



STRATEGIC PLAN 2006-2010

**RESEARCH AND DEVELOPMENT INSTITUTE
FOR THE AGRI-ENVIRONMENT (IRDA)**

STRATEGIC PLAN 2006-2010

RESEARCH AND DEVELOPMENT INSTITUTE
FOR THE AGRI-ENVIRONMENT (IRDA)

[A collection of handwritten signatures in green ink, including names like Benoit Bolduc, Daniel, and others, arranged in a diagonal line across the bottom of the page.]

Photos by : Marc Lajoie, MAPAQ

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MESSAGE FROM THE CHAIRMAN OF THE BOARD OF DIRECTORS AND THE PRESIDENT AND CHIEF EXECUTIVE OFFICER

It is with great pride that we table the 2006-2010 Strategic Plan of the Research and Development Institute for the Agri-Environment (IRDA). This plan, approved by the members of IRDA's Board of Directors on December 16, 2005, is the framework that will guide the work of IRDA over the next five years, and apply to its research programming as well as to its management.

IRDA produced its Strategic Plan by consulting its personnel, its clients and its partners. This plan is therefore the outcome of more than twenty meetings in which representatives of about thirty clients and partners of IRDA have participated, and the majority of its employees. The plan also reflects the needs of the agricultural sector in terms of research, development and transfer in the agri-environment.

The plan is our road map for participating in the sustainable development of agriculture. With our research, we want to contribute to the protection of the quality of water, air, agricultural soils and crops, as well as to the protection of biodiversity in agricultural environments, and this while helping to consolidate the competitiveness of farm operations and facilitating cohabitation in rural areas. Our 2006-2010 Strategic Plan is organized around these major issues, which the agricultural sector is now facing.

Since its inception in 1998, and even more so during the next five years, IRDA has wanted to support the agricultural sector in finding useful solutions, useable and used by farmers. In its Strategic Plan, IRDA has identified five research orientations that will form the basis of its scientific research programme from 2006 to 2010. For each of these orientations, IRDA's researchers have determined the expected research results for 2010, as well as the objectives for the transfer of these results to users. Finally, in order to support research activities and ensure that the stated objectives are achieved, the management of IRDA has set management orientations and priority actions that form the implementation basis of the Strategic Plan.

IRDA has paid particular attention to measuring its performance, and will report on it in 2008, half way through the Strategic Plan, and then again in 2010. This information will allow clients and partners of IRDA to see for themselves to which degree the organization has succeeded in reaching the objectives stated in the Strategic Plan.

Finally, we wish to acknowledge the 150 persons who have collaborated with the preparation of this collective achievement. More specifically, our thanks go to the personnel of IRDA, its clients and partners, and to the members of the Board of Directors.



Jacques Lebuis
Chairman of the Board of Directors



Gisèle Grandbois
President and Chief Executive Officer

The Research and Development Institute for the Agri-Environment (IRDA - Institut de recherche et de développement en agroenvironnement) is a non-profit research corporation, created in March 1998 by four founding members, the Department of Agriculture, Fisheries and Agri-Food (MAPAQ - Ministère de l'Agriculture, des Pêcheries et de l'Alimentation), the Union of Agricultural Producers (UPA - L'Union des producteurs agricoles), the Department of Sustainable Development, the Environment and Parks (MDDEP - Ministère du Développement durable, de l'Environnement et des Parcs) and the Department of Economic Development, Innovation and Export Trade (MDEIE - Ministère du Développement économique, de l'Innovation et de l'Exportation).

In addition to representatives of the four founding members, IRDA's Board of Directors has representatives from universities, environmental groups and farmers associations.

IRDA's network in the agricultural sector is one of its strengths, and it is essential for accomplishing its research and development projects, and its transfer activities in agri-environment. For example, in 2005, more than 130 financial partners, research partners and clients, at the national, provincial and regional levels, have collaborated with IRDA's projects.

Our mission

The mission of IRDA is to conduct knowledge acquisition, research, development and transfer activities, with the goal of contributing to the sustainable development of agriculture.

In 2010, IRDA will continue to assert itself as a leader in agri-environment that is able to anticipate problems, and accelerate the development and the implementation of solutions corresponding to the needs of farmers and of society.

Our vision

Our values

Quality and thoroughness of our work

IRDA expects that its researchers and technicians demonstrate scientific thoroughness in all of their work, thus contributing in maintaining the excellent reputation of the organization as a research centre. IRDA also expects that all of its support personnel demonstrate a constant preoccupation for providing quality work.

Respect for people

IRDA highly values interpersonal relationships based on mutual respect, the acceptance of differences and the absence of any discrimination, as specified by the Canadian Charter of rights and freedoms and by the Québec Charter of human rights and freedoms.

Responsibilities of employees

IRDA depends on the competence of its employees and considers that they are in the best position to determine what conditions are necessary to accomplish their work, and that they have the primary responsibility for their professional development.

Transparency

The management of IRDA shares with its employees the information which may help them comprehend the challenges and opportunities facing the organization, as well as better accomplish their respective duties. Also, IRDA ensures that its clients and partners can easily access information on its performance, its management and its governance, in order to promote and facilitate their collaboration with the organization.

Our clients

- 1) The clients of IRDA consist of the organizations and individuals that participate in its research, development and transfer projects.
- 2) The main users of IRDA's research and development results are agricultural producers, advisers, researchers from other research centres and students.
- 3) Eventually, the whole of Québec society benefits from the work of IRDA.

Philippe Auclair Richard Hogue Bernard Bélanger Amel M. Rami Larrière

Our governing principles

A partnership approach

- Research and development partnerships: IRDA favours research and development partnerships because this approach contributes to high added value research, reduces duplications and allows for significant technological transfers for each partner.
- Transfer partnerships: IRDA wishes to establish more formal associations with certain organizations involved in knowledge transfer or in technological transfer, in order to ensure that the results of our research are transferred to advisers and, eventually, to agricultural producers.
- Management partnerships: IRDA promotes collaboration with other research centres in order to improve its internal management or to reduce costs, or preferably to achieve both.

A balanced "portfolio"

IRDA wishes to maintain a balanced "portfolio" in its research, development and transfer activities. Applied research and development projects constitute most of the work at IRDA. However, in order to be able to anticipate problems, IRDA must also devote part of its efforts to fundamental research. Also, IRDA wants to ensure that its research results are transferred to agricultural advisers, and then in the field, thus the importance of allocating some of its resources to transfer activities.

We should be aware that the allocation of efforts between research, development and transfer for each researcher may vary at different stages of his or her career, according to expertise and aptitudes, and differ from the general pattern targeted for the whole of IRDA.

Maintaining a critical mass

IRDA wishes to strengthen the fields of research where its expertise is recognized and promote the maintenance or the establishment of a "critical mass" of researchers and technicians in these fields.

Transferring IRDA's research results to advisers

One of IRDA's main concerns is to ensure that its research results are transferred to its clients, particularly to advisers of agricultural producers. These advisers are in the best position to ensure that information is transferred to agricultural producers, and to promote the implementation of proposed solutions.

Development of technologies and equipment

Each time that IRDA gets involved in research and development for a technology or an equipment, it tries to associate itself with a distributor or a manufacturer in order to maximize the chances of eventual commercial development and implementation at the farm.

World view

IRDA encourages strategic partnerships and exchanges with other research centres and researchers from countries facing the same agri-environmental issues as Québec.

Jean-Claude Charrier, Edith Plante, Julie Nad, Ann Zidan, Danielle Page, Benoit Bolduc, Julie Desrosiers, Isabelle Couture, Nathalie Daigle, Françoise Charrier, Julie Desrosiers

AGRI-ENVIRONMENTAL ISSUES

Québec agriculture has evolved significantly over the last forty years, which has contributed to changing the landscape of Québec's countryside. Along with the reduction in the number of farms and their increase in size, farm specialization, the concentration of animal husbandry in certain regions and manure management methods have evolved. In many regions of Québec, large areas of prairies and pastures have been progressively replaced by annual crops such as corn, and more recently soybeans.

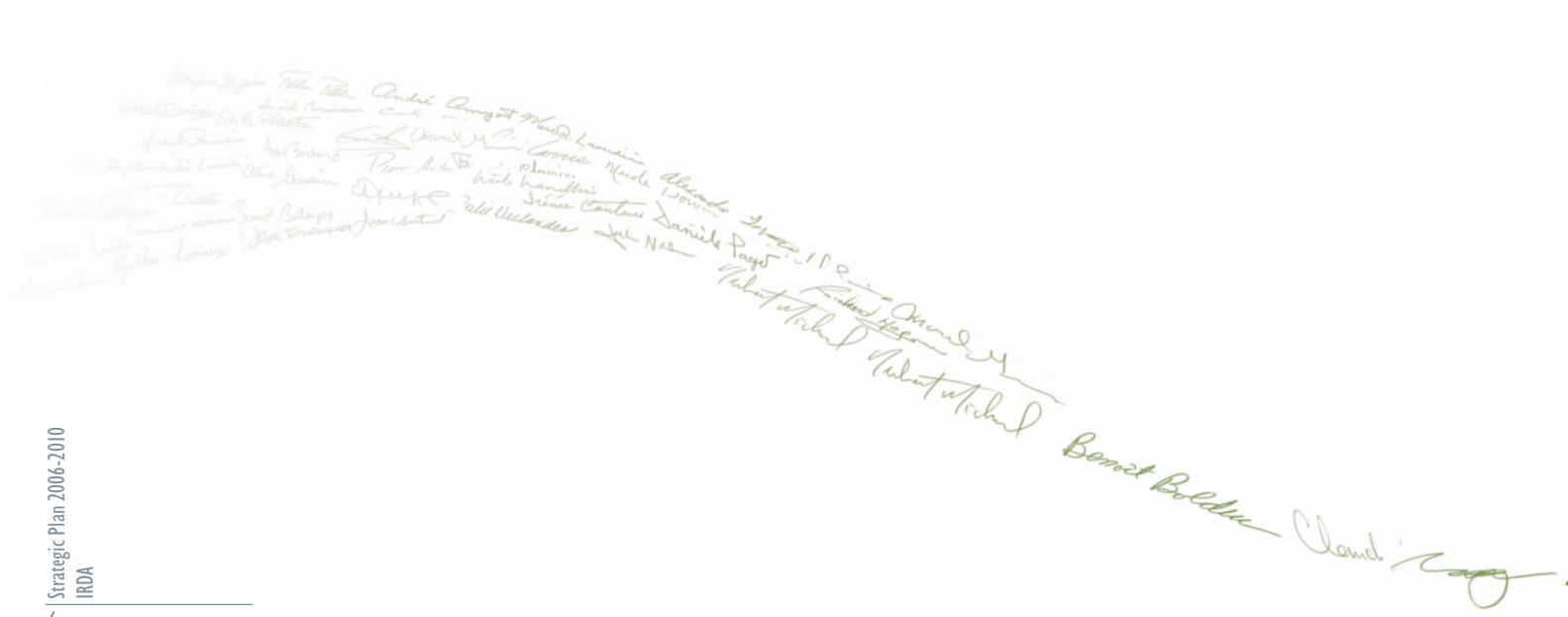
At the same time that the concept of "sustainable development" was being developed in the early 1980's, several reports were associating the intensification of agriculture with the degradation of agricultural soils and of water quality, particularly in watersheds with high concentrations of farm animals. The general population is also becoming increasingly interested in the quality of their environment. More specifically, in rural areas the odours and the water pollution caused by certain agricultural practices are the source of cohabitation problems.

As a result, the government tightened regulations concerning agricultural practices, particularly for animal husbandry. In this context, it is a challenge to ensure the expansion, or even to maintain Québec's agriculture, and to allow it to remain competitive in a context of open markets.

Thus, the agricultural sector is faced with three major agri-environmental issues, which correspond to the three components of sustainable development: **environment, economy and society**

ISSUES

- **Water, air, soils and crop quality; and biodiversity**
- **Competitiveness of farm operations**
- **Cohabitation in rural areas**



Solutions...

Useful and useable solutions, used by farmers to:

- Preserve the quality of water, air, soils and crops; and biodiversity
- Consolidate the competitiveness of farm operations
- Facilitate cohabitation in rural areas

Our research orientations

In order to help the agricultural sector to face these three major agri-environmental issues, IRDA has chosen five research orientations that will allow for the development of solutions that are useful, useable and used by producers. The research orientations are as follows:

- Propose strategies for animal husbandry and manure management;
- Reduce emissions of odours, greenhouse gases, ammonia and bio-aerosols;
- Optimize the use of fertilizers and soil amendments;
- Reduce pesticide use;
- Propose cultivation practices and hydro-agricultural improvements.

For each of these orientations, IRDA has set research objectives to be achieved by 2010. For example, its researchers have estimated what the reduction of odours could be in a typical swine production facility, by 2010, if a farmer implemented the practices proposed and the technologies developed or tested by IRDA over this period. IRDA has also set objectives for the transfer of its research results to its clients, and particularly to agricultural advisors. Indeed, it is essential that the latter be well aware of IRDA's research results in order to be able to transmit this information to agricultural producers and to encourage the implementation of the measures proposed.

Our approach: the life cycle approach

As much as possible, for the projects planned for the next five years, IRDA will adopt the life cycle approach to evaluate the environmental, economic and societal impacts associated with different types of productions on the scale of the plot, of the farm and of the watershed.

The life cycle approach consists of evaluating the impacts of each step of a production in order to produce an overall evaluation.

Our management orientations

In order to reach the research and transfer objectives it has set, IRDA must have sufficient financial, material and human resources. Furthermore, it will need to acquire additional tools to supervise its research projects, and develop ways to measure and report on its results.

In this context, IRDA has defined six orientations for the management of the organization. Based on these orientations, it has set management objectives to be achieved by 2010 and priority actions that must be accomplished before 2008. Reaching these management objectives should allow IRDA to have at its disposal the resources and tools necessary to achieve its research and transfer objectives. The management orientations are as follows:

- Ensure adequate funding, that will allow IRDA to accomplish its mission;
- Develop the full potential of human resources;
- Optimize the use of our facilities and equipments;
- Ensure the transfer of our research results;
- Ensure the supervision of our research activities;
- Adequately measure and report on IRDA's performance.

Agathe Lemieux, Blaise Fathallah, Maryse Cellame, Simon Gagnon, Kamel Gagnon, Louis-Philippe Gagnon

Don Côté, Angèle Corriveau, [Signature]

Asia Bouchard

M-2

RESEARCH ORIENTATIONS, RESEARCH OBJECTIVES AND TRANSFER OBJECTIVES

Propose strategies for animal husbandry and manure management

Decreasing the impact of animal productions on the environment is a major challenge for Québec, where approximately 30 million cubic metres of solid and liquid manure are produced each year. Swines represent 40% of the entire livestock population of Québec, and they produce 30% of the total volume of livestock manure. Swine production is not the only one to exert pressure on the environment; dairy and beef cattle productions also generate large quantities of manure that can cause environmental impacts.

In addition to phosphorus and nitrogen, manure may also contain other contaminants likely to reach surface or ground waters. These substances are not necessarily removed by water treatment processes and may be found in water used for human consumption.

Research objectives to reach by 2010

- Propose a set of strategies for swine production that will ensure, in particular, appropriate management of manure produced. These strategies should:
 - Be adaptable to the farm;
 - Be economically viable;
 - Present a potential for reducing odours and environmental risks caused by leakages of nutrients and the dissemination of pathogens.
- Based on the experience and knowledge gained in swine production, study husbandry and manure management strategies adapted to other animal productions.
- Evaluate options for non-agricultural use of manure (including energy production) and for the sanitary disposal of animal carcasses.
- Develop monitoring tools for contaminants whose origin is potentially from agriculture (antibiotics, trace metals, etc.), and that are not the target of systematic treatments in water treatment processes.

Transfer objectives to reach by 2010

Carry out, or have carried out, the necessary transfer activities so that:

- 75% of advisers working in the swine sector;
 - 60% of advisers working in the sector of other animal productions,
- are aware of our research results for strategies in animal husbandry and manure management.

Reduce emissions of odours, greenhouse gases, ammonia and bio-aerosols

Odorous emissions coming from swine production facilities and from spreading liquid manure are restricting the development of this production, and are the source of important problems of cohabitation in rural areas. Also, inside the production facilities, air quality problems that are caused by ammonia and bio-aerosols (moulds, biotoxins, etc.) are worrisome because of their potential impacts on the health of workers and animals.

The contribution of agriculture to greenhouse gas emissions represents approximately 10% of total emissions generated by all the sectors of Québec's economy. Now that the Kyoto Protocol has been endorsed, it is important to quantify the impacts of different animal production systems, in order to be able to reduce their greenhouse gas emissions.

Research objectives to reach by 2010

- Develop and validate methods for measuring the concentration of odours, moulds and biotoxins that meet international standards.
- Propose practices and develop / test technologies (air filtration, separation of solid / liquid phases of manure, manure spreading equipment, etc.) that are adaptable to the farm, economically viable and that will allow for a 50% reduction in:
 - concentrations of odours, gases and bio-aerosols inside swine facilities;
 - emissions of odours, bio-aerosols, greenhouse gases and ammonia outside facilities;
 - concentrations of odours due to the spreading of liquid swine manure.
- Based on the experience and knowledge gained in swine production, evaluate the possibility of adapting to other animal productions the practices and technologies for reducing concentrations and emissions of odours, greenhouse gases, ammonia and bio-aerosols.

Transfer objectives to reach by 2010

Carry out, or have carried out, the necessary transfer activities so that:

- 60% of advisers working in the swine sector;
 - 40% of advisers working in other animal productions,
- are aware of our research results in reducing emissions of odours, greenhouse gases, ammonia and bio-aerosols.

Michele Bovine Pansu

P. Levesque

Hanilton Alexandre Lopez Jean-Pierre Louché Michel Paradis

Optimize the use of fertilizers and soil amendments

Each year, in Québec, approximately 215,000 tons of total nitrogen and 120,000 tons of phosphorus (P₂O₅) are applied on about 2 million hectares of cultivated soils. Half of these quantities come from the 30 million cubic metres of solid and liquid manures produced each year. The other sources of nitrogen and phosphorus are mainly chemical fertilizers, paper mill sludge and sewage sludge from water treatment plants.

An optimal use of fertilizers and soil amendments is necessary in order to avoid excessive soil phosphorus enrichment, and the risk of contaminating ground and surface waters. One of the objectives of the Règlement sur les exploitations agricoles (REA) is to achieve soil phosphorus equilibrium, on each farm, by 2010.

Also, a better management of mineral fertilizers and manures requires an understanding of their dynamics in soils, in relation to crop requirements.

Research objectives to reach by 2010

- Develop methods, tools and models of integrated plant fertilization for nitrogen, phosphorus and potassium (including a phosphorus loss risk index and an indicator of soil nitrogen level) that allow:
 - to improve by 25% the precision of recommendations for nitrogen, phosphorus and potassium applied;
 - to reduce by 25% the nitrate and phosphorus losses in the surface and ground waters;
 - to optimize the yield and the quality of harvests.
- Evaluate the agronomic effectiveness and the agri-environmental risks associated with the agricultural use of fertilizers, farm fertilizers (manures) and soil amendments.
- Propose strategies for increasing plough layer thickness in order to increase soil productivity by 20%.

Transfer objective to reach by 2010

Carry out, or have carried out, the necessary transfer activities so that all agricultural advisers working in soil fertilization are aware of our research results in this field.

Reduce pesticide use

The agricultural sector is by far the largest user of pesticides in Québec. Over the last twenty years, pressure has increased continuously for reductions in the use of these products because of their negative impacts on health, the environment and the quality of food. Also, pesticide drift, occurring when they are sprayed, and the risks of contaminating ground water are the source of serious problems of cohabitation in rural areas.

In 1992, the MAPAQ established, with its partners, a phytosanitary strategy with the objective of substantially reducing pesticide use. Important efforts were made by agricultural advisers and by producers in order to reduce the pressure of these inputs on the environment. Still today, the phytosanitary strategy remains the foundation of the actions of MAPAQ and its partners in pesticide management. However, this strategy is oriented towards integrated pest management, using alternate solutions in order to rationalize the use of pesticides.

Research objectives to reach by 2010

- Propose integrated crop pest management methods:
 - applicable in organic agriculture or during transition periods;
 - that allow a 10% reduction in pesticide quantity per hectare in major crops, vegetable crops and berries (strawberries and raspberries);
 - that allow a 10% reduction in environmental impacts associated with pesticide use in apple orchards;
 - that allow the preservation of crop quality and the economic viability of farm operations.
- Use the life cycle approach to evaluate the different pesticide use scenarios, while considering all other environmental, economic and societal aspects.
- Propose integrated fruit production (IFP) practices in order to increase by 15% the use of these practices in the IRDA experimental orchard.

Transfer objectives to reach by 2010

Carry out, or have carried out, the necessary transfer activities so that:

- all apple growing advisers and 50% of apple growers;
 - 75% of agricultural advisers working in corn, soybeans, cereals and potato productions;
 - all advisers working in organic agriculture (vegetables sector);
 - 50% of advisers working in the vegetables sector;
 - all advisers working in the strawberry and raspberry sector,
- are aware of our research in integrated pest management and in organic agriculture (vegetables sector).

Propose cultivation practices and hydro-agricultural improvements

Non-point source pollution from agricultural activities is a major issue in Québec. The migration of various contaminants (phosphorus, nitrogen, pesticides, sediments) from cultivated fields threatens the long term productivity of agricultural land and the quality of surface and ground waters.

Loss of organic matter, increasing difficulties in soil ploughing, compaction of the deeper soil layers, surface runoff and the resulting water erosion, are among several types of soil degradation that result in farm productivity losses, as well as in the disturbance of neighbouring water courses. Selecting appropriate cultivation practices and installing hydro-agricultural improvements that are better adapted allow to reduce the negative impacts of these phenomena on water and soil resources, as well as on crops.

Research objectives to reach by 2010

- Evaluate the technical and economic feasibility, and the environmental benefits of conservation cultivation practices and hydro-agricultural improvements, including buffer strips.
- Develop diagnostic, land use planning and plot management tools in support of decision making, on the scale of the farm and of the watershed, in order to:
 - reduce by 50% the export of suspended solids, of phosphorus, of nitrogen, of pathogens and of pesticides to the aquatic ecosystem;
 - improve water, soils and crop quality
- Propose irrigation water management protocols to ensure crop sanitation.

Transfer objective to reach by 2010

Carry out, or have carried out, the necessary transfer activities so that 75% of advisers working in crop and soil management are aware of our research results in this field.

André Amiot Fédéric Telle

Marc Lavoie Rodrigue Drogon

MANAGEMENT ORIENTATIONS, MANAGEMENT

Ensure adequate funding

In 2005, IRDA had a total budget of \$ 8 M, a reduction of \$ 1 M compared to 2004. This cutback was felt at all levels of the organization and did not allow, among other consequences, provisions to be made for amortization in 2005. In order to accomplish its mission, it is essential for IRDA to have adequate funding.

Approximately 80% of IRDA's budget comes from the MAPAQ and the UPA. In addition to this core funding, IRDA self-finances part of its activities through numerous research contracts. Thanks to sustained efforts, this self-financing amounts to almost 20% of the total budget of the organization.

Management objectives to reach by 2010

- By 2007, increase the revenues of IRDA by \$1.3 M (in order to return to the level of 2004, plus salary indexing).
- Maintain at 20% the self-financing of IRDA.

Priority actions to accomplish by 2008

- Develop a funding strategy for strengthening the participation of the founding partners and solicit new major partners.
- Project management:
 - Adapt the structure of IRDA in order to ensure a better support to researchers for project management;
 - Develop guidelines and offer training sessions to researchers to improve project management (estimating and monitoring of costs; project management process).
- Make representations to certain funding agencies, such as the Fonds québécois de la recherche sur la nature et les technologies (FQRNT), in order that IRDA be admissible as a principal applicant.
- Monitor funding programmes

Develop the full potential of human resources

In 2005, IRDA had 110 employees, including 33 researchers and research professionals.

By 2010, almost half of IRDA's researchers will retire, causing a loss of expertise. However, this situation is also a good opportunity to recruit researchers whose profile will correspond to the new research programmes of IRDA. Also, retirements will require that some technicians reorient their work within IRDA.

Human resources are the main asset of IRDA. The organization must therefore ensure that the abilities of its employees are fully utilized.

Management objectives to reach by 2010

- Develop the full potential of each employee.
- Maintain a good working environment.
- Increase the employees' sense of belonging to IRDA.
- Ensure that IRDA continues to be perceived as a first-rate employer.

Priority actions to accomplish by 2008

- Finalize the replacement plan for the next three years (2006-2008).
- Develop a plan for the transfer of the unspoken expertise of retiring researchers.
- Develop a support plan for employees whose tasks will be modified because of retirements or organizational changes.
- Renew the employee training plan.
- Finalize the implementation of the performance evaluation process for personnel.
- Maintain relations with retired employees.

Optimize the use of our facilities and equipments

IRDA has research and experimental infrastructures located in Sainte-Foy, Deschambault, Saint-Lambert-de-Lauzon, Saint-Hyacinthe and Saint-Bruno. These infrastructures include several laboratories, a phytotron (growth chambers and greenhouses), four experimental sites (three farms and an orchard), as well as animal husbandry facilities.

These facilities and equipments must be maintained and renewed in order to remain at the leading edge of technology, and fulfil the requirements of researchers. However, some of these equipments and facilities are underused. Also, because of the large number of analyses done in support of research activities, the Agri-environmental Analysis Laboratory must continue to offer quality analytical services with the objective of full client satisfaction.

Management objectives to reach by 2010

- Have facilities that meet the needs of the new research orientations and environmental requirements.
- Maintain a compliance level of more than 95% for reliability indicators of the Agri-environmental Analysis Laboratory.
- Promote exchanges of our equipments and facilities, internally as well as with our partners and other research centres.

Priority actions to accomplish by 2008

- Increase awareness of our strategic facilities and equipments (inventory and publication on our Internet site).
- Implement the ISO 17025 standard in the Agri-environmental Analysis Laboratory.
- Develop an internal equipment loan policy.
- Implement an environmental management system (EMS) covering the entirety of IRDA's facilities and activities.
- Reserve sufficient space on one of our experimental farms, in order to be able to carry out research in organic agriculture.
- Develop a capital assets plan over five years.
- Carry out optimal use studies of our experimental farms.

Handwritten signatures in green ink at the bottom of the page, including names like Gselleros, Franck, Pauline, and others.

OBJECTIVES AND PRIORITY ACTIONS

Ensure the supervision of our research activities

Supervision of research activities is fundamental if IRDA is to carry out research and development projects of quality that correspond to its mission and its objectives.

During the last few years, IRDA has established a series of processes for project quality control. However, these processes must be continually reviewed and improved.

At the time of the inception of IRDA, two committees were created in order to guide research activities. These are the scientific orientation committee (SOC) and the scientific support committee (SSC), whose mandates must be redefined.

Management objectives to reach by 2010

- Continue to carry out research and development projects of high quality that will contribute to the excellent standing of IRDA as a research institute.

Priority actions to accomplish by 2008

- Review the quality control system of our research activities.
- Review the mandate of the scientific orientation committee (SOC).
- Review the mandate of the scientific support committee (SSC).
- Adapt the structure of IRDA's scientific direction in order to:
 - facilitate exchanges between researchers and collaboration with our research partners;
 - supervise and coordinate IRDA's performance measurement efforts.

Ensure the transfer of our research results

IRDA is very active in knowledge and technology transfer. Each year, IRDA researchers conduct approximately 300 transfer activities (scientific articles, conferences, scientific posters, research reports, popular articles, open doors). However, in spite of the efforts made, IRDA had never set precise transfer objectives or ways to evaluate the level of transfer of its research results to agricultural advisers. In its 2006-2010 Strategic Plan, IRDA has set a series of transfer objectives.

In order to reach its transfer objectives and ensure that its research results reach farmers, IRDA has identified certain priority actions.

Transfer objectives to reach by 2010

The transfer objectives for research results are presented along with each research orientation.

Priority actions to accomplish by 2008

- Improve IRDA's Internet site.
- Create a listing of agricultural advisers working in the fields covered by IRDA's research.
- Sign an agreement with the Centre de référence en agriculture et agroalimentaire du Québec (CRAAQ) in order for IRDA to better utilize the transfer resources of the CRAAQ.
- For each of the ongoing research projects, identify an organization or a resource person who will be involved in the transfer of the results.
- Plan to have a resource person responsible for coordinating IRDA's transfer activities.
- Develop a transfer activities plan (which will be incorporated into IRDA's general communications plan).
- Develop a policy on the protection of IRDA's intellectual property and its commercial development.

Adequately measure and report on IRDA's performance

The evaluation report on IRDA's performance that was tabled in 2004 mentions the fact that the 2001-2004 Strategic Plan did not contain any programme objectives. It was indicated that the next Strategic Plan should have objectives that identify the results we hope to achieve in terms of the state of knowledge and of technologies in agri-environment.

During the preparation of its 2006-2010 Strategic Plan, IRDA made an effort to set research, transfer and management objectives that were as precise as possible. During the next few years, the challenge for IRDA will be to measure its research results and make them known to its clients, its partners and to all interested parties.

Management objectives to reach by 2010

- Measure IRDA's performance: evaluate to what degree IRDA has reached:
 - its research and transfer objectives;
 - its management objectives.
- Report on the performance of IRDA to its clients and partners, and to all interested parties.

Priority actions to accomplish by 2008

- Define performance indicators (2006):
 - for each research and transfer objective;
 - for each management objective.
- Measure the baseline for all performance indicators.
- Measure IRDA's performance (2008).
- Report on the performance of IRDA in the annual report and on the Internet site.
- Plan for a resource in agricultural management in order to be able to evaluate the economic impacts of applying the practices or using the technologies proposed by IRDA.

Pauline We Robert Michel Clémency Germain-F. Moreau SteuQyt ab

In order to implement its Strategic Plan for 2006-2010, IRDA will soon finalize an action plan for 2006-2008 that will contain all of the priority actions defined in the preceding section (management orientations). This action plan will present, for each of the priority actions, a timetable for carrying them out, a person responsible for each, as well as the resources needed.

In 2008, the management of IRDA will conduct a half way point review, in order to verify how well the objectives set in its 2006-2010 Strategic Plan have been met. Following this review, the management will make the necessary adjustments and produce the 2009-2010 version of the action plan.

IRDA wishes to thank all of the organizations that have participated in its strategic planning.

Agriculture and Agri-Food Canada (AAC)

Association des producteurs de fraises et de framboises du Québec (APFFQ)

Centre de développement du porc du Québec inc. (CDPQ)

Centre de référence en agriculture et agroalimentaire du Québec (CRAAQ)

Centre de recherche et développement en agriculture (CRDA)

Centre de recherche industrielle du Québec (CRIQ)

Club de fertilisation de la Beauce

Club du bassin LaGuerre

Conférence des recteurs et principaux des universités du Québec (CREPUQ)

Conseil pour le développement de l'agriculture du Québec (CDAQ)

Fédération de l'UPA de la Beauce

Fédération des producteurs de bovins du Québec (FPBQ)

Fédération des producteurs de cultures commerciales du Québec (FPCCQ)

Fédération des producteurs de lait du Québec (FPLQ)

Fédération des producteurs de pommes du Québec (FPPQ)

Fédération des producteurs de porcs du Québec (FPPQ)

Fédération des producteurs d'œufs de consommation du Québec (FPOCQ)

Fédération québécoise des municipalités (FQM)

Fertior

Institut de technologie agricole (ITA)

Institut national de la recherche scientifique Eau-Terre-Environnement (INRS-ETE)

Les Baies de l'Île

Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ)

Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP)

Ministère du Développement économique, de l'Innovation et de l'Exportation (MDEIE)

Nature Québec (formerly UQCN)

Regroupement national des conseils régionaux de l'environnement du Québec (RNCREQ)

Union des producteurs agricoles (UPA)

Université de Montréal

Université de Sherbrooke

Université Laval

McGill University

André Lamy, Aline Gervais, Nicole Handberg, Jean-François Anis, Fátima R. Augusto, Manon LeBlond

STRATEGIC PLAN 2006-2010

MISSION

The mission of IRDA is to conduct knowledge acquisition, research, development and transfer activities, with the goal of contributing to the sustainable development of agriculture.

VISION

In 2010, IRDA will continue to assert itself as a leader in agri-environment that is able to anticipate problems, and accelerate the development and the implementation of solutions corresponding to the needs of farmers and of society.

ISSUES

Water, air, soils and crop quality, and biodiversity

Competitiveness of farm operations

Cohabitation in rural areas

RESEARCH ORIENTATIONS

Propose strategies for animal husbandry and manure management

Reduce emissions of odours, greenhouse gases, ammonia and bio-aerosols

Optimize the use of fertilizers and soil amendments

Reduce pesticide use

Propose cultivation practices and hydro-agricultural improvements

PROPOSED APPROACH

Use the life cycle approach to evaluate the environmental, economic and societal impacts associated with different types of productions on the scale of the plot, of the farm and of the watershed.

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