total
Beef	369,090	16.1
Sheep (meat)	32,581	1.4
Live Bovines	13,491	0.6
Live Ovine	7,058	0.3
Poultry meat	168	0.0
Wool	128,953	5.6
Leather	264,994	11.5
Dairy	124,673	5.4
Honey	3,047	0.1
Cereals	216,388	9.4
Non-Citric fruit	3,515	0.2
Citrus	30,839	1.3
Wine	6,758	0.3
Forestry	108,990	4.7
Fishery	120,242	5.2
Subtotal	**1,430,787**	**62.4**
Others non-agricultural	**863,770**	**37.6**
TOTAL EXPORTS	**2,294,557**	**100.0**

Source: DIEA 2002, based in MGAP BCU, JUNAGRA e INAVI.
in Censo Agropecuario, 2000

The major export partners are the Common Market of the South (Mercosur) accounting for 40-45% of the exports, the European Community (20%) and The United States (8%) (World Bank, 2001).

The more recent Agricultural Census conducted in Uruguay (Censo Agropecuario, 2000), indicated the presence of some 57,000 farms. This number shows a small increment over the 54,000 farms in existence in 1990. However, this increment in the number of farms between 1990 and 2000 is

explained by a better coverage and organization of the most recent census (Dirección de Insumos y Estadísticas Agropecuarias, DIEA 2002). The normal tendency during the last 20 years has been a reduction in the number of farms due principally to the loss of small-scale farms. As indicated in Table 2.2, in the year 2000, Uruguay accounted for 20% fewer farms than in 1980. In addition, the same table provides information regarding the evolution of some of the principal indicators related to population and land distribution.

Regarding land ownership, it is important to note that most of the land in Uruguay is privately owned (70%), but leasing (16%) and partnerships also occurs (DIEA, 2002).

Table 2.2 Number of farms and other demographic indicators.

	Census year			
Indicator	1970	1980	1990	2000
Total number of farms	77,163	68,362	54,816	57,131
Total area exploited (ha)	16,517,730	16,024,656	15,803,763	16,419,683
Total agricultural pop.	318,166	264,216	213,367	189,838
Total workers	181,206	159,446	140,430	157,009
Hectares per farm	214	234	288	287
Hectares per person	52	61	74	86
Workers per farm	2.35	2.33	2.56	2.75

Source: DIEA 2002 (Censo Agropecuario 2000)

The use of the agricultural land of Uruguay (Table 2.3) can de summarized as follows: natural and established forestry (7.6%), fruit, vineyards and horticulture (0.5%), crops and forage (8.1%), seeded or artificial pastures (7.3%), natural grassland with fertilizer and/or seed incorporation (4.1%), and natural grassland (71.1%). As a general description, the more intensive

productive systems are located in the south and the southwest area of the country, coinciding with the better soil quality of the country. Extensive beef cattle, sheep and mixed livestock systems are located in the north and northeast area of Uruguay. Rice production, one of the most important exportable crops, is located in the east section, having an accelerated expansion to the northeast.

Table 2.3 Use of agricultural land: Year 2000.

	Exploited area	
	Hectares	Percentage
Total	16,419,683	100.0%
Forestry	1,250,722	7.6%
Citric fruit	21,659	0.1%
Others fruit	10,490	0.1%
Vineyards	9,382	0.1%
Horticulture	34,695	0.2%
Cereals crops	597,533	3.6%
Annual Forage crops	417,529	2.5%
Land under work	323,441	2.0%
Artificial pastures	1,195,979	7.3%
Natural grassland with seed and fertilizer	678,434	4.1%
Natural grassland	11,667,747	71.1%
Unproductive land	212,072	1.3%

Source: DIEA 2002, Censo Agropecuario 2000.

Regarding technological aspects of the Uruguayan agriculture it is pertinent to indicate that about 10% of the farms (5,608) in year the 2000 were using irrigation systems. Farms cultivating rice accounted for 11% of the total farms with irrigation systems. Mechanization is another important indicator of technology, and for the same year, 41% of the farms (i.e., 23,250) had tractors for cultivating 11 million hectares (DIEA, 2002).

In the year 2001, livestock numbered 11 million cows (mostly Hereford) and 13 million of sheep (mostly Corriedale and Merino). The dairy sub-sector

(Holstein based) produced 1,300 million liters of milk for the same year (382 liters/person). Regarding the major cereal crops, Table 2.4 shows the cultivated area, the productivity and the average yield per hectare since 1997. As indicated by Allegri (1999), technological innovation from the research institutions contributed to the 75% of the milk production growth, 30% of the wheat average yield, 20% of the rice productivity, and 20% of the meat production. However, there remain yield gaps between the farmers and the research station averages.

Table 2.4. Major cereal crops indicators.

Cereal Crops		1998/99	1999/00	2000/01
Wheat	Area [1]	193.3	196.5	128.0
	Production [2]	559.2	377.2	324.4
	Productivity [3]	2,893	1,920	2,534
Barley	Area	72.8	54.9	92.2
	Production	196.0	111.0	228.8
	Productivity	2,692	2,022	2,482
Corn	Area	59.3	42.3	57.2
	Production	242.5	64.7	262.8
	Productivity	4,089	1,530	4,595
Sunflower	Area	134.3	50.2	48.8
	Production	160.7	33.3	58.3
	Productivity	1,197	663	1,195
Sorghum	Area	29.7	12.4	38.4
	Production	106.1	19.9	158.9
	Productivity	3,572	1,605	4,143
Rice	Area	208.1	189.4	153.7
	Production	1,328	1,209	1,030
	Productivity	6,383	6,384	6,704
Soybeans	Area	9.0	8.9	12.0
	Production	19.0	6.8	27.6
	Productivity	2,111	768	2,300

(1) Area in thousand of hectares
(2) Production in thousand of tons
(3) Productivity in kilos per hectare

Source: DIEA 2002, Anuario Agropecuario 2001

2.2. The Common Market of the South (MERCOSUR)

Argentina, Brazil, Paraguay and Uruguay signed the "Tratado de Asuncion" founding the "Common Market of the South" (Mercado Común del Sur) "MERCOSUR" in 1991. In Ouro Preto, Brazil (1994), the Protocolo de Ouro Preto established the institutional structure of MERCOSUR. Later, Chile and Bolivia became associate members of MERCOSUR. The enlargement of the dimensions of their national markets through integration was a fundamental condition for accelerating their processes of economic development (Arboleya, J.; Restaino, E., 2002)

MERCOSUR and the associated countries (Chile and Bolivia), at the end of 1999, represented a population of 231 million (4% of the world population) and about 10% of the total global land area (IICA, 2001). In particular, MERCOSUR accounts for approximately 40% of the Latin America land area, 4.2% of the world product and 4.3% of the world commerce. MERCOSUR's world participation does not seem very important yet; however this common block represents an important economic force for Latin America, accounting for more than 70% of the gross product and 40% of the internal commerce (Sawaya M.J. et al. 1998).

The agro-alimentary sector of MERCOSUR is a strategic sector inside the block, which is responsible for about 20% of the commerce (IICA, 1998). This sector of MERCOSUR involves a wide variety of agricultural products of high quality.

As indicated by Arboleya, J and Restaino E. (2002), the MERCOSUR market allows for:

- Free movements of goods, services and factors of production (capital and labor), by means of, among others, the elimination of custom duties and non-tariff restrictions on the movement of goods.
- The establishment of a Common External Tariff (CET) and the undertaking of a common trade policy vis-à-vis third countries and the coordination of positions on economic, trade, regional and international forums.
- The coordination of macroeconomic and sector policies between members countries in the areas of foreign trade, agriculture, industry, fiscal and monetary issues, foreign exchange and in capital, services, customs, transport and communications as well as others that are agreed upon, in order to assure adequate conditions of competitiveness amongst member countries.
- Members' commitment to harmonize their legislation on relevant issues to strengthen the integration.

In terms of commerce, MERCOSUR has a substantial importance for Uruguay, and in particular for the agricultural sector. MERCOSUR accounts for 45% of the Uruguayan exports and 43% of the Uruguayan imports. Other important commercial partners such as the European Community and the United States accounts for 20% and 7% of Uruguayan exports, respectively The Multiple

National System of Generation, Technology Transfer, and Extension (World Bank, 2001).

a) History

During the institutional evolution of the Generation, Technology Transfer, and Extension system, many organizations have contributed in different ways to develop this multiple system.

The first experience in Uruguay in relation to this field was in 1914, the year in which the National Plant Breeding and Nursery Institute (Instituto Fitotécnico y Semillero Nacional) was established (INIA, 2002). It was a pioneer agricultural research organization in Uruguay and South America. In 1907, the University of the Republic established a Faculty of Agronomy with the commission of superior education to develop professionals in agriculture science (Facultad de Agronomía, 2002). It wasn't until 1950 that the extension focused on technical assistance and outreach. In 1953, a pilot demonstrative area (Area Demostrativa de San Ramón) was established under the supervision of the Ministry of Agriculture (MGAP) and Inter-American Institute for Cooperation on Agriculture (IICA). It was established with the purpose of developing the south region that had educational, economical and technical problems (Indarte, 1988). In 1961 the "Instituto Fitotecnico y Semillero Nacional" was reorganized as the Agricultural Research Center with "Alberto Boerger" (CIAAB) as its first director. With this reorganization, the CIAAB broadened its goals by taking responsibility for extension projects. This action determined the formation of the National Center for Agriculture Extension inside of the CIAAB. Its objective was to offer

integral technical assistance to farmers and their families. This was a short experience. In 1968, the CIAAB returned to its previous goal of maintaining exclusive responsibility for research and articulation with other institutions of technical assistance, education, credit and organizations for the dissemination of information (Allegri et al., 1988). Between the 1960s and 1970s there were numerous changes in these organizations. Many institutions such as Plan Agropecuario were created, diverse institutions reviewed its goals and some government programs were established. This shows that Uruguay, differently from many Latin American countries, opted for the multi-institutional model approach in reference with the chain technology-generation and technology transfer-extension (Indarte, 1988). This model determined that many institutions focused in on their specific needs and goals, but without a formal national plan for articulation.

b) The present

According to this previous development, Uruguay today has a several institutions, related to research, technology transfer and extension system. Allegri (1999) analyzed this "national system" in two sub-systems:

1) Technology generation, and
2) Technology transfer and extension

1) The technology generation sub-system

Four actors represent this technology generation sub-system. The National Agriculture Research Institute (INIA), which represents approximately 90% of the

national investment in applied agricultural research (Allegri, 1999), the University of the Republic, with a faculty of agronomy and veterinary medicine, the Ministry of Agriculture (MGAP) (through a Veterinarian Laboratory Research Center "Miguel Rubino" - DILAVE), and the Uruguayan Wool Secretariat (SUL)

2) The technology transfer and extension sub-system

This sub-system is multi-institutional. Basically those institutions or actors may be grouped into five clusters:

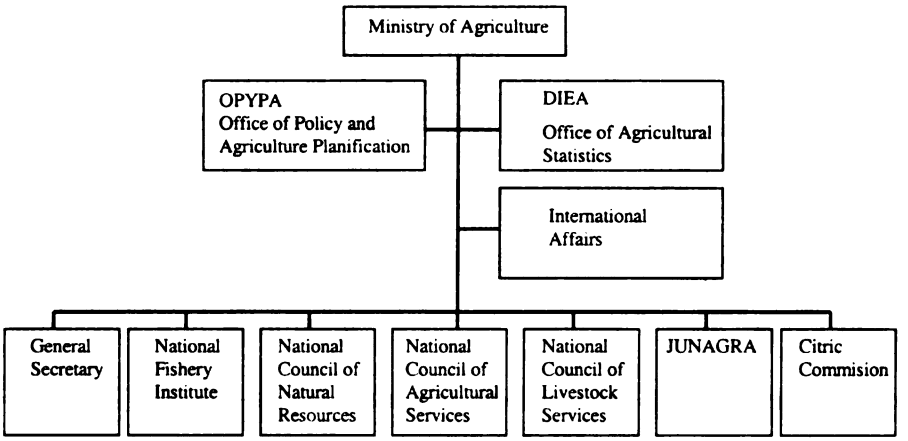
a) Public organization or programs managed by the MGAP. This group is very small and today we can find only some structure oriented to small farmers and a few important social sectors. This is consistent with the government strategy of transferring the financial responsibility of the extension activities to the private or "semi-private" sector. For instance, we can find programs conducted by the MGAP, oriented to provide technical and management assistance, products promotion, and some financial assistance linked to the incorporation of new technology:

- Livestock Project, promoting adoption of innovation in all meat chain production (farmers, industry, market, products, etc) to increase market competitiveness.
- Technology Transfer Program, oriented to finance technology transfer projects presented by individual or groups of farms.
- Fruit and Horticulture Development Program (PREDEG)
- Non Traditional Exportation Development Program (PENTA)

- National Help Program for Small Farmers (PRONAPPA-FIDA)
- Natural Resources Management and Irrigation Development (PRENADER)
- National Development Program of Small/Medium Livestock Farmers (PRONADEGA)

In 1990, the MGAP created the National Fruit and Horticulture Council (JUNAGRA). This is an MGAP unit whose goal is to improve the relationships between the fruit and horticulture organized farmers and the various technology transfer-extension services. Its mission is to offer technical support for the production, processing and marketing of this sub-sector (JUNAGRA, 2002). Moreover it seeks to promote the adoption of new technologies, disseminate information, and help organized farmers to export. The JUNAGRA' targets over approximately 12,000 small and medium fruit and horticultural farms (JUNAGRA, 2002).

Figure 2.2 Organization of the Ministry of Agriculture of Uruguay



Source : MGAP, 2001

b) Public organizations that are related with the MGAP. In this case, the management and control is shared by the public and private sector. Examples of this are INIA, Plan Agropecuario Institute (IPA), National Seed Institute (INASE) and SUL. The INIA and SUL have also research obligations. The IPA has exclusively the responsibility for extension.

i) INIA was created in 1989 by congressional law, modifying the existent CIAAB. INIA has two major objectives. First, to promote and implement agricultural research activities in order to contribute to sustainable development of the agricultural sector. Second, to articulate an effective transfer of technology generated through the technical

assistance and extension organizations belonging to the public or private system. Farmers are involved in the institutional management through representatives appointed by farmers' organizations.

The Law of INIA creation also determines the existence of five *Regional Advisory Councils* (RAC). Farmers, technicians and representatives from the main professional association assemble those advisory councils. The main objectives of those RACs are to provide advice on technological problems and contribute to priority setting. There are also, *Working Groups* (WG) for each commodity and/or system of production. Those two instruments, RAC & WG, are two of the most important elements used by INIA to assess to farm needs. Moreover, they represent an important linkage with farmers and relevant agriculture actors.

Farmers contribute to the INIA budget with a tax over farmers' sales (0.4%). The total basic budget is derived from this tax from farmers, and at least the same amount is matched by Government funds.

The INIA develops many activities (technical seminars, training, field days, guided visits, fair stands, etc) and products (videos, publications, handouts, etc.) to cover the demand for technology.

ii) Plan Agropecuario Institute (IPA) was restructured in 1998. Before it restructuring, it was a public organization directed by the MGAP. Today it has a board with the same structure as INIA. IPA's budget comes principally from the government, but it can establish agreement with the

private sector in order to develop special extension programs. Its current staff includes around 30 technicians. The IPA has six regional offices throughout the country located in strategic locations. It works in cooperation with the INIA and other sources of information and technology. It also develops many activities, especially for public or private farm advisors and farmers.

iii) The National Institute of Seeds (INASE) is another public non-governmental, non-profit organization. The Congress modifying the existing structure inside of the MGAP, created this institute in 1997. This is another example of moving responsibility from government to autonomous non-profit organization. The principal goals and objectives are to promote the production and distribution of high quality seeds with knowledgeable identity. By law, INASE is responsible for testing (every 2 to 3 years) all the new commercial vegetable varieties that attempt to enter into the commercial system in Uruguay. The INASE controls many activities in relation with the commercialization process of seeds and it disseminates information regarding the particular characteristics and quality of seeds for all the vegetables and crops used in Uruguay (INASE, 2002). This information is very important for farmers by aiding their selection of the appropriate variety of seed according to the individual needs and productive system. The INASE is a member of the International Seed

Testing Association (ISTA), International Union for Protection of Variety Obtain (UPOV), and Association of Seed Certification Agencies (AOSCA).

iv) Uruguayan Wool Secretariat (SUL). Since 1966, its main activities have been in the sheep industry and have been the generation and transfer of technologies, training, guidance, information, quality control of wool and meat production processes, and overseas consultancy services (SUL, 2002). It also develops many activities for the transfer of technology to sheep breeders.

c) Public organizations NOT under the MGAP

This segment includes the University of the Republic, the Bank of the Republic (BROU) and state governments.

i) University of the Republic: The University of the Republic of Uruguay, through the Agronomy and Veterinarian Faculty, develops independent research and transfer technology project and activities, in addition to its formal educational responsibilities.

ii) Bank of the Republic (BROU): The BROU is the principal financial institutions supporting the agricultural sector (Indarte, 1988). BROU is the main institution that helps to disseminate information to farmers

linked to credit services. Moreover, as a part of the promotion of its credit lines, it disseminates important technical agricultural information such as: crop varieties approved for credits, credit linked to the use of some specific fertilizer or credit available for specific planting practices.

iii) State Governments: Some state government offices have agricultural development agencies that promote the development of some region or products. In general these offices have technicians that help farmers within the state territory.

d) Non- profit private organization

The technical assistance organized, executed and financed by the private sector has grown considerably in the last few years. The private sector represents a very important mechanism for technology transfer. It is dynamic and exerts high impact. The most important actors are:

i) Cooperatives: The cooperative movement has a long history in Uruguay (Ferrin L.C., 1991). Today, approximately 60 agricultural cooperatives serve a large number of farmers. They specifically serve small and medium farmers. The most important role of those cooperatives is related to basic agriculture inputs, sales and agribusiness operations, products stores and direct farm advice. The highly developed commercial activity has created the need for

organized second-grade structures with marketing specialization by products (Uruguayan Wool Central Cooperative, Uruguayan Meat Central Cooperative and Uruguayan Grain Central Cooperative).

In relation to dairy production, CONAPROLE (the National Co-operative of Dairy Farmers) groups about 80% of the dairy farmers, processes 70% of country's production, and exports more than 50% of its milk production (CONAPROLE 2002).

Cooperatives are an important instrument for farm advice, technology transfer and extension programs.

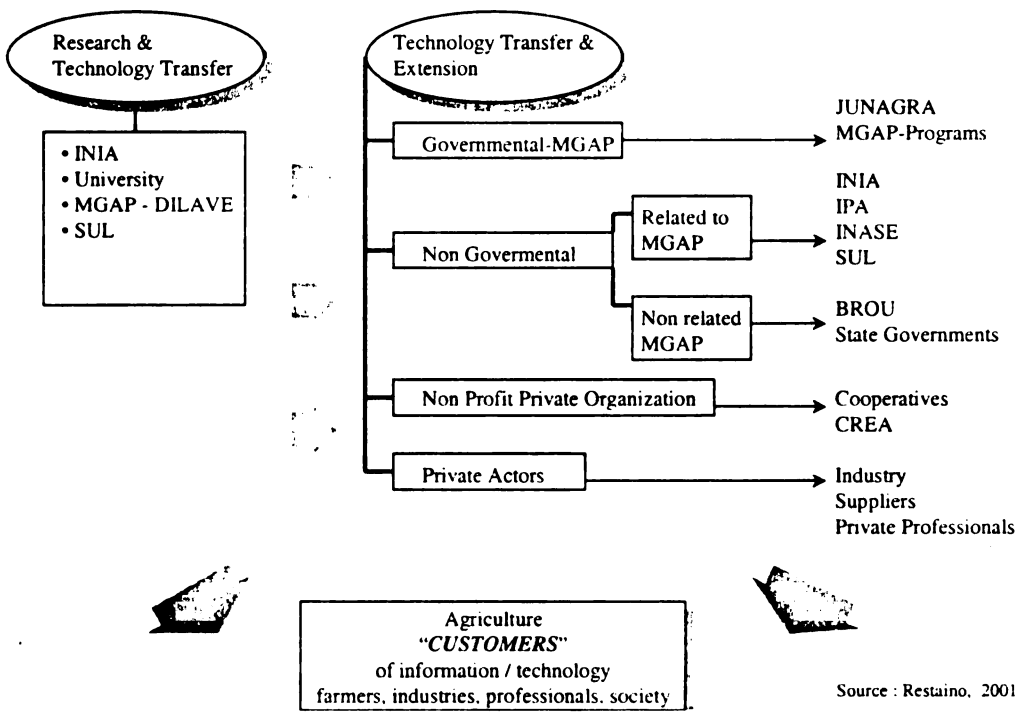
ii) Cooperative Research and Experimentation in Agriculture Groups.

CREA's groups are composed by ten to twelve farmers with similar productive characteristics to each other. They are self-managed groups that work and meet periodically to share experiences of their farms, analyze problems and search for solutions. Every group has one or two technicians that work as farm advisors. Each group has a hierarchical organization that helps to conduct the activities. The central element of the activity of one CREA group is the regular and rotational visit to one member by the entire group. All CREA groups (approximately 50) are organized in a major hierarchical organization, called FUCREA that gives administrative services and searches for permanent actualization of technicians hired by farmers. The CREA movement is based in two principal concepts: the farmer-manager as a

central element in the decision making process of technology incorporation, and the solid attitude of cooperation between farmers in order to grow in technology and business development.

e) Private actors. Finally it is necessary to highlight the action of the private sector as an important element in the transfer technology-extension process. This group includes principally the following actors: industry, input suppliers, and private farm advisors. The development of this segment has been very important to Uruguay in recent years. For instance, the agro-industries represent an important actor in relation with the development of some regions and products. Two examples are present in Uruguay. One is in relation to barley crop and brewery industries. These industries provide seeds, fertilizer and farm advice and at the end they purchase the product from farmers. This is a very interesting vertical integration, which helps to develop barley crops technology (in addition to other cereal crops) paying attention to the production marketing and quality factors. Rice farming is another good example. In the same way as in the east and northeast of Uruguay, the rice industry has helped this important exportable crop to grow consistently in the last years.

Figure 2.3 Organization of the Research and Technology Transfer-Extension Institutions in Uruguay



It is also necessary to mention the importance of the "round tables". These are self-directed groups working to identify relevant vertically integrated problems. They are composed of specialists from INIA, the Technological Laboratory of Uruguay (LATU), Agronomy Faculty, and the industrial sector. Currently in Uruguay there are barley (malt factories), wheat, rice, garlic and onion, tomato, citrus and forestry round tables working.

In the same way, input suppliers through different marketing strategies and providing farmers with seeds of new varieties, new chemicals, fertilizers, etc, are providing technology.

Finally we have to indicate the action of private technicians (agronomists, veterinarians and technical experts) in farm advice, technology transfer and extension. This relationship is not very evident in general and it is more limited to big farms.

As described above, the *generation, technology transfer and extension system* includes a conglomeration of many agents and institutions. From the description, it is evident that the present strategy of the Uruguayan government is to transfer financial responsibility of the extension activities to the private sector, except for the service of small farmers (Allegri, 1999).

Some organizations such as INIA, IPA, INASE, are already functioning with Board of Directors including representatives of the major farmers associations. This is a very important and modern concept. As a principal customers, farmers are directly involved in the decision-making of these organizations. That leads to a very strong demand driven model and participatory involvement.

Group technical assistance is increasing (refer to the CREA example). The experience with this participative methodology is very positive, not only in developing productive and technological problems, but to also in helping and empowering the farmer and his/her family as managers. Technical assistance to individual farmers is mainly through individual advisors from non-profit organizations (like: cooperatives) or from private professionals.

One of the main characteristics of this multiple technology transfer-extension system is its diversity. Farmers have the advantage of having many

sources of information and institutions taking care of many aspects of the agricultural sector's problems. On the other hand, the complex institutional system determines overlapping and competition among institutions working for the same "customers" even though each has a different scope. The establishment of more partnerships (e.g., strategic alliances, networking, social capital, etc) to promote a more efficient development and optimize resources should be a priority in this field.

Globalization and competitive markets demand innovation and high efficiency from farmers. Therefore, it is necessary to better articulate the transfer of technologies in order to optimize organizational effort, decrease overlapping and competition, and to help farmers with these difficult challenges.

The latest reorganization effort of the research system (INIA) incorporates a modern concept where farmers orient and help to prioritize research programs. This is one of the most important changes in the last decade in the agricultural that promotes demand-driven model of agricultural research.

2.3. The National Agricultural Research Institute (INIA)

a) Institutional background

In order to support and develop the important agricultural sector of Uruguay, the country has been working for a long time in agricultural research and extension. The first experience in implementing agricultural research and extension in Uruguay came in 1914 when the National Plant Breeding and Nursery Institute (Instituto Fitotecnico y Semillero Nacional) was established for

the purpose of improving local cereals grown in the country. Since then, the research system has grown under the outstanding leadership of its first director, Dr. Alberto Boerger. In 1961, after Dr. Boerger is death, the Institute was reorganized, broadened in its goals and it was renamed as the "*Centro de Investigaciones Agrícolas Alberto Boerger*" (CIAAB) (INIA, 2002).

The CIAAB expanded its research areas including pastures, beef cattle, dairy, sheep, seeds, integrated production systems and many support disciplines to help the research programs. Since the beginning of the 1970's the Government has promoted regionalization of the national research system, creating and annexing four new research stations to the existing "La Estanzuela". Each research station was committed to work with the major commodity product produced or grown in that region.

According to Allegri (1999), although this reorganization was a major change in favor of agricultural research, the CIAAB continued to belong to the public sector, i.e., Ministry of Agriculture. The major constraints that the CIAAB faced during this period were restrictions in human and financial resources and the lack of formal participation of clientele in research needs assessment. However, the Institute developed good performance and a remarkable regional reputation based on the creativity and commitment of the staff and the establishment of strategic agreements with many farmer organizations to increase funding sources for research in key commodities such as rice, dairy, beef meat, and wool.

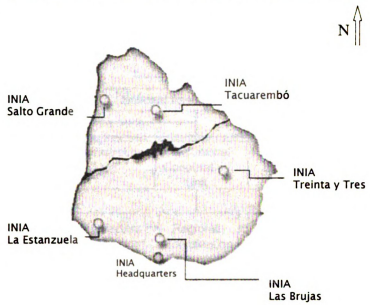
b) The National Agricultural Research Institute creation

In 1987, based on conceptions of some CIAAB researchers, some farmer organizations and others' from the scientific community, the Government developed a new proposal for the existent agricultural research organization. In 1989, a congressional law based on this previous idea, modified the CIAAB creating a new public non-governmental, non-profit organization entilted the National Agricultural Research Institute (INIA).

c) INIA structure and internal organization

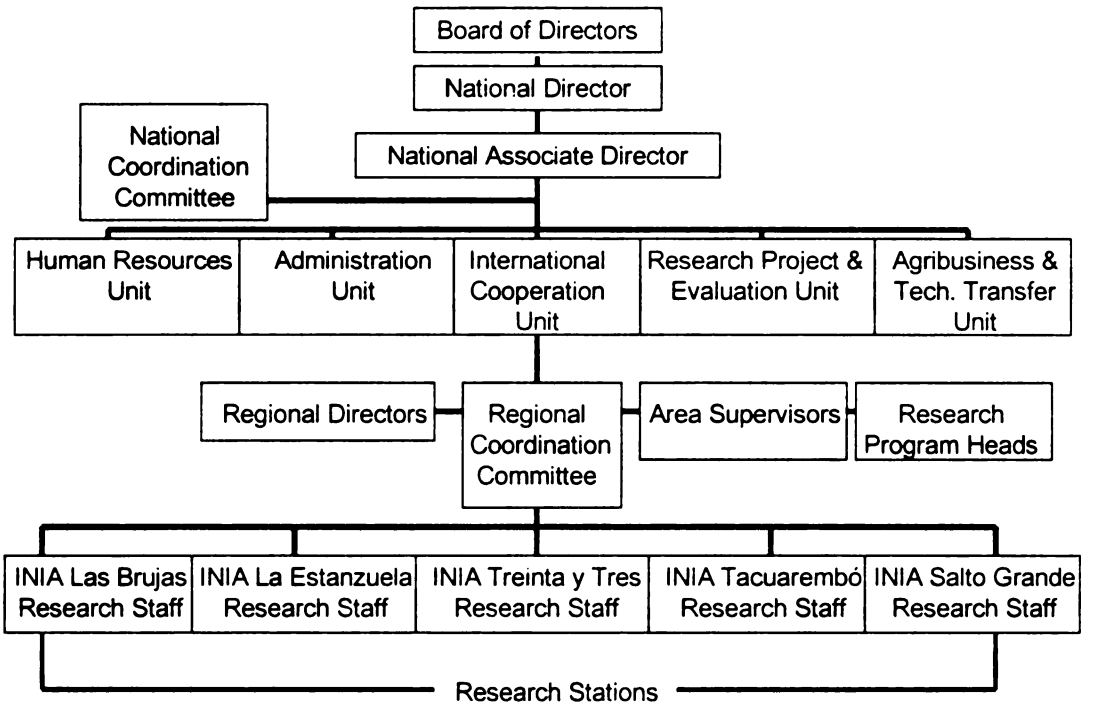
The Institute has five research stations distributed around the country and located in different agro-ecological and socio-economic regions: INIA La Estanzuela (South-west), INIA Las Brujas (South), INIA Treinta y Tres (East), INIA Tacuarembó (Noth-east) and INIA Salto Grande (North). In addition, it has an administrative headquarter in the capital city, Montevideo. This structure provides approximatley 5,000 hectares for agricultural research purposes (M. A. Allegri, 1999; INIA, 2002).

Figure 2.4 Localization of the INIA's research stations and head quarters.



The *Board of Directors* is the highest authority of INIA. Two farmer's representatives representing the most important farmer organization in the country, and two Government members compose this Board. The next level of authority in the institutional flow chart is the *National Director* who is responsible for the implementation and execution of the Board's decisions and for the identification of additional issues from the staff. Therefore, the National Director receives the support and advice from specialized units in the area of *Research Projects & Evaluation*, *Human Resources*, *Administration*, *Agribusiness and Technology Transfer*, and *International Cooperation* (Figure 2.6).

Figure 2.5 INIA's organizational structure



Each research station has a *Regional Director*, who has administrative responsibilities at the regional level. The programmatic research area is under the leadership and coordination of the *Research Area Supervisors*, and *Research Head of Programs.*

INIA personnel currently include 128 researchers of the over 529 total staff of INIA (INIA Human Resource Unit, 2002). Of the 128 researchers, 21 (16%) hold administrative and managerial positions, while 107 (84%) are appointed 100% to researcher activities. Most of the researchers have post-graduate degree (83%), distributed as follow: 45% have Master degree and 38% hold Ph.Ds. (INIA Human Resources Unit, 2002). In comparison with the situation

described by Allegri (1999), the total human resource members of INIA show a 4% reduction since 1999. In particular, the faculty member segment was reduced by 7% since 1999. The percentage of researchers with post-graduate studies increased by 2% according the results reported by Allegri in 1999. However, the percentage of researchers with Ph.Ds increased by 15% since 1999. The ratio of support staff to researchers is about 3.7:1.

The operative research system responds to a "matrix" model. The Areas and Programs (represented by commodities and systems of production) have a national hierarchy and conduct activities at the relevant experimental station (Table 2.5).

Table 2.5. Research Areas and Programs of INIA

Research Area (4)	Research Programs (13)
Animal Production	Beef Cattle
	Dairy
	Sheep and Goats
	Farm Animals
	Pastures
Crop Production	Winter Crops
	Summer and Oil Crops
	Rice
	Evaluation of Cultivars
Horticulture	Horticulture
	Fruticulture
	Citrus
Forestry	Forestry

As mentioned in Chapter I, INIA's structures also include five Regional Advisory Councils (one for each research station). These Regional Advisory Councils (RAC) were created in the Law of INIA creation, with the objective of including stakeholders' opinions in the agricultural research activities at the regional level (Allegri, 1999).

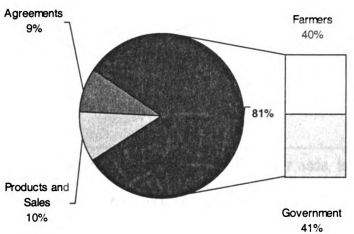
In addition to the RAC, in 1990, the INIA board created Work Groups (WGs) to provide more broad-based opinions to the RAC. The purpose of the WGs roles are to strengthen the participation of farmers and other customers in guiding research programs. In these WGs the INIA researchers, farmers, farmer representatives, and other stakeholders discuss research plans and desired results for specific commodities and system of production.

The RAC and WGs of INIA La Estanzuela are the subject of this study. A more elaborate description about these councils is provided in the section entitled "The Regional Advisory Councils of INIA) in this chapter.

The financial resources of the institute came from three major sources that were established by the Law of INIA's creation: a) a 0.4% tax assessment on farmer's sales on the domestic market (first sale), b) a matching amount of financial resources provided by the government, based on the farmers tax contribution, and c) the self-generated funds from agricultural, and/or intellectual products as well as royalties and private agreements or joint ventures. In addition to these three major sources of funds, two others can be identified: a) voluntary contributions from farmer organizations, institutions, and/or national and international aid agencies, and b) grant development from the institution. Figure

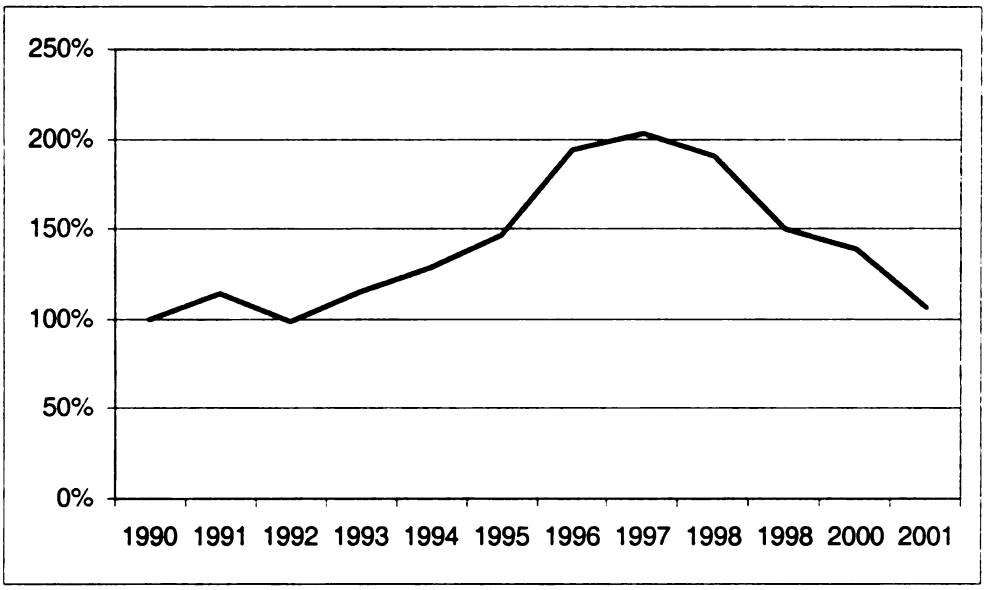
2.7 shows the distribution of these funding sources for the year 1998 (Allegri, 1999).

Figure 2.6 Sources of the income structure (%) of INIA for the year 1998. Source : Allegri (1999)



Regarding the evolution of INIA's income, it is important to note that since its creation in the year 1990 and until 1997, the income from farmer plus the government was growing as a consequence of higher productivity and of stabilized agricultural prices. However, since 1997 incomes shows a constant reduction as a consequence of the regional economic crisis, due to loses of some Uruguayan export markets i.e. loss of U.S. beef market caused by "foot and mouth" disease, and of course, the reduction in international prices of some major agricultural commodities (Figure 2.8).

Figure 2.7 Evolution of the INIA major income-funding sources (farmer tax plus government) as a percentage of the 1990 income (Base100%)



Source: INIA, 2002 (Administration Unit)

2.4. INIA La Estanzuela Research Station of INIA

The INIA La Estanzuela research station is one of the five research stations of INIA. The study was conducted at this research station, which is located in the southeast part of the country. The INIA La Estanzuela regional area of work involves some of the most productive soils of Uruguay, with a high diversification of productive systems including dairy, intensive livestock, forage, and cereals crops productions.

This research station was founded in 1914 and was the pioneer agricultural research organization in South America (INIA, 2002). Between 1961 and 1970, four others new research stations were created, developing the base for the INIA's creation in 1989.

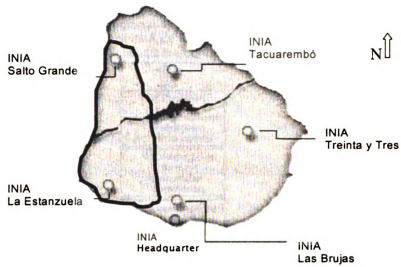
INIA La Estanzuela is responsible for the development and conduction of research programs in seven of the thirteen INIA's research programs. These research programs are identified as follows:

- summer and oil crops
- winter crops
- evaluation of cultivars
- dairy
- beef cattle
- sheep and goats
- pastures

Moreover, INIA La Estanzuela is the head research station of four of the above named research programs (i.e., summer and oil crops, winter crops, evaluations of cultivars, and dairy). Other research and support disciplines collaborate and/or develop research projects as well. These disciplines are as follows: beekeeping, cattle breeding service, weeds, soils, irrigation and weather, crop breeding, seed production and breeding, animal and vegetable lab services, technology transfer unit and agricultural economic unit.

The region of work of INIA La Estanzuela involves some 20,000 farms accounting for 35% of the total existing farms in the country in the year 2000 (DIEA, 2002). As mentioned earlier, this region is one of the most diversified regions of the country because of the soil quality that allows for many combinations of production or systems of productions.

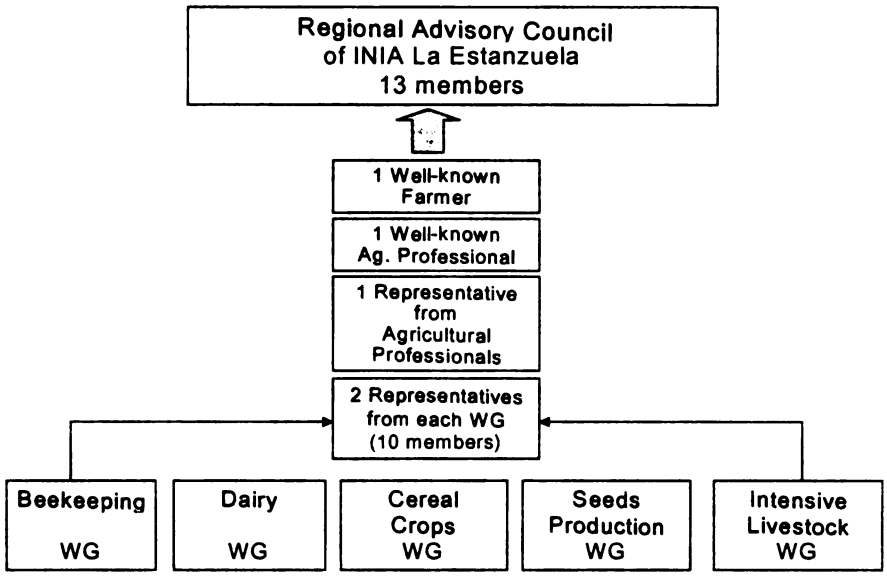
Figure 2.8 Region of work of INIA La Estanzuela research station.



Regarding human resources, INIA La Estanzuela allocates 34 faculty members (31 of which are researchers) and 120 support personnel, accounting for 27% and 30% of the INIA total staff, respectively (INIA Human Resources Unit, 2002). In relation to the operating budget, INIA La Estanzuela accounts for 37% of the total operating budget of INIA (INIA Administrative Unit, 2002).

As discussed earlier, the Law of INIA creation indicates the existence of Regional Advisory Councils for each research station. The INIA La Estanzuela's Regional Advisory Council is formed by 13 members (INIA La Estanzuela, RAC minutes 2002). In addition, five Work Groups (WGs), were developed according to the major areas of research of this research station. The following WGs are functioning at INIA La Estanzuela: beekeeping, dairy, cereals crops, seed production, and intensive livestock production. Each of these WGs is comprised of a variable number of members ranging from 12 to 15.

Figure 2.9 Regional Advisory Council and Work Groups of INIA La Estanzuela and their relationships.



From the review of the RAC and WG minutes of INIA La Estanzuela from 1991 to 1995, it is possible to find that WGs and the RAC met twice a year. During 1996, there were no meetings, and for the period from 1997 to 2001, five RAC and 14 WG meetings were held. Consequently, it is possible to indicate that for the entire period 1991-2001, INIA La Estanzuela research station organized and conducted a total of 15 RAC and 54 WGs meetings. Usually, meetings were conducted in the first and the last quarter of the year.

Some of the problems affecting the RAC-WG system can be illustrated from the analysis of some keys issues discussed in the most recent meetings conducted between April and August 2001. Three WGs council meetings were conducted at INIA La Estanzuela: Cereal Crops, Intensive Livestock and Dairy. One of the major problems occurred at the meeting was the response to the invitation in terms of attendance. Of the total members invited to participate in the

meetings, only 31% attended (attendance range: 21 to 41%) (Unidad de Agronegocios y Difusión INIA, 2001).

The same pattern was found for all meetings conducted at INIA, with a 36% attendance in eleven WGs council meetings conducted at the five research stations between March and November 2001 (attendance range: 14 to 70%) (Unidad de Agronegocios y Difusión INIA, 2001). This fact could be explained by various reasons, some of which were related to a lack of motivation to participate, lack of information previous to the meeting, a short time between receipt of the invitation and the meeting time, among others.

2.5. The Regional Advisory Councils of INIA

As mentioned earlier, the INIA's Law of creation (1989) established the Regional Advisory Councils of INIA. As the Law indicated, five RACs were created in 1990, coincident with each research station location. In 1990, the INIA Board of Directors, understanding that the RAC does not have a sufficient member base to provide broad-based opinions from the clientele, required the creation of commodity groups or Working Groups (WGs). Delpiazzo (1996), in an interpretation of the INIA's Law, indicates that the RAC are institutions of support, consultation, and advice for the research station directors (Regional Directors). The RAC mission is to collaborate with the Regional Director to propose the bases for the establishment of regional (research and/or extension) plans and to promote regional activities and to collaborate in seeking additional funding resources for research and extension activities (Delpiazzo, 1996). The same

author, states clearly that RACs are not structures of active administration for the institution (Art 15 of the INIA's Law 16.065).

The Regional Director of each research station is responsible for the management, follow-up and convocation of the RAC. However, each RAC has the right to ask the research station Regional Director for a meeting at any time. Moreover, the Regional Director receives support from the Technology Transfer Unit of each research station. This unit's major responsibility is to operate as a gatekeeper for demand of extension educational activities (i.e., farmers and technician visit, etc.); to develop regional educational programs (i.e. seminars, field days, etc.); to produce and coordinate educational materials (i.e., publication, videos, etc.); and to collaborate with the RAC's and WGs logistics and support. This last responsibility involves: a) maintaining a database with personal information of the RAC and WG members; b) delivering invitations for RAC and WGs meetings; c) supporting and processing the initiatives from the RAC and WGs members; d) processing and archiving the RAC and WG minutes; and e) maintaining the necessary communication with the RAC and WG members. But this unit does not have decision-making right, therefore, for any external action related to the RAC and WGs it has to have the Regional Director approval.

Regarding the procedures, Delpiazzo (1996) indicates that the Law of INIA creation (Article 32) established that every RAC should work under the command of one member functioning as the president. Regarding the frequency of meetings, the same article specifies that RACs should meet at least every three

months. In addition, the same author states that the Regional Director of each research station should assist with the RAC meetings. As indicated by Delpiazzo (1996), the current established norms suggest that RAC members may remain as members for a period of three years, but they can be re-elected.

The WGs, in some ways, are RACs organized by commodity groups. As is indicated by Article 8 of the INIA Board resolution #102/91 (August, 1991), each WG could be composed by a maximum of ten permanent members who must be farmers or agricultural professionals of the region (Delpiazo, 1996). However, depending upon to the topic of discussion, selected members could assist in order to increase the access to more knowledgeable or pertinent information. In addition, regional farmers could freely attend the meetings, without limitation in number.

Article 9 of the same Board resolution, indicates that every WG should have a president elected from the permanent members in order to represent the WG at the RAC, plus a vice-president and a secretary. The Article 10, indicates that the Regional Director should appoint a regional faculty staff working in extension activities (Technology Transfer Unit) as the liaison with all the WGs of the region. The WG president, vice-president, and the secretary should have permanent contact and interaction with the regional Director and the liaison, in order to achieve a dynamic development of the WG.

Finally, Article 12, described by Delpiazzo (1996), indicates that every activity or meeting product should be documented and archived as RAC and WG records (minutes).

From the documentation analyzed, there is no indication of what the responsibilities of the WG should be. However, based on the original idea of creation, it can be assumed that they have the same duties as the RAC, but restricted to the commodity product for which they are working.

2.6. The Use of Advisory Councils in Agriculture

Establishing a linkage between research, extension, and universities working in agriculture has been a considerable challenge for a long time (Leholm, A.; Suvedi, M; Vlasin, V., 1998). The authors state that administrators and managers of agricultural organizations (research, extension, education, and development) have recognized that linkages among research, extension, and clientele are necessary and must be strengthened. These linkages have been a major problem in both developed and in developing countries. However, this fact is more pronounced in developing countries.

Leholm, Suvedi, and Vlasin (1998), describe four types of research, education, and extension linkages, appropriate to improve interaction. These authors based their views on the original description of Kaimowitz, Snyder and Engel (1990), who identified three major types of linkages as: a) joint planning and programming; b) collaborative professional activities; c) resource allocation; and communication between organizations.

According to this description, RAC fit the "Collaborative Professional Activities" description, in which researchers, educators and stakeholders meet together to plan, implement, and evaluate programs, plans, and/or activities. As

Leholm at al. (1998) point out, this approach encourages teamwork and reduces differences regarding personal status.

Thiele, van Fliert and Campilan (2001) defines participatory research as the involvement of farmers and other stakeholders early in the process of technological innovation in order for them to collaborate in the identification of problems and in the development of new appropriate technology for these problems. According to Thiele et al. (2001), there are almost as many definitions and classifications of participatory research as practitioners. However, they present a classification of participatory research from Biggs (1989), identifying four types: a) contractual, where farmers provide scientists with consultation regarding resources (i.e., land) and/or services (i.e., labor); b) consultative, where scientist consult farmers and other stakeholders regarding their problems and possible solutions; c) collaborative, where researchers and farmers collaborate as partners in the research process; and d) collegial, when scientists guide farmers and users in informal research and development systems.

According to the previous classifications of participatory research, the Regional Advisory Councils of this study are a mix of consultative and collaborative types. However, according to the definitions of functions of the RAC of INIA, there are more consultative than collaborative actors.

Advisory councils have a long established history and are closely related to agriculture practices and especially to the Land Grant System of the United States. As Johnson (1998) argues, the Land Grant System has historically cultivated strong relationships among those groups that included qualified

informants. The establishment of those advisory councils gave status to farm interests by permitting farmers and other important agricultural actors to participate in research decisions.

In the United States, The Federal Agriculture Research (Extension and Education Reform Act of 1998) requires land grant institutions to establish structures for obtaining stakeholder inputs. Agriculture research is recognized by this reform as a public good, which requires public involvement of its users (Johnson 1998). For instance, the Virginia Cooperative Extension (VCE), in 1990, faced a severe reduction in its state budget allocation. It was indispensable for the VCE to find the means to become more efficient and effective in the identification of educational activities and in the allocation of resources in extension programs. Consequently, "Advisory Councils" were created as an effort to ensure that community stakeholders became systematically involved in the needs assessment process and the programming effort of the VCE (MSUE, 1997)

Others synonyms are used in place of "Advisory Councils". The Michigan State University Extension (MSUE) mentions that advisory councils are frequently referred to as "Extension Councils" or "Extension Advisory Councils". In spite of this, they are all described as having similar functions (MSUE, 1997). These councils have existed over many years in many counties of the state of Michigan in the United States, according to the Handbook. MSUE indicates that the uses of these broad-based councils were central to MSUE in 1992 in the "Statewide Issues Identification" process.

Leholm, A., Hamm, L., Suvedi, M., Gray, I., and Poston, F, (1999) argue that agricultural research stations have been criticized for not including formally stakeholders' opinions in the past. The authors state that the "interface" between extension and research is a key element in order to meet future needs based on a demand driven system. They present a description of the "Area of Expertise Team" (AoE) of Michigan State University. The AoE teams are very similar in their functions to the RAC. However, these are organized as self-directed teams with co-chairs as leaders, and with their own budgets. Leholm et al., describes self-directed teams as groups that place decision-making and problem solving authority in the hands of persons most knowledgeable of the products or services. The major difference with the RAC (analyzed in this study) is that they have a higher independence in decision-making. The AoE's major functions are to plan, implement, and evaluate educational programs. The RACs studied in this research are more instruments of consultation, from the research organization.

Some examples of advisory council use in agriculture at the MERCOSUR countries are also described. Of course, Uruguay is one example having the installation of the Regional Advisory Councils (RAC and WG) at the INIA (INIA, 2002). In addition, the National Institute of Agricultural Technology (INTA) of Argentina describes the uses of "Consejos Asesores Regionales" (Regional Advisory Councils) in its structure. However, the INTA councils also have responsibilities regarding budget allocation at the regional level as well being as policy makers of the institute. The regional advisory councils at the INTA were also created by the Law of creation of the INTA in 1956 (INTA, 2002).

Similarly, the National Agricultural Research Institute (INIA) of Chile, created in 1964, indicates the existence of "Consejos Directivos" (Directive Councils) at the regional centers of research (INIA-Chile, 2002). These councils develop functions similar to the INTA of Argentina. They integrate representatives from the public and the private sector as broad-based councils but with important responsibilities in budget allocation and in the decision-making process of the research institute at the regional level.

The Agricultural Research Institute of Brazil (EMBRAPA) did not specifically mention the existence of advisory councils in its structure. However, the concept of involving public and private stakeholders in participative methods is indicated in its organizational description (EMBRAPA, 2002).

a) Major functions of the advisory councils in agriculture

From the review of literature, it is possible to identify common functions for the advisory councils working in agriculture, of which the most important are to: a) identify community assets, needs and issues; b) collaborate in the prioritization process according to the available resources; c) assist in the evaluation process; d) identify potential resources; e) become knowledgeable communicators with the organizations to whom they represent; and f) advocate for research and/or extension programs (INIA, 2002; MSUE, 1997; INTA, 2002; INIA-Chile, 2002, Johnson, 1998).

From the previous description of major functions, it is possible to understand the variety of roles and authority that advisory councils may have. An

accurate delimitation of the roles among council members is indicated as indispensable, for a true functioning of the advisory councils. As indicated by Johnson (1998), if there is not a clear definition of roles, it is possible that council members and researchers may have different understanding of the council's roles and purposes. Consequently, different expectations will be made by the different actors at the council resulting in mismatching goals and frictions.

b) Membership and representations at the advisory councils

It needs to be kept in mind that the advisory councils are groups of people, and in consequence, human relationships influence them. Moreover, issues concerning selection of participants appear to be an important factor that affects its performance. Advisory councils are generally formed to achieve a favorable balance represented by geographical location, age, gender, commodity production, major role, as well others characteristics of members (Mainzer, 1958). The failure of broad-based statewide advisory groups raises serious concerns (Johnson, 1998). An advisory council's opinion may ignore the needs of some farmer segments and/or non-traditional groups. Lacy (1996), states that determining appropriate membership is often a key factor in building a successful advisory council process. Current problems are likely to have more weight with those groups, and sometimes, advisory councils are not concerned with long-term vision problems (Heffernan, 1986).

c) Advisory council functioning

As human groups, advisory councils may also suffer from motivational and behavioral problems. The lack of motivation to participate after a period of time has been reported by Restaino (1998). A lack of trust in the process is also mentioned by Allegri (1999). Johnson (1998) reported that most council members found council participation to be stimulating because of the social and technical interaction developed at the councils. In addition, council members may feel motivated by the possibility of being "insider" viewers of research programs. This fact, as indicated by Gordon (1999), could be interpreted as a non-reward motivational factor for council members.

This participatory method may involve some problems related to the shared of responsibilities or power. Evaluation results of advisory councils (Extension Councils) of the Virginia Cooperative Extension indicated that both extension staff and non-extension staff members were uncomfortable with shared decision-making and saw the involvement process as a time-consuming effort (MSUE, 1997).

The frequency of meetings is also indicated as a determinant for a successful functioning of the councils. From the INIA minutes' analysis, it was indicated that, in general, every council met twice a year. The established norms for the RAC councils at INIA specify that at least the regional advisory council should have the opportunity to meet twice during the year. Johnson (1998) describes the same situation for the Michigan Agricultural Experiment Station's advisory council. Because of the irregular meeting frequency, it is indicated that

council members suffer from discontinuity (Mainzer, 1958; Johnson, 1998; Restaino, 1998). In this sense, follow-up meetings and a continuous communication between meetings appear as indispensable.

The agenda meeting definition (purpose and objectives) and duration of the meetings are issues to be considered carefully for any meeting. Council members and researchers are adults, with individual responsibilities external to the council, different jobs, different experiences, determining different and particular expectations. The "andragogical model" described by Cookson & Knowles (1998) regarding adult learners states that, adults have a deep need to be self-directed and they have an accumulated body of experience that has to be considered. Moreover, Cookson & Knowles indicate that primarily intrinsic motivators, such as self-esteem, responsibility, and opportunity, motivate adults. This model, different from the "pedagogical model", implies the necessity of being learner (or in this case, council member) oriented. Doing an analogical consideration of this model, in summary, it is possible to state that at the moment of establishing the meeting goals, objectives, and agenda, it is necessary to have in mind that we are working with adults and, therefore, the basic assumptions made by Knowles should be taken into consideration. For instance, Johnson (1998) states that the primary purpose of meetings were for giving reports by researchers and administrators, with only a small amount of time set aside for discussion. Indication of requests from INIA council members for more time for discussion and better planning of the meeting agenda were also found in the

council reports (minutes). Surely, this is not the expectation that "advisory" council members have regarding their function at the councils.

Gamon, J. (1987), in an interesting paper entitled "Advisory Councils-Real Friends", report some of the most important considerations in order to have supportive advisory councils or, as the author indicate, "real friends". Gamong, points out meeting at convenient time, in a familiar place is sometimes a key factor for having good attendance. Moreover, she argues over the option of replacing meetings with telephone conferences, mailed reports, and other a-synchronous contact, in order to reduce the frequency of meetings. In addition, she indicates the importance of correct-sized, action-oriented, personally rewarding meetings as time tested, and never-fail guidelines for successful council committees.

As a summary of the major issues affecting the advisory councils, it is opportune to cite Johnson's (1998) major recommendations found in the case study of the Michigan Agricultural Experiment Station's advisory council. The recommendations were:

- define a clear role for the advisory council
- select knowledgeable and well-linked stakeholders
- help stakeholder organizations and their members to develop capacity to participate in advisory councils and research priority setting
- develop an internal infrastructure to operate and support the councils, and

- communicate council's activities among all stakeholders and the general public. (p.p. 133-140)

2.7. Stakeholder Participation in Agricultural Research

According to Grimble and Wellard (1997), stakeholders can be defined as "any group of people, organized or not, who share a common interest or stake in a particular issue or system." Farmers are in concordance with this position in the agricultural system in Uruguay, and especially in the INIA ecosystem. Farmers share, with this agricultural research organization, the challenges of seeking new technology and solutions to technological needs. Moreover, it is important to remember that, in the case of INIA, farmers are an important source of funding for INIA (40%). That fact increases the importance of this segment as stakeholders. In addition, Burkhard (1991), and Allegri (1999) state that stakeholders have long been involved in determining public agricultural research priorities.

Kelsey, K.D. (2002), in a case study of forestry stakeholders working together with the Department of Forestry at Oklahoma State University, points out that lack of information from the land-grant university and the presentation of too technical information represented barriers for these stakeholders to have timely, useful and appropriate knowledge. One of the conclusions of this study strongly suggests the necessity to have face-to-face interaction, consultations, and integration between researchers and stakeholders in order to match interest.

2.8. The Concept of Clientele

As described in the introduction, clientele can be considered as not only the actual, but also, potential customers. Cano, (1981) conducting an important research in many Latin American countries two decades ago, reported that most of the agricultural research in those countries represents a lack of accountability to clientele. Cano's study describes clearly that before the 1980s agricultural political directives and research thoughts from researchers drove the research programs. This system failed to address the real needs of the major customers. After many years, important marketing concepts were introduced into the agricultural systems. These marketing concepts influenced many organizations working in agricultural research to establish demand-driven models, and become preoccupied with identifying its "clientele" and, most important, with identifying effective instruments to assess clientele needs.

The International Service for National Agricultural Research (ISNAR) stated that the importance for research and extension organizations working in agriculture was to promote and establish the necessary mechanisms for involving public and private stakeholders in order to have direct contact with the clientele (ISNAR, 1990). According to Hadwiger (1982), a generalized type of clientele linkage came from the establishment of advisory councils groups.

Long, J. (1984), indicate the substantial value that there is when stakeholders and users of extension programs are involved in advisory councils. As Long states, involvement speeds up the process of planed change and it result in better decisions.

2.9. Team and Group Dynamics

The terms "teams" and "groups" of people implies that some individuals work together, physically, or otherwise, having a common purpose (Gordon, 1999). However, Gordon states that there is an important difference between a group and a team. A "group" can be defined as two or more people in a work setting with a common goal. On the other hand, the term "team" emphasizes collaboration (symbiosis) between members to accomplish the goal.

Knowing the manner in which groups and teams develop ensure the effectiveness of these instruments (Gordon, 1999). The first step in this process is the formation of the group or the team. Common needs, interest, goals, physical proximity and/or cultural similarity are the most important causes for team or group formation. However, the same author states that groups that have common goals and interest are more effective than those who don't.

Watson, Johnson & Merrit (1998), indicate that it is essential that teams members understand both the interdependence of individuals within the group and the uniqueness that each person brings to the team.

Although, there is a process for a group development in which the group evolves through many stages until it becomes productive. Four key elements should be considered in order to achieve effective development (Gordon, 1999): a) the resources of individual members, b) goal setting for the group, c) norm setting, and d) roles setting.

Advisory councils are in fact groups or in some cases teams working together, consequently all previous concept have to be taken into consideration in order to function effectively. In addition, it is important to indicate that there are some characteristics linked to the work in teams such as: a) groups generally need more time to make decisions than individuals, b) groups tend to make riskier decision than individuals (Gordon, 1999), and c) there is a risk of ignoring individual expertise if the group procedures and norms are not clearly established. From the major difference, described earlier, between "teams" and "groups" appears important to set up the condition to turn the advisory councils from groups to teams. This is not an easy task. Maxwell (2001) identified 17 indisputable Laws for Teamwork. Among these laws, two appears as the most important regarding the advisory councils working in agriculture: develop identity between members, the council, and the research system; and the law of communication that indicates the necessity of develops full interaction among members.

CHAPTER III

Methodology

The purpose of this chapter is to describe the methods and procedures used to assess information about Regional Advisory Council members' profiles and the perceptions that members have regarding the Regional Advisory Councils. It also describes procedures followed to study INIA La Estanzuela research staff profile and their perceptions about the Regional Advisory Councils.

This study was conducted at La Estanzuela research station of the National Agricultural Research Institute (INIA) of Uruguay. Of the five INIA research stations (Las Brujas, La Estanzuela, Treinta y Tres, Tacuarembó, and Salto Grande), it was only possible for INIA to provide La Estanzuela research station Regional Advisory Councils database on time for inclusion in this study. Therefore, the study was limited to INIA La Estanzuela research station.

This study focused on two areas: a) the internal operation of INIA regarding the Regional Advisory Councils, and b) the interaction between the Regional Advisory Councils (Regional Advisory Council-RAC and Work Groups - WG) and INIA.

3.1. Research Design

This research has the format of a case study of INIA La Estanzuela research station, one of the five research stations of the National Agricultural Research Institute of Uruguay. Ary, Jacobs and Razavieh (1996) states that case studies attempt to describe the subject of the study from the entire range of behaviors and the relationships of these behaviors and the environment.

Singleton et al. (1993), also recommends using case studies when the item of the study is a single unit of analysis, such as an organization. Moreover, uses of case studies have been a common method for investigating research and scientific advisory committees and drawing conclusions on their operations and effectiveness (Johnson, 1998).INIA La Estanzuela research station is located in the southwest region of Uruguay. This research station accounts for 30% of the total research staff of INIA and for about 37% of the total operative INIA budget (INIA Human Resources Unit; Administration Unit, 2002). This study focuses on identified factors and processes taking places inside of the Regional Advisory Councils, and analyzes the relationships of the ecosystem INIA-Regional Advisory Councils & Work Groups.

Instrument development was done between February and May 2002, and data analysis from September thru November 2002. Data collection was conducted in Uruguay, between June and August 2002 by the researcher.

This study utilized both, qualitative (exploratory research) and quantitative (descriptive and explanatory research) methods. This combination of quantitative and qualitative methods were used in obtaining a more complete picture in order

to understand the complexity of internal and external human relationships under the framework of an organization.

3.2. Research Questions

This study intended to answer the following research questions:

1. What is the demographic and socio profile of Regional Advisory Councils members?
2. How were Regional Advisory Councils members selected?
3. What are the linkages between the Regional Advisory Councils participants and the major farmer organizations in Uruguay?
4. How do the Regional Advisory Councils participants perceive the methodology that INIA uses to work with those stakeholder groups?
5. What do Regional Advisory Councils members perceive as barriers, if any, in the functioning of the advisory councils?
6. What do INIA staff and managers perceive as barriers, if any, in the functioning of the advisory councils?
7. According to INIA, what are the areas of work for the Regional Advisory Councils?
8. According to the Regional Advisory Councils members, what are the areas of work for the advisory councils?
9. What is the relevance that Regional Advisory Councils members give to RAC and WGs in terms of identifying farmer research needs, farmer linkages, and farmer educational programs?

10. What is the relevance that INIA gives to RAC and WGs in terms of identifying farmer research needs, farmer linkages, and farmer educational programs?

3.3. Population and Sample

This study included two sample populations: a) Regional Advisory Council members of INIA La Estanzuela (RAC and WG participants), and b) INIA La Estanzuela research staff.

All participants of Regional Advisory Councils (RAC) and Work Groups (WG) listed in the database of INIA La Estanzuela since December 1998 were included as the second population of this study. According to this, 131 council members were identified as the target population. After the first mail contact, four persons responded who had never participated in the system. Therefore, the researcher considered this as a database error and eliminated these records from the population. Consequently, 127 council memberswere included as the survey population for the RAC and WG population.

Research managers of INIA LA Estanzuela (Regional Director, *Research Area Supervisors and Research Programs Head*) were excluded from the INIA sample population of this study, due to the fact that they are involved in the decision making process of many of the issues regarding the Regional Advisory Councils.

Of the 38 actual INIA La Estanzuela research staff (target population), 31 researchers were identified as survey participants. The Regional Director, two area supervisors, and four program research heads were excluded.

3.4. Instrumentation

In order to implement a valid, reliable, credible and feasible methodology the following four instruments for data collection were utilized:

- Two types of surveys:

  Survey A, to collect data from INIA La Estanzuela researcher staff

  Survey B, to collect data from RAC and WG council members
- Informal questionnaire (semi-structured interviews)
- Secondary data analysis (internal documents, memorandums, agendas, minutes, reports, etc.)

  Appendix C shows the instruments used for the different populations.

a) Questionnaire development

Survey questionnaires were first developed in the English language. Survey questions were developed following the research questions established for this study, taking into consideration the suggestions and topic of interest proposed by the Technology Transfer and Marketing Unit of INIA, and taking into consideration the experience that the researcher has after having been working with the councils for a period of ten years. Once the first draft for each survey questionnaire was developed, these were revised after close consultation with

the Technology Transfer and Marketing Unit of INIA. In addition, Michigan State University experts (the researcher's major professor, two other professors in the department of Agricultural Natural Resources, Education and Communication Systems-ANRECS) provided feedback and suggestions over the survey questions and questionnaire organization. Finally other suggestions from faculty members at the ANRECS department and INIA peers were also taken into consideration.

After this careful and critical process, and following the guideline as described by Dillman D. (2000), two survey questionnaires were constructed, including six sections with 34 questions for the Regional Council Members, and five sections with 20 questions for INIA research staff. Moreover, a comment section was provided at the end of each survey questionnaire to allow participants to add additional comments related to the study. Of the total set of questions, 14 were identical and two were identical except for some modification in the number of options presented to the respondents.

The six sections of the RAC/WG survey questionnaire (Survey B) were:

1) *Section A. Present member's selection* process consisted of two questions to determine the actual membership status regarding the Regional Advisory Council (RAC) and/or the Working Groups (WG) councils and the possible causes of withdrawal of some members.

2) *Section B. Member selection and representation*: eight questions were posed in this section with the intention of

determining when members joined the councils, how they were selected, suggestions to improve selection process, member relationship with major farmers and agricultural organizations/institutions, familiarity with the system before participation, and member's perception regarding representation of major organizations at the councils.

3) *Section C. Operational characteristics: of the RAC and the WG councils.* This section asked participants a set of seven questions regarding, the best period of the year (months) to hold meetings and the frequencies of councils meetings, satisfaction with the invitation process and issues regarding invitation timing, knowledge of meeting objectives/purposes before attending, and satisfaction with INIA's meeting support.

4) *Section D. Meeting procedure:* this section included four questions of which two were open-ended seeking to identify the major weaknesses of the meeting procedures and of which three were suggestions to improve meetings procedures. One question was posed to investigate general satisfaction with meeting procedures and last question in this section was a nine-item question regarding information and guidelines received previous to attending meetings, interaction with others participants, time availability during meetings, and increments in technical expertise as a result of council participation.

5) *Section E. RAC and WG perceptions:* this section involves six questions dealing with major barrier identifications, major areas of concerns of RAC and WG, perceptions about member contributions and importance of members' opinions. In addition, members were asked to indicate the importance of having norms to guide the selection and/or member renovation.

6) *Section F. Personal characteristics:* in this section seven questions investigate major commodity products linked with participants, member leadership characteristics, age, gender, actual occupation, educational level and living location.

INIA research staff questionnaire, as indicated earlier, included five sections.

1) *Section A. Selection and representation.* INIA staff were asked in this section to indicate how familiar they were with the system, how many times each had participated in council meetings and how they perceived council member representation.

2) *Section B. Operational characteristics of RAC and WG councils.* This section included four questions. Three were identical to the questions asked in Section C of Survey B (RAC/WG): period of the year to hold meetings (month), frequency of meetings, and objective/purpose of the meeting knowledge before participation. The remaining question in this section, as well as in Survey B, asked about satisfaction of invitation process of researchers to the

Council meetings (notification process requesting the researcher participation in the meeting).

3) *Section C. Meetings procedures.* This section corresponded to section D in Survey B. It included the same four questions, however the nine-item question (in Survey B) was reduced to five items. Interaction with others members and the technical expertise statement was not pertinent for INIA staff.

4) *Section D. RAC and WG perception.* This section is identical to Section E on Survey B. The main objective of this section was to establish a perception comparison between RAC/WG council members and INIA research staff.

5) *Section F. Personal characteristics.* Three questions were included in this section to gather information about INIA research staff age, gender, and educational level.

Appendix D shows the congruence between sections and questions in both survey questionnaires and the relationship with the research questions of this study.

As Dillman (2000) indicates, the graphical aspects of layout and design, itself, represents the critical aspect that will affect participant understanding of questions and the motivation to answer all questions. Consequently, three different graphic models were developed and consulted with peers and with

Michigan State University experts in order to identify which model was clearer and friendlier.

Next, the survey questionnaires were translated into the Spanish language taking care to preserve the exact meaning of each question and/or item. To assure validity, all of the Spanish versions of the interview questions, and the survey questionnaires A & B were field tested using a group of people with similar characteristics to the study population, but were not included in the study. Based on the feedback (field-test), modifications were made in the instruments enhance content validity.

Finally, survey questionnaires were printed and duplicated using a different color for each sample population (pale blue for the Regional Advisory Council, pale yellow for INIA research staff). This procedure allowed the researcher to quickly identify survey questionnaires with each sample and for survey participants to quickly identify the questionnaire from the cover letter, and to avoid any possible errors in data entry. In addition, Dillman (2000) states that paper color also plays an important role in attracting respondent attention to the instrument.

b) Survey implementation

Pre-letters and cover letters were developed to establish the first contact with survey participants and to introduce the necessary information of the study, respectively. In addition, the pre-letters and cover letters included the contact information of the researcher and the request to contact the researcher if it were

necessary to use a different address or means to send the survey. The cover letters as well as pre-letters were designed following Dillman's (2000) suggestions, to create a professional, friendly and positive first impression.

The pre-letter for the Regional Advisory Council members and INIA research staff were very similar. The Regional Advisory Council member pre-letter was printed on INIA letterhead, signed by the Regional Director of INIA La Estanzuela and the researcher. The pre-letter was sent by public or private mail (depending on the best choice regarding the participant address) on June 20, 2002 (ten days before mailing the survey questionnaire).

The survey packets (RAC/WG and INIA research staff) were assembled including the cover letter, the survey questionnaire (with a unique generated code inserted at the bottom of the first page), and a self-addressed prepaid return envelope. RAC/WG survey packets were mailed using a private and the public mail company from Colonia City (Uruguay) on July 3, 2002.The pre-letter for INIA research participants was mail-merged with the INIA La Estanzuela research staff e-mail database and sent by INTERNET e-mail on July 1st, 2002. The cover letter for INIA researchers was also printed on an INIA letterhead and signed by the researcher. A confidentiality statement, in agreement with the University Committee on Research Involving Human Subjects (UCRIHS) [2] of Michigan State University, was included assuring survey participant of privacy protection.

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[2] UCRIHS, University Committee on Research Involving Human Subjects
Survey questionnaires, pre-letters, cover letters and interview consent forms were submitted to UCRIHS for approval on May 27 6, 2002. Approval and authorization to conduct the study (Category 1-2 Exempt, ID # 02-441) was received on June 06, 2002. (Appendix B)

INIA researcher survey packets were assembled as well as RAC/WG packets, but, in this case, they only included a plain INIA envelope for returning the survey to the office researcher at INIA La Estanzuela. INIA research packets were distributed at INIA La Estanzuela research station, in person by the researcher on July 10, 2002.

A series of two follow-up reminders were developed to contact non-respondents after the first mailing. The first thank-you reminder follow-up letter to the RAC/WG members was sent by mail about ten days after the survey packet, on July 15, 2002. The second follow-up reminder for the same sample included a new motivational cover letter and a duplicate questionnaire. It was sent by mail on July 26, 2002 (five days before the established return response deadline).

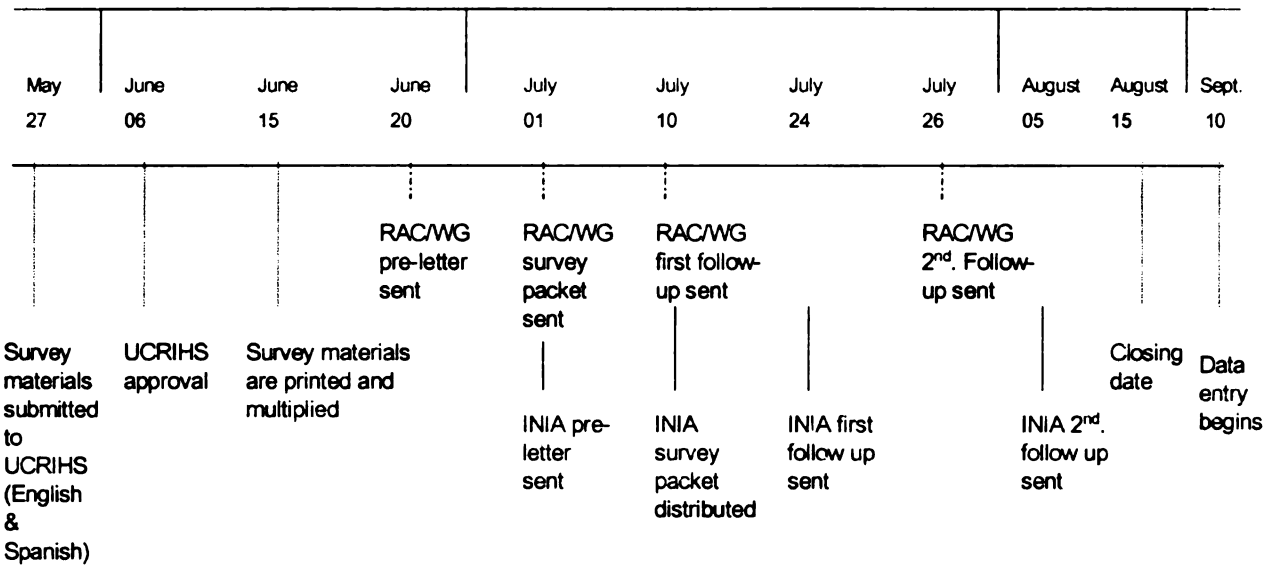
Two follow-up reminders were sent to INIA research staff by e-mail on July 24, 2002 and August 5, 2002.

Copies of all materials used in the mailing packets as well the follow-up reminders are provided in Appendix C.

Completed questionnaires were carefully checked upon return. Date of return and respondent code were annotated in the database to identify early and late respondents. Early and late RAC/WG respondents were compared in order to identify some possible differences. t-tests were run to explore possible differences in the perceptions from earlier and late RAC/WG respondents. All usable questionnaires were given a new identification number following the order of processing (data entry). By the closing date, August 15 2002, 81 usable

questionnaires were received from the RAC/WG members and 27 from the INIA research staff, representing 64% and 84% response rates, respectively.

Figure 3.1 Survey implementation timing execution.



c) Semi-structured interviews

Interviews were conducted as part of the qualitative data collection. In total nine interviews were conducted: three of INIA research staff and six of RAC/WG

council members. Council members and INIA researchers were selected randomly for interviews.

Interviews were conducted in a very informal environment and were not tape-recorded to increase the free-flow of ideas and the confidentiality of the interviewees. Notes were taken after the researcher finished the interviews. The notes were analyzed, clustered into common topics and reported together with the open-ended questions over the same topics as were asked in the survey questionnaires.

The interview information was used to complement survey information and in order to obtain a more qualitative understanding of the major issues of the RAC and WG council.

3.5. Data Analysis

A continuous and interactive process from the beginning of the research study was followed to collect and analyze qualitative data (INIA documents, council meeting minutes, interviews, and open-ended questions included at the survey questionnaires). This data was classified, organized systematically and analyzed identifying common patterns.

Quantitative data were coded, entered and analyzed using the Statistical Package for Social Science (SPSS) software between September and November 2002. Data were first checked for data entry errors. Corrections were made in the

database and errors or inconsistencies, were checked by tracking the code number for each survey questionnaire.

The first part of the analysis consisted of descriptive statistics including frequency counts, measures of central tendency and measures of dispersion, as appropriate.

The second part of the analysis consisted of descriptive statistics of questions with a five-point Likert-type scale. Six Likert-type scales were used in this study (Table 3.1). Means and standard deviations were calculated for each variable. Tests of mean differences (ANOVA, Scheffe post-hoc, and t-test) were performed to analyze significant differences on perceptions between two or more groups.

The alpha level was set a priori at the 0.05 levels for all significance tests.

Table 3.1 Five point Likert-type scale used in the study

Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6
None	Not Satisfied	Not at all	Strongly disagree	Nothing important	Not at all
Poor	A little Satisfied	A little	Disagree	Somewhat important	A little
Fair	Somewhat satisfied	Somewhat	Neutral	Neutral	Neutral
Good	Satisfied	Good	Agree	Important	Familiar
Very Good	Very Satisfied	Very good	Strongly agree	Very important	Very familiar

3.6 Limitations of the Study

Some limitations of the study included the following:

- This study is limited to the Regional Advisory Council and Work Groups of the INIA La Estanzuela research station of the National Agricultural Research Institute of Uruguay.
- This study is limited to the INIA La Estanzuela research staff of the National Agricultural Research Institute of Uruguay.
- The researcher has been working with the Regional Advisory Councils/Work Groups of INIA La Estanzuela research station since 1990. This experience contributes to the study development and conduction, but at the same time has the potential for developing subjective perspective.
- At the time when this study was conducted, the region and, in particular, Uruguay was affected by a severe economic recession. The agricultural sector was one of the most affected by this recession and therefore, some participants' opinions/perceptions could be potentially affected by this situation.

CHAPTER IV

Results

The data collected in this study were analyzed using the Statistical Package for Social Science (SPSS) and according to the methodology described in Chapter III. Qualitative data were analyzed interpreting the responses, coding major topics, and clustering the responses according to the emerging topics. This chapter describes the most important findings, according to the objectives of this study.

The results and discussion of findings, are organized according to the research questions as follows:

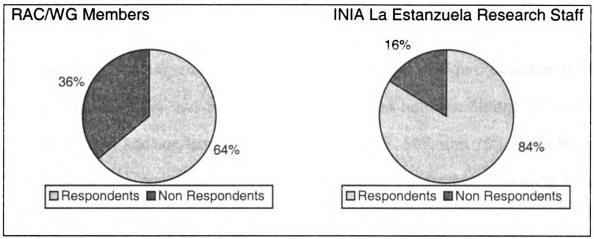
1. What is the demographic and socio profile of Regional Advisory Councils members?
2. How were Regional Advisory Councils members selected?
3. What are the linkages between the Regional Advisory Councils participants and the major farmer organizations in Uruguay?
4. How do the Regional Advisory Councils participants feel about the methodology that INIA uses to work with those stakeholder groups?
5. What do Regional Advisory Council members perceive as barriers, if any, in the functioning of the advisory councils?

6. What do INIA staff and managers perceive as barriers, if any, in the functioning of the Regional Advisory Councils?
7. According to INIA, what are the areas of work and concern for the Regional Advisory Councils?
8. According to the Regional Advisory Councils members, what are the areas of work and concern for the advisory councils?
9. What is the relevance that Regional Advisory Councils members give to RAC and WG in terms of identifying farmer research needs, farmer linkages, and farmer educational programs?
10. What is the relevance that INIA gives to RAC and WG in terms of identifying farmer research needs, farmer linkages, and farmer educational programs?

The study populations for this study consisted of 127 Regional Advisory Councils (RAC) and Work Group (WG) members, and 31 research staff of INIA La Estanzuela research station. Data were gathered using a self-administered questionnaire to all members of this population and thru semi-structured interview to nine randomly selected participants.

At the closing date established as August 15, 2002 a total of 81 usable surveys were received from the RAC/WG members indicating a rate of return of 64% (Figure 4.1). For INIA La Estanzuela research staff, a total of 26 completed and utilizable survey were received representing a return rate of 84% (Figure 4.1).

Figure 4.1 Percentage of respondents and non-respondents for each sample population (RAC/WG and INIA La Estanzuela Research Staff)



As this is an explanatory case study, theses responses rate are considered as adequate. D. Dillman (2000) indicates for some surveys developed in the United States responses rates between 58 and 78% as acceptable. In addition, the RAC/WG sample rate of 64% is considered by the researcher a worthy rate considering the difficult socio-economic situation of the country and especially of the agricultural sector when this study took place.

4.1. Regional Advisory Councils Members' Profiles

To answer the first research question, selected demographic and socio information was collected from the RAC/WG members.

Results are organized under the following headings: a) age, b) gender, c) major occupation, d) formal educational level, e) living location, f) current membership status, g) major reason for no longer participating, h) year when started participating, and I) major members' s commodity production area.

a) Age

The minimum and maximum age reported by the Regional Advisory Council members (RAC and WG) was 26 and 70 years, respectively. The average age of members (mean) was 48 years and a standard deviation of 9 years. Approximately, two-third of respondents were between 39 and 57 years (Table 4.1). In addition, percentiles distribution (25^{th}, 50^{th}, and 75^{th} percentiles) are indicating a negatively skewed age members distribution, indicating that more cases are over the mean.

Table 4.1 RAC/WG member age

N=81		
Mean (Std. Dev.)		47.85 (8.55)
Percentiles	25	42.50
	50	48.00
	75	52.00

b) Gender

Table 4.2 shows that almost all (96.3%) of the council members are male. Only 3 out of the 81 respondents (3.7%) are female.

Table 4.2 RAC/WG gender member's distribution (N=81)

	Frequency	Percent
Female	3	3.7
Male	78	96.3
Total	81	100.0

c) Major occupation

RAC/WG Council members could be farmers, farm advisors and/or farmers or professional working in any agricultural organization or farmer association in Uruguay. Regional Advisory Council (RAC) and Work Group (WG) members were asked to identify themselves with a major occupation such as: a) farmers, b) farm advisor, c) professional working for an institution, and d) other occupation. Results in Table 4.3 indicate that almost one-fourth (24.7%) of the RAC/WG members were farmers, about one-fifth (19.8%) were farm advisor, and about 26% were "professionals working for an institution" as his/her major occupation. However, 24 of the 81 members indicated some combination of the above options.

Table 4.3 Current occupation of respondents (N=81)

	Frequency	Percent
Farmer	20	24.7
Farm Advisor	16	19.8
Professional working for an Institution	21	25.9
Farmer / Farm Advisor	11	13.6
Farmer / Professional working for Institution	5	6.2
Farm Advisor / Professional working for Institution	6	7.4
Others	2	2.5
Total	81	100.0

A computation of these combination shown in Table 4.3, indicate that about 14% of the respondents' occupation is "farmer and farm advisor", 6.2% as "farmer and professional working for an institution", and about 7% indicated "farm advisor and professional working for an institution". The remaining 2.5% indicated "other" major activity such as "agricultural businessman".

d) Formal educational level

RAC and WG members were asked to indicate their formal educational level as part of his/her demographic characteristics. Table 4.4 shows that about four out of five (81.5%) have more than 13 years of education, representing a bachelor level or University degree. Almost one out of ten (9%) indicated High School education, and the same number (9.8%) indicated less than 10 years of formal education.

Table 4.4 Member's formal educational level (N=81)

	Frequency	Percent
Less than 6 years	1	1.2
7 to 10 years	7	8.6
11 to 12 years	7	8.6
More than 13	66	81.5
Total	81	100.0

e) Living location

Council member's (RAC/WG) living location (Urban, Suburban or Rural) is an important characteristic in order to understand how available some services could be for members. Table 4.5 shows that about three out of five (58%) came from an "urban" living location and Montevideo the capital of Uruguay. The "rural" living location (member that live in a farm) was indicated by one-fourth of the members.

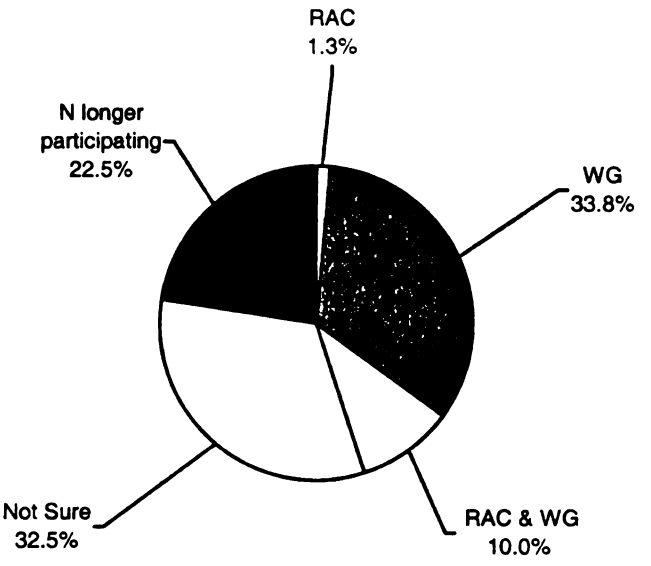
Table 4.5 RAC/WG member living location (N=80)

	Frequency	Percent
Main city	17	21.3
Urban	29	36.3
Sub-urban	14	17.5
Rural	20	25.0
Total	80	100.0
Missing NA	1	
Total	81	

f) Current membership status

Council members could participate as Regional Advisory Council member (RAC), Working Group member (WG), or participate in both councils as Working Group member and group representative at the RAC (RAC/WG). To explore the membership status from participants, council members were asked to identify themselves as Regional Advisory Council (RAC) member, Working Group (WG) member, Working Group member and RAC representative (RAC/WG), "not sure" about his/her position and if he/she is no longer participating at the council system. Figure 4.2 shows that 1.3% indicated that they were RAC members, about 34% indicated Work Group membership position, and one out of ten (10%) mentioned participation in both councils as WG member and RAC representative. In addition, a significant percentage of respondents (32.5%) indicated that there were "not sure" about what his/her membership is. Similarly, about one out five respondents (22.5%) indicated that they were no longer participating in any council (neither RAC, nor WG).

Figure 4.2. Member's current position (percentages)



g) Major reason for no longer participating in the RAC or WG

From those members participating in the survey and responding that they are no longer participating (22.5% of the respondents, Figure 4.2) or not sure about his/her status (32.5%), about 8% mentioned that they lost interest in continued participation (Table 4.6). Similarly, almost 8% mentioned they found some kind of conflict with other activities, 5% indicated that they found the system complex, and 30 out of 38 (almost 79%) mentioned other reasons, which included:

- I did not received any new invitation from INIA (n=22)
- I changed my work region (n=1)
- I changed my job (n=1)

- I am retired now (n=1)
- The system does not allow me to participate as I like (n=1)
- I participate only once for a special meeting (n=1)
- Non specific reason (n=3)

Table 4.6 Major reason for no longer participate at the councils (N=38)

	Frequency	Percent
Lost interest	3	7.9
Find conflict w/ others activities	3	7.9
Find the system complex	2	5.3
Other	30	78.9
Total	38	100.0

h) Year when members start participating

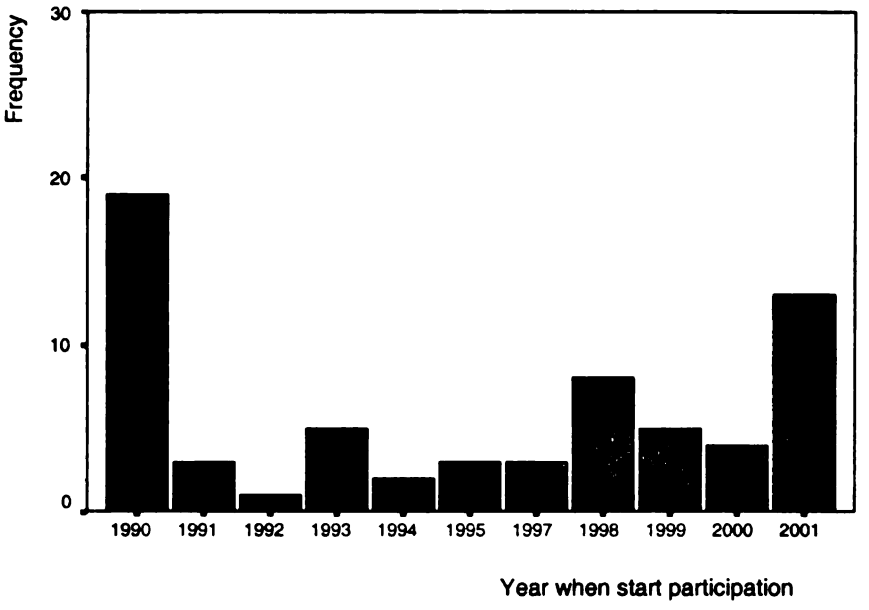
RAC and WG members were asked to identify the year when they started their participation at the councils. Table 4.7 shows that almost 29% of respondents started their participation in 1990, year when the councils were established by INIA. Years 1998 and 2001 show significant percentages of members starting their work as RAC and/or WG members (12.1% and 19.7% respectively). This is consistent with years in which INIA has worked extensively with RAC and WG establishing and prioritizing the new research programs and consequently, demanding its stakeholders their opinion about the research program development (1998, POMP Evaluation, PIMP discussion; 2001, PIMP Evaluation). In addition, Results show that one-half (50%) of the members have been working for at least 5 years in the RAC/WG, and almost one out of three (30%) has ten years of experience working at the councils (Table 4.7).

Table 4.7. Year when members start participating (N=66)

Year	Frequency	Percent	Cumulative Percent
1990	19	28.8	28.8
1991	3	4.5	33.3
1992	1	1.5	34.8
1993	5	7.6	42.4
1994	2	3.0	45.5
1995	3	4.5	50.0
1996	0	0.0	50.0
1997	3	4.5	54.5
1998	8	12.1	66.7
1999	5	7.6	74.2
2000	4	6.1	80.3
2001	13	19.7	100.0
Total	66	100.0	
Missing	15		
Total	81		

Similarly, Figure 4.3 shows the frequency distribution of the years when members started to participate in the council. This picture provides an easy view of the distribution.

Figure 4.3. Year when members start participating (Frequencies)(N=66)



i) Major commodity production of members

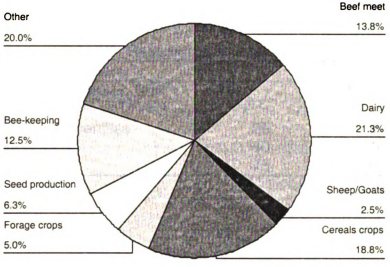
Figure 4.4 shows the major production area associated with RAC/WG members. According to the results, about one-fifth (21.3%) of the RAC/WG members were engaged in dairy, about 19% of members are linked to cereal crops, almost 14% with beef meat, and 12.5% with beekeeping as major areas. In addition, seed production was indicated by five members (6.3%), forage by four participants (5%) and a 2,5% of RAC/WG members indicated sheep/goats.

For some participants it was difficult to select one major area of work linked with the major agricultural commodities in the INIA La Estanzuela region. Therefore, 16 members (20%) indicated some combinations crops and livestock systems. These includes:

- Integrated system of production (n=1)
- Cereals crops, Forages and Seed Production (n=4)
- Beef meat, Cereals crops, Forages and Seed Production (n=5)

- Beef meat and Sheep/Goat (n=2)
- Beef meat and Dairy (n=2)
- Irrigation systems (n=1)
- Bee-keeping and calves breeding (n=1)

Figure 4.4. Major member's area of work (Percentages)



4.2. INIA La Estanzuela Research Staff Profile

This section describes demographic information for the INIA La Estanzuela research staff population. The population, as it was described in the Methodology chapter, involved the research staff at INIA la Estanzuela research station (N=31) excluding the Regional Director, Area Supervisors (2 Supervisors), and Programs Heads (4 Programs Head). The response rate, as

mentioned earlier was 84% (N=27). Results presented in this section are organized under the following items: a) age, b) gender, c) graduate degree, and d) experience with the RAC/WG councils.

a) Age

Table 4.8 shows that the average and median (50th percentile) age for the research staff is 46 years. A standard deviation of 8 years indicates that about two-thirds of the INIA La Estanzuela research staff is between 38 and 54 years.

Table 4.8 Research staff age (N=26)

Mean (Std. Dev)		46.12 (8.31)
Percentiles	25	39.00
	50	46.00
	75	53.50

b) Gender

Of the research staff survey respondents, 69.2% were male and 30.8% were female. As shown in Table 4.9 almost seven out of ten research staff was male. These figures show some higher percentage of female researchers at this time at INIA La Estanzuela that it was described by Allegri (1999) (22% were female in the overall INIA in 1999).

Table 4.9. Research staff gender (N=26)

	Frequency	Percent
Female	8	30.8
Male	18	69.2
Total	26	100.0

c) Graduate degree

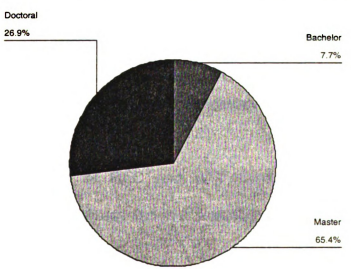
INIA La Estanzuela research staff participating in the survey was also asked to answer about their current academic level. Table 4.10 indicates that the majority (92.3%) of research staff has some post-education study (Master or Doctoral). Almost two out of three (65.4%) research staff have Master degree, and over one-fourth indicated Doctoral academic level or Ph.D.

Table 4.10. Research staff academic degree (N=26)

	Frequency	Percent
Bachelor	2	7.7
Master	17	65.4
Doctoral	7	26.9
Total	26	100.0

Figures obtained for INIA La Estanzuela show a better situation regarding Master level in comparison with the whole Institution (45%) and a reduced level regarding total INIA's Ph.D (38%).

Figure 4.5. Research staff academic degree



d) Participation at the RAC / WG meetings

The number of times that a researcher participates in the RAC/WG meetings is an important variable related with the experience that the researcher has regarding this participatory system. When INIA La Estanzuela research staff were asked to indicate the number of times that they participate, almost two-third (65.4%) indicated participation in four to six meetings since 1990, 7.7% indicated participation between seven and ten times, and 3.8% more than ten times (Table 11). However, about one-fourth (23%) indicated participation of less than three times in twelve years. In addition it is important to remark that since the RAC and WG were established in 1990, almost 70 meetings were held in INIA La Estanzuela research station ((CAR & GT INIA La Estanzuela, 1990-2000)).

Table 4.11 How many times research staff participated at the RAC or WG? (N=26)

	Frequency	Percent
1 to 3 times	6	23.1
4 to 6 times	17	65.4
7 to 10 times	2	7.7
More than 10 times	1	3.8
Total	26	100.0

4.3. Councils Member Selection

a) Selection process

Selection of RAC and WG members is important first-step to the functioning and representation of a participatory process.

Findings in Table 4.12 show that "direct invitation from INIA" and "direct designation by farmer's organization" are the two major means in which members are invited to participate in the RAC and/or the WG councils. According to these figures, INIA is directly responsible for the selection of about half (46%) of RAC/WG members. In addition, two-fifths (40%) of the INIA LA Estanzuela RAC / WG members were designated to participate by majors farmers organizations operating in the country. Fewer respondents (2,5%) expressed that they were self involved by personal interest, and one out of ten (10%) were invited by others members of RAC and WG who were already participating in the advisory councils.

Table 4.12 How RAC and WG council members where selected? (N=80)

	Frequency	Percent
Through INIA invitation	37	46.3
Appointed by organization	32	40.0
By personal interest	2	2.5
RAC or WG invitation	8	10.0
Other	1	1.3
Total	80	100.0
Missing	1	
Total	81	

b) Members suggestions regarding selection process

This section provides qualitative information collected using open-ended questions included in the RAC/WG survey questionnaire and personal interviews to council members.

Participants were asked to offer suggestions about how members should be selected in the future. Members felt that future council members should have a wide experience in the field for what they are expected to represent. Moreover, actual council members indicated that selection should be done from a wide spectrum, including independent members, members representing regional organizations, national organizations, and others farmers and/or agricultural organizations. Similarly, members pointed out the following values as remarkable and necessary characteristics for any council member: innovative, positive, vision, leadership, and motivation.

The quotation below indicates the spirit of what participants indicated as desiderable:

"Select people motivated, innovative with positive attitude and directly linked with the production,... with mud on the shoes"

Regarding representation of members, it was as well mentioned that WG members designation should be done by the major organizations working in the region and by INIA directly. Regarding RAC members appointment, participants' opinion is divided. Suggestions include the following statements as the most frequently mentioned: a) RAC members should be selected from the WG members, b) INIA board should select them and c) the Regional Director should

invite RAC members from the major agricultural organizations working in the region.

In addition, members indicated that it is necessary to establish a written policy regarding how members should be selected and re-elected, and this policy should be advertised and disseminated.

4.4. Linkages with Farmer Organizations

Linkages or working relationships that RAC/WG members have with the major agricultural farmers organizations and agricultural associations is an important indicator about what is the grade of representation the major agricultural stakeholders have in the RAC and WG councils. A set of questions was included in the RAC/WG survey questionnaire to gather information to respond to the third research question of this study.

Information in this section is organized under the following sub-headings: a) RAC/WG member actual representation, b) INIA Research staff perception about the RAC/WG member representation, c) RAC/WG member perception about the actual representation of the major stakeholders, d) perceived difference from the two councils (WG and WG/RAC), and e) perceived difference in the representation based in the actual member's representation status.

a) RAC and WG member's actual representation

Regional Advisory Council members were asked to indicate what is their actual representation status (linkage with farmers organization). Table 4.13 shows that almost four-fifths (80%) of the RAC and WG members are representing an organization or a group of farmers. More than 60% of the RAC and WG members are representing some agricultural or major farmer organization/association, and about 2 out of ten members (19%) indicate themselves as independent members.

Table 4.13 What is your representation status? (N=67)

	Frequency	Percent
Independent participant	13	19.4
Representing an organization	41	61.2
Independent but representing a group of farmers	13	19.4
Total	67	100.0
Missing	14	
Total	81	

b) INIA's research staff perception about members representation

The same questions regarding representation of RAC/WG members were also asked to the INIA La Estanzuela research staff to collect their perceived idea about RAC/WG member's representation.

Table 4.14 INIA's research staff perception about RAC/ WG membership status (N=25)

	Frequency	Percent
Independent participant	5	20.0
Representing an organization	12	48.0
Independent but representing a group of farmers	8	32.0
Total	25	100.0
Missing	1	
Total	26	

Findings shown in Table 4.14 indicate that almost one-half (50 %) of the INIA La Estanzuela researcher staff perceived that the majority of RAC / WG members are appointed to represent some farmer/agricultural organizations. Similarly, 32% indicate that a majority of RAC/WG members are independent (not linked with any major farmer organization) but representing a group of farmers.

Thus, perception that the research staff have about RAC/WG representation is consistent to what of RAC / WG members.

c) RAC / WG member perception about representation

Besides identifying the real representation that each member has at the councils, RAC and WG members were asked to indicate what perception they have about the overall representation of the major stakeholders groups. Respondents were asked to indicate their perceptions on a five point Liekert-type scale. The values for each statement were averaged to determine a value for each statement based on the overall opinion of the RAC/WG members.

Table 4.15 shows that the perception of RAC/WG members about farmers' representation is fair (mean: 2.82, Std. Dev.: .976). Their perception about University representation was poor (2.44, Std. Dev.: 1.089). Similarly, members indicated a poor (2.56, Std. Dev.: .979) perception for the agri-industry representation and for the agri-business representation (2.59, Std. Dev.: 1.023) at the councils. University and agri-business representation were the statements were members express major dispersion in their opinion indicated by higher standard deviation. About the statement "Organization representation" at the councils was rated higher (Mean: 3.17, Std. Dev.: .828).

Table 4.15 RAC / WG member's perception regarding representation (N=81). Frequencies and Percentages.

Perception	None N (%)	Poor N (%)	Fair N (%)	Good N (%)	Very Good N (%)	Mean *	Std. Dev
About farmers representation (N=71)	6 (8.5)	21 (29.6)	26 (36.6)	16 (22.5)	2 (2.8)	2.82	.976
About organization representation (N=71)	3 (4.2)	8 (11.3)	36 (50.7)	22 (31.0)	2 (2.8)	3.17	.828
About University representation (N=63)	15 (23.8)	18 (28.6)	18 (28.6)	11 (17.5)	1 (1.6)	2.44	1.089
About agri-industry representation (N=66)	10 (15.2)	22 (33.3)	21 (31.8)	13 (19.7)	0 (0)	2.56	.979
About agri-business representation (N=61)	11 (18.0)	16 (26.2)	21 (34.4)	13 (21.3)	0 (0)	2.59	1.023

*Mean was calculated based on a 1-5 scale: 1=None, 2= Poor, 3=Fair, 4=Good, 5=Very Good.

d) Differences in the perceived opinion between RAC and WG

An attempt was made to determine possible differences in the perceptions of representation at the RAC/WG councils, according to the membership status (exclusive participation in the WG vs. participation in both RAC and WG). A t-test was performed to compare the means for each statement within WG and RAC/WG members. Table 4.16 shown that the perceptions of "Organization Representation" was significantly different between WG and RAC/WG members (t=2.581, Sig. .021). Members who participated both in RAC and WG had significantly positive perceptions about organization representation than WG members. No significant differences in perceptions were found for all other statements between RAC and WG members.

Table 4.16 t-test for means differences between WG members and RAC/WG members for ideas about representation of principal customer segments.

Perception	Actual position	N	Mean**	Std. Deviation	t-value	Sig.
About farmers representation	WG member	26	2.92	1.017	1.730	.103
	WG member & RAC representative	8	3.50	.756		
About organizations representation	WG member	26	3.15	.834	2.581	.021*
	WG member & RAC representative	8	3.88	.641		
About University representation	WG member	24	2.21	.884	.549	.587
	WG member & RAC representative	8	2.50	1.414		
About agri-industry representation	WG member	24	2.71	.999	.781	.451
	WG member & RAC representative	8	2.38	1.061		
About agri-business representation	WG member	20	2.85	.875	1.634	.132
	WG member & RAC representative	8	2.13	1.126		

* Significance difference at 95%

**Mean was calculated based on a 1-5 scale: 1=None, 2= Poor, 3=Fair, 4=Good, 5=Very Good.

e) Differences in the perceived idea by membership status

Differences in the perceived idea of representation at the RAC/WG according to the membership status (independent participant, representing an organization, and representing a group of farmers) were explored.

Table 4.17 Differences in perceptions by RAC/WG membership status (ANOVA)

Perception	Membership status	N	Mean*	Std. Dev.	F value	Sig.
About farmers representation	Independent participant	12	3.17	.937	.577	.565
	Representing an organization	36	2.86	1.018		
	Representing a group of farmers	12	2.75	1.055		
	Total	60	2.90	1.003		
About organizations representation	Independent participant	12	3.08	1.165	1.496	.233
	Representing an organization	36	3.31	.749		
	Representing a group of farmers	12	2.83	.718		
	Total	60	3.17	.847		
About University representation	Independent participant	10	2.10	.994	.633	.535
	Representing an organization	32	2.47	1.164		
	Representing a group of farmers	11	2.64	1.120		
	Total	53	2.43	1.118		
About agri-industry representation	Independent participant	11	2.27	1.009	.608	.548
	Representing an organization	34	2.65	.981		
	Representing a group of farmers	11	2.45	1.128		
	Total	56	2.54	1.008		
About agri-business representation	Independent participant	11	2.82	.982	1.458	.243
	Representing an organization	30	2.63	.964		
	Representing a group of farmers	10	2.10	1.197		
	Total	51	2.57	1.025		

*Mean was calculated based on a 1-5 scale: 1=None, 2= Poor, 3=Fair, 4=Good, 5=Very Good.

Results illustrated in Table 4.17 indicate that there are no significant differences in perception of representation at the RAC/WG according to their membership status.

In addition, Appendix E presents a list of Institutions, farmer organizations and group of farmers from which respondents reported linkages or any formal relationship.

4.5. Perception Regarding Procedures Used with the Councils

Respondents were asked to indicate their feelings about the methods and procedures that INIA utilizes to work with them. Questions were asked about the invitation process, meeting procedures, INIA support and weaknesses.

Findings are presented in the following sections:

a) Invitation process

Table 4.18 shows results when RAC/WG members were asked to give their opinion about the "Invitation process" that INIA uses to convoke a meeting. More than three-fifth (60%) of participants indicated that they are "Satisfied" or "Very Satisfied"; however, fewer members (7%) were "Not Satisfied", and one out of ten (10.3%) indicated "Little Satisfaction".

Table 4.18. RAC member' satisfaction with invitation process

	Frequency	Percent
Not satisfied	6	7.7
Little satisfied	8	10.3
Somewhat satisfied	15	19.2
Satisfied	41	52.6
Very satisfied	8	10.3
Total	78	100.0
Missing	3	
Total	81	

For the overall group of RAC/WG members results shows a mean score of 3.47 and a Standard Deviation of 1.066, on a 1-5 scale: 1=Not Satisfied, 2= Little satisfied, 3= Somewhat satisfied, 4=Satisfied, and 5= Very satisfied.

In order to determine differences in the members' perceived opinion about the invitation process, t-test was run. t-test value of 1.351 (p= .207) indicates that there is no significant difference between RAC/WG and WG members' opinion (Table 4.19).

Table 4.19 Test of differences for satisfaction with invitation process (RAC vs. WG).

	Actual position	N	Mean	Std. Dev.	Std. Error Mean	t-test	Sig.
How satisfied are you with the invitation process	WG member	27	4.04	.587	.113	1.351	.207
	WG member & RAC representative	9	3.56	1.014	.338		

b) Opinion about information before attending the meetings

When RAC/WG were asked about how well they know the objective/purpose of the meeting before assisting to the meetings, almost one-third (34%) of members indicated they came to the meeting with "somewhat" knowledgeable about the objective or purpose of the meeting. Similarly, 31.3% indicate "A little" knowledge, and 2.5% "Not at all" knowledge of the meeting purpose. Besides, fewer (5%) of members came to the meeting with a "Very good" knowledge of the purpose (Table 4.20).

Table 4.20 RAC knowledge of meeting objective/purpose (N=80)

	Frequency	Percent
Not at all	2	2.5
A little	25	31.3
Somewhat	27	33.8
Good	22	27.5
Very good	4	5.0
Total	80	100.0
Missing	1	
Total	81	

Overall, the average score (mean of 3.01, Std. Dev .948 calculated based on a 1-5 scale: 1=No at all, 2= A little, 3= Somewhat, 4=Good, and 5= Very good) indicated somewhat satisfaction regarding knowledge of the objectives previous the meetings.

When INIA Research staff was asked the same question almost one-third (31%) of the researchers indicated that they start the meeting with "some" knowledge of the objective or purpose of the meeting (Table 4.21). However, almost half of them (46%) indicate a "good" knowledge of the meeting objective.

Similarly, about one-fifth (19%) indicated "a little" knowledge, and about 4% of the mentioned "no" knowledge of the purpose of the meeting.

Table 4.21 INIA research staff knowledge of meeting objective/purpose.

	Frequency	Percent
Not at all	1	3.8
A little	5	19.2
Somewhat	8	30.8
Good	12	46.2
Very Good	0	0
Total	26	100.0

To analyze possible differences between the means of the groups (RAC, RAC/WG, and INIA), a one-way ANOVA test was run. According to the results shown in Table 4.22, there were no significant differences ($p < .05$) between means.

Table 4.22 Test of differences (ANOVA) for knowledge of meeting obkective/purpose (RAC, WG and INIA research staff).

	N	Mean	Std. Deviation	F	Sig.
WG member	27	3.26	1.023		
WG member & RAC representative	9	3.00	.866	252	.778
INIA Staff	26	3.19	.895		

c) Opinion about satisfaction with INIA support

RAC/WG members survey questionnaire asked about the perceived satisfaction regarding: a) INIA support before members assist to the meeting, b) INIA support during the meetings, and c) INIA support after the meetings. Respondents were asked to rate their level of satisfaction on a series of

statements on a Likert-type scale. The scale had a reliability (Cronbach alpha) of .74.

Table 4.23 Satisfaction with INIA support before, during, and after meetings (frequency and percentages).

Satisfaction	No Satisfied N (%)	A Little Satisfied N (%)	Somewhat Satisfied N (%)	Satisfied N (%)	Very Satisfied N (%)	Mean *	Std. Dev
Before Meetings (N=77)	12 (15.6)	14 (18.2)	23 (29.9)	25 (32.5)	3 (3.9)	2.9	1.138
During Meetings (N=76)	5 (6.6)	3 (3.9)	6 (7.9)	50 (65.8)	12 (15.8)	3.8	.963
After Meetings (N=75)	16 (21.3)	23 (30.7)	18 (24.0)	16 (21.3)	2 (2.7)	2.5	1.131

*Mean was calculated based on a 1-5 scale: 1=No Satisfied, 2=A little satisfied, 3=Somewhat satisfied, 4=Satisfied, 5=Very Satisfied.
Values without parenthesis indicate Frequencies; Values in parenthesis indicate Percentages,

Means calculated based on a 1-5 scale (1=No Satisfied, 2= A little satisfied, 3= Somewhat satisfied, 4=Satisfied, and 5= Very satisfied) showed a value of 2.9 (Std. Dev= 1.138), i.e, mean satisfaction with INIA support before the meetings; 3.8 (Std. Dev.= .963), i.e., satisfaction during the meetings; and 2.5 (Std. Dev.= 1.131) satisfaction after the meetings. The higher values of standard deviation for each statement indicate a wide spread variation in the member's opinion about satisfaction for "before" and "after" meetings; yet, a few members indicating, "Very satisfied" (less than 4%).

To explore possible mean differences for each satisfaction statement based on the major group of work (WG exclusive and RAC/WG), a t-test was run. Table 4.24 shows that there is no significant difference in the level of satisfaction

with INIA. However, WG members consistently indicate a higher satisfaction level than RAC/WG members.

Table 4.24 Test of differences (t-test) for satisfaction before, during and after meetings (RAC/WG vs. WG)

	Actual position	N	Mean	Std. Dev.	t-value	Sig.
Satisfaction with INIA help: Before the meetings	WG member	27	3.44	1.050	1.600	.133
	WG member & RAC representative	9	2.78	1.093		
Satisfaction with INIA help: During the meetings	WG member	25	4.12	.526	.530	.609
	WG member & RAC representative	9	3.89	1.269		
Satisfaction with INIA help: After the meetings	WG member	25	3.20	1.118	1.612	.131
	WG member & RAC representative	9	2.44	1.236		

d) Opinion about satisfaction with the procedures used during the meetings

How satisfied council participants are with the methodology is a good indicator regarding if INIA is using an appropriate procedure to work with.

Satisfaction means were calculated based on a 1-5 Likert-type scale (1=No Satisfied, 2= A little satisfied, 3= Somewhat satisfied, 4=Satisfied, and 5= Very satisfied). Results shown in Table 4.25, indicate a 3.74 mean for WG members (Std. Dev.= 1.059), 3,78 (Std. Dev.= .833) for RAC/WG members, 3,56 (Std. Dev. 1.044) for those members who are not sure if they still are members, and 2,88 (Std. Dev. 1.111) for participants that indicated they are no longer participating. Similarly, INIA research staff indicated a 2,71 mean satisfaction value (Std. Dev. .908), showing the lower satisfaction according to the scale.

Therefore, findings in Table 4.25 indicate that INIA Research staff is less satisfied than RAC/WG members about the methodology used in the meetings. Furthermore, RAC/WG members that are no longer participating in the meetings, and members that there are "nor sure" about what is his/her status are less satisfied than others groups.

Table 4.25 Test of differences (ANOVA) for satisfaction with the process/structure of meetings by membership status.

Membership status	N	Mean	Std. Deviation	F value	Sig.
WG member	27	3.74	1.059		
WG member & RAC representative	9	3.78	.833	4.843	.001*
Not sure	24	3.56	1.044		
No longer participating	17	2.88	1.111		
INIA Staff	24	2.71	.908		

As shown in Table 4.25, significant differences at the .05 level were observed among the groups determined by membership or relationship with the councils. A multiple comparisons between groups (Post Hoc Test, Sheffe) indicated that the satisfaction indicated by INIA research staff is significantly different from RAC/WG members and WG (Sig. .014).

e) Major weakness in meetings

Information presented in this section came from qualitative data collected thru open-ended questions and members interviews. One open-ended question related to collect opinion about the major weakness that participants found was included in the RAC/WG and INIA research staff questionnaires.

Analysis of the opinions from RAC/WG members reveals, that meetings are very bureaucratic with a wide and extensive program, and consequently lack of available time for discussion and interaction.

Another set of statement could be related to the available information that members can have previous to the meetings. Members indicated that previous information is very poorly or inexistent, therefore meetings show lack of preparation from members resulting in uninformed members.

Methodological aspects of the meetings were also indicated as responsible for poor meetings. In this sense, members indicated that methodology used regularly lacks of opportunity to interact with INIA's researchers. Moreover, it was pointed out that meeting mostly of the times are not for discussion, but just to inform about what INIA researchers are doings. Finally, members indicated as an additional weakness the domination that old and experienced council members exert over the rest of the members.

From the stand point of INIA, researchers indicated as one of the major weakness the little opportunity that they have to participate directly in the meetings. Researchers expressed that mostly of the time Area Supervisors or Program Head lead the meetings using the information provided by the researchers.

In addition, researchers indicated that INIA sometimes do not have clearly defined what the purpose of the meeting is. Furthermore, researchers also pointed out that the council members opinions are not well processed inside of the INIA's structure.

Some other minor groups of opinions were consistent with what was pointed out by members regarding: a) wide program, b) lack of time, c) poor or inexistent information provided to councils members previous the meetings and d) excess of technical data.

4.6. Council Members Opinion about Perceived Barriers, Meeting Interaction and Received Guidelines

A set of questions was asked to RAC/WG members in order to gather their opinion about the major barriers that they found in the system. RAC/WG members were asked to respond to three basic groups of statements regarding: a) instructions and guidelines for meetings, b) interaction between RAC/WG members and INIA La Estanzuela research staff, c) opinion about time available during meetings and, d) major barriers expressed in open-end questions.

A mean was calculated for each statement based on a 1-5 Likert-type scale: 1=Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, and 5= Strongly disagree.

a) Instructions and guidelines for meetings

This section describes the opinion that RAC/WG members have about the instructions and guidelines they receive or received to work on the councils.

RAC/WG members rated with a mean of 2.68 (Std. Dev= 1.016) in a 1-5 scale their opinion about received "adequate guidelines about the RAC and WG

councils" (Table 4.26). When asked about if they received adequate information prior to the meeting, a mean of 2.60 (Std. Dev.= .990) was founded according to their opinion.

Table 4.26 RAC/WG perception about received guidelines and previous information to work in the councils.

Guidelines & Information	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)	Mean *	Std. Dev.
I receive adequate guidelines about RAC and WG (N=75)	11 (14.7)	20 (26.7)	27 (36.0)	16 (21.3)	1 (1.3)	2.68	1.016
I receive adequate information previous the meeting (N=77)	10 (13.0)	28 (36.4)	23 (29.9)	15 (19.5)	1 (1.3)	2.6	.990

* Means calculated based on a 1-5 scale: 1=Strongly disagree, 2= Disagree, 3= Neutral 4= Agree and 5= Strongly disagree.

Mean values in Table 4.26 indicate a "disagreement" or "neutral" opinion regarding guidelines received and prior information about the meeting.

b) Interaction between RAC/WG members and research staff

Member's results shown in Table 4.27 indicate means ranging between 3.13 and 3.93 for a set of statements regarding interactions either between RAC/WG members or RAC/WG and INIA research staff. A mean of 3.93 (Std. Dev. .943), was indicated to the feasibility of members to express their ideas during meetings. When members were asked to indicate their opinion about interaction with other members and INIA research staff, a mean of 3.69 (Std.

Dev.= 1.000) was indicated, 3.47 (Std. Dev.= 1.125) was the mean found for interaction with other members outside of meetings, and 3.63 (Std. Dev.= 1.056) for interaction with INIA Research staff.

Table 4.27 RAC/WG member perceived opinion about interaction

Interaction	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)	Mean *	Std. Dev
I can express my opinions during the meetings (N=76)	2 (2.6)	5 (6.6)	9 (11.8)	40 (52.6)	20 (26.3)	3.93	.943
I can interact with others members during the meetings (N=75)	3 (4.0)	6 (8.0)	16 (21.3)	36 (48.0)	14 (18.7)	3.69	1.000
I can interact with others members outside the meetings (N=76)	4 (5.3)	12 (15.8)	18 (23.7)	28 (36.6)	14 (18.4)	3.47	1.125
There is a good interaction with INIA Researchers (N=76)	4 (5.3)	7 (9.2)	16 (21.1)	35 (46.6)	14 (18.4)	3.63	1.056
I feel that my ideas are taking in consideration (N=75	4 (5.3)	14 (18.7)	29 (38.8)	24 (32.0)	4 (5.3)	3.13	.963

In general, respondents tend to agree that they had an opportunity to express ideas and to interact between RAC/WG members and with INIA research staff. The lower perception value was found for RAC/WG members who indicated their opinion about the feeling that their ideas expressed in the meetings are taken into consideration by INIA (mean=3.13). Moreover, the

lower standard deviation (.963) was also found for this statement indicating more consistency among RAC/WG members about his/her opinion.

c) Opinion about time and growth in technical expertise

Members where asked to indicate if they have enough time during meetings to elaborate their ideas and if they feel that they are increasing their technical expertise as a consequence of their participation in the RAC and WG councils. Results shown in Table 4.28 indicate a mean of 2.99 (Std. Dev.= .902) regarding the time that members have to elaborate their ideas during meetings. This result shows an almost "neutral" opinion to this statement.

Members opinions about the fact of develop technical expertise as a consequence of participate in the councils show a mean of 3.58 (Std. Dev.= .912). This value indicates that members have agreement regarding this statement; in fact, more than three-fifth (63%) of members "agree" or "strongly agree" with this statement (Table 4.28).

Table 4.28 Time availability during meetings and growth in technical expertise

Time and Technical expertise	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)	Mean *	Std. Dev
I have enough time during meetings to elaborate my ideas (N=76)	4 (5.3)	16 (21.1)	36 (47.4)	17 (22.4)	3 (3.9)	2.99	.902
I feel that I am developing technical expertise as result of my participation (N=73)	1 (1.4)	10 (13.7)	16 (21.9)	38 (52.1)	8 (11.0)	3.58	.912

d) Major barriers

Qualitative data regarding the major barriers showed that 11 statements out of 26 were related to the utility and the importance given to council members' opinion by INIA. Members indicated that they have an impression that INIA does not feel it necessity to meet with them, and consequently it does not give value to their participation. Council members felt that INIA shared information about closed or approved research programs. Lack of feed back from INIA regarding councils suggestions, recommendation or possible implementation of council opinions seem to support the previous idea about the importance that INIA is given to this systems to RAC/WG members.

Another important group of opinions is related to the economical situation that Uruguay, and in particular, the agricultural sector is living since the end of year 2000. Members indicated that the recession does not allow them to see the technological needs of the future. Furthermore, they do not feel motivated to participate because they have many economic and financial problems to resolve at the present time as a consequence of the recession.

The third most important issue indicated is related to the economic cost that members have to pay to participate. Members indicated that participation at the councils is not remunerate by INIA; as a consequence, members have a direct cost of travel and expenses to cover in order to assist to the meeting and a more important indirect cost regarding the loose of the day in their personal activities.

Finally, a miscellaneous group of minor comments were related to: a) members' low level of commitment, b) membership renewal renovation, c)

regulation of members participation, and d) lack of coordination between major farmers organizations.

4.7. INIA Research Staff Opinion about Perceived Parriers, Meeting Interaction and Received Guidelines

Similar to RAC/WG, a set of questions regarding the major barriers that they found to the functioning of the meetings was asked to INIA research staff. INIA research staff were asked to respond to three basic group of statements regarding: a) instructions and guidelines for meetings, b) interaction between RAC/WG members and INIA La Estanzuela research staff, and c) opinion about time available during meetings.

Descriptive statistics with means and standard deviation were calculated for each statement based on a 1-5 scale: 1=Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly disagree.

a) Instructions and guidelines for meetings

Table 4.29 shows INIA Research staff opinions about the received guidelines and instructions previous council meetings. A mean of 2.54 (Std. Dev.= .811) for "adequate guidelines" indicate that research staff does not agree with the statement, in fact 50% of the researchers "disagree" and 38.5% are neutral to the statement.

Regarding "previous information", a mean of 2.23 (Std. Dev.=. 815) shows that research staff lack of appropriate information before the meetings.

Table 4.29 INIA's Research staff opinion regarding guidelines and information previous meetings.

Guidelines & Information	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)	Mean *	Std. Dev
I receive adequate guidelines about RAC and WG (N=26)	1 (3.8)	13 (50.0)	10 (38.5)	1 (3.8)	1 (3.8)	2.54	.811
I receive adequate information previous the meeting (N=26)	4 (15.4)	14 (53.8)	6 (23.1)	2 (7.7)	0 (0)	2.23	.815

b) Interaction between RAC/WG and Research staff

A mean of 3.35 (Std. Dev. 1.018) indicates that INIA La Estanzuela research staff is "neutral" regarding the possibility of express their ideas during meetings. When INIA research staff was asked to indicate their opinion about interaction with RAC/WG members, a mean of 2.96 (Std. Dev.= .889) was indicated (Table 4.30).

Table 4.30 INIA's research staff opinion regarding opinion and interaction with RAC/WG members

Interaction	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)	Mean *	Std. Dev
I can express my opinions during the meetings (N=26)	1 (3.8)	4 (15.4)	9 (34.6)	9 (34.6)	3 (11.5)	3.35	1.018
There is a good interaction with RAC/WG members (N=25)	2 (8.0)	4 (16.0)	12 (48.0)	7 (28.0)	0 (0)	2.96	.889

Overall the averaged scored (means) show that INIA research staff are either "neutral" or "agree" to the fact that they can express their ideas during meetings. They are almost "neutral" regarding interaction with RAC/WG members. In fact, one-fourth (24%) of the INIA la Estanzuela research staff "disagrees" and 8% strongly "disagree" regarding interaction with RAC/WG members.

c) Opinion about amount of time to express ideas during meetings

Almost half (48%) of the staff expressed "neutral" opinion about the amount of time provided to express ideas (Table 4.31).

Table 4.31 Opinion about time availability during meetings.

Time	Strongly Disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly Agree N (%)	Mean *	Std. Dev
I have enough time during meetings to elaborate my ideas (N=25)	2 (8.0)	6 (24.0)	12 (48.0)	5 (20.0)	0 (0)	2.80	.866

d) Major barriers

INIA research staff also was asked in an open-ended question to identify the major barrier that this participative system is suffering. According to the analysis, the major theme was related to the difficulty that council members have to separate individual problems than regional or national problems. This problem also determines that ideas or suggestions from council members are based on a short vision of the future.

In addition, INIA research staff (coincidently with RAC/WG members) indicated the fact that INIA lacks of credibility from the council members. INIA staff pointed out that INIA is perceived as bureaucratic to implement council members' suggestions and give timely feed back to the suggestions and propositions made during the councils meetings.

4.8. Comparison of Perceived Opinions, Council Members vs. INIA

As we saw previously, some of the questions posed to RAC/WG members described in the section 1.6 were also posed to INIA research staff (section 1.7).

This section analyze some possible differences in the perceived opinions between RAC/WG and INIA's research staff regarding their valorization for the following selected statements: a) opinion about received guidelines, b) information received previous meetings, c) opportunity to express ideas during meetings, and d) time available during the meeting to elaborate they own ideas.

Table 4.32 Test of differences (t-test) between RAC/WG and INIA for received guidelines, information prior meetings, interaction, and time during meetings.

		N	Mean	Std. Dev.	t-value	Sig.
I received adequate guidelines about the RAC and WG	INIA	26	2.54	.811	.716	.477
	RAC/WG	75	2.68	1.016		
I received adequate information previous the meetings	INIA	26	2.23	.815	1.874	.067
	RAC/WG	77	2.60	.990		
I can express my opinions during the meetings	INIA	26	3.35	1.018	2.591	.013 *
	RAC/WG	76	3.93	.943		
I have enough time during the meetings to elaborate my ideas	INIA	25	2.80	.866	.926	.360
	RAC/WG	76	2.99	.902		

Results shown in Table 4.32 indicate a significant difference between RAC/WG and INIA's research staff opinion on the "opportunity to express their own opinions during the meetings" (t-value=2.591, Sig. .013). Therefore, according to the findings, councils' members seem to be more likely to give suggestions than INIA research staff during meetings.

For all others statements shown in Table 4.32, there were no a significant differences between the RAC/WG and INIA research staff opinion ($p < .05$).

4.9. Perception about Relevance of the RAC/WG

This section presents results regarding the perceived relevance of the advisory councils (RAC and WG) to identify farmer research needs, farmer linkages, and identify farmer educational programs.

A mean was calculated for each statement based on a 1-5 scale: 1=Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly disagree. A t-test was run to explore possible significant differences between means groups.

Results are presented under the following structure: a) responsibilities of RAC councils, b) responsibilities of WG councils, and c) judgment about importance of RAC/WG councils' opinion for INIA.

a) Responsibilities of the RAC councils

In this section sample population were asked to answer a set of statements regarding the relevance of the RAC for a selected given group of major responsibilities according to analyzed agendas of these RAC and WG councils since 1990.

Regarding "farmer needs identification", findings shown in Table 4.33 indicate that RAC/WG members were close to "agreement" (mean= 3.87) and INIA's research staff were in the middle of the way between a neutral and agreement (mean= 3.46). A t-test, between both means indicate a significant difference between both samples populations. Values for this statement consequently indicate that RAC/WG members are more willing to identify the

councils as relevant institution to identify farmer's needs than INIA's research staff.

When participants were asked to categorize if RAC councils are relevant to maintain strong linkages with the major farmer organizations, RAC/WG mean was 3.74 and INIA's research staff mean was 3.79. Both opinions are consistent and there is not significant difference between means (Table 4.33).

Table 4.33 Test of differences (t-test) for RAC/WG members and INIA research staff regarding major areas of responsibility for RAC councils

	RAC/WG		INIA Staff		t-value	Sig.
	N	Mean* (Std. Dev)	N	Mean** (Std. Dev)		
RAC are relevant institutions to identify farmer needs	75	3.87 (.935)	24	3.46 (.233)	2.027	.049*
RAC are relevant institution to maintain a strong linkage with farmer organizations	76	3.74 (.985)	24	3.79 (.833)	.269	.789
RAC are relevant institutions to identify regional educational activities	74	3.46 (1.062)	24	3.46 (.884)	.005	.996
RAC are relevant institution to give advice about INIA operative budget	75	3.40 (1.151)	25	1.80 (.577)	9.089	.000*
RAC are relevant to give support to the INIA's Regional Directors	70	3.77 (1.010)	25	2.80 (1.118)	.3823	.000*
RAC are relevant to prioritize research programs	74	4.08 (1.057)	25	3.32 (.802)	3.767	.000*
RAC are relevant to integrate farmers, industry and consumers to analyze technological problems	74	3.50 (1.230)	25	3.48 (.872)	.089	.930

**Mean calculated based on a 1-5 scale: 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree.
* Significant difference

In addition, a identical value of 3.46 for both samples were found when asked about the relevance of the RAC councils to identify regional educational activities.

The relevance "of RAC councils to give advice about operative INIA's budget" shows a very different and opposite orientation between samples. According to the RAC/WG members a mean of 3.40 indicate a positive relevance for this statement. However INIA's research staff means of 1.80 indicate a negative opinion of this statement for the RAC, with a significant difference regarding the RAC/WG mean. Moreover, RAC/WG council members indicated a mean of 3.77 when asked about the relevance of RAC councils to give advice of Regional Directors. However, INIA's research staff opinion is significantly different with a 2.80 mean value.

When samples were asked to indicate their opinion about "relevance of the RAC councils to prioritize research programs", RAC/WG members indicated an averaged value of 4.08, while INIA's research staff indicate a 3.32 mean value, showing a significant difference ($p < .05$) between indicated means.

For the last statement regarding the RAC councils, similar means were founded (3.50 for RAC/WG and 3.48 for INIA's staff) indicating no significant differences in their opinion about the relevance of RAC councils as a mechanism to integrate farmers, industry and consumers.

In summary, RAC/WG members agree about three roles for the council:

a) RAC is relevant to prioritize research programs

b) RAC is relevant institutions to identify farmer needs

c) RAC is relevant to give support to the INIA's Regional Directors

INIA La Estanzuela research staff tends to agree with the following three roles for the RAC council:

a) RAC are relevant institution to maintain a strong linkage with farmer organizations
b) RAC are relevant to integrate farmers, industry and consumers to analyze technological problems
c) RAC are relevant institutions to identify farmer needs, and RAC are relevant institutions to identify regional educational activities.

b) Responsibilities of the WG councils

The same set of statements were asked to RAC/WG members and INIA's research staff regarding the WG councils, in order to explore some possible differences in the perceived idea of relevance between both councils (RAC and WG).

Table 4.34 shows that WG are highly indicated by RAC/WG members to identify farmer's needs (mean = 4.20). INIA's research staff is close to agreement indicating a mean value of 3.70, showing a good acceptance of this statement. Even though there is a significant difference between both samples means, values indicate agreement to the statement.

Table 4.34 Test of differences (t-test) for RAC/WG members and INIA research staff regarding major areas of responsibility for WG councils

	RAC/WG		INIA Staff		t-value	Sig.
	N	Mean* (Std. Dev)	N	Mean** (Std. Dev)		
WG are relevant institutions to identify farmer needs	79	4.20 (.774)	23	3.70 (.765)	2.789	.008*
WG are relevant institution to maintain a strong linkage with farmer organizations	78	3.91 (.871)	24	3.88 (.797)	.185	.854
WG are relevant institutions to identify regional educational activities	77	3.71 (.856)	24	3.63 (.924)	.421	.677
WG are relevant institution to give advice about INIA operative budget	74	2.89 (1.177)	24	1.63 (.576)	7.024	.000*
WG are relevant to give support to the INIA's Regional Directors	71	3.51 (1.067)	24	2.46 (.932)	4.590	.000*
WG are relevant to prioritize research programs	78	3.88 (1.057)	24	3.42 (.881)	2.167	.036*
WG are relevant to integrate farmers, industry and consumers to analyze technological problems	79	3.58 (1.183)	25	3.52 (.770)	.306	.761

**Mean calculated based on a 1-5 scale: 1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree.

* Significant difference

Regarding the relevance of the WG councils to maintain a strong linkage with farmer's organization, participants indicated means close to agreement (INIA=3.88, RAC/WG 3.91). Similar situation was found for the statement related to the relevance of these councils in order to identify regional educational activities, with no significant different mean of 3.71 and 3.63 for RAC/WG and INIA's research staff respectively.

Once again, the statement about the relevance of "give advice about INIA's operative budget" show the lowest rating by RAC/WG members and INIA's

research staff. This result is consistent with the RAC council's statement and indicates that these councils are seen as "not appropriate" to discuss about budget.

When asked about if WG are relevant institutions to give support to regional directors, a significant difference was found between a 3.51 RAC/WG mean and 2.46 INIA's research staff mean. This result seem to indicate that according to RAC/WG members WG councils are relevant entities to give support to regional directors, while INIA's research staff are more reluctant to support this statement.

According to RAC/WG members a mean of 3.88 was indicated for the relevance of the WG councils to prioritize research programs. INIA's staff indicates a significant different mean of 3.42. These values indicate that RAC/WG members are more willing to indicate these institutions to prioritize research programs.

For the last statement (WG are relevant to integrate farmers, industry and consumers), no significant mean of 3.58 for RAC/WG and 3.52 were indicated.

In summary, the three major mean values according to the RAC/WG member's idea are:

a) WGs are relevant institutions to identify farmer needs

b) WGs are relevant institution to maintain a strong linkage with farmer organizations

c) WGs are relevant to prioritize research programs

INIA's research staff tends to indicate the three following statements as major roles for the WGs:

a) WGs are relevant institution to maintain a strong linkage with farmer organizations

b) WGs are relevant institutions to identify farmer needs

c) WGs are relevant institutions to identify regional educational activities

c) Importance of RAC/WG opinion for INIA

RAC/WG members and INIA research staff were asked to indicate their judgment about how important they think the RAC and WG councils' members opinion are for INIA. Mean values were calculated based on a 1-5 scale: 1=Nothing important, 2= Somewhat Important, 3= Neutral, 4= Important and 5= Very Important. A t-test was run to determine significant differences between group means scores.

As shown in Table 4.35, a mean of 3.86 (Std. Dev.= 1.022) was indicated for RAC/WG members' as their perception of how important is for INIA their opinion. INIA research staff indicates for the same question a 3.12 (Std. Dev. = .971) mean value. A t-test indicated a significant difference between the two means (t-value= 3.282, Sig. .002). Results indicate that RAC/WG have a significant better perception about how INIA considers their opinion than INIA research staff.

Table 4.35 Test of differences (t-test) for perceived importance of RAC opinions for INIA

	Nothing Import. N (%)	Somewhat Import N (%)	Neutral N (%)	Import. N (%)	Very Import. N (%)	Mean	Std. Dev.	t-value	Sig.
RAC/WG member (N=79)	1 (1.3)	11 (13.9)	8 (10.1)	37 (46.8)	22 (27.8)	3.86	1.022	3.282	.002
INIA Research Staff (N=26)	1 (4.0)	6 (24.0)	8 (32.0)	9 (36.0)	1 (4.0)	3.12	.971		

4.10. Contribution as a RAC/WG Member for Selected Areas.

Members and INIA research staff were asked to indicate their perceptions about how RAC/WG had contributed to the selected most important areas according to the major topics for what INIA asked RAC/WG participation. Mean values were calculated based on a 1-5 scale: 1=Very poor, 2= Poor, 3= Regular, 4= Good and 5= Very Good. A t-test was run to explore possible significant differences between group means.

Results in Table 4.36 shown that mean values for both, RAC/WG and INIA research staff range from 1.79 to 2.96. These averaged values, indicate that both RAC/WG members and INIA research staff hold the perception that RAC/WG members contribution to this selected areas was in the best situation "Regular".

A t-test was used to determine differences in opinions between RAC/WG members and INIA research staff. Findings in Table 4.36 indicate a significant

difference for the last item: "Members contribution regarding prioritization of extension activities", (t-value=2.811, Sig. .007). INIA research staff perception about RAC/WG member's contribution is significantly more positive than RAC/WG members themselves.

Table 4.36 Test of differences (t-test) for RAC member's contribution.

Statements	Groups	N	Mean	Std. Dev.	Std. Error Mean	t-test	Sig.
Member contribution regarding: research policy formulation	INIA	26	2.31	.788	.155	.130	.897
	RAC/WG	72	2.33	1.035	.122		
Member contribution regarding: research project identification	INIA	26	2.85	.881	.173	.405	.687
	RAC/WG	74	2.76	1.180	.137		
Member contribution regarding: research project prioritization	INIA	26	2.96	.871	.171	.741	.462
	RAC/WG	74	2.80	1.216	.141		
Member contribution regarding: budget and resources allocation	INIA	26	1.81	.694	.136	.126	.900
	RAC/WG	70	1.79	.915	.109		
Member contribution regarding: identification of extension activities	INIA	26	2.92	.845	.166	.1964	.054
	RAC/WG	74	2.51	1.088	.127		
Member contribution regarding: prioritization of extension activities	INIA	26	2.88	.816	.160	2.811	.007*
	RAC/WG	72	2.32	1.032	.122		

4.11. Familiarity with the System Before Participation

How familiar participants (RAC/WG and INIA research staff) were with the system before participating is an important element to understand if participants were well prepared to participate in this system; therefore if INIA provides them enough information and/or training before being council members.

When asked to indicate their familiarity with the system, RAC/WG members averaged a mean of 2.48 (Std. Dev. 1.211) in a 1-5 scale: 1=Not at all, 2=A little, 3=Neutral, 4= Familiar and 5=Very Familiar (Table 37). INIA Research staff indicates a 3.38 (Std. Dev.=. 637).

Results indicate that INIA research staff were significantly more familiar with the system than RAC/WG members (t-value=4.935, Sig. .000). Results show an important gap or need for more education or training to the advisory council members before they join the system.

Table 4.37 test of differences (t-test) for familiarity with the system (RAC vs. INIA research staff).

	Not at all N (%)	A little N (%)	Neutral N (%)	Familiar N (%)	Very Familiar N (%)	Mean	Std. Dev	t-value	Sig.
RAC/WG member (N=80)	21 (26.3)	23 (28.8)	17 (21.3)	15 (18.8)	4 (5.0)	2.48	1.211		
INIA Research Staff (N=26)	0 (0)	1 (3.8)	15 (57.7)	9 (34.6)	1 (3.8)	3.38	.637	4.935	.000*

4.12. Time and Frequency of Meetings Suggested

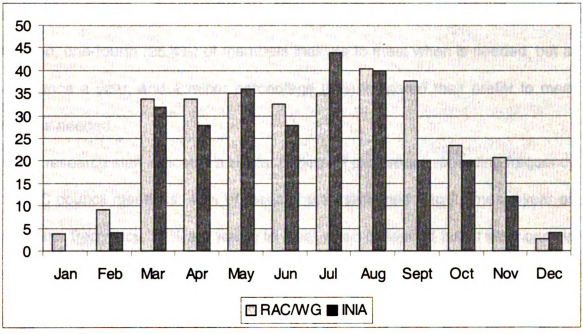
This section present information regarding the most appropriate period of the year to have meetings, and how frequent participants indicate council meetings should be held. From the current norms of the Regional Advisory Councils (Delpiazzo, 1996), we know that there is indication for the RAC to meet every three months. The analysis of the RAC/WG minutes indicates that usually

meetings were hold twice a year, and mostly during the first and last quarter of the year. In addition, it was indicated in the minutes of the RAC the necessity of avoid meetings during important period related to major agricultural operations as seed, and harvest. (RAC, WG minutes 1992-1998)

a) Appropriated months of the year

When is most appropriate to have meetings is an important element that need consideration when working in the agricultural sector. Farmers and others agricultural stakeholders' free time vary according to the type of production and/or major commodities products RAC/WG members are linked with.

Figure 4.6. Month of the year selected as most appropriate to have meetings
(Expressed in individual valid percentages. 100= 100% of the population said "Yes" to this month, 0=0% selected this month as appropriate)



As shown in Figure 4.6, there is consistency in the shapes illustrated by the percentage in which each month was selected by participants (RAC/WG and INIA).

August shows the lower gap between both, RAC/WG and INIA, and was highly selected as appropriate to held meetings. Similarly, March and May shows reduced gaps between both samples, and were indicated with good preference to have meetings, but less than August. INIA research staff indicated July as the most appropriate month; however, RAC/WG indicated this month with the same preference as May.

b) Frequency of meetings

Table 4.38 indicates that 52% of the members prefer to meet one or two times a year, and 14% are willing to meet 3 to 4 times at the RAC councils. In addition, one-fourth (25.4%) of members indicate to meet when is needed, but at least once a year, and a minor percentage (6%) indicated their prefer to meet when is needed.

INIA's research staff indicates a similar pattern of preference regarding frequency of RAC council meetings; 46% of researchers mentioned 1 to 2 times a year as the better frequency, 30% are willing to meet when is needed but at least once in a year and 23% when is needed.

Table 4.38 How often should the RAC meetings be held according to RAC/WG members?

RAC	RAC/WG members		INIA Research Staff	
	Frequency	Percent	Frequency	Percent
1 to 2 times a year	35	52.2	12	46.2
3 to 4 times a year	10	14.9	0	0
When is needed	4	6.0	6	23.1
When is needed, but once a year	17	25.4	8	30.8
Other	1	1.5	0	0

In the case of WG councils, almost 30% of RAC/WG members indicate 1 to 2 times a year as the better frequency to meet, almost one fourth 3 to 4 times, 17% prefer to meet when is needed and 27% when is needed but at least once a year (Table 4.39). In addition, about 54% of the INIA research staff indicate that meet when is needed but at least once a year is the best frequency for these councils, almost 27% indicate 1 to 2 times a year, 15% when is needed and a minor percentage (4%) selected 3 to 4 times as the more preferable frequency to meet.

Table 4.39. How often should the WG meetings be held according to RAC/WG members?

WG	RAC/WG members		INIA Research Staff	
	Frequency	Percent	Frequency	Percent
1 to 2 times a year	24	29.6	7	26.9
3 to 4 times a year	20	24.7	1	3.8
When is needed	14	17.3	4	15.4
When is needed, but once a year	22	27.2	14	53.8
Other	1	1.2	0	0

4.13. Invitation Process

a) RAC/WG members

RAC/WG members were asked to give opinion about how satisfied they are with the invitation process that INIA uses with members to convoke the meetings. Basically, this question is related with the timing of the invitation, the information they received, and the support they receive from INIA since they are invited and the meeting.

Table 4.40 shows that about 63% of RAC/WG members are "satisfied", 19% are "somewhat satisfied", and one out of ten participants are 'Little satisfied". However, 8% of members are "no satisfied" with the invitation process. In addition, an averaged mean for this variable was calculated, indicating a mean of 3.47 and a mode of 4.00.

Table 4.40 How satisfied RAC/WG are with the invitation Process? (N=78)

	Frequency	Percent
No satisfied	6	7.7
A little satisfied	8	10.3
Somewhat satisfied	15	19.2
Satisfied	41	52.6
Very satisfied	8	10.3
Total	78	100.0

Mean was calculated based on a 1-5 scale: 1=No Satisfied, 2=A little satisfied, 3= Somewhat satisfied, 4=Satisfied, 5=Very Satisfied.

Mean: 3.47 (Std. Dev. 1.066)
Mode: 4

b) INIA's internal convocation process

As well as RAC/WG members, INIA research staff receives an invitation from the Regional Director and/or the Head Program to assist to the RAC or WG meetings. For this reason INIA Research staff was asked to indicate how satisfied they are with the internal process of convocation for these meetings.

Results shown in Table 4.41 indicate that almost one fifth (19.2%) of the researchers are no satisfied, 30.8% are a little satisfied, 46.2% somewhat satisfied, and fewer (4%) indicated satisfaction with the process. There was no indication of very satisfied.

In addition, an averaged mean for this variable was calculated, indicating a mean of 2.35 and a mode of 3.00.

Table 4.41 How satisfied INIA La Estanzuela Research staff is with the internal (INIA) invitation process? (N=26)

	Frequency	Percent
No satisfied	5	19.2
A little satisfied	8	30.8
Somewhat satisfied	12	46.2
Satisfied	1	3.8
Very Satisfied	0	0
Total	26	100.0

*Mean was calculated based on a 1-5 scale: 1=No Satisfied, 2=A little satisfied, 3=Somewhat satisfied, 4=Satisfied, 5=Very Satisfied.

Mean: 2.35 (Std. Dev= .846)
Mode: 3

c) Timing and follow-up for RAC/WG invitation

How many days in advance RAC/WG members likes to receive the invitation for the meetings is an important point in order to improve the quality of the entire process of invitation.

RAC/WG members were asked to indicate, how much time in advance they like to receive the invitation. Table 4.42 shows that more than one half (51.9%) of the members prefer to receive the invitation 15 days before the meeting, about 11% indicate 3 weeks in advance (21 days), almost one fourth (24.7%) indicate 4 weeks (30 days) in advance, and a minor percentage (2.5%) prefer more than 30 days in advance.

Table 4.42. How much time in advance RAC/WG members like to received the invitation (N=81)

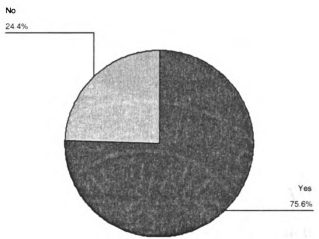
	Frequency	Percent
7 days in advance	8	9.9
15 days in advance	42	51.9
21 days in advance	9	11.1
30 days in advance	20	24.7
More than 30 days	2	2.5
Total	81	100.0

Besides, members were asked to indicate if after the normal invitation they would like to receive some kind of reminder follow-up, and if "Yes", which way is best for them.

As is indicated in the Figure 4.7, three-fourth (75.6) of RAC/WG members indicate that they like to receive a reminder follow-up after the first normal

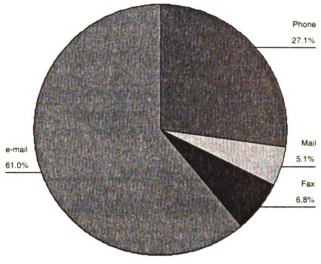
invitation. Moreover, 61% of members indicate e-mail (internet mail), and 27% selected a phone call as the most appropriate ways to remind them the meeting.

Figure 4.7 After the normal invitation RAC/WG member likes to receive a follow up reminder?



Indication of "e-mail" as the most appropriate way to communicate with 61% the actual list of members seems to indicate that the majority of members have access to Internet (Figure 4.8). This finding is an important point for INIA in order to increase the number and quality of contacts with the majority of members in an economical way.

Figure 4.8 Type of follow up reminder preferred by RAC/WG members



4.14. Importance of Established Norms for the RAC/WG

According to the actual description of RAC and WG procedures, established in the INIA's Law of creation, there are established norms regarding member's rotation, member's position and member's selection. However, according to the procedures utilized during the last ten years at INIA La Estanzuela there was lack of application of the existent norms.

For this reason, members were asked to indicate if they consider important to have norms that could help the RAC and WG councils. Table 4.43 shows that the majority of RAC/WG members (57.1%) indicate the necessity of have norms, and 31% indicate a somewhat necessity. Coincidently, INIA research staff follows the same pattern indicated by RAC/WG members, but in a stronger percentage in favor of having established norms. Thus, almost 85% of

INIA research staff indicate that RAC and WG councils need to have norms to works, and an additional 11% indicate a somewhat necessity of have norms.

Table 4.43 Opinion about importance of has established norms.

	Yes, need norms N (%)	Somewhat N (%)	No, do not need norms N (%)
RAC/WG member (N=81)	44 (57.1)	24 (31.2)	9 (11.7)
INIA Research Staff (N=26)	22 (84.6)	3 (11.5)	1 (3.8)

In addition when RAC/WG members were asked to specify what type of norm they would like to promote, the following items better represent their opinions:

- Necessity of register members representation
- Regulate concurrence and absences as motive to remove the member
- Regulate period of time to serve as council members

Similarly, INIA research staff indicated the following topics as major areas to setup norms:

- Members representation should be documented
- Norms regarding monetary payments to council members for travel costs
- Regulate number of farmers and professional for each council
- Period of time to serve as council members

4.15. Analysis of Others Comments

Respondents were encouraged to provide further opinions they felt were related to the study. This section provides an analysis of the final open-ended comments included in the survey questionnaires (RAC/WG and INIA). Information presented in this section is organized under the following headings: a) RAC/WG general comments and b) INIA's research staff general comments.

a) RAC/WG general comments

Forty-five RAC/WG respondents over 81, freely provided comments indicating more close feelings regarding the Regional Advisory Councils and the Work Groups. From the qualitative analysis of this comments, six major themes emerged 1) Economical situation of Uruguay, 2) Membership situations, 3) Needs assessments, 4) RAC/WG as linkages, 5) INIA position regarding RAC and WG and 6) Happiness with the study topic/initiative.

Theme 1: economical situation of Uruguay, participants pointed out that under this situation determining high constraints and financial problems in particular in the agricultural sector, there is few time to use in participative mechanism. RAC/WG members indicated that their particular economical and financial problems are they priority. Moreover, they state that this situation determines lack of motivation in general with the agricultural sector and in particular to participate and being involved with the RAC and WG councils.

Related, but with minor intensity, members indicated also that participation in the RAC and WG represent by itself a cost (travel expenses).

Theme 2: Several comment related to council "membership situations". Some participants indicated confusion about their membership status because they were invited to participate in one or two specific time, but after they did not received more invitation, neither explanation. One respondent was very specific in his/her comment: *"I did not receive more invitations, so I do not know if I am still member or not"*

Under the same topic, some other comments refer to the lack of young and new people at the councils. Moreover, members indicated that they do not have any reward from this membership. Annotations about this specify that members should have some economical rewards that help them to cover travel expenses, and or the loss of the day in them particular activities. However, they also mentioned that any non-economical reward or recognition will increase the motivation and engagement with the system and consequently with INIA.

Theme 3, related to the usefulness of RAC and WG as important tools to explore farmers and productive need assessments. One member remarked the importance of RAC and WG to gather information regarding the major technological problems that farmers have. However, two final comments pointed out that RAC are less effective than WG regarding his topic. According to one of this comments, WG are more linked to the reality and to farmers than RAC.

Theme 4, involved comments related to the appropriateness of RAC and WG as bridges or linkages with major agricultural stakeholders. RAC were

mentioned as good instruments for linkage research with customers. However, members pointed out that selection and representation are key elements to establish good linkages that allow these councils to operate as antennas from the productive sector.

Important comments were also indicated regarding INIA position to these councils (Theme 5). Some final comments mentioned that INIA should give more importance to this system. According to one comment, INIA research staff should be more open and receptive to council member's opinion.

Under the last theme: happiness with the study, comments were indicated to congratulates the researcher for choosing this topic. Participants hope that results could help to improve and to revitalize the system. Moreover, these kind comments indicate for the researcher demonstrations of appreciation and friendship collected from ten years of work in the region as research-farmers liaison agent. I addition these desire of good things from some members indicate also an important cohesiveness with INIA, build from this system.

b) INIA's research staff general comments

From INIA research staff questionnaire 11 final comments were collected out 26 respondents. Those final comments could be clustered under 4 themes: 1) Council member selection and representation, 2) RAC/WG outreach, 3) RAC/WG weight, and 4) INIA's procedure.

Theme 1: revolves around issues indicated from researcher indicating that member's selection should be done more careful in order to have real and

effective representation. In addition, one comment indicated that in order to have effective representation members should be rewarded economically, to create a sense of responsibility in the council member.

Topic included under theme 2 elaborate the idea that RAC should have national outreach, while WG are much appropriate to work oriented by regional outreach.

The third theme, integrate three comments related to what should be the importance (weight) that RAC and WG should have for INIA. Research staff comments under this theme indicated that INIA should consider council opinion as one more voice or channel to listen, but not the only one. Moreover, research staff pointed out that this understanding should be clearly transmitted and understood to council members, in order to create real expectations regarding their opinions. Other final comment, indicated the necessity of consider other channels of opinion because council needs are extremely related to present problems. However, for research it is extremely necessary to think also in future demands.

The fourth and final umbrella theme, involve comments related to the importance for INIA of have more clear defined objectives, purpose, procedures and norms to work with RAC and WG as a precondition for a good system development. Additional comment indicates also that INIA should give to the RAC and WG more importance.

This selected quotation is very inclusive regarding many of the final comments:

"RAC and WG should be an important component of INIA system of research prioritization, farm need assessment and linkage, but in reality they have been unsuccessful. I hope this study can help INIA to identify some elements for a new strategy to revitalize the RAC and WG. Unfortunately, some things are very rigid. For instance, RAC are included in the INIA's Law of creation. Consequently, it could be an obstacle to create a new structure that allows RAC to work oriented by disciplines, as it seems more appropriate."

CHAPTER V

Summary, Conclusions and Implications

5.1. Summary

This research was conducted at the INIA La Estanzuela research station of the National Agricultural Research Institute (INIA) of Uruguay. The study is of institutions called "Regional Advisory Councils" (RAC and WGs) of INIA La Estanzuela. RAC and WG's, created by the INIA's Law of creation of INIA and the INIA Board of Directors respectively, are indicated as important mechanisms to assess agricultural demands as well as linkage structures with the major agricultural and farmer organizations.

The primary objective of this study was to examine the factors and the relationships that affect the performance of the RAC and WG's. Currently, no studies have been made at INIA to assess the performance of the councils, yet there has been indication of several limitations in their performance.

The results of this study have implications for INIA and particularly for INIA La Estanzuela research station.

This research involved two study populations: the RAC members and the research staff of the INIA La Estanzuela research station. A total of 127 council members and 31 researchers served as populations in this study.

Data were collected using two self-administered survey questionnaires (RAC/WG council members and INIA research staff), an informal questionnaire for semi-structured interviews, and the analysis of secondary data (internal documents, memorandums, minutes, etc.). Data were collected at INIA La

Estanzuela research station in Uruguay, between July and August of 2002. Data analysis was done using quantitative (descriptive statistics, tests of means differences) and qualitative procedures.

Findings showed that RAC and WG continue to be relevant mechanisms for stakeholder participatory involvement. However, some problems regarding member and research staff guidelines to work with the councils, definition and communication of objective/purpose of council meetings, council members' renovation, INIA procedures of research staff involvement in councils meeting and communication between INIA and council members were identified as the major limitations for the councils' performance.

The socio-demographic information of RAC council member shows low participation of young people, and an extended length of services of council members at the RAC and WG.

Findings indicate that INIA is responsible for the selection of almost half (46%) of the council members. Although this important selection of council members made by INIA, shows a good representation from the major farmers and agricultural organizations, and a balanced distribution of farmers (25%), farm advisor (20%), and professional working for institutions (26%), the RAC council member still perceived a low representation of the agri-business, University, and farmer actors.

Lack of guidelines, information received prior to attending meetings, lack of knowledge of the objectives of meetings, and low direct participation of

research staff at the council meetings were indicated as major problems of the general procedures that INIA uses to work with the RAC and WG councils.

RAC and WG members also indicated confusion regarding their current membership status. The major reason for this uncertainty of membership status was indicated by the reduced frequency of contact or lack of contact/communication from INIA.

RAC and INIA research staff indicate and agree on the importance of the Regional Advisory Councils (RAC and WG) as valid instruments to identify farmers needs, prioritize research programs and develop linkages between research, extension, customers and stakeholders.

From the analysis of the literature, it is easy to discover the importance of participative and collaborative methods utilized between the research centers, customers or users of the technology and stakeholders. INIA, and the Regional Advisory Councils (RAC and WG) instrumented by INIA are remarkable examples of this participation, collaboration, and integration.

This study has identified some key elements that for improving the methodology of work with the advisory councils and improve the relationship of RAC and WG with INIA.

5.2. Conclusion and Implications

The most significant conclusions of this study are presented following the guidance of the posed research questions, which drove this research. The following major conclusions and implications are organized under the following

sections: a) advisory council members' profile, b) council members' selection process and linkages with the major farmer/agricultural organizations, c) perceptions regarding the methodology/procedures used by INIA with the advisory councils, d) major barriers affecting the advisory councils performance, e) areas of concern of the advisory councils, f) relevance of the advisory councils opinions, and g) general reflections.

a) Advisory Council members' profile

From the socio-demographic characteristics of council members (RAC and WG) there is an indication of a lack of involvement of young people (farmer and farmer representatives) at the councils. The percentile distribution of the council members' ages shows a negatively skewed distribution with 50% of the council members being over 48 years of age. Moreover, the lack of young people was mentioned during the interviews and in the final comments from RAC and WG members' survey questionnaire. This finding implies, for INIA, the necessity to include young and valuable people, with different ideas and perceptions regarding the agricultural sector and technological needs. In addition, the findings allowing a lower level of involvement of young people with agricultural issues or agricultural organizations. According to Mainzer (1958), it is very important for the life and accuracy of the advisory council to have a good balance represented by geographical locations, age, gender, actor's major role, and commodity. Lacy (1996) and Johnson (1998), indicate the importance of having a broad-based

composition and appropriate membership as a key factor for building successful advisory councils.

Regarding the year when members joined the councils, the findings indicated that 33% of the advisory council members joined the councils during the first year of RAC and WG work (1990-1991), meaning that they had been working continually for more than ten years. Similarly, 50% of the members had been working at the RAC and WGs for more than five years. This implies the lack of council member renovation and consequently, no opportunity for new people to contribute to INIA. In addition, this result suggests some status quo related to the dynamic of RAC and WG regarding the general procedures of member renovation. The conduction of focus groups in the INIA La Estanzuela region for pre-sampling and identification of new members is a good strategy to start the renovation process.

b) Council members' selection process and linkages with major farmer/agricultural organizations.

Regarding the selection process of council members, the findings indicated that INIA was responsible for the selection of 46% of the INIA La Estanzuela council members. However, this fact does not affect the representation of the major farmer and agricultural organizations at the councils. In fact, 80% of the RAC/WG members indicated they were representing organizations (Institutions represented are listed in Appendix E). This finding is consistent with the perception that INIA research staff have regarding the council member representation. In addition, the major occupation of council members

indicates a balanced distribution of farmers (25%), farm advisor (20%), and professional workers for organizations (26%). However, council members perceived a lower representation by the university, and the agri-industry and business segments at the advisory councils. This implies that RAC and WG's have a good representation of the major stakeholders groups, but that some attention should be given to increasing the university and the agri-industry and agri-business representation for the future.

c) Perceptions regarding the methodology/procedures used by INIA with the advisory councils.

In relation to the procedures that INIA is using with the advisory councils, a major concern was identified regarding guidelines and information that members and researchers received prior to attending the meetings. Finding indicated that a significant percentage of council members (68%), as well as research staff (54%), being attending the meetings with a poor knowledge of the objective/purpose of the meeting. This finding was shown by means scores on a1-5 Likert-type scale, which indicated that the information received prior the meeting, was not satisfactory (the means were 2.60 and 2.23 for RAC/WG and INIA research staff, respectively). This finding has a significant implication in relation to the quality of the meetings. It seems to be very difficult for members and researchers to accomplish the purpose of the meetings, when there is a lack of information and the objectives are unclear. Consequently, it is necessary for INIA to make a significant effort in the meeting objectives definition and

communication, as well in the provision of general information prior to the meetings.

Findings also indicated that RAC/WG and INIA research staffs do not have adequate guidelines related to the council work prior to their participation. This finding shows that council members and INIA research staff have to gain experience and learn about the work of the councils as they participate in the RAC and WG meetings. Consequently, this finding implies problems in the understanding of the council functions and outreach. According to this finding, it is important for INIA to establish instances and procedures to educate and to inform council members and research staff about the functions, the norms, and the general procedures regarding the RAC before new members join the system.

Regarding the satisfaction that council members have concerning the INIA support before, during and after the meetings, the findings indicated that members were well satisfied with the support that INIA provided them during meetings (3.8 mean in a 1-5 Likert-scale). However, council members expressed little or only some satisfaction (2.5 and 2.9 mean in a 1-5 Likert-scale), regarding support before and after the meetings. This result may be due to the lack of communication, and follow-up contacts from INIA between meetings. As it was noted earlier, a significant percentage of council members have doubts about their membership status as a consequence of the lack of communication from INIA. In this sense, again, the findings suggest the necessity to improve the strategy of communication and contact with members in an ongoing manner.

Regarding council members interactions, members reported the ability to

interact sufficiently with other council members and between themselves and the research staff.

However, INIA research staff perceived that they do not have the same capacity for interacting with council members. This finding suggests that INIA staff have some limitation to interact with council members. As indicated earlier, a significant percentage of INIA researchers participate in a small number of meetings. Similarly, some researchers indicated that in most of the cases, they provide the information to the Area Supervisor and Program Head, but they do not participate in the RAC and WG meetings. Findings related to the internal process of convocation of INIA researcher at the meetings, indicated lack of satisfaction of researchers with this procedure. This conclusion implies that norms and procedures need to be revised to ensure more research involvement with RAC and WG meetings.

In addition, there is a common perception between council members and INIA research staff that meetings are very broad in their programs, that many reports are presented and that there is not enough time for discussion. In addition, council members complained that they did not receive any feedback from INIA regarding their opinions and participation. The conduction of "open-agenda" meetings appears to be as important in order to ascertain new topics and to give the opportunity to RAC members to freely discuss problems or issues, that would otherwise be missed or be outside of the agenda or be out of time.

The major findings in this section are in agreement with the major issues affecting advisory councils as reported by Johnson (1998) in a similar study conducted at the Michigan Agricultural Experiment Station of Michigan State University.

d) Major barriers affecting the advisory councils performance

The membership status of the advisory council participants is one of the most significant findings of this study. When members were asked to indicate their current membership regarding RAC and WGs, one out of three (32.5%) indicated not to be sure about his/her membership status. Similarly, one out of five (22.5%) mentioned no to be longer participating. More than half (55%) of the members indicated not being actively working was a very significant concern. However, when exploring the causes of inactivity, almost three-fourths (73%) mentioned that they had not received new invitations from INIA to participate in meetings or communication regarding the RAC councils for a long period of time. This finding implies a significant lack of communication from INIA to the council members. In addition, this conclusion suggests that the RAC and WG council members database could be corrected or ameliorated by adequate maintenance.

One of the major functions of the Regional Advisory Councils is to identify, to discuss and prioritize research programs. However, INIA La Estanzuela research staff indicated a low level of participation at the council meetings. Almost two out of three researchers mentioned participating in four to six meetings, and 23% of them indicated participating in only one to three meetings

over more than 60 meetings held since 1990-91. This finding is consistent with comments from the open-ended questions in which research staff members are recommended to become more involved directly in the council meetings, rather than being represented by Area Supervisors or Program Heads. This finding suggests that a review be made of the INIA's procedures regarding INIA La Estanzuela faculty participation in the council meetings. It is pertinent to state that this factor could be responsible for the lack of major involvement and engagement of the INIA researcher in the system. Moreover, it could be difficult for researchers to consider RAC and WG suggestions when the researcher did not participate directly in these meetings.

In order to increase motivation and engagement a strong recommendation is made to develop a non-monetary reward, recognition, and motivational strategy for RAC council members, to increase the feeling of belongingness, esteem, and cohesiveness with the system and INIA. Easy procedures such as publication in newspapers regarding RAC members' meetings or ideas, an annual award given to the most engaged RAC member, an annual recognition given to the work of each RAC members, among other possible ideas, are suggested.

e) Areas of concern of the advisory councils work

RAC/WG members and INIA staff perceived that both councils are relevant institutions for identifying farmer needs, prioritizing research programs, developing linkages between the research institute and farmer and/or agricultural

organization, identifying regional extension activities, and integrating farmers, industry and consumers in a sort of round table of discussion. RAC/WG council members also indicated the function of giving advice about budget allocation and of supporting the regional director in his/her development as areas of responsibilities for the RAC and WG. However, INIA research staff disagrees with both of these suggestions.

The findings suggested that both RAC/WG members and INIA research staff have a good understanding of the major functions of the councils. However, RAC/WG council members perceived that the "budget" responsibility is an area of concern for the RAC. This area, as described by Delpiazzo (1996), is not an area of responsibility of the councils. In this sense, it could be important for INIA to make efforts to clarify this stakeholder expectation.

f) Relevance of the advisory councils opinions

In relation to the importance of council opinions, both council members and INIA research staff state that RAC and WG council opinions are important to INIA. However, council members and INIA research staff indicated that councils' contributions were poor in the following areas: research policy identification, formulation, prioritization, and identification and prioritization of extension activities. Comments in the open-ended questions and interviews revealed that council members do not receive clear feedback regarding how their opinions are processed inside of INIA. This conclusion implies the necessity of establishing a good communication flow between council members and INIA, and vice versa

regarding the process of integrating council opinions. Feedback is needed, as a two-way communication system, between INIA and council members.

g) General reflections

Leholm et al. (1998), and Leholm et al. (1999), have indicated that establishing the linkage between research, extension, and stakeholders has been a considerable challenge. As the authors argue, many research stations have been criticized for not including formally stakeholders' opinions. In this sense, INIA represents a good example of both points: a) developing an instrument in an innovative system that allows farmers and other stakeholders to participate and collaborate in the decision-making process of the institution, and b) creating an instrument of linkage for the major agricultural actors working in the agricultural sector of Uruguay.

RAC members and INIA research staff indicated a substantial relevance of this instrument for identifying technological needs and educational activities, prioritizing research and extension programs, and as using a linkage tool with stakeholders. In addition, a great commitment to the instrument and from the topic can be easily identified from the high responses rates, and the interest demonstrated by the participants in the study.

It is important to remark that many of the problems reported in this study were identified as common problems by other researchers for others advisory councils, and represent mostly organizational problems, rather than structural problems. As Axinn, H., and Axinn, W. (1997) pointed out, participation and

collaboration does not occur without cost; that cost includes the investment of time, energy, and appropriate communication, "including long hours of patient listening" (p 93). The authors indicate that collaboration is more of a qualitative process, than it is a quantitative process.

The most urgent and general actions that INIA La Estanzuela research station must consider, based on the findings, are to review the general procedures and norms established for the work with the RAC and WG. The elaboration and dissemination of updated norms, in collaboration with RAC and INIA staff members, is encouraged. For this purpose, developing a set of focus groups, to discuss major findings of this study and to determine solutions is advised. The identification and/or the reinforcement of the work of a "gatekeeper" or liaison person for the RAC and WG, in order to identify and develop a continuous communication strategy is also encouraged.

In addition, an efficient, effective, and timely process must be implemented for the internal processing and archiving of the RAC and WG suggestions, ideas, and comments. Feedback regarding the status of these inputs is imperative in order to increase trust, motivation, and the perception of contribution from RAC and WG members.

The usefulness of this study could be realized if the results were analyzed by INIA and utilized to improve the Regional Advisory Council system at INIA La Estanzuela research station. A summary of the results should be made available to council's members, INIA research staff, and INIA managers in order to utilize the major findings.

5.3. Recommendation for Future Research

Although there is indication of the existence and the uses of Regional Advisory Councils or Advisory Councils at different levels, some studies were conducted and few were published. Some difficulty was found in attempting to identify similar studies to help in the definition of this study. Consequently, several gaps in the research literature and knowledge related with the topic were noted. This case study represents the first study of the Regional Advisory Council's one research station (INIA La Estanzuela) of the National Agricultural Research Institute (INIA) of Uruguay. As a case study, this research station represents valuable information for the subject of the study, but a generalization of the findings is not possible.

In addition, due the importance of the export commerce for the agricultural sector of Uruguay, it would be worthwhile to conduct additional deep analysis regarding the independence that farmers and other stakeholders have regarding the identification of new productive technologies.

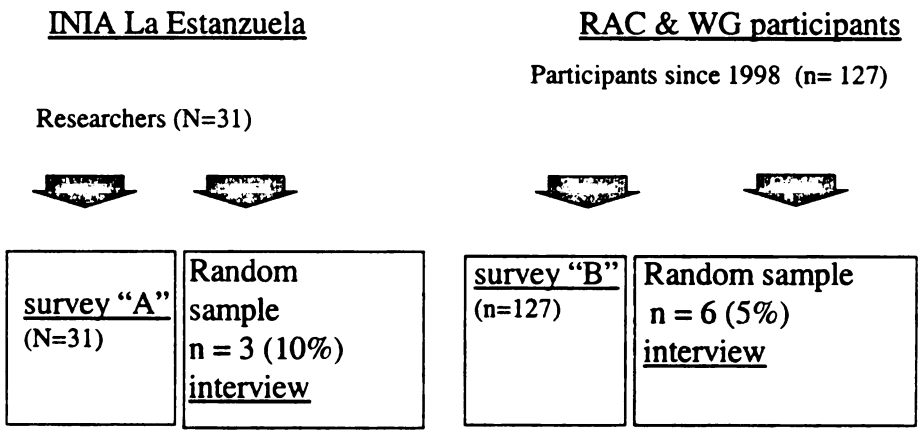
It is necessary to encourage the undertaking of new studies regarding this area in order to broaden the knowledge regarding these valuable participatory institutional arrangements.

A similar study is recommended to be conducted of the entire INIA, involving the five research stations in order to provide a major source of information for drawing generalizations regarding the Advisory Councils of INIA.

APPENDICES

Appendix A

Sample Population and Instruments



Appendix B
UCRIHS Approval

MICHIGAN STATE
UNIVERSITY

October 15, 2002

TO: Murari SUVEDI
409 Agriculture Hall
MSU

RE: **IRB # 02-441 CATEGORY: 1-2 EXEMPT**

TITLE: AN EXAMINATION OF THE REGIONAL ADVISORY COUNCILS OF URUGUAY'S NATIONAL AGRICULTURAL RESEARCH INSTITUTE (INIA)

ANNUAL APPROVAL DATE: **June 6, 2002**
REVISION REQUESTED: October 7, 2002
REVISION APPROVAL DATE: October 14, 2002

The University Committee on Research Involving Human Subjects' (UCRIHS) review of this project is complete and I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the **UCRIHS APPROVED THIS PROJECT'S REVISION.**

This letter notes approval for the changes made in the project title and target population.

RENEWALS: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Projects continuing beyond one year must be renewed with the green renewal form. A maximum of four such expedited renewal are possible. Investigators wishing to continue a project beyond that time need to submit it again for a complete review.

REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB# and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.

PROBLEMS/CHANGES: Should either of the following arise during the course of the work, notify UCRIHS promptly: 1) problems (unexpected side effects, complaints, etc.) involving human subjects or 2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of further assistance, please contact us at (517) 355-2180 or via email: UCRIHS@msu.edu.

Sincerely,

Ashir Kumar, M.D.
UCRIHS Chair

AK: rt

cc: Ernesto Restaino Galup
409 Agriculture Hall

OFFICE OF
RESEARCH ETHICS AND STANDARDS
University Committee on Research Involving Human Subjects
Michigan State University
202 Olds Hall
East Lansing, MI
48824
517/355-2180
FAX: 517/432-4503
Web: www.msu.edu/user/ucrihs
E-Mail: ucrihs@msu.edu

The Michigan State University IDEA is institutional Diversity: Excellence in Action
MSU is an affirmative-action, equal-opportunity institution

Verbal Consent Statement for Interviews – INIA & RAC
(To be read)

Dear [RAC member first name / INIA Researcher]:

HELLO, I am ***Ernesto Restaino***. I would like to ask for your valuable participation in the study entitled " An Examination of the Regional Advisory Councils of the Uruguay's National Agricultural Research Institute of Uruguay (INIA)".

Your opinion is an extremely valuable component of this study. You were selected randomly to participate in this personal face-to-face interview.
I would very much appreciate a few minutes of your time to respond some questions. This is an informal interview so feel free to talk relaxed. It should only take 30 minutes.

Please be assured that your participation is voluntary, and all your responses are kept strictly confidential. This means that your name will not be connected to your responses in any way and your privacy will be protected to the maximum extent allowable by law. Your answers will not be seen by anyone except for the researcher. You are in liberty not to answer any of the questions or to terminate the interview at your discretion.

Are you willing to participate in this interview? (Yes/No)

(The interviewer is to leave a copy of this verbal consent with each participant.)

If you have any question and concern regarding this study, please contact:	*If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact – anonymously, if you wish:*
Ernesto Restaino, Ing. Agr. Master Candidate, MSU restaino@inia.org.uy Phone: (0554) 8000 INIA La Estanzuela Ruta 50 km 11, Colonia	Ashir Kumar, M.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) Phone: (517) 355-2180, Fax: (517) 432-4503, ucrihs@msu.edu 202 Olds Hall, East Lansing, MI 48824. USA

UCRIHS APPROVAL FOR
THIS project EXPIRES:

JUN - 6 2003

SUBMIT RENEWAL APPLICATION
ONE MONTH PRIOR TO
ABOVE DATE TO CONTINUE

Cover Letter for the Survey Questionnaire A – INIA

[Date]

[INIA researcher FIRST NAME and LAST NAME]
INIA [name of the Research Station]

Dear [researcher first name]:

I would like to ask for your valuable participation in the study entitled " An Examination of the Regional Advisory Councils of the Uruguay's National Agricultural Research Institute of Uruguay (INIA)".
This study is being conducted as partial fulfillment of the requirements for my Master degree at Michigan State University. I decided to choose this area of work based on the importance that this topic has for clientele participation in INIA's policy making.

Your opinion as INIA researcher is an extremely valuable component of this study. This survey is sent to all the INIA researchers.
I will appreciate a few minutes of your time to respond to the attached questionnaire. It should take about 10 minutes.

Please be assured that your participation is voluntary, and all your responses are kept strictly confidential. This means that your name will not be connected to your responses in any way and your privacy will be protected to the maximum extent allowable by law. Your answer will not be seen by anyone except for the researcher. Your name will never be placed on your questionnaire. You may choose not to answer some of the questions. You indicate your voluntary agreement to participate by completing and returning this questionnaire.

An early response would be especially appreciated. Once you have completed the questionnaire, use the self-addressed envelope provided and places it in the box you can find in the secretary of your Research Station. Please return this completed questionnaire before [Month Day, Year].

A summary of the result of this study will be available upon completion. If you would like a copy of the result, please indicate this in the available space in the questionnaire.

Thanks for your assistance.
Sincerely,

JUN - 6 2003

Ernesto Restaino
Transfer Technology Unit – INIA La Estanzuela

SUBMIT RENEWAL APPLICATION ONE MONTH PRIOR TO ABOVE DATE TO CONTINUE

If you have any question and concern regarding this study, please contact:	*If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact – anonymously, if you wish:*
Ernesto Restaino, Ing. Agr. Master Candidate, MSU restaino@inia.org.uy Phone: (0554) 8000 INIA La Estanzuela Ruta 50 km 11, Colonia	Ashir Kumar, M.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) Phone: (517) 355-2180, Fax: (517) 432-4503, ucrihs@msu.edu 202 Olds Hall, East Lansing, MI 48824. USA

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Cover Letter for the Survey Questionnaire B – RAC

[Date]

[RAC/WG member FIRST NAME and LAST NAME]
[STREET ADDRESS]
[CITY, COUNTY]

Dear [RAC/WG member first name]:

I would like to ask for your valuable participation in the study entitled " An Examination of the Regional Advisory Councils of the Uruguay's National Agricultural Research Institute of Uruguay (INIA)".
This study is being conducted as partial fulfillment of the requirements for my Master degree at Michigan State University. I decided to choose this area of work based on the importance that this topic has for clientele participation in INIA's policy making.

Your opinion as RAC and WG member is an extremely valuable component of this study. This is sent to all RAC and WG members listed since 1998.
I will appreciate a few minutes of your time to respond to the attached questionnaire. It should take about 10 minutes.

Please be assured that your participation is voluntary, and all your responses are kept strictly confidential. This means that your name will not be connected to your responses in any way and your privacy will be protected to the maximum extent allowable by law. Your answer will not be seen by anyone except for the researcher. Your name will never be placed on your questionnaire. You may choose not to answer some or any of the questions. You indicate your voluntary agreement to participate by completing and returning this questionnaire.

An early response would be especially appreciated. A self-addressed envelope has been enclosed for your convenience in returning the completed questionnaire. Moreover, if you find any difficulty to send back the questionnaire feel free to contact me anytime. Please return this completed questionnaire before [Month Day, Year].

A summary of the result of this study will be available upon completion. If you would like a copy of the result, please indicate this in the available space in the questionnaire

UCRIHS
THIS pr

JUN - 6 2003

SUBMIT RENEWAL APPLICATION
ONE MONTH PRIOR TO
ABOVE DATE TO CONTINUE

Thanks for your assistance.
Sincerely,

Ernesto Restaino
Transfer Technology Unit – INIA La Estanzuela

If you have any question and concern regarding this study, please contact:	*If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact – anonymously, if you wish:*
Ernesto Restaino, Ing. Agr. Master Candidate, MSU restaino@inia.org.uy Phone: (0554) 8000 INIA La Estanzuela Ruta 50 km 11, Colonia	Ashir Kumar, M.D., Chair of the University Committee on Research Involving Human Subjects (UCRIHS) Phone: (517) 355-2180, Fax: (517) 432-4503, ucrihs@msu.edu 202 Olds Hall, East Lansing, MI 48824. USA

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Appendix C

Pre-letter RAC and WG members

Fecha

«titulo» «nombre» «apellido»
«direccion»
«localidad», «departamento»

Estimado «nombre»:

Es un gusto volver a estar en contacto!

Nos dirigimos a Ud. en su carácter de participante del ***Consejo Asesor Regional (CAR)*** y/o los ***Grupos de Trabajo (GT)*** de ***INIA La Estanzuela***, para manifestarle, que en el marco del esfuerzo que INIA viene realizando para revitalizar esta importante herramienta de vinculación con el sector productivo, proximamente recibirá de parte del Ing. Ernesto Restaino, de la Unidad de Difusión de INIA La Estanzuela, un breve cuestionario referente al estudio del funcionamiento de los mismos. Su análisis será un aspecto central de la tesis de sus estudios de Maestría.

Dicho estudio pretende recoger las impresiones, percepciones e ideas de los miembros y quienes han participado en alguna ocasión en el CAR y los GT.

Le enviamos esta comunicación anticipadamente, con el fin de ponerle en conocimiento de que su participación en este estudio es muy importante. Su opinión es el insumo más substancial de este proyecto, el cual será de gran importancia para saber como podremos mejorar y jerarquizar el vínculo con los principales clientes de INIA a través del CAR y los GTs.

Muchas gracias anticipadamente por su tiempo y consideración. Solo con su generosa ayuda es que este estudio podrá ser exitoso. Por favor esté pendiente de la llegada del cuestionario, el mismo será enviado por esta misma vía (si Usted desea hacer algún cambio en su dirección o forma de envío, por favor llámenos al 0574 8000 – Stella Benedetto o envíe un correo electrónico a restaino@inia.org.uy).

Deseando poder contar con su valiosa opinión y ayuda reciba atentos saludos,

Ing. Ernesto Restaino
Unidad de Difusión
INIA La Estanzuela

Ing. Eduardo de la Rosa
Director Regional
INIA La Estanzuela

Pre-letter INIA Research Staff

Fecha

«Nombre» es un gusto volver a estar en contacto!

Como sabrás, me encuentro al final de mi programa de Maestria en Michigan State University. Actualmente estoy iniciando mi Tesis referente el estudio de los Consejos Asesores Regionales y los grupos de Trabajo y su relacionamiento con INIA.

Este trabajo pretende recoger las impresiones, percepciones e ideas de los miembros de los CAR y los GT y de quienes han participado en alguna ocasión en ellos. En unos pocos días distribuiré entre todos los técnicos investigadores de INIA la Estanzuela un breve cuestionario referente al estudio de los ***Consejos Asesores Regionales (CAR)*** y los ***Grupos de Trabajo (GT)*** de ***INIA La Estanzuela.***

Del mismo modo, un cuestionario similar esta siendo enviado a todos los participantes externos.

Esta comunicación es informal y tiene como objetivo iniciar el contacto y solicitarles su valiosa ayuda antes de recibir el cuestionario. Vuestra opinión como técnico de INIA La Estanzuela es el insumo más substancial de este estudio.

Muchas gracias anticipadamente por tu tiempo y consideración. Distribuiré personalmente el cuestionario luego del 15 de Julio, cuando este visitando INIA La Estanzuela por 4 semanas en ocasión de llevar adelante este trabajo; la devolución se hará en forma totalmente anónima.

«Nombre2» deseo poder contar con tu valiosa opinión y ayuda! Nos vemos pronto.

Un afectuoso saludo,

Ernesto Restaino
Unidad de Difusión – INIA La Estanzuela

restaino@inia.org.uy
Tel: (0574) 8000
INIA La Estanzuela
Ruta 50 Km 11, Colonia

Cover Letter RAC/WG members

Fecha
«titulo» «nombre» «apellido»
«direccion»
«localidad», «departamento»

Estimado «nombre»

Quisiera solicitar su valiosa participación en el estudio titulado "Análisis de los Consejos Asesores Regionales del Instituto Nacional de Investigación Agropecuaria del Uruguay (INIA)".

Este estudio es conducido como parte de mis estudios de Maestría en Michigan State University. He decidido elegir esta área de trabajo basado en la importancia que este tema tiene referido a la participación de los principales beneficiarios de INIA en la determinación de políticas del Instituto.

Su participación como miembro del CAR y/o de los GT es un componente extremadamente valioso en este estudio. Esta encuesta esta siendo enviada a la totalidad de los miembros registrados desde 1998. Apreciaría mucho que destine algunos minutos de su tiempo para contestar el questionario adjunto. Solo le tomará unos 15 minutos.

Por favor tenga en cuenta que su **participación es voluntaria**, y que sus respuestas serán tenidas en **estricta confidencialidad**. Esto significa que su **nombre no será conectado con sus respuestas** de ninguna forma y su privacidad será protegida bajo las máximas regulaciones establecidas por la ley. Su nombre no debe ser nunca puesto en el cuestionario. Asimismo, Usted puede elegir no contestar alguna de las preguntas. Enviándonos el cuestionario adjunto Usted está indicando su acuerdo de participación voluntaria.

Una pronta respuesta es ampliamente agradecida. Un sobre con todos los datos requeridos y previamente pago ha sido incluido para su comodidad y conveniencia en el retorno del cuestionario una vez completo. Asimismo, si Usted tiene alguna dificultad para el retorno del cuestionario, no dude en contactarme. Por favor complete y envíe el questionario antes del **15 de Agosto 2002.**

Un resumen de los resultados estará disponible una vez finalizado el estudio. Si Usted desea recibir una copia por favor indíquelo marcando su preferencia en el lugar previsto en el cuestionario.

Gracias por su colaboración; atentos saludos,

Ernesto Restaino,
Unidad de Difusión- INIA La Estanzuela

Si Usted tiene alguna pregunta referida al estudio, por favor contacte a: Ernesto Restaino, Ing. Agr. Candidato a Maestria, MSU restaino@inia.org.uy Telef: (0574) 8000 INIA La Estanzuela Ruta 50 km 11, Colonia	Si Usted tiene alguna pregunta referida a sus derechos como participante en el estudio, o si tiene alguna inconformidad con cualquier aspecto de este proyecto, Usted puede contactar (anónimamente si lo desea) a: Ashir Kumar, M.D., Director del Comité de Investigación con Participación de Sujetos de Michigan State University (UCRIHS) Telef: (517) 355-2180, Fax: (517) 432-4503, ucrihs@msu.edu 202 Olds Hall, East Lansing, MI 48824. USA

Cover Letter INIA Research Staff

Fecha
«titulo» «Nombre3» «Apellido»
«Estacion»

«Nombre2»:

Quisiera solicitar tu valiosa participación en el estudio titulado ***"Análisis de los Consejos Asesores Regionales del Instituto Nacional de Investigación Agropecuaria del Uruguay (INIA)".***

Este estudio es conducido como parte de los requerimientos para completar mis estudios de Maestria en Michigan State University. He decidido elegir esta área de trabajo basado en la importancia que este tema tiene referente a la participación de los principales beneficiarios de INIA en la determinación de políticas del Instituto.

Tu participación como técnico de INIA es un componente extremadamente valioso en este estudio. Esta encuesta esta siendo enviada a la totalidad de los técnicos investigadores de INIA La Estanzuela. Apreciaría mucho que destines algunos minutos de tu tiempo para contestar el cuestionario adjunto. Solo te tomará unos 10 minutos.

Por favor ten en cuenta que tu **participación es voluntaria**, y que tus respuestas serán tenidas en **estricta confidencialidad**. Esto significa que tu **nombre no será conectado con tus respuestas** de ninguna forma y tu privacidad será protegida bajo las máximas regulaciones establecidas por la ley. Tu nombre no debe ser nunca puesto en el cuestionario. Asimismo, puedes elegir no contestar alguna de las preguntas. Enviándo el cuestionario adjunto estás indicando tu acuerdo de participación voluntaria.

Una pronta respuesta es ampliamente agradecida. Una vez completado el cuestionario, insértalo en el sobre de re-envío suministrado y depositalo en el contenedor que encontrarás en la central telefónica de la Estación Experimental. Por favor completa y envía el cuestionario antes de **Agosto 15, 2002.**

Un resumen de los resultados estará disponible una vez finalizado el estudio. Si deseas recibir una copia por favor indíqualo marcando tu preferencia en el lugar previsto en el cuestionario.

Gracias por tu colaboración.
Atentamentos saludos,

Ernesto Restaino
Unidad de Difusión - INIA La Estanzuela

Si Usted tiene alguna pregunta referida al estudio, por favor contacte a: Ernesto Restaino, Ing. Agr. Candidato a Maestria, MSU restaino@inia.org.uy Telef: (0574) 8000 INIA La Estanzuela Ruta 50 km 11, Colonia	Si Usted tiene alguna pregunta referida a sus derechos como participante en el estudio, o si tiene alguna inconformidad con cualquier aspecto de este proyecto, Usted puede contactar (anónimamente si lo desea) a: Ashir Kumar, M.D., Director del Comité de Investigación con Participación de Sujetos de Michigan State University (UCRIHS) Telef: (517) 355-2180, Fax: (517) 432-4503, ucrihs@msu.edu 202 Olds Hall, East Lansing, MI 48824. USA

First Follow Up Reminder
Same for RAC/WG and INIA staff

[Fecha]

[Nombre]
[Dirección]

Con gusto le hemos enviado la semana pasada un breve questionario acerca del estudio de los Consejos Asesores Regionales (CAR) y los Grupos de Trabajo (GT) del Instituto Nacional de Investigación Agropecuaria (INIA).

Si Usted ya lo completó y envió, por favor acepte mi más sincero agradecimiento. Si Usted aún no lo ha completado, por favor tómese unos minutos y hagalo hoy mismo. Le estoy sinceramente agradecido de antemano dado que solo pidiendole la valiosa opinión a gente como Usted podremos mejorar nuestros RAC y GTS.

Por favor recuerde que su participación en el estudio es sumamente importante. Su opinión es el insumo más substancial del proyecto.

Si por alguna razón Usted no ha recibido el questionario, o se le ha traspapelado, por favor comuníquese al 0554 8000 y le haré llegar otro hoy mismo.

Muchas gracias
Atentamente

Ernesto Restaino
Unidad de Transferencia de Tecnología – INIA La Estanzuela

restaino@inia.org.uy
Ph: (0574) 8000
INIA La Estanzuela
Ruta 50 Km 11, Colonia

Replacement Letter Follow Up

[Fecha]

[Nombre]
[Dirección]

Hace tres semanas le enviamos un breve questionario acerca del estudio de los Consejos Asesores Regionales (CAR) y los Grupos de Trabajo (GT) del Instituto Nacional de Investigación Agropecuaria (INIA). Hasta el día de hoy no hemos recibido su questionario completo.

Si Usted ya lo completó y envió, por favor acepte mi más sincero agradecimiento. Si aún no lo hizo, adjunto encontrará una nueva copia del questionario para facilitarle su respuesta. Por favor tómese unos minutos y hagalo hoy mismo. Le estoy sinceramente agradecido de antemano dado que sólo pidiéndole la valiosa opinión a gente como Usted podremos mejorar nuestros RAC y GTs.

Por favor recuerde que su participación en el estudio en sumamente importante. Su opinión es el insumo más substancial del proyecto. Asimismo, recuerde que su confidencialidad está protegida con el máximo rigor establecido por la ley.

Tengo la esperanza de que Usted aún pueda ayudarnos llenando el questionario y devolviéndolo lo más pronto posible.

Muchas gracias
Atentamente

Ernesto Restaino
Unidad de Transferencia de Tecnología – INIA La Estanzuela

restaino@inia.org.uy
Ph: (0574) 8000
INIA La Estanzuela
Ruta 50 Km 11, Colonia

Verbal Consent Form for Interviews

Estimado [**Miembro del RAC/GT/Técnico de INIA nombre**]

Buen día/Buenas tardes! Mi nombre es ***Ernesto Restaino***. Quisiera solicitarle su valiosa participación en el estudio titulado "Análisis de los Consejos Asesores Regionales del Instituto Nacional de Investigación Agropecuaria del Uruguay (INIA)".

Su participación es un componente extremadamente valioso en este estudio. Usted fue elegido al azar entre todos los participantes para esta entrevista.
Apreciaría algunos minutos de su tiempo para responder algunas preguntas. Esta es una entrevista informal, por lo cual puede sentirse en confianza y relajado. La entrevista solo tomará unos 30 minutos.

Por favor tenga en cuenta que su **participación es voluntaria**, y que sus respuestas serán tenidas en **estricta confidencialidad**. Esto significa que su **nombre no será conectado con sus respuestas** de ninguna forma y su privacidad será protegida bajo las máximas regulaciones establecidas por la ley. Sus respuestas no serán vistas ni analizadas mas que por el investigador. Usted tiene el derecho de no contestar alguna o ninguna de las preguntas, o **terminar esta entrevista cuando Usted lo disponga.**

Esta dispuesto a participar en la entrevista? (Si/No)

(El entrevistador dejará una copia de este consentimiento al entrevistado)

Si Usted tiene alguna pregunta referida al estudio, por favor contacte a:	Si Usted tiene alguna pregunta referida a sus derechos como participante en el estudio, o si tiene alguna inconformidad con cualquier aspecto de este proyecto, Usted puede contactar (anónimamente si lo desea) a:
Ernesto Restaino, Ing. Agr. Candidato a Maestria, MSU restaino@inia.org.uy Telef: (0574) 8000 INIA La Estanzuela Ruta 50 km 11, Colonia	Ashir Kumar, M.D., Director del Comité de Investigación con Participación de Sujetos de Michigan State University (UCRIHS) Telef: (517) 355-2180, Fax: (517) 432-4503, ucrihs@msu.edu 202 Olds Hall, East Lansing, MI 48824. USA

Interviews Questions

1) Cuál es su percepción general respecto de los CAR y GTs?

2) En su opinión, cuál cree es la mayor barrera para que este sistema desempeñe una buena performance?

3) Cuáles son sus sugerencias acerca de como los RAC y los GT deberían ser organizados y reforzados en el futuro?

4) Cuál es su opinión acerca de la representatividad de los miembros en los CAR y los GT?

RAC and WG survey Questionnaire

Cuestionario para miembros del Consejo Asesor Regional y Grupos de Trabajo

Por favor marque la opción que mejor represente su opinión. Ejemplo: [4] / 1 2 (3) 4 5

CAR - sigla que representa al *Consejo Asesor Regional*

GT - sigla que representa a los *Grupos de Trabajo*

Por favor INICIE AQUI ☺

Sección A - Condición Presente

1 ***Cuál es su posición actual en los CAR y/o los GTs?***

- ☐ Soy miembro del CAR
- ☐ Soy miembro de los GT
- ☐ Soy miembro de los GT, y delegado en el CAR

▶ **si marcó alguna de estas 3 primeras opciónes NO conteste la Pregunta 2**

- ☐ No estoy seguro
- ☐ No sigo participando ▶ **Si Usted está en esta situación, por favor continue con el cuestionario basado en su experiencia pasada. Su opinión es muy importante!**

2 ***Si Usted no sigue participando en el CAR y/o en los GT, por favor especifique la razón:***

- ☐ Perdí interés y dejé de participar
- ☐ Encontré limitantes económicas para participar
- ☐ Encontré algún conflicto con otras actividades personales
- ☐ Encontré el sistema complejo y poco atractivo
- ☐ No creo en este método de participación
- ☐ Otra (especifique)

_____

Sección B- Selección y Representación

3 ***Cuándo comenzó a participar en el CAR o los GTs?***

_____ año

4 ***Como fue seleccionado para participar en el CAR o los GTs?***

- ☐ A través de invitación de INIA
- ☐ Fui designado por mi organización/asociación/institución
- ☐ Por interés personal
- ☐ Por invitación de otro miembro del CAR o los GTs
- ☐ Otra (especifique)

_____

❺ ***En su opinión, cómo se deberían seleccionar a los miembros del:***

a) CAR

b) GT

❻ ***Qué tan familiarizado estaba Usted con el CAR y los GTs antes de integrar los grupos?***

Por favor circule su elección en la escala : desde 1 igual a "Nada familiarizado" hasta 5 igual a "Muy familiarizado"

Nada familiarizado	Muy poco fam.	Algo fam.	Familiarizado	Muy familiarizado
1	2	3	4	5

❼ ***Si Usted es un miembro activo, cuál de las siguientes opciones mejor representa su situación como participante:***

☐ Soy un participante independiente

☐ Represento a una organización/asociación/institución
(Por favor conteste la pregunta 8)

☐ No estoy designado por ninguna organización, pero represento a un grupo de productores (Por favor conteste la pregunta 9)

❽ ***Si representa una organización/asociación/institución, por favor indique el nombre :***

_____

❾ ***Si representa un grupo de productores, por favor indique que clase de grupo:***

_____

10 ***Cuál es su idea acerca de la representación de los principales clientes de INIA en el CAR y los GTs?***

Por favor indíque su elección para cada una de las siguientes afirmaciones.
1 es igual a "No hay" hasta 5 igual a " Es muy buena".

	No hay	Es pobre	Es regular	Es buena	Es muy buena
Representación de productores	1	2	3	4	5
Representación de organizaciones de productores	1	2	3	4	5
Representación de la Universidad	1	2	3	4	5
Representación de la agro-industria	1	2	3	4	5
Representación de las agro-empresas	1	2	3	4	5

Sección C - Operatividad de los CAR y los GTs

11 ***En su opinión, cuáles meses son apropiados para mantener reuniones?***

Puede elegir más de uno. Circule su/s opcion/es

Ene, Feb, Mar, Abr, May, Jun, Jul, Ago, Set, Oct, Nov, Dic

12 ***Con qué frecuencia deberían realizarse las reuniones?***

CAR	*GTs*	
☐	☐	1 a 2 veces en el año
☐	☐	3 a 4 veces en el año
☐	☐	Cuando sea necesario
☐	☐	Cuando sea necesario, pero al menos una vez al año
☐	☐	Otra (especifique)

Otra ***CAR***: _____

Otra ***GT***: _____

13 ***Qué tan satisfecho está Usted con el proceso de invitación usado para citar las reuniones del CAR y los GTs?***

Circule su opción en la escala. Desde 1 igual a "No satisfecho" hasta 5 igual a "Muy satisfecho".

No satisfecho	Poco sat.	Algo sat.	Satis.	Muy satisfecho
1	2	3	4	5

14 ***Cuánto tiempo antes quisiera Usted recibir la nota de invitación para las reuniones de los CAR y los GTs?***

- ☐ 7 días antes
- ☐ 15 días antes
- ☐ 21 días antes
- ☐ 30 días antes
- ☐ Mas de 30 días antes

15 ***Después de enviada la primera invitación, quisiera Usted recibir algún recordatorio para la reunión?***

☐ Si ☐ No

Si su respuesta fue "SI", por favor díganos como?

- ☐ Por teléfono
- ☐ Por correo
- ☐ Por fax
- ☐ Por correo electrónico

16 ***Por favor piense en la última reunión en la que participó. Qué tan bien conocía el objetivo/propósito de la reunión antes de concurrir?***

Por favor indique su opción en la escala, desde 1 igual a "Para nada" hasta 5 igual a "Muy bien".

Para nada	Muy poco	Algo	Bien	Muy bien
1	2	3	4	5

17 ***Qué tan satisfecho está Usted con el apoyo que recibe por parte de INIA como miembro del CAR o los GTs?***

Por favor marque su opción en la escala para cada una de las situaciones planteadas. Desde 1 igual a "No satisfecho" hasta 5 igual a "Muy satisfecho".

	No satisfecho	Muy poco sat.	Algo sat.	Satis.	Muy satisfecho
Antes de las reuniones	1	2	3	4	5
Durante las reuniones	1	2	3	4	5
Despues de las reuniones	1	2	3	4	5

Sección D - Desarollo de las reuniones

18 ***Qué tan satisfecho está Usted con el procedimiento o la estructura usada durante las reuniones?***

Por favor indíque su opción en la escala, desde 1 igual a "No satisfecho" hasta 5 igual a "Muy satisfecho"

No satisfecho	Poco sat.	Algo sat.	Satis.	Muy satisfecho
1	2	3	4	5

19 ***Cuál es la mayor debilidad en el desarrollo de las reuniones?***

20 ***Como podrían las reuniones ser mejoradas en el futuro? Por favor plantee tres sugerencias concretas.***

a)

b)

c)

21 ***En qué medida Usted está de acuerdo o en desacuerdo con las siguientes afirmaciones:***

Por favor marque su opción en la escala para cada una de las situaciones planteadas.
Desde 1 igual a "Muy en desacuerdo" hasta 5 igual a "Muy de acuerdo"

	Muy en desacuerdo	En desac.	Mas o menos	De acuerdo	Muy de acuerdo
Tengo adecuadas instrucciones acerca del funcionamiento del CAR y los GTs	1	2	3	4	5
Recibo suficiente información antes de las reuniones	1	2	3	4	5
Puedo expresar mis opiniones durante las reuniones	1	2	3	4	5
Puedo interactuar con otros miembros durante la reuniones	1	2	3	4	5
Puedo interactuar con otros miembros fuera de las reuniones	1	2	3	4	5
Hay buena interacción con los técnicos de INIA durante las reuniones	1	2	3	4	5
Siento que mis ideas son tenidas en cuenta	1	2	3	4	5
Tengo suficiente tiempo durante las reuniones para elaborar mis ideas	1	2	3	4	5
Siento que estoy desarrollando mi conocimiento técnico como resultado de mi participación	1	2	3	4	5

Sección E - Percepciones acerca del CAR y los GTs

22 ***En su opinión, cuáles son las tres mayores barreras/impedimentos que el CAR o los GT enfrentan?***

1)

2)

3)

23 ***En su opinión cuáles deberían ser las tres mayores áreas de trabajo del CAR y los GTs?***

1)

2)

3)

24 ***En qué medida Usted está de acuerdo o en desacuerdo con las siguientes afirmaciones?***

Por favor marque su opción en la escala para cada una de las situaciones planteadas. Desde 1 igual a "Muy en desacuerdo" hasta 5 igual a "Muy de acuerdo"

	Muy en desacuerdo	En desac.	Mas o menos	De acuerdo	Muy de acuerdo
El **CAR** es una importante estructura para identificar necesidades tecnológicas de los productores	1	2	3	4	5
El CAR es una importante estructura para mantener un fuerte vínculo con organizaciones de productores	1	2	3	4	5
El CAR es una importante estructura para identificar actividades de difusión locales	1	2	3	4	5
El CAR es una importante estructura para aconsejar acerca del presupuesto operativo de INIA	1	2	3	4	5
El CAR es una importante estructura de soporte para los Directores Regionales	1	2	3	4	5
El CAR es una importante estructura para priorizar programas de investigación	1	2	3	4	5
El CAR es una importante estructura para integrar productores, industria y consumidores para analizar problemas tecnológicos	1	2	3	4	5
Los **GTs** son una importante estructura para identificar necesidades tecnológicas de los productores	1	2	3	4	5
Los GTs son una importante estructura para mantener un fuerte vínculo con organizaciones de productores	1	2	3	4	5
Los GTs son una importante estructura para identificar actividades de difusión locales	1	2	3	4	5
Los GTs son una importante estructura para aconsejar acerca del presupuesto operativo de INIA	1	2	3	4	5
Los GTs son una importante estructura de soporte para los Directores Regionales	1	2	3	4	5
Los GTs son una importante estructura para priorizar programas de investigación	1	2	3	4	5
Los GTs son una importante estructura para integrar productores, industria y consumidores para analizar problemas tecnológicos	1	2	3	4	5

25 ***Cree Usted que es importante tener normas y reglas establecidas para el CAR y los GTs, acerca de selección de miembros, rotación de miembros, etc.?***

Si ☐ No ☐ Más o menos ☐

Si su respuesta fue "SI", qué tipo de normas deberían ser establecidas?

26 ***Qué tan importante cree Usted son los aportes del CAR y los GTs para INIA?***

Nada Importantes	Algo imp.	Neutro	Importantes	Muy Importantes
1	2	3	4	5

27 ***En qué medida cree Usted que su trabajo como miembro ha contribuido en las siguientes áreas:***

Por favor marque su opción en la escala para cada una de las situaciones planteadas. Desde 1 igual a "Muy pobre contribución" hasta 5 igual a "Muy buena contribución"

	Muy pobre Contribución	Pobre Contr.	Regular Contr.	Buena Contr.	Muy buena Contribución
Formulación de políticas de investigación	1	2	3	4	5
Identificación de proyectos de investigación	1	2	3	4	5
Priorización de proyectos de investigación	1	2	3	4	5
Distribución de presupuesto de investigación	1	2	3	4	5
Identificación de actividades de divulgación y extensión	1	2	3	4	5
Priorización de actividads de divulgación y extensión	1	2	3	4	5

Sección F - Características personales

28 ***Cuál de los siguientes rubros de producción mejor representa su mayor área de trabajo?*** (por favor elija solo una, la más importante para Usted)

☐ Ganado de carne	☐ Cereales	☐ Fruticultura
☐ Lechería	☐ Forrajes	☐ Horticultura
☐ Ovinos/Caprinos	☐ Prod. de semillas	☐ Apicultura
☐ Otra (especifique) _____		☐ Forestación

29 ***Por favor califíquese Usted mismo de acuerdo con las siguientes afirmaciones:***

	Muy en desacuerdo	En desac.	Mas o menos	De acuerdo	Muy de acuerdo
Me considero un miembro activo	1	2	3	4	5
Me gusta llegar a decisiones por concenso	1	2	3	4	5
Me gusta hacer críticas positivas	1	2	3	4	5
Soy una persona innovativa	1	2	3	4	5
Me considero técnicamente sólido en mi área de trabajo	1	2	3	4	5
Me gusta trabajar en equipo	1	2	3	4	5

30 ***Cuál es su edad?***

_____ años

31 ***Cuál es su género?***

☐ Femenino ☐ Masculino

32 ***Cuál su actual ocupación?***

☐ Productor
☐ Asesor Técnico
☐ Profesional trabajando para una Institución
☐ Otra (especifique) _____

33 ***Cuantos años de educación formal ha completado?***

- ☐ Menos de 6 años (Primaria)
- ☐ Entre 7-10 años (Liceo)
- ☐ Entre 11-12 años (Bachillerato)
- ☐ Más de 13 años (Universidad)

34 ***Cuál de las siguientes categorías mejor representa su lugar de vivienda?***

- ☐ Capitalino (Montevideo)
- ☐ Urbano (vivo en otra capital distinta de Montevideo)
- ☐ Sub-urbano (vivo cerva de una capital, menos de 20 km)
- ☐ Rural (vivo en el campo)

Por favor agregue o comparta cualquier comentario adicional que Usted crea es oportuno para este estudio.

Si Usted quiere recibir copia de los resultados de este estudio, por favor indíquelo marcando una cruz en el recuadro adjunto ☐

Muchas gracias por su ayuda!! ☺

INIA Research Staff Survey Questionnaire

Cuestionario para técnicos investigadores del I N I A

Por favor marque la opción que mejor represente su opinión. Ejemplo: [4] / 1 2 (3) 4 5

CAR - sigla que representa al *Consejo Asesor Regional*

GT - sigla que representa a los *Grupos de Trabajo*

Por favor INICIE AQUI ☺

Sección A - Selección y Representación

❶ ***Cuántas veces participó en las reuniones de los CAR y/o GTs desde que estos grupos comenzaron a funcionar?***

- ☐ 1 a 3 veces
- ☐ 4 a 6 veces
- ☐ 7 a 10 veces
- ☐ Más de 10 veces

❷ ***Qué tan familiarizado está Usted con el CAR y los GTs ?***

Por favor circule su elección en la escala : desde 1 igual a "Nada familiarizado" hasta 5 igual a "Muy familiarizado"

Nada familiarizado	Muy poco fam.	Algo fam.	Familiarizado	Muy familiarizado
1	2	3	4	5

❸ ***Cuál de las siguientes afirmaciones cree Usted mejor representa la situación de los miembros en el CAR y los GTs?***

- ☐ Los miembros son mayoritariamente participantes independientes
- ☐ Los miembros representan mayoritariamente alguna organización/ asociación/institución
- ☐ Los miembros no son designados por ninguna organización, pero representan mayoritariamente a grupos de productores

Sección B - Operatividad de los CAR y los GTs

4 ***En su opinión, cuáles meses son apropiados para mantener reuniones?***
Puede elegir más de uno. Circule su/s opcion/es

Ene, Feb, Mar, Abr, May, Jun, Jul, Ago, Set, Oct, Nov, Dic

5 ***Con qué frecuencia deberían realizarse las reuniones?***

CAR	*GTs*	
☐	☐	1 a 2 veces en el año
☐	☐	3 a 4 veces en el año
☐	☐	Cuando sea necesario
☐	☐	Cuando sea necesario, pero al menos una vez al año
☐	☐	Otra (especifique)

Otra ***CAR***: _____

Otra ***GT***: _____

6 ***Qué tan satisfecho está Usted con el proceso interno (INIA) de convocatoria del CAR y los GTs?***
Circule su opción en la escala. Desde 1 igual a "No satisfecho" hasta 5 igual a "Muy satisfecho".

No satisfecho	Poco sat.	Algo sat.	Satis.	Muy satisfecho
1	2	3	4	5

7 ***Por favor piense en la última reunión en la que participó. Qué tan bien conocía el objetivo/propósito de la reunión antes de concurrir?***
Por favor indíque su opción en la escala, desde 1 igual a "Para nada" hasta 5 igual a "Muy bien".

Para nada	Muy poco	Algo	Bien	Muy bien
1	2	3	4	5

Sección C - Desarollo de las reuniones

8 ***Qué tan satisfecho está Usted con el procedimiento o la estructura usada durante las reuniones?***

Por favor indíque su opción en la escala, desde 1 igual a "No satisfecho" hasta 5 igual a "Muy satisfecho"

No satisfecho	Poco sat.	Algo sat.	Satis.	Muy satisfecho
1	2	3	4	5

9 ***Cuál es la mayor debilidad en el desarrollo de las reuniones?***

10 ***Como podrían las reuniones ser mejoradas en el futuro? Por favor plantee tres sugerencias concretas.***

a)

b)

c)

11 ***En qué medida Usted está de acuerdo o en desacuerdo con las siguientes afirmaciones:***

Por favor marque su opción en la escala para cada una de las situaciones planteadas.
Desde 1 igual a "Muy en desacuerdo" hasta 5 igual a "Muy de acuerdo"

	Muy en desacuerdo	En desac.	Mas o menos	De acuerdo	Muy de acuerdo
Tengo adecuadas instrucciones acerca del funcionamiento del CAR y los GTs	1	2	3	4	5
Recibo suficiente información antes de las reuniones	1	2	3	4	5
Puedo expresar mis opiniones durante las reuniones	1	2	3	4	5
Hay buena interacción con los miembros del CAR y los GTs durante las reuniones	1	2	3	4	5
Tengo suficiente tiempo durante las reuniones para elaborar mis ideas	1	2	3	4	5

Sección D - Percepciones acerca del CAR y los GTs

12 ***En su opinión, cuáles son las tres mayores barreras/impedimentos que el CAR o los GT enfrentan?***

1)

2)

3)

13 ***En su opinión, cuáles deberían ser las tres mayores áreas de trabajo del CAR y los GTs?***

1)

2)

3)

14 ***En qué medida Usted está de acuerdo o en desacuerdo con las siguientes afirmaciones?***

Por favor marque su opción en la escala para cada una de las situaciones planteadas. Desde 1 igual a "Muy en desacuerdo" hasta 5 igual a "Muy de acuerdo"

	Muy en desacuerdo	En desac.	Mas o menos	De acuerdo	Muy de acuerdo
El **CAR** es una importante estructura para identificar necesidades tecnológicas de los productores	1	2	3	4	5
El CAR es una importante estructura para mantener un fuerte vínculo con organizaciones de productores	1	2	3	4	5
El CAR es una importante estructura para identificar actividades de difusión locales	1	2	3	4	5
El CAR es una importante estructura para aconsejar acerca del presupuesto operativo de INIA	1	2	3	4	5
El CAR es una importante estructura de soporte para los Directores Regionales	1	2	3	4	5
El CAR es una importante estructura para priorizar programas de investigación	1	2	3	4	5
El CAR es una importante estructura para integrar productores, industria y consumidores para analizar problemas tecnológicos	1	2	3	4	5
Los **GTs** son una importante estructura para identificar necesidades tecnológicas de los productores	1	2	3	4	5
Los GTs son una importante estructura para mantener un fuerte vínculo con organizaciones de productores	1	2	3	4	5
Los GTs son una importante estructura para identificar actividades de difusión locales	1	2	3	4	5
Los GTs son una importante estructura para aconsejar acerca del presupuesto operativo de INIA	1	2	3	4	5
Los GTs son una importante estructura de soporte para los Directores Regionales	1	2	3	4	5
Los GTs son una importante estructura para priorizar programas de investigación	1	2	3	4	5
Los GTs son una importante estructura para integrar productores, industria y consumidores para analizar problemas tecnológicos	1	2	3	4	5

15 ***Cree Usted que es importante tener normas y reglas establecidas para el CAR y los GTs, acerca de selección de miembros, rotación de miembros, etc.?***

☐ Si ☐ No ☐ Más o menos

Si su respuesta fue "SI", qué tipo de normas deberían ser establecidas?

16 ***Qué tan importante cree Usted son los aportes del CAR y los GTs para INIA?***

Nada Importantes	Algo imp.	Neutro	Importantes	Muy Importantes
1	2	3	4	5

17 ***En qué medida cree Usted que el trabajo de los miembros del CAR y los GTs han contribuido en las siguientes areas:***

Por favor marque su opción en la escala para cada una de las situaciones planteadas. Desde 1 igual a "Muy pobre contribución" hasta 5 igual a "Muy buena contribución"

	Muy pobre Contribución	Pobre Contr.	Regular Contr.	Buena Contr.	Muy buena Contribución
Formulación de políticas de investigación	1	2	3	4	5
Identificación de proyectos de investigación	1	2	3	4	5
Priorización de proyectos de investigación	1	2	3	4	5
Distribución de presupuesto de investigación	1	2	3	4	5
Identificación de actividades de divulgación y extensión	1	2	3	4	5
Priorización de actividads de divulgación y extensión	1	2	3	4	5

Sección F - Características personales

18 ***Cuál es su edad?***

_____ años

19 ***Cuál es su género?***

☐ Femenino ☐ Masculino

20 ***Cuál es su grado académico?***

☐ Universidad

☐ Master

☐ Doctorado

☐ Otra (especifique) _____

Por favor continue en la siguiente página ☺

Por favor agregue o comparta cualquier comentario adicional que Usted crea es oportuno para este estudio.

Si Usted quiere recibir copia de los resultados de este estudio, por favor indíquelo marcando una cruz en el recuadro adjunto ☐

Muchas gracias por su ayuda!! ☺

Appendix D

Research question correspondence between samples populations

Research questions and correspondence with the questions identification in survey questionnaires. (Question number in parenthesis indicate open-ended questions)

	Research Questions	RAC & WG Questions Survey B	INIA Saff Questions Survey A
1	What is the demographic and socio profile of Regional Advisory Councils members?	1,2,3,28,29, 30,31,32,33, 34	
2	How were Regional Advisory Councils members selected?	4, (5)	
3	What are the linkages between the Regional Advisory Councils participants and the major farmer organizations in Uruguay?	7,(8),(9),10	3
4	How do the Regional Advisory Councils participants perceive the methodology that INIA uses to work with those stakeholder groups?	13,16,17,18	7,8
5	What do Regional Advisory Councils members perceive as barriers, if any, in the functioning of the advisory councils?	(19),(20),21, (22)	
6	What do INIA staff and managers perceive as barriers, if any, in the functioning of the advisory councils?		(9),(10),11 ,12
7	According to INIA, what are the areas of work for the Regional Advisory Councils?	(23)	
8	According to the Regional Advisory Councils members, what are the areas of work for the advisory councils?		(13)
9	What is the relevance that Regional Advisory Councils members give to RAC and WGs in terms of identifying farmer research needs, farmer linkages, and farmer educational programs?	24,26,27	
10	What is the relevance that INIA gives to RAC and WGs in terms of identifying farmer research needs, farmer linkages, and farmer educational programs?		10,16,17
(G)	General data	6,11,12,14,1 5,25	1,2,4,5,6,1 5,18,19,20

Appendix E

Major farmer organizations and agricultural institutions reported

Anaprose
Asociación de Ingenieros Agrónomos
Asociación Nacional de Productores de Leche
Asociación Rural de Florida
Banco de la Republica del Uruguay
Calcar
Calmer
Calol
Calpa
Calpu
Cámara de Agroquímicos
Cámara Uruguaya de Semillas
Centro Agronómico de Salto
Conaprole
Cradeco
Facultad de Agronomía
Fucrea
Instituto Nacional de Colonización
Intituto Nacional de Carnes
Recarlecal
Secretariado Uruguayo de la Lana
Sociedad de Criadores de Holando
Sociedad de Fomento "La Casilla"
Sociedad de Fomento de Flores
Sociedad de Fomento Rural de Tarariras
Sociedad Rural de Durazno
Sociedad Rural de Río Negro
Unión Rural de Flores

Group of Farmers
Grupo Apícola Cardona
Grupo de Criadores Ovinos Intensivos
Grupo de Productores Agrícolas del Litoral
Grupo de Productores Lecheros CREA
Grupos CREA
Grupos Lecheros de Conaprole
Productores Apícolas

Appendix F
Late and earlier respondents comparison

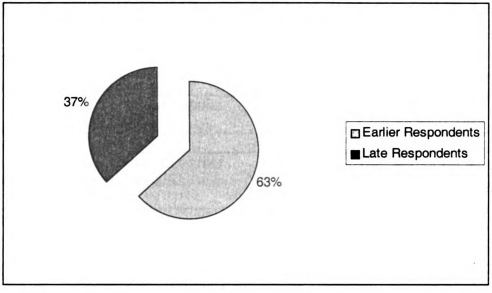
i) General commets regarding late and earlier respondents

Normally, late and earlier respondents are compared in order to allow generalization of the findings. In addition, as Dillman, D. (2000) suggest a revision of earlier respondents survey questionnaires to allows the researcher to identify possible problems in the questionnaire and have the right time to re-send a new version. Following the Dillman suggestion, as it was described in the methodology, a track of earlier and late RAC/WG respondent's members was executed to quick evaluate possible problems with the questionnaire, but also to allows some quick analysis between both sub-groups (late and earlier).

RAC/WG members were considered "late respondents" when they survey questionnaire was received after the closing date (July 31, 2002) and before August 15, 2002, date when it was definitively closed the survey questionnaire reception.

Figure 1 shows that 37% of RAC/WG members were considered "late respondents", and the remaining 63% were "earlier respondents" according to the previous definition and procedure.

Figure 1 RAC/WG late and earlier respondents percentages



No differences at .05 level of significance were found between the "early" and "late" respondents perceptions and valorization of the questions asked.

However, from the cross-tabulation analysis of some descriptive statistics it is interesting to point out some findings.

For instance, Table 2 shows that 40% of "late" respondents were "not sure" about if they are RAC or WG members, versus a 29% from "earlier" respondents. Similarly, 30% of "late" respondents indicate "no longer participation" in the RAC and WG councils, versus about 18% from the "earlier" sub-group.

Table 2, Actual position * Late/earlier respondent Cross-tabulation

Actual Position		Late/earlier respondent		Total
		late	earlier	
WG member	Count	8	19	27
	% within Late/earlier respondent	26.7%	37.3%	33.3%
WG member & RAC representative	Count	1	8	9
	% within Late/earlier respondent	3.3%	15.7%	11.1%
Not sure	Count	12	15	27
	% within Late/earlier respondent	40.0%	29.4%	33.3%
No longer participating	Count	9	9	18
	% within Late/earlier respondent	30.0%	17.6%	22.2%
Total	Count	30	51	81
	% within Late/earlier respondent	100.0%	100.0%	100.0%

Besides, Table 3 indicates that in the "late" sub-group we can find more (almost 31%) of members who are "Independent but representing a group of farmers" than in the "earlier" segment of respondents (12%).

Table 3. What is your membership status * Late/earlier respondent Cross tabulation

What is your membership status		Late/earlier respondent		Total
		late	earlier	
Independent participant	Count	5	8	13
	% within Late/earlier respondent	19.2%	19.5%	19.4%
Representing an organization	Count	13	28	41
	% within Late/earlier respondent	50.0%	68.3%	61.2%
Independent but representing a group of farmers	Count	8	5	13
	% within Late/earlier respondent	30.8%	12.2%	19.4%
Total	Count	26	41	67
	% within Late/earlier respondent	100.0%	100.0%	100.0%

Finally, a major percentage of "late" respondents were localized in the main city or in an urban area (70%) than "earlier" respondents (50%) (Table 4). At the beginning of the process a research concern was that sub-urban or rural areas could needed more time to sent back the survey taking in consideration that members living in these areas would need more time to reach the postal office.

Table 4. Member living location * Late/earlier respondent Cross-tabulation

Member living location		Late/earlier respondent		Total
		late	earlier	
Main city	Count	8	9	17
	% within Late/earlier respondent	26.7%	18.0%	21.3%
Urban	Count	13	16	29
	% within Late/earlier respondent	43.3%	32.0%	36.3%
Sub-urban	Count	3	11	14
	% within Late/earlier respondent	10.0%	22.0%	17.5%
Rural	Count	6	14	20
	% within Late/earlier respondent	20.0%	28.0%	25.0%
Total	Count	30	50	80
	% within Late/earlier respondent	100.0%	100.0%	100.0%

ii) Other Complementary Information for Late respondents

How were you selected * Late/earlier respondent

			Late/earlie responden		Total
			late	earlier	
How you where selecte	Through INIA	Coun	14	23	37
		% within responden	46.7%	46.0%	46.3%
	Appointed by	Coun	11	21	32
		% within responden	36.7%	42.0%	40.0%
	By personal	Coun	1	1	2
		% within responden	3.3%	2.0%	2.5%
	RAC or WG	Coun	4	4	8
		% within responden	13.3%	8.0%	10.0%
	Other	Coun		1	1
		% within responden		2.0%	1.3%
Total		Coun	30	50	80
		% within responden	100.0	100.0	100.0

How familiar were you with RAC and WG before starting * Late/earlier respondent Crosstabulation

			Late/earlier respondent		
			late	earlier	Total
How familiar were you with RAC and WG before starting	Not at all	Count	8	13	21
		% within Late/earlier respondent	27.6%	25.5%	26.3%
	A little	Count	8	15	23
		% within Late/earlier respondent	27.6%	29.4%	28.8%
	Somewhat	Count	7	10	17
		% within Late/earlier respondent	24.1%	19.6%	21.3%
	Familiar	Count	5	10	15
		% within Late/earlier respondent	17.2%	19.6%	18.8%
	Very familiar	Count	1	3	4
		% within Late/earlier respondent	3.4%	5.9%	5.0%
Total		Count	29	51	80
		% within Late/earlier respondent	100.0%	100.0%	100.0%

Member gender * Late/earlier respondent Crosstabulation

			Late/earlier respondent		
			late	earlier	Total
Member gender	Female	Count		3	3
		% within Late/earlier respondent		5.9%	3.7%
	Male	Count	30	48	78
		% within Late/earlier respondent	100.0%	94.1%	96.3%
Total		Count	30	51	81
		% within Late/earlier respondent	100.0%	100.0%	100.0%

Member current occupation * Late/earlier respondent Crosstabulation

			Late/earlier respondent		
			late	earlier	Total
Member current occupation	Farmer	Count	9	11	20
		% within Late/earlier respondent	30.0%	21.6%	24.7%
	Farm Advisor	Count	6	10	16
		% within Late/earlier respondent	20.0%	19.6%	19.8%
	Professional working for an Institution	Count	9	12	21
		% within Late/earlier respondent	30.0%	23.5%	25.9%
	Other	Count		2	2
		% within Late/earlier respondent		3.9%	2.5%
	Farmer/Farm Advisor	Count	2	9	11
		% within Late/earlier respondent	6.7%	17.6%	13.6%
	Farmer/Prof. working for Inst.	Count	2	3	5
		% within Late/earlier respondent	6.7%	5.9%	6.2%
	Farm Advisor/Prof. working for Inst.	Count	2	4	6
		% within Late/earlier respondent	6.7%	7.8%	7.4%
Total		Count	30	51	81
		% within Late/earlier respondent	100.0%	100.0%	100.0%

Member formal educational level * Late/earlier respondent Crosstabulation

			Late/earlier respondent		
			late	earlier	Total
Member formal educational level	Less than 6 years	Count		1	1
		% within Late/earlier respondent		2.0%	1.2%
	7 to 10 years	Count	5	2	7
		% within Late/earlier respondent	16.7%	3.9%	8.6%
	11 to 12 years	Count	1	6	7
		% within Late/earlier respondent	3.3%	11.8%	8.6%
	More than 13	Count	24	42	66
		% within Late/earlier respondent	80.0%	82.4%	81.5%
Total		Count	30	51	81
		% within Late/earlier respondent	100.0%	100.0%	100.0%

Group Statistics

	Late/earlier respondent	N	Mean	Std. Deviation	Std. Error Mean	t-value	Sig
Member age	late	30	47.70	7.883	1.439	.126	.900
	earlier	51	47.94	8.988	1.259		

Means differences between late and earlier respondents for the majo variables of the study.

	Late/earlier respondent	N	Mean	Std. Deviation	Std. Error Mean	t-value	Sig.
How familiar were you with RAC and WG before starting	late	29	2.41	1.181	.219	.343	.732
	earlier	51	2.51	1.239	.173		
How satisfied are you with the invitation process	late	28	3.21	1.067	.202	1.622	.111
	earlier	50	3.62	1.048	.148		
How well did you know the objective/purpose of the meeting	late	30	3.10	.923	.168	.645	.521
	earlier	50	2.96	.968	.137		
Satisfaction with INIA help : Before the meetings	late	29	2.97	.981	.182	.356	.723
	earlier	48	2.88	1.231	.178		
Satisfaction with INIA help : During the meetings	late	28	3.82	.772	.146	.139	.890
	earlier	48	3.79	1.091	.157		
Satisfaction with INIA help : After the meetings	late	28	2.29	1.049	.198	1.514	.135
	earlier	47	2.68	1.163	.170		
Satisfaction with the process/structure of meetings	late	28	3.50	1.000	.189	.000	1.000
	earlier	50	3.50	1.129	.160		
I received adequate guidelines about the RAC and WG	late	27	2.44	1.013	.195	1.516	.135
	earlier	48	2.81	1.003	.145		
I received adequate information previous the meetings	late	27	2.56	.974	.187	.274	.785
	earlier	50	2.62	1.008	.143		
I can express my opinions during the meetings	late	27	4.19	.681	.131	1.964	.053
	earlier	49	3.80	1.040	.149		
I can interact with other members during the meetings	late	26	3.81	1.059	.208	.701	.487
	earlier	49	3.63	.972	.139		
I can interact with other members outside the meetings	late	27	3.52	1.122	.216	.257	.798
	earlier	49	3.45	1.138	.163		
There is a good interaction with INIA researchers	late	27	3.85	.949	.183	1.417	.162
	earlier	49	3.51	1.102	.157		
I feel that my ideas are taking in consideration	late	27	3.41	.931	.179	1.894	.063
	earlier	48	2.98	.956	.138		
I have enough time during the meetings to elaborate my ideas	late	27	3.22	.801	.154	1.790	.078
	earlier	49	2.86	.935	.134		
I feel that I am developing technical expertise as result of my participation	late	26	3.42	.809	.159	1.117	.268
	earlier	47	3.66	.962	.140		
How important are the RAC and WG imputs	late	29	3.72	.996	.185	.914	.364
	earlier	50	3.94	1.038	.147		

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