**PROCINORTE**

**Strategic Plan 2013 – 2018**

**DRAFT FOR DISCUSSION**

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### Executive Summary

This Strategic Plan is the result of the Cooperative Program in Agricultural Research and Technology for the Northern Region (PROCINORTE) Board of Directors’ (BOD) decision to update its first Strategic Plan 2010-2013.

The process included designing and sending a questionnaire to the BOD and to members of the Task Forces (TF) and following up with interviews, discussions with the PROCINORTE Executive Secretary (ES), and senior IICA personnel, as well as reviewing the inputs and finalized 2010-2013 Strategic Plan. Extensive research on the political and institutional changes taking place in the agricultural R&D systems of Canada, Mexico and the United States, and the growing importance of NAFTA and globalization, was also carried out to understand their implications for PROCINORTE.

PROCINORTE is an innovative tri-lateral technical program that is, in some ways, still striving to find its place and achieve its full mission. PROCINORTE is beginning to offer a highly relevant and more cost efficient means to advance in critically needed areas. If appropriately supported over the next five years, it has the potential to spark greater and much broader gains. In light of the broader LAC setting PROCINORTE’s second Strategic Plan comes at a most critical juncture. The Northern region’s unique response to agricultural trade opportunities and its future economic and trade ties with LAC countries means that the next phase must be positioned to advance its two-pronged geographic mandate.

The full potential of PROCINORTE can only be achieved through committed leadership by all three countries and actively engaged task forces addressing pressing issues of shared importance. We are pleased to take note that some task forces are making good strides in their work that is both highly relevant and more cost efficient.

Since the inception of PROCINORTE TF membership have been reconstituted as needed, and are now composed of high-level researchers from Agri-Culture and Agri-Food Canada, the Agricultural Research Service in the United States and the Instituto Nacional de Investigaciones Forestales Agrícolas y Pecuarias in Mexico. These TF have carried out innumerable activities to share knowledge in the trilateral priority topics of plant and animal health, tropical and subtropical fruits, and genetic resources. These joint actions have provided a platform for efficient networking between agricultural scientists and regulators. If appropriately supported over the next five years, PROCINORTE has the potential to spark even greater and broader gains.

The Northern region’s vital role in creating and providing agricultural trade opportunities is not only vital to the region itself but also to the future economic and trade ties with Latin American and Caribbean (LAC) countries. Therefore, PROCINORTE’s next phase must be positioned to advance its two-pronged geographic mandate. After essentially more than two decades of neglect by most LAC countries and their donor partners in agricultural R&D, more agile and responsive R&D support mechanisms linked to “upstream” knowledge and technologies becomes increasingly critical to serve the LAC institutional base. Additionally, PROCINORTE can play an important role in promoting and achieving innovation both within the Northern Region and more broadly in the hemisphere. It can be safely said that PROCINORTE occupies a unique and still underutilized niche that can provide more benefits with relatively minimal increased investments.

In the proposed 2013-2018 Strategic Plan, the vision of PROCINORTE remains the same: *the governments of Canada, Mexico, and the United States working together, in consensus, and through their national agricultural research institutions to problem-solve and support agriculture in the North American region with science, improved, technology, and scientifically-based policy guidance.*

The Strategic Plan is proposing a revised mission:

*In the increasingly interconnected national, regional, and world economy PROCINORTE should mutually strengthen agriculturally related governmental and stakeholder collaboration in research, development, and policies to: 1) enhance sector productivity and competitiveness needs; 2) improve food safety and plant and animal health, and 3) assist on related capacity building needs. This is to be advanced via increased supportive links with the North American and other Western Hemisphere countries plus corresponding regional and global research and development networks.*

The proposed Strategic Plan maintains PROCINORTE’s current structure to probe more assertively into the selected policy, tactical, and operational issues. Simply maintaining the status quo in the level and scope of actions over the next five years does not appear to be a viable option. In fact, continuing a “maintenance mode” will bring into question the longer term viability of the organization.

The Plan proposes four areas for PROCINORTE’s strategic agenda and a suggested response for each that will improve PROCINORTE’s effectiveness technically and operationally:

| **Themes** | **Suggested response** |
| --- | --- |
| Broadening National-Level Institutional Support and Raising Visibility | Formation of a PROCINORTE National-Level Advisory/Steering Support Group |
| Update the PROCINORTE’s Declaration signed in 1998 |
| Improving PROCINORTE’s Message Outreach System | Distribute broader PROCINORTE’s Achievements |
| Make presentations to Key Stakeholder/Support Institutions and Prospective Supporters and Advocates |
| Carry out virtual sessions with broader audience to review PROCINORTE’s products and progress during Annual Meetings |
| Intensifying Efforts To Augment PROCINORTE Funding | Conduct visits by IICA’s DG to key BOD and their respective leaders and related governmental leaders |
| Restore and ensure IICA’s allotted core funding levels previous to 2011 |
| Streamline budget approval and fund release processes |
| Secure funding and in-kind support from a variety of entities |
| Coordinate complementary research support activities with USDA/NIFA, and others |
| Program Operations and Organizational Adjustments | Strategizing for possible broader range of TF topics |
| Carry out quarterly follow up meetings with national members to review progress and provide recommendations to help advance TF work |
| Conduct quarterly Board reviews (via Skype) to advance policy, strategic, and operational issues as needed  |
| Conduct TF annual meeting follow ups as needed on relevant activities such as proposal preparation |
| Expanded institutional contacts with the PROCIS, FONTAGRO and other potential collaborators |
| Secure broader support from IICA Representatives in Northern Region |

PROCINORTE is confronting a major cross roads period at a time when funds are becoming scarcer yet agricultural production and trade issues become more critical in light of climate change and a growing population. It is time to prudently reflect on the complex circumstances and on the good work advanced by PROCINORTE’s dedicated scientific and management cadre to date. The time is now to press forward with a strategic tri-lateral focus with its accompanying operational challenges to advance more aggressively and productively the PROCINORTE’s Mission.

**PROCINORTE’s STRATEGIC PLAN 2013-2018**

### I. INTRODUCTION

This plan is the result of the Cooperative Program in Agricultural Research and Technology for the Northern Region (PROCINORTE) Board of Director’s (BOD) decision in 2008 to review its first Strategic Plan 2010-2013. As this period neared its end, the BOD instructed IICA’s Executive Secretary (ES) to prepare the next Strategic Plan covering 2013-2018 for its review.

During the 2010-2013 period, much has transpired, which warrants a multi-faceted effort to determine key accomplishments and assess, limitations and opportunities in the context of a rapidly changing economic and institutional environment, and to present recommended interventions that are in keeping with PROCINORTE’s objectives, resources, and current capacities.

Major PROCINORTE program and operational documents and related studies were reviewed and key leaders, scientists, and collaborators were interviewed or asked to complete a standard questionnaire.

The Strategic Plan contains: 1) an overview of PROCINORTE’s institutional base; 2) highlights of the key work by its four scientific and knowledge building Task Forces (TF); 3) the external economic and institutional dynamics PROCINORTE must confront during the next phase of its work; and 4) the presentation of the proposed strategic, tactical, and operational activities required to advance this innovative, broadly gauged effort—both topically and geographically.

### II. STRATEGIC PLAN SETTING

In this section, PROCINORTE is analyzed as a as a potential “new era” construct to facilitate improved agricultural science and technology application in North America and the western hemisphere.

Beginning in 1980, the Inter-American Institute for Cooperation on Agriculture (IICA) commenced to facilitate a series of innovative sub-regional collaboration mechanisms on agricultural research called “PROCIs”. The *Programa Cooperativo para el Desarrollo Tecnológico Agroalimentario y Agroindustrial del Cono Sur (PROCISUR)* in the Southern Cone and the *Programa Cooperativo Regional para el Desarrollo Tecnológico y Modernización de la Caficultura (PROMECAFE)* for Central American coffee producers were the two first mechanisms formed.

The original focus was the introduction of more cost effective delivery along common product lines from cross-country research and technological activities such that small farmers would improve their productivity and incomes. Coordinated technology generation networks from this approach were introduced and supported. Resulting from the early successes, similar networks were established in the Andean Region (PROCIANDINO), the tropical areas of the Southern Cone countries (PROCITROPICOS), the Caribbean region (PROCICARIBE) and Central America (SICTA).

In 1998, PROCINORTE which is composed of Canada, Mexico, and the United States was formed to “foster agricultural research and technology for competitive, sustainable development---to solve problems and take advantage of regional opportunities and capabilities (IICA 1998).” Its “Declaration” formalized: 1) “a regional mechanism for mutual cooperation in agricultural research and technology transfer;” 2) stipulated that IICA would “serve as the program’s promoter and facilitator” and required that the defined research initiatives be “agreed upon by all three countries; “and 3) stipulated that, in addition to the identified lead governmental research agencies, “representatives of other countries networks or organizations may participate (Ibid.).”

It took participants several years to begin mobilizing and mounting a productive PROCINORTE agenda. This was in part due to the need to obtain trilateral agreements across the portfolio, the major differences within and across each country’s agro-ecological setting, and early-on, some internal, country-level institutional adjustments. As a result of the BOD’s decision regarding the limited tangible results, beginning in 2008, a multi-faceted consensus building process was launched to prepare for the PROCINORTE’s first Strategic Plan. Subsequent to national-level SWOT gathering, producing a “Blue Print” survey, and a subsequent interactive workshop, and “Balanced Scorecard” and “Strategic Mapping” inputs, the Plan was finalized and approved in 2009.

The Plan introduced a common vision statement: “*the governments of Canada, Mexico, and the United States working together, in consensus, and through their national agricultural research institutions to solve problems and support agriculture in the Northern Region with science, improved technology and scientifically based policy guidance* (IICA 2009)”. Appropriately, its mandate was a more “upstream” research and development (R&D) focus than that of the other PROCIs.

From this unifying statement, a mission statement was developed around the original Declaration by broadening the geographic focus to “reaching out to other American countries, regional and global research networks.” The Plan advanced a statement of objectives, anticipated challenges, core competencies, and a strategic issue statement. It defined the organizational structure directed by the BOD, which is composed of senior-level research managers from the Canadian Agriculture and Agri-Food –Canada Research Branch (AARC), the Mexican government’s Instituto Nacional de Investigaciones Forestales Agrícolas y Pecuarias (INIFAP), and United States’ Department of Agricultural Research Service (USDA-ARS). In the case of INIFAP, its Director General participates in the Board.

During the period, the BOD formalized the selection of the scientists from the three countries that do the actual technical work on PROCINORTE’s four thematic TF: 1) Genetic Resources; 2) Tropical and Sub-Tropical Fruits; 3) Animal Health; and 4) Plant Health. Each TF’s work is led by the respective lead scientist (usually the national program director for the particular area) and a highly interactive an increasingly collegial national-level scientific team. All members are federal government scientists, charged to advance their national programs. However, in this innovative structure, because all of the scientists see important complementary gains to “their” work within the broader international context they must work, they make extra, value-added, “in-kind” contributions. This work style is undertaken in “exchange for” their professional gains measured in terms of new knowledge and productive collaborative experiences.

IICA sits on the BOD in a voice-without-vote role and provides under its special “facilitating fund,” currently averaging $20,000 annually per TF to cover workshops, training events, travel to relevant meetings, and materials. IICA’s supports to PROCINORTE also includes the time of the Executive Secretary (ES), a senior specialist on innovation who serves as program facilitator and fund administrator for 40% of her time.

The Strategic Plan speaks to PROCINORTE’s uniqueness. “It is currently the only mechanism available to these three countries to use agricultural sciences to help solve trilateral problems of common concern in their agricultural sector.” (IICA 2009) Within its notably broad, mandated Northern and Western Hemisphere operational spheres, it brings together a unique agricultural scientific base. For the period 2007-2009 the United States ranked second in global public agricultural R&D spending at US$4,487 million (China is now number one) and Canada is in seventh place at US$871 million (P. Pardey and J. Beddow 2013). Regarding PROCINORTE’s expanding two-pronged geographic mandate, according to the latest available data from Latin America and the Caribbean (LAC), Brazil is the major investor in agricultural R&D with a budget of US$1.3, and Mexico is in second place with US$.5 billion (FAO 2012). PROCINORTE features a superior and extraordinarily broad scientific and technological support base derived from each country’s highly productive and long established links with quality state scientists, strong agricultural university research and teaching faculties, and their rich ties with the agri-business sector.

In order to capture its value and PROCINORTE’s potential for possible subsequent activities; Section III presents an overview of the TFs’ work.

### III. PROCINORTE’S TASK FORCE ACTIVITIES AND PRODUCTS

Building on the important unifying and more systemic coordination the Strategic Planning process provides, the BOD subsequently requested a complementary TF-specific, Strategic Plan exercise to ensure overall program harmonization. This was also done to advance yearly monitoring, assess results, and approve project activities, beyond the vital role performed by each TF leader and always, within the established national program mandate of each scientist.

Due to program differences and actual project life, each TF is unique. Accordingly, to obtain some initial impressions of PROCINORTE’s work-albeit in general terms, this section presents a brief description of each TF. It closes with some general cross-cutting themes.

**GENETIC RESOURCES- NORGEN:** This TF, PROCINORTE’s first, harks back to its founding days. In terms of germplasm distribution and needs, this TF unites a notably important critical mass of scientific centers of excellence. NORGEN’s objectives are to: 1) encourage communication and collaboration among personnel involved in National Genetic Resource Systems; 2) identify training and educational needs; 3) integrate with other genetic resources networks within the Americas and around the world; 4) develop projects of interest to the three countries; 5) encourage cooperation of national experts in each country’s operational and advisory committees; 6) establish contact with other task forces of PROCINORTE; and (7) support the development of an Integrated Genetic Resources System in Mexico. Scientists from many research stations within AAFC, ARS and INIFAP, and also from universities and other research centers participate in the NORGEN’s activities.

In terms of the contribution to increasing regional cooperation for genetic resources conservation and sustainable use, NORGEN’s most significant pre-Strategic Plan contribution was its leadership in the strategy “The Americas: A Rational and Effective Conservation Strategy for Plant Genetic Resources” prepared for the Global Crop Diversity Trust in 2006. The document was intended to serve as basis for a concerted strategy with participation of countries and networks of the PROCI system (NORGEN, the Mesoamerican network of Plant Genetic Resources- REMERFI, the Andean Network of Plant Genetic Resources- REDARFIT, the Genetic Resources Network in the Southern Cone- REGENSUR and the [Plant Genetic Resource Network for South American Tropics](http://www.uia.be/s/or/en/1100019368)- TROPIGEN), as well as international research centers based in LAC. NORGEN’s substantive involvement has continued subsequently in the International Symposium of Genetic Resources for Latin America and the Caribbean -SIRGEALC.

NORGEN has been helping advance the USDA/ARS’s Germplasm Resources Information Network (GRIN), which is considered the international “gold standard” for plant genebank information management. AAFC has adopted GRIN, and INIFAP is in the process of doing so. NORGEN is helping via training workshops on GRIN-Global, which provides Mexican and Canadian curators with the tools to manage genebank documentation. Workshop and training activities were provided to Mexico’s new state-of-the-art National Genetic Resources Center to include GRIN utilization and application.

A multiyear *Phaseolus* bean genetic resource and breeding project led by an INIFAP’s lead scientist was conducted in Mexico in collaboration with an AAFC bean scientist. Transfer of the bean germplasm collected and characterized would be advanced under the standard scientific procedures. This regional support program is facilitating a scientific effort of increasing global importance.

In 2012, NORGEN along with INIFAP organized the International Symposium on *in vitro* and *Cryopreservation* *Techniques* at the National Genetic Resources Center. This important event was attended by not only North American scientists but also many South American curators. The objective also was to strengthen increasingly important genetic resource networks.

**TROPICAL AND SUB-TROPICAL FRUITS:** This TF was created in 2000 to advance research needs related to production, product quality, post-harvest physiology and handling, and the safety and traceability of tropical and subtropical fruits. Its major goal is to become a mechanism to facilitate exchanges of scientific experience and information and training in the North American Region and build linkages among public and private country institutions. This TF responds to the increasing demands for fresh and processed fruit products in Norte America, many of which come from Mexico. A major USAID funded report indicates the growing world trade in fruits and vegetables and related food products. Specifically, when compared with other regions, LAC exported almost four times more than its closest competitor, China (USAID 2005).

The TF has implemented several research projects of importance for the three countries such as (1) effect of post-harvest handling at the packing house on the shelf life of mango and avocado, (2) mechanized visual assessment of avocado and mango quality assessment, (3) a centralized database for the rapid integration of data with regard to quality and food safety in the mango and avocado supply chain, (4) development of anthracnose-resistant mango germplasm and (5) development of parameters to determine the quality of tropical/subtropical fruits. The TF keeps an updated most extensive web site available in English, Spanish and French (<http://www.ars-grin.gov/cgi-bin/may/procinorte/index.cgi>).

This TF demonstrates the implicit tri-lateral requirements driven by Mexico and U.S lead international producers (first and third respectively), and Canada’s expanded imports, based on consumer demands. These trade dynamics stimulate needs for improved post-harvest and fruit quality technologies.

This TF has made encouraging advances in the use of reflectance spectroscopy to determine fruit maturity, a significant factor to assess product quality and harvest time. The collaboration between the lead Canadian and Mexican scientists in this topic has led to the production of a field tool that could save farmers thousands of dollars. Since 2004, the TF has provided outreach services to producers and their organizations in Mexico and California.

From the results of this TF, the PROCINORTE ES obtained funding from IICA’s Technical Cooperation Fund (FondCT for its Spanish name) to carry out the project “Revitalizing a Cherished Crop: Mango Chain Development in Haiti” in collaboration with the IICA offices in Haiti and the United States. The project aimed at improving the mango value chain in Haiti, disseminating some technologies developed by the TF. This contributes to IICA’s vision of strengthening links between “traditional sectors” (Haiti) and “knowledge intensive sectors” (AAFC, ARS and Mexico). AAFC scientists could not participate in the project but provided conceptual support to development of the project. Aspects affecting the future of this TF are presented in Section V.

* **ANIMAL HEALTH:** This TF is one of the latest to be formed. Over the last three years, it launched a much focused agenda; monitoring and harmonizing diagnostic methods of major animal diseases that could impact on trade.
* At the technical level, with the emergence of the highly publicized H1N1 influenza virus and the re-emergence of tuberculosis, the technical mobilization, communication, and collaboration between INIFAP, AAFC, and ARS was increasingly noteworthy. At the annual BOD meeting in October 2009, the new TF Chair stressed the need to investigate the potential for research collaborations and networking among the governments’ animal health researchers, proposing influenzas as a priority. Therefore, a high-level workshop focusing on the H1N1 virus (the first time for such a Northern American meeting) was carried out in Ames, Iowa. There were some difficulties obtaining participation from Mexican delegates from the national animal health authorities (SENASICA). Subsequently with support from both INIFAP and IICA, a high level member of staff from SENASICA was appointed to the TF, which made communications and participation more efficient.

Since then, and based on the TF Strategic Plan, this focus is on: 1) strengthening government-led collaboration in animal health for research and policy guidance; 2) problem-solving through scientific guidance in animal health to help support NAFTA[[1]](#footnote-1); and 3) helping target animal health research to meet the challenges of the region’s producers.

The most visible work has focused on animal diseases outbreaks and damage amelioration. The second tri-lateral activity, the “Influenza A Virus Molecular Diagnostic Techniques Workshop” was carried out in a reference laboratory in Winnipeg, Canada in coordination with the Canadian Food Inspection Agency (CFIA). This focused on molecular diagnostic techniques, virus isolation, characterization and sequencing, and on information sharing and networking between scientist and regulators from the three countries. This effort brought together for the first time scientists and regulators from the three countries. A solid network of researchers and animal health regulators started to form.

Subsequently the TF organized the expert workshop on highly pathogenic avian influenza in Athens, GA, to respond to the chicken and egg H7N3 outbreak in Mexico. This disease was prioritized because if not confronted, would have generated hundreds of millions of dollars in damage; providing the right diagnosis tools is the first step to disease control. The U.S. Poultry and Egg Association participated in the workshop and made initial gestures to contribute financially to a trilateral effort in this theme. The participants improve communication and mechanisms for responding to Avian influenza outbreaks.

Networking between scientists and regulators in the regional workshops has been an important systematic practice for helping scientists respond more efficiently and cost effectively to address common problems. They established the tri-lateral base for the harmonization of diagnostic methodologies.

From these first-ever experiences, a common base for an urgently mounted, complementary collaborative research and response mechanism are mobilized around influenza (avian and other species), Bovine Spongiform Encephalopathy (BSE) and bovine tuberculosis. These efforts are stimulating private sector interest from the three countries.

**PLANT HEALTH:** This is the most recently formed TF. Prior to the first Strategic Plan, the member of the TF met several times to discuss several possible areas of interest among the three countries that ranged from insect resistance and horticultural crop pests, to quarantine/fumigation issues for imported fruit and green house pests. However, getting to a consensus proved difficult.

In 2009, PROCINORTE supported a workshop on *Huanglongbing and Zebra Chip* diseases organized by the Texas Citrus Mutual. In 2010, a meeting in conjunction with the International Organization of Biological Control (IOBC) conference was supported by PROCINORTE but only the Canadian representative could attend.

As a result, the BOD decided to review the composition of the TF to appoint high level researchers. Currently, the TF is composed of research leaders from ARS, AAFC and INIFAP, with extensive expertise and record of collaboration. The TF has updated the tri-lateral priorities to focus on invasive plant pathogens, insect pests, and weeds of high agronomic or environmental consequence.

Given the subsequent rapid advancement in the United States of the brown marmorated stink bug (BMBS), its identification in Canada and likely expansion to Mexico, this insect pest became the TF’s focus point. The BMSB attacks tree fruit, vegetable crops and field crops, and, in a single growing season to apples alone, it caused $37 million in the mid-Atlantic United States. It is expected to become a serious pest in all three countries. In 2012, in Westminster, Maryland, the TF shared latest research and sightings and presented a preliminary distribution forecast based on data simulations made by Mexican researcher. Already, as a consequence of this focused effort and the pest expected damage, the TF produced pamphlets with information on the BMSB to be distributed among Mexican scientists and farmers to assist in preventing the dispersal of this serious pest.

**DISCONTINUATION OF THE LibraryPROCI:** On another note, in 2011 the BOD decided to discontinue the Library and Information Technologies TF, LibraryPROCI, which had been operative even before PROCINORTE following the withdrawal of the Canadian Agriculture Library (CAL). The work of the LibraryPROCI was mainly to support the National network of Mexican Libraries and therefore sojme BOD members felt that it was not providing equal benefits for the three PROCINORTE countries.

**GENERAL COMMENTS ABOUT THE TF**

Some general outcomes of the TF’s work are provided.

* From a somewhat nebulous concept, PROCINORTE has established itself as a growing purveyor of important agricultural R&D services from “knowledge-intensive sectors.”
* Some time was required to achieve deliberative trilateral BOD topic approval and TF agenda selection processes; but these processes (which now could be streamlined) provided the firm base for strengthening the PROCINORTE R&D agenda.
* Increasingly LAC scientists are participating in PROCINORTE activities and all participants agree that more linkages are mutually beneficial.
* Most of the TF topics are evolving around the expanding trade agenda and agriculture’s growing position and, as additional agreements spark, expanded agricultural trade.
* There is increased attention to “in-kind” contributions, which now demonstrate multiple inputs beyond the important initial small IICA stimulants and the key initial scientific work.
* The program participants have demonstrated a strong willingness to be responsive to changing national and specific science and technological needs and requirements.
* An innovative and relevant R&D base has been established which has the potential to deepen and broaden its agenda.

### IV. NATIONAL AND REGIONAL ECONOMIC AND INSTITUTIONAL DYNAMICS

In this section, the inter-related national and regional economic and institutional dynamics that converge to forge PROCINORTE’s future mission are analyzed. This Strategic Plan of potentially longer (to be defined later) duration builds from and further focuses on core themes that were advanced for the first Plan in 2010. These diverse themes must be updated and potentially include food security and rural poverty, NAFTA and Inter-American trade. Also an analysis of the R&D capacities, donor trends and support institutions, and the current situation of PROCINORTE’s member institutions seem timely in light of the second Strategic Plan.

**FOOD SECURITY AND INCRESINGLY VEXING RURAL POVERTY:** The Strategic Plan 2010-2013 built on the stark experiences from the global food crisis in 2008-2009 and the consequences of the global financial crisis. These impacted agricultural policies, investments, commodity prices, and trade. For the period of the next Plan, volatile food price spikes are not anticipated of the magnitude previously observed, but prices are likely to increase. Also, there has been progress on reducing global chronic under-nourishment and globally, some achievement of the United Nation’s Millennium Development Goals (MDG) by reducing under-nourishment by 2015 is expected. To date however, 870 million worldwide are still undernourished.

Within this context, most LAC countries responded very slowly to macro-economic shifts. To generalize, except for the Southern Cone countries, the complementary agricultural sector policy and institutional reforms were not advanced at the scale and form required. This is particularly true for LAC’s small-to-medium countries. They had accumulated a myriad of macro- and sector-related structural problems that constrain major poverty reduction in the rural sectors due to their sub-optimal agricultural sector. IICA reports: 1) In LAC national poverty rates remain considerably higher in rural areas; 2) In countries where rural poverty levels are high, poverty tends to be greater in households in which incomes are based exclusively on agriculture; and 3) Progress toward achieving MDG on poverty reduction has been slower in LAC’s rural areas (IICA 2011). In this setting, a more productive and dynamic market-driven agricultural sector forms the core economic base for stimulating sustainable, broad-based growth.

**NAFTA AND EXPANDED HEMISPERIC TRADE AND GLOBALIZATION:** The strongest rationale presented for PROCINORTE’s Strategic Plan focused on NAFTA, signed in 1994. NAFTA has become the world’s largest free trade area, linking 450 million people. Two-way trade has rebounded from the global financial recession, such that by 2010-11, downward trends had been reversed and recovered to US $2.6 trillion. In 2011, tri-lateral agricultural trade totaled US$ 61.2 billion (USTR 2013). All consumers have benefitted from a larger range and supply of counter-cyclical fresh agricultural and livestock, and processed food and beverage products, and from increasingly varied consumer prices. From an “import” country perspective, a recent USDA report captures some interesting aspects of the multiple gains:

Among major trading partners, Mexico ranks second only to Canada as the top source of U.S. agricultural imports and is approaching Canada’s level. This prospective convergence signals Mexico’s emergence as the eventual single largest source of U.S. agricultural imports. Mexico’s wide variety and selection of products, particularly topical crops, is the driving force in the country’s push to the top. U.S. demand for horticultural products—from avocados, strawberries, other berries, grapes, melons, mangos, citrus fruits, and pecans to tomatoes, peppers, cucumbers, squash, asparagus, and onions—are supplied in bulk quantities and lowering prices year-round from Mexico. The geographic advantage of Mexico’s s planting areas conveniently matches Canada’s proximity (for these same products) to U.S. markets (Zanheiser 2013).

Building on the progress achieved through NAFTA, each country and the world in general, have sought more open trading relationships with non-NAFTA counties. As of July 2013, the World Trade Organization listed 575 Regional Trade Agreements (RTAs), which are reciprocal agreements between two or more parties, of which 379 are in force. With regard to the NAFTA countries: 1) Canada has seven of which four are in the Western Hemisphere; 2) Mexico has 13 of which 10 are in the Western Hemisphere; and one about to be announced; and 3) US which has 12; 6 of these involve the Western Hemisphere and one is about to be announced (WTO 2013).

LAC is gaining increased market shares and currently, holds a much larger portion of world trade in agriculture (13 percent) than in minerals and metals (8 percent) and manufacturing (3 percent) (Chaherli and Nash 2012). But in today’s notably competitive world, competitors are always at the doorstep. For example under the Dominican Republic-Central America-United States Free Trade Agreement (CAFTA-DR), non-traditional fruits and vegetables exports formed the region’s most promising exports. However, many producers have not been able to sustain productivity and a competitive edge. As a result, countries have lost established market shares of some key product lines (Bathrick 2008).

Interestingly, but further illustrative of the growing challenges from globalization’s rapidly shifting realities, China’s agricultural inputs to LAC grew 24 percent from 2009 to 2010 (Chaherli and Nash 2012). IICA’s comprehensive review of the unprecedented dynamics across LAC presents a larger and broader scientific work required for sector-related productivity and quality enhancement, risk reduction, food safety, exotic pests and diseases, et al. and also, major institutional re-tooling (IICA 2011).

Table 1 illustrates the radical changes across LAC and the globalization growing opportunities, and how these apply to the PROCINORTE countries. It reflects the changing agricultural export trends for crops for each of the NAFTA counties and regional average, and compares these with the regional averages for the four Southern Cone counties. Striking regional contrasts exist between the two trade blocks as do much lower levels export levels and shifts across the NAFTA countries.

Table 1. Annual Accumulated Growth In Agricultural Crop Trade

|  |  |  |
| --- | --- | --- |
| Countries and Trade Block  | Exports (%) 2000/05 | Exports (%) 2005/10 |
| Canada  |  7.2 |  13.1 |
| Mexico  |  7.9 |  8.9 |
| USA  |  4.6 |  13.0 |
|  |  |  |
| NAFTA Averages  |  6.6 |  11.6 |
| Southern Cone Averages  |  11.9 |  20 |

Source: ECLAC, FAO, and IICA 2011

**TRENDS IN LAC NATIONAL AGRICULTURAL RESEARCH CAPACITIES AND SUPPORT:** This overview is presented in the context of PROCINORTE’s other regional mandate, that is, R&D support to LAC. Agricultural research and innovation have been pivotal to increasing productivity, which is essential in advancing and sustaining economic development.

By 1990 LAC’s agricultural research and innovation systems (except for the most part in the Southern Cone countries) had reached their high point. Until very recently, R&D support was cut by governments and donors gradually and precipitously. As the World Bank noted, “At the same time, the demand for innovation became all the more pressing, as increased global completion required improvements in agricultural productivity, notable funding reversals occurred (World Bank 2006)”. An IICA review of the consequences records the loss of the key critical mass and major erosion of scientific and technical skills ranging from limited staff with advanced degrees to expanded needs in fruits and vegetables, livestock, soil science, food technology, biotechnology, etc. (IICA 2012).

The recognized standard for national agricultural R&D spending is 1 percent of the sectors’ GDP. Applying this standard for LAC, when the four extraordinarily progressive and productive Southern Cone countries are removed (averaging 1.5 percent), the rest, including Mexico (at 1.15 percent) average only .5 percent for sector R&D investments (ASTI 2009).

Figure 1 reflects LAC per capita food production compared with the industrialized and South East Asian countries and the consequences overtime of inadequate attention to R&D in LAC. Since the early 2000s, the LAC performance presents less robust yield trends and the actual downward shift commencing in 2006 (IICA 2012). In this context in this period of extended neglect, collaborative scientist-to-scientist agronomic research alone will not be the sustainable solution. Concerted institutional and human capacity development and re-tooling is needed to respond to today’s economic realities, sector preparedness and responsiveness to markets and competitiveness requirements. These form major unresolved needs for new era-enabling policies, public/private-private/public institutional structures, extension and modern era technology outreach services, etc. Interestingly, as noted in the next section, many countries are now considering major new multi-donor bank assistance, In addition, from their own resources, Ecuador and Panama are undertaking a major reorganization of their current R&D systems.

FIGURE I. Per Hectare Production Trends for Food Crops



**TRENDS OF THE REGION’S SUPPORT MECHANISMS TO HELP ADVANCE NATIONAL-LEVEL AGRICULTURAL R&D:** Against this backdrop of changing needs and challenges, the traditional support structures were slow to respond to requisite institutional re-engineering to confront the radically different economic and trade structures. Some innovative new mechanisms and approaches are also advancing. Nonetheless, commensurate with current special needs, the institutional void is increasingly felt and broadening and requires major strategic responses. To appropriately frame PROCINORTE’s next phase, an overview of the main support base for R&D and innovation, is presented.

1. MAIN DONORS**:** Commencing in the 1960s, significant financial and technical assistance was provided in LAC by agencies such as the Canadian International Development Agency (CIDA), predecessors to the United States Agency for International Development (USAID), the Inter-American Development Bank (IDB) and the World Bank (WB).

USAID’s initial major support came in the form of R&D- related institutional development work that supported the standardized public research institutional model (commonly termed “INIA” in Spanish). USAID also supported agricultural colleges and universities (assisted by U.S. land grant colleges and universities, USDA, and private sector firms) focused on institutional development and training of scientists and extension programs and workers in LAC. Thousands of professionals from LAC received advanced degrees in the United States to mount and manage these basic services and institutions critical for sector modernization. During this crucial start-up period, this support represented 34 percent of USAID’s agricultural obligation (Office of Technology Assessment 1991) of a notably larger sector support budget. R&D support peaked in the mid-1970s. However, on a regional basis and in US dollar terms deflated to 2005 prices, this support had declined to $25 million by the mid-1980s, and dropped precipitously such that by 1996, there was no R&D funding (P. Pardey and J. Beddow 2013).

During this period, the IDB and the WB however increasingly advanced support to many of these initial core R&D services, but over time, at support levels well below the earlier budgets (FAO 2012). An IDB study of 15 countries found that by 2006, donor and multi-lateral bank support averaged but 3 percent of total national-level funding sources (broken down by government, produces, own income and private public enterprises, and others) (S. Gert-Jan and B. Nienke 2009). Interestingly, however, and in slow response to the accumulation of much earlier signals and warnings, the IDB and WB are reviewing queries from the [Instituto Nacional de Innovación Agropecuaria y Forestal (](http://www.iniaf.gob.bo/)INIAF in the Dominican Republic), Instituto Nicaragüense de Tecnología Agropecuaria (INTA in Nicaragua), the Instituto Nacional de Innovacion Agraria (INIA in Peru), the Instituto Nacional de Innovación Agropecuaria y Forestal (INIAF in Bolivia), and INIFAP in Mexico.

The one USAID sustained research support program on a global basis has been the Collaborative Research Support Program (CRSPS). Interestingly, this program relates directly or indirectly with PROCINORTE’s TFs four research topics, to include specifically horticulture and livestock. The CRSPS embrace a partnership with university and developing country scientists, some of which are in LAC and USAID in a well-regarded but ever-diminishing network. Since 1987, USAID budgets have averaged about $24 million per year (P. Pardey and J. Beddow 2013).

Under USAID’s new sector revitalization program “Feed the Future,” Guatemala, Honduras, and Haiti are targeted for specific financial and technical support; but no support slated for R&D capacity and institutional development needs. Elsewhere in LAC however, broader support for agricultural development has declined abruptly. The only current USAID R&D activity is in response to the devastating leaf blight fungus affecting coffee rust in Central America in which a variety of technical assistance services are provided through PROMECAFE.

CIDA has had a long commitment to support international agricultural development, working in Bolivia, the Caribbean, Colombia, Haiti, Honduras, and Peru. CIDA was a founding member of the International Fund for Agricultural Development (IFAD) and in 2009, doubled its support level to $75 million. This was part of Canada’s increased support at the L’Aguila G-8 Summit to double the country’s assistance to the global food crisis. For some years CIDA has supported the Consultative Group for International Agricultural Research (CGIAR) which has provided crop specific R&D services since before the Green Revolution. In March 2013, the Canadian government announced that CIDA was merged into the government’s trade and foreign affairs portfolio, but no additional funding was anticipated.

1. NON-TRADITIONAL INTERNATIONAL DONORS AND SUPPORT MECHANSIMS**:** In the face of unprecedented LAC needs, international supporters have made some initial but insufficient efforts to more systematically and strategically advance agricultural R&D. Three initiatives are noted below.

The Regional Fund for Agricultural Technology, FONTAGRO: This was launched in 1998 by the IDB and its co-sponsor IICA as a competitive funding mechanism for agricultural research and innovation focusing on small farmers. It is an effort to target funds and support to more directly promote research cooperation and local institutional strengthening among organizations at the national and regional levels in ALC. Over the years, FONTAGRO has involved the participation of CGIAR and regional centers such as the [Centro Agronómico Tropical de Investigación y Enseñanza (CATIE)](http://www.catie.ac.cr/) in a facilitative or complementary role via a competitive grants mechanism. From its endowment, is funded by its member countries and administered by the IDB, it has financed 73 projects for a total value of US$67 million ($25 million awarded by the Fund and $42 million as matching funds provided by executing institutions). FONTAGRO’s fund members are 14 LAC countries and Spain. This year, the Chinese Academy of Agricultural Sciences (CAAS) and the IDB (on behalf of FONTAGRO) signed a memorandum of understanding to promote cooperation between China and LAC by “facilitating agricultural innovation, conducting research, promoting information exchange, mobilizing resources, and other related activities” (IDB 2013). The PROCINORTE countries are yet not members of FONTAGRO and there fore can not apply for funding, however the northern countries could co-fund a project of mutual interest with FONTAGRO.

Forum for the Americas on Agricultural Research and Technology –FORAGRO: FORAGRO was developed by IICA to respond to years of increased inattention by governments and donors to agricultural research and technology development in the growing context of trade liberalization. In 1996, the “First Consultative Meeting of the National Agricultural Research Systems in Latin America and the Caribbean” met in 1998. FORAGRO was constituted after a major forum was convened, involving representatives of national public and private institutions, PROCIs, universities, FONTAGRO, and CGIAR centers. One of its key roles is “to help shape polices that promote agricultural development from technological perspectives (FORAGRO 2013).” FORAGRO provides advocacy input and work groups on behalf of the Americas to the Global Forum on Agricultural Research (GFAR), an international body that is dedicated to advancing agricultural research and innovative systems for development.

CGIAR: This important group’s contributions date back to the 1960s in LAC. In 2006, 47 percent of the CGIAR’s total global budget was focused in Africa with LAC receiving only 14 percent (ASTI 2012). Three CGIAR centers are located in LAC: the International Center for Wheat and Maize Improvement (CIMMYT, located in Mexico and working with INIFAP), the International Center for Tropical Agriculture (CIAT, located in Colombia), and the International Potato Center (CIP, located in Peru).

**CURRENT DYNAMICS OF PROCINORTE’S INSTITUTIONAL BASE:** Section II presents PROCINORTE’s institutional and organizational structure, which shaped its first Strategic Plan. That Plan described in general terms the nature of each institution’s evolution and its special program mandates. The fundamental base related to PROCINORTE has not changed measurably. More detailed background can be located via: 1) <http://www.agr.gc>. ca/index e.php for AAFC; 2) <http://www.ars.usda.gov/main/main/htm> for ARS; 3) <http://www.inifap.gob.mx/> for INIFAP; and [www.iica.int/](http://www.iica.int/) for IICA.

Since the first plan and actually before, each country's agricultural R&D systems have gone through different political and institutional dynamics which in the context of the current task require some understanding. This section highlights each country's current situation within this broader setting. An understanding of these developments within this section's helps shape PROCINORTE's responses in the North and for its greater interconnection with the ALC.

While the trends in the above-mentioned bases affect PROCINORTE’s response to its broader regional mandate, trends in this section relate most directly to the North. As was determined later and in the context of radically changing hemispheric needs and voids, both target groupings should become more interconnected.

AAFC: PROCINORTE’s first Strategic Plan was advanced during a period of governmental change toward a strong commitment to advance a balanced budget in the most expeditious manner. One means chosen was a major across-the-board reduction of traditional federally-funded science and technology programs. While science and technology budgets were to be reduced, the remaining federal budgets were to be directed more towards commercially oriented, “industry-based” endeavors. These policies have affected all of Canada’s research enterprises to include universities and research centers such as the National Science and Engineering Research Council and the Canada Institute of Health Research.

This year, the Department of Agriculture and Agri-Food’s budget is to be cut by 10 percent; one of ten departments to be cut by double digits. For AAFC specifically, this has resulted in the shutting down of the Cereal Research Center for wheat and oats, its Horticultural Research and Development Centers and the plant pathology unit at the Pacific AAFC Center (The Public Service Alliance of Canada 2012).

In response to these adjustments, in April 2013, the Growing *Forward 2* (GF2) plan was launched. This program will “focus on innovation, competitiveness, and market development to ensure Canadian producers and processors have the tools and resources they need to continue to innovate and capitalize on emerging market opportunities (AAFC 2013). This new program will focus specifically on innovation, competitiveness, and marketing themes. The first pillar, *Agrilnnovation* will focus on industry-led R&D to support pre-commercialization research and development, and knowledge transfer leading to innovative agriculture, agri-food and agri-based practices, processes, and products. This new system provides non-repayable contributions for two types of projects via Agri-Science “clusters” or “single research projects” (AAFC 2013a).

Although the details are not yet fully understood, there are a series of recently pending issues of importance to PROCINORTE, particularly as they relate to the Tropical and Sub-Tropical Fruit TF. Currently, all AAFC research activities are being reviewed to assess their “fit” and compliance within the selection or non-selection guidelines. Personnel decisions around this major shift are also being made based on this rigorous review process.

Given the key role the Canadian scientist performs in the increasingly visible Tropical and Sub-Tropical Fruit TF and PROCINORTE’s trilateral implementation requirements, unless an accommodation can be reached, a potentially serious situation for the program is on the horizon because personnel changes might impact negatively advances made.

ARS: For a considerable period, this lead US agricultural research service has encountered decreased funding levels, which are stimulating mounting concerns. Pardy and Alston report that “since 1990 agricultural growth has slowed to a crawl… The link between the slowdown in public funding and the slowdown in agricultural productivity is apparent” (Pardy and J. Alson).

In 2012, the President’s Council of Advisors on Science and Technology (PCAST) reported to President Obama its concerns about the potential consequences of this trend. Critically needed productivity-related research has declined notably. For three decades public spending for this traditional core service stagnated in real terms such that the core competitive grants program was less than $500 million per year. The PCAST spoke to the growing consequences of this trend and recommended that this program be increased from $500 million to $700 million per year. This stagnation in funding is causing many of the most important US research companies to invest a significant amount of their research dollars in China, India, and Brazil (Office of the President 2012).

No prospects for resolution of this situation are foreseen, at least for the short-term. Due to these ever-tightening budgets and increased U.S. government travel restrictions, PROCINORTE’s TF scientists’ decisive coordination activities are increasingly curtailed, thus reducing critically needed planning and networking sessions.

It is important to also mention that ARS has its own extensive international support program managed by its Office of International Research Programs. This unit addresses international partnerships, food security, and biosecurity engagement activities. Within this structure, targeted research support is provided for USAID’s Feed the Future program and broader agendas and programs. The senior and scientific personnel interacting with PROCINORTE also interact with the appropriate ARS personnel. In addition, in 2011 the Agricultural Technology Innovation Partnership (ATIP) Foundation was formed to help increase the likelihood that ARS research will benefit private sector firms through collaborative partnerships. ATIP facilitates the integration of venture capital with government, industry, and academic research and development in ways that might be of benefit to application of PROCINORTE’s research products.

Recognizing the significant budgetary constraints affecting ARS, it is also appropriate to note the possible complementary support services that could be supplied by the National Institute for Food and Agriculture (NIFA). In contrast to ARS, which is USDA’s internal research agency, NIFA is USDA’s extramural science agency to advance collaborative research. NIFA provides approximately $1.2 billion annually to the U.S. agricultural science community at American universities including institutions that serve Hispanic populations. By providing such support, NIFA’s intent is to strengthen agricultural teaching, extension and research on those campuses.  As with the ARS, NIFA’s programs are authorized and designed to strengthen United States agriculture. But also, it recognizes that many of the agricultural science priorities complement directly PROCINORTE’s current core elements. Thus, NIFA could possibly provide support opportunities for U. S. agricultural researchers, teachers, and extension specialists to work with counterparts around the world. Perhaps after careful review, PROCINORTE could form a complementary structure.

INIFAP: As reported earlier, Mexico has risen to second place in total public agricultural R&D spending in LAC. Its overall budgetary support, even in down times, has overall been consistently supportive. For example in an IICA report analyzing R&D investments in relation to agriculture’s total value added between 2001 and 2006, Mexico was the only country surveyed that recorded an increase in R&D spending (IICA 2012). Also noteworthy is the fact that Mexico, with 4,067, full time equivalent (FTE) agricultural research staff, is second only to Brazil (Ibid.).

Organizationally however, the R&D structure in Mexico is large and somewhat dispersed. For the large public sector programs, INIFAP was earlier the traditional leader and still tends to a large national portfolio. Mexico also has a large number of state and federal agencies along with some 125 separate faculties or university units involved in agricultural R&D (G. Stads and N.Beintema 2009). Within this expanding national structure, INIFAP’s FTE staff proportions have greatly declined as research staff growth occurred mainly at the university level and its retirements were not filled (Ibid.). Within this system, the Mexican federal government’s Secretary of Agriculture, Livestock, Rural Development, Fisheries, and Food (SEGARPA) makes the federal budgetary distribution with allocations going to INIFAP, universities, and other governmental agencies. In 2006, INIFAP accounted for 22 percent of the total national budget (Ibid.).

INIFAP also has major R&D complementary support work under the new effort by the Government of Mexico’s maize production expansion program, *MasAgro*. This is a new 10 year US$136 million government initiative, implemented by CIMMYT. A significant share of the *MasAgro* funding is implemented through INIFAP. CIMMTYT works with close oversight of SAGARPA in representation of the Government of Mexico, and CIMMYT coordinates closely with multiple entities that report to SAGARPA, including INIFAP. CIMMYT has four representatives of the Government of Mexico on its Board, including the Director General of INIFAP, and the Vice-Minister in SAGARPA with oversight on INIFAP.

It is noted earlier that in addition to NAFTA, Mexico with 14 Regional Trade Agreements, has the largest number of agreements of any PROCINORTE county. NAFTA opened radically Mexico’s previously highly protected agricultural economy to the forces of globalization and competition. Accordingly, the agreement provided a 15 year transition period to diversify out of “sensitive crops” of doubtful competitiveness. ASTI’s recent review of Mexico concludes that, in light of Mexico’s still pending “structural deficiencies,” a “well developed national agricultural research system and adequate levels of investments are important national prerequisites (G. Stads, G. Moctezuma, J. Espinosa, et.al. 2008).”

IICA: PROCINORTE operates from IICA’s Office in Washington, D.C. and is technically coordinated by its headquarters’ Directorate of Technology and Innovation. The IICA U.S. office has many responsibilities related to: 1) securing financial and technical resources; 2) increasing program visibility; and 3) providing information services.

PROCINORTE’s financial and program management and coordination responsibilities are assigned to its ES—occupying 40 percent of her time. She has the same responsibility for FONTAGRO and functions as the Northern Region’s Specialist in Management of Technological Innovation. She also provides technical support to the Country Representative who participates on the BOD, but in a consultative capacity.

For the last 15 years IICA has not received increases from country membership contributions. This has forced some overall program adjustments and reductions, and caused IICA to express uncertainty about PROCINORTE’s future. During recent years annual PROCINORTE support has been reduced from an earlier base level of $130,000 such that for the past two years the BOD wrote to IICA’s headquarters requesting reconsideration.

Based on the consequences of the neglect to LAC’s increasingly weakened R&D institutional structures and programs, and fully in the context of an increasingly competitive trade environment and agriculture’s unprecedented opportunities, IICA has designated “Technological Innovation” as its institutional priority. In October 2011, the Ministers of Agriculture of the Americas approved the Declaration “Sowing innovation to harvest prosperity” which focuses on innovation as a whole. Given the major R&D institutional void, this declaration forms an important institutional commitment to advance LAC’s growing agricultural productivity and competitiveness needs. The focus and content evolve from the diverse experiences obtained from the PROCI’s, and also FONTAGRO and FORAGRO and the changing trends to form a more systematic engagement in improved agricultural technologies (ICCA 2012).

In Section V discusses PROCINORTE’s possible contribution to this important new effort. As funding uncertainties have increased for IICA and similar uncertainties arise across at least AAFC and ARS, PROCINORTE’s advancement becomes increasingly difficult.

In concluding this section the meaningful advancement on PROCINORTE’s Vision and Mission Statements as originally presented and the thrust of the Plan overall becomes an increasingly challenging undertaking. Some important science and technological products and knowledge flows have been advanced, and some within a very limited time period. This is all within an increasingly resource-scarce environment. Clearly the broader technological support network needed to respond to the realities globalization has wrought requires special attention. Across the PROCINORTE’s northern country hemispheric focus and now also much more broadly in LAC for the unprecedented win:win opportunities to become sustainable, special focus and operational support measures are required.

Due to political choices and national budgetary realities or operational challenges, PROCINORTE provides a special mechanism for increasing much needed support and attention to scientific collaboration with a more cost effective and efficient operational alternative of considerable mutual benefit. The lead R&D institutions are increasingly challenged but as demonstrated, if more systematically supported and appropriately advanced, PROCINORTE can help confront the prevailing hurdles and advance important solutions in the North and beyond to LAC. At this critical juncture, Section V offers a proposed framework to marshal requisite needs over a longer period.

### V. ACHIEVIEVING PROCINORTE’S R&D OBJECTIVES

This section proposed a transitional strategic and operational framework for PROCINORTE in light of the analyses of the previous sections.

**INTRODUCTION AND SETTING THE STAGE**: PROCINORTE’s mandate and structure provide an innovative mechanism for more appropriately channeling the world’s largest economic and trading block and best agricultural scientific and technology systems to generate broad and more robust sustainable gains of mutual benefit.

The background presented and the feedback obtained from a focused, interactive questionnaire and discussion exchange with many of PROCINORTE’s key cadre indicates that the next strategic framework must more directly confront formidable institutional and operational constraints. From what has been presented and while formidable constraints prevail, much more positive outcomes are possible if energies, political support, and operational reforms are advanced to support this Strategic Plan.

Strategic options generate important consequences that must be considered. After extensive consultation and careful reflection, at least two options are proposed: 1) The status quo path through which PROCINORTE will try to accomplish in some cases some good things but within an increasingly frustrating and unsustainable professional network; or 2) The transitional framework based on more clearly defined complementary activities and functions that systematically advances the PROCINORTE structure over hopefully, a longer and much more productive period.

Section V is driven generally by the responses from the BOD and TF questionnaires. It is based on SWOT-like presentation focusing on two core questions directed to the BOD. Table 1 presents the responses to the query soliciting PROCINORTE’s greatest contributions. The measured responses presented reflect the creation of a generally hopeful institutional base. From subsequent reflection and broader reviews a similar confirmation of most of these views was obtained. From this initial foundation and the conclusions reached from Section IV, sufficient justification is presented to consider PROCINORTE’s proposed next phase, 2013-2018.

TABLE 1 BOD’s Opinions Regarding PROCINORTE’s Contributions

|  |
| --- |
| 1. Developed a collaborative structure demonstrating that common topics can be better addressed across borders.
 |
| 1. Strengthened research problems within a trilateral win:win:win context.
 |
| 1. Has facilitated an exchange of experiences, information, and training among some of the region’s institutions.
 |
| 1. Has made possible the realization of combined activities among some of the participating institutions which have problems of mutual interest.
 |
| 1. Has mobilized some of the best people and moved forward over time in spite of increased issues and obstacles.
 |
| 1. Program‘s breadth is its merits and has developed a base of confidence that has leveraged the best national talents.
 |
| 1. Advanced a broad base of core issues and topics.
 |
| 1. Has become a special, trilateral scientific organization to address common problems in ways that add value.
 |

Paradoxically however, based on the other key SWOT-related responses regarding PROCINORTE’s weaknesses and limitations summarized in Table 2, there are serious deficiencies. These important points are addressed in the context of the broader questionnaire and also the accompanying but not tallied questionnaires that were completed separately, plus the reviews of annual reports and selected conversations indicate that there are substantive imperfections that must be confronted. Interestingly, these points represent many of the “core challenges” to be confronted during the implementation of the first Plan. These core challenges are grouped around three themes: 1) advancing and influencing the related research agenda in a way that stimulates focused and sustained policy support; 2) raising PROCINORTE’s visibility and stimulating a broader stakeholder partnership and support relationship; and 3) receiving more funding from core membership and/or other sources.

In the review of Table 2 it must be noted that in this request to the BOD based on the knowledge that funding limitations were already PROCINORTE’s greatest limitation, the BOD was requested specifically not to list it, thus providing more opportunity for other more general themes.

Based on the advances recorded in Section II and the substantive material reviewed and multiple consultations, the consultant concludes that from a focused and multi-faceted response, and the Table 2 shortcomings in this Strategic Plan, a more productive outcome in a much broader geographic and possibly topical areas will be observed.

Table 2 BOD’s Opinions Regarding PROCINORTE’s Weaknesses and Limitations

|  |
| --- |
| 1. The impact of the activities developed is limited.
 |
| 1. There is no strategy to establish a program or activity that provides for a broader participation of related public and private institutions.
 |
| 1. Although the priorities are intended to influence the region and the hemisphere, PROCINORTE has not played a leadership role in their definition.
 |
| 1. The BOD is only at the annual meeting with little opportunity or means for follow up.
 |
| 1. TF leaders and scientists have their national-level work responsibilities and are increasingly stretched such that PROCINORTE’s activities do not always advance.
 |
| 1. PROCINORTE lacks appropriate visibility at the policy level and base that must be broadened.
 |
| 1. It shows promising potential but is such a fragile structure.
 |
| 1. There are insufficient financial resources directed to advance the core initiatives.
 |
| 1. There is a lack of interest to resolve growing issues and problems of broader interest.
 |
| 1. There is a need to advance diverse opinions and conditions constrains operations
 |

### VI. PROCINORTES’S STRATEGIC PLAN’S CORE ELEMENTS

Continuing from the above conclusion and careful reflection, it appears that the possible status quo option would not at this pivotal juncture be appropriate. PROCINORTE is an innovative structure still at an incipient stage of development with committed leadership that will require targeted nurturing by building from the original core precepts of the first Plan.

The suggested approach is to basically maintain PROCINORTE’s prevailing strategic structure and probe into the admittedly arduous and sensitive but necessary policy, tactical, and operational issues. This section presents the core strategic elements of the original PROCINORTE Strategic Plan with some minor modifications as recommended and additional themes that set the stage for the proposed tactical agenda.

1. Pertinence of Core Themes from Original Framework: For the upcoming period, the prevailing Vision and Values statements have application and are repeated below. However, to better capture and more meaningfully respond to the broader changed times and the obvious complementary political and economic interests and benefits derived from NAFTA, a more pointed Mission statement is suggested. This modification puts more focus on the higher-level policy and powerful mutual gains implicit within this trilateral agreement. Following the established format from the first Plan, points 1-4 are provided with the subsequent related themes gleaned from this review process as presented in points 5 and 6.

2) Vision: ***The governments of Canada, Mexico, and the United States working together, in consensus, and through their national agricultural research institutions to problem-solve and support agriculture in the North American region with science, improved, technology, and scientifically-based policy guidance.***

The statement is not changed from the Strategic plan 2010-13.

3) Values:

* + ***Ensure equality among nations***
	+ ***Serve the farmer***
	+ ***Protect the consumer of agricultural produce***
	+ ***Build scientific capability to meet societies’ needs***
	+ ***Share science for the benefit of all.***

4) Mission: the proposed mission statement:

***In the increasingly interconnected national, regional, and world economy that NAFTA and globalization have created, mutually strengthen agriculturally related governmental and stakeholder collaboration in research, development, and policies to: 1) enhance sector productivity and competitiveness needs; 2) improve food safety and plant and animal health, and 3) assist on related capacity building needs. This is to be advanced via increased supportive links with the North American and other Western Hemisphere countries plus corresponding regional and global research and development networks.***

5) Broad Strategic And Core Lessons Learned From PROCINORTE 2010-2013

* Shared tripartite conviction that, for our respective rural communities to grow, agricultural export growth is crucial and for this to happen, priority support must also focus on expanded R&D competitiveness, productivity, and food safety needs.
* During periods of prolonged budget reductions, PROCINORTE’s innovative structure and mechanism provides an important approach to quickly advance and build R&D program efficiencies. Its core focus is to mobilize the national “best” public sector research and science around shared problems from a mutually supportive regional network. This process also takes advantage of marked regional climatic variations and diverse agro-ecological conditions which reduce periods for experimentation and testing thus reducing budgets, and an increasing variety and level of in-kind contributions.
* PROCINORTE also demonstrates the essential reality that to sustain the benefits from today’s trade-bound world, complementary trade enhancement, win:win activities must also be advanced.

6) The Phasing Of the Strategic Plan’s Five Year Duration: This Plan covers a broad institutional and economic and trade-related foundation. It is still a somewhat abstract process and its national importance in agricultural R&D is not broadly appreciated. In the face of numerous formidable constraints and obstacles, there are major contributions and issues that can and should be advanced and ameliorated, without which the broader Mission will not be realized. There is also a danger of possibly discrediting prematurely PROCINORTE’s objectives if not appropriately addressed early on.

The continuation of a status quo process for five years does not appear to be a viable option. Accordingly, in the context of this transitional strategy, it is more appropriate to undertake in three years a brief stock-taking assessment of the program’s advancement, and if little progress has been made, curtail operations.

**PROCINORTE’S PROPOSED TACTICAL AND OPERATIONAL AGENDA**: To paraphrase one BOD member, “*This Strategic Plan must serve as a means to more optimally advance our mission*.” Progress must be made in a way that helps the scientists advance while fomenting greater policy and political support and promoting more visible and sustainable impacts during this early portion of the transitional period. This thrust must also take into consideration the current work load of the BOD, TF members and SE.

Accordingly and respective of pressing on with PROCINORTE’s Mission, four inter-related focus themes are presented with their suggested responses. These are:

1. Broadening national-level institutional support and raising PROCINORTE’s visibility;
2. Improving PROCINORTE’s message outreach system;
3. Intensifying efforts to augment PROCINORTE’s funding; and
4. Making program operational and organizational adjustments.

All respond directly to the major challenges earlier presented and the key points raised from the BOD and TF questionnaires. Upon the BOD’s review and approval and or modifications to this proposed plan, during the implementation of each Annual Plan, these themes can be assessed to ascertain advancement and what is needed for the subsequent year.

A brief account of each theme and the recommended response from PROCINORTE follows.

1. **Broadening National-Level Institutional Support and Raising Visibility**: Today’s economic realities require that for all countries to grow more sustainably, national core comparative advantages must constantly be supported and focused so that these become more competitive and productive. If PROCINORTE is to be a viable factor in this quest, it’s innovative mandate to regularly mobilize “in-kind” labor support beyond the normal jobs of the researchers involved (to which most in the past have enthusiastically responded), increasingly confronts a barrier. A key element for programming and advancing PROCINORTE’s atypical work requirement is the annual work plan and networking. However, due to budget reductions it is now being facilitated with limited success via virtual communications.

Initial work-related, “in-kind “contributions are important, but these cannot be exploited, particularly when expected support is decreased. In varying degrees, the program demonstrates the consequences of uncertain and increasingly reduced budgets across all fronts as well as growing frustrations, and even job uncertainties. Many see the importance of their work in helping their nation and others and the special professional growth derived from this high-level, scientific networking, but also, they confront increased dissatisfactions.

Perhaps, these conclusions are due to the declining appreciation for core productivity enhancing support for agricultural research (in favor of increased attention but within a zero sum budgets advancing important nutrition, environmental, climatic research etc.), and also, the plethora of other demands assigned to key personnel. At this juncture the fledgling structure lacks the visibility and political support base to mobilize the earlier felt focus and minimal measures to sustain key support.

Suggested PROCINORTE Responses

* **Formation of a PROCINORTE National-Level Advisory/Steering Support Group**. This body should have its role formalized and should meet occasionally, at least semi-annually with the first session to be convened this fall. It should be organized in ways that would bring attendees up to speed on the TF’s activities and also, given the special prestigious nature of each group’s expertise and experiences, extract strategic ideas to stimulate and advance the substantive issues that all countries in varying degrees, increasingly confront.

This steering group would be composed of respected representatives from agriculturally and non-agriculturally related governmental agencies (such as regulatory and trade entities), agri-business, producer associations, food safely groups, press, academia, etc. They should share information and review progress with the TF and PROCINORTE BOD member and subsequently with the Minister/Secretary of Agricultures. They would receive copies of related periodic reports and on their own, hopefully present articles and meet with national officials to provide broader opinions and support regarding agricultural R&D and PROCINORTE’s support activities and the importance of such approaches to the country. They should be of sufficient stature to advise senior national leaders. For illustrative purposes, in the US these might be from APHIS, NIFA, Global Harvest Initiative, broad-based producer and food safety groups, related scientific groups, the American Public and Land Grant University Association (APLU), a representative from USAID’s Collaborative Research Support Program (CRSP)} which include at least two of the TF’s agenda topics, horticulture and livestock in some of the LAC countries, etc. Similar composition should be sought in Canada and Mexico.

* **Update PROCINORTE’s Declaration**: This is a very broad and outdated document that would be more useful if it could be re-drafted to bring greater focus, broader national participation and greater definition of respective roles to include those of the BOD, TF and respective advisory, steering committee groups. It could be structured to mobilize official review and interaction.
1. **Improving PROCINORTE’s Message Outreach System:** The four TF areas are recognized with respect and viewed as important within their respective, naturally small agricultural scientific groups. This is a period of universal budget constraints across all institutional bases and PROCINORTE’s approach to trilateral collaboration dependent on manageable levels of in-kind support is slowly proving to be a cost effective mechanism for mobilizing highly specialized technical leaders. This type of collaborative research is done in ways that would be exceedingly difficult and costly to mobilize under traditional systems. Unfortunately however, due in part to its uniqueness and exacerbated by unprecedented budgetary strife, “good science” takes PROCINORTE only so far.

The basic products, information and data to periodically share with more senior governmental officials, policy makers, grantors, and interested stakeholders and public are in short supply. PROCINORTE-related handouts are scarce. Only one TF has a comprehensive web page and IICA’s is very slim and outdated. There is little that brings the consequences (or potential consequences) of PROCINORTE’s work together beyond the brief internal time-specific annual reports. Further, there is no advocacy or strategy for targeting policy-level groups.

Suggested PROCINORTE Responses

* **Distribute PROCINORTE’s Achievements**: Perhaps IICA’s well regarded communications department could review the respective outreach products and make general recommendations and present simple formats and procedures for updating web pages and even prepare semi-annual and simple newsletter format for each TF. As will be discussed more broadly later, if the respective lead TF institutions are unable to help advance these products, perhaps a part-time graduate student (for example University of Maryland College of Agriculture and Life Sciences) could be obtained to work with TF teams from the ES’s office to advance these product/s. There is need to have a minimal set of basic informational products that appropriately highlight national contributions and the gains from PROCINORTE’s innovative synergistic process.
* **Advance Presentations to Key Stakeholder/Support Institutions and Prospective Supporters and Advocates**: With these materials, BOD members would have much needed data and advocacy materials to educate various stakeholder groups and senior governmental leaders and to influence Ministers/Secretaries of Agriculture of PROCINORTE’s important cost effective contributions. In an important complementary mode, IICA’s headquarters leadership would be prepared for their north-bound, senior-level visitation missions with current information and supportive comments. These could be presented in a mutually reinforcing way to key stakeholder or potential stakeholder organizations. For example, in the United States where the consultant has more information, sessions might also be held with respective Ambassadors, the U.S. State Department, IDB, FONTAGRO, World Bank , IDB, USAID, Global Harvest, APLU, food safety, etc.

IICA’s new “Technological Innovation” effort and the established premier “upstream”/”knowledge intensive sectors” PROCINORTE embodies converge with the same core R&D agendas of the other PROCIS and their national institutional affiliates. PROCINORTE appears to be well positioned to help IICA substantively collaborate in this complementary effort. In addition, targeted visits for those countries requesting IDB and WB assistance could benefit notably for their upcoming project design efforts to mobilize the most efficient broader outreach services.

At Annual Meetings carry out virtual sessions with broader audience to review PROCINORTE’s products and progress: Taking advantage of the concentration of BOD and TF leaders at their annual meetings provides a special opportunity for a programmed virtual type session to the broader interested audience affiliated with PROCINORTE’s growing network to review products and progress.

1. **Intensifying Efforts To Augment PROCINORTE Funding:** This is a critically important area. During the design of the current Strategic Plan, funding constraints were clearly identified. During the formulation of the first Strategic Plan, a parallel PROCINORTE Business Plan was developed to arrange financing to cover anticipated needs for the work of the TF’s. Under this plan, core funding from the respective national members would go from zero to $25,000 in 2013 and increase to $40,000 by 2015 (IICA 2010). Due to increased pressures brought by the global economic crisis and the national governmental budgetary pressures, the BOD chose not to advance this plan. At the same time, the two newest TF programs are now advancing, thereby creating additional budgetary shortfalls and related pressures and frustrations.

National budgets are decreasing. Exacerbating the problem are complicated budget planning and support activity expenses due to the consequences of IICA’s budgetary reductions and uncertainties. Scheduling confusion arises from the different fiscal years of the members, coordination and review obligations required during the BOD’s annual TF review and approval process in October, and the short time for actual budget preparation. Consequently in 2012, of the $108,000 allotted, $18,300 was not spent (IICA 2013).

Interestingly, though difficult to monitor there is a broadening range of increased “value added” contributions PROCINORTE is mobilizing. These include: 1) increased “in kind” contributions in terms of scientist’s time, use of laboratories and equipment for training purposes, and other support services provided by PROCINORTE members which in some TF’s may be at its limit; 2) increased PROCINORTE “buy in” for services as demonstrated by the position taken by the U.S. Poultry and Egg Association’s reaction to the Avian virus and their request to present a proposal (unable to respond due to staff/work limitations); and 3) the successful implementation of the project in Haiti supported technically by members of the Fruits TF.

In view of these experiences and expanding workloads of key TF, BOD, and IICA staff levels, for PROCINORTE to advance it must begin to tap additional funds to productively advance during the next three year period and hopefully beyond. There are growing frustrations around the vital need to generate new revenue streams commensurate with PROCINORTE’s product lines and the region’s needs and the expanding numbers of countries interested in modernizing their very limited national R&D capacities.

Suggested PROCINORTE Responses

* **Visits by IICA’s Director General to key BOD and their respective leaders and maybe other related governmental leaders** (be they in trade, foreign affairs, science and technology units as needed) should be made to solicit minimal core fund support: Section III presents a growing multi-faceted portfolio with more tangible products on the horizon. It demonstrates the great value in an early phase of PROCINORTE’s special value and potential of much more to come, if appropriately supported. While all are appreciative of the amounts provided by these same nations, which forms IICA’s largest country support base, these nations have been direct benefactors during PROCINORTE‘s period of increasingly shallow funding. For the gains to continue in the way that has been proven necessary, a small but important contribution is needed from the member countries. Consequently, during the proposed senior-level trips mentioned above, the Director General should follow up along the lines presented in the Business Plan 2010-2013.
* **Attempt to at least restore and ensure IICA’s previously allotted core funding levels for, at a minimum, the initial three year period of this Strategic Plan**. Following the funding levels of from three years ago, this would be the provision in 2013 of $130,000. In addition however, as critical seed capital is needed for this expressed period, a pledge from IICA of at least $50,000 until at least the total national-level contributions have been provided. This is to cover the additional ES related support services listed under this Plan’s proposed Target Agenda. Also, provision should be made to cover at least 50 percent of the ES’s time for PROCINORTE support activities.
* **Explore efforts to generate a more agile budget approval and fund release processes:** Based on the unfortunate circumstances under which IICA’s funds to PROCINORTE have been returned, conduct a program review process and offer recommended adjustments for budget scheduling dates. There is a need to define a more optimal scheduling for programming and spending activities.
* **Solicit funding support from a variety of entities:** Some PROCINORTE project stakeholders indicated their willingness to support activities but the respective TF was unable to follow up. These opportunities cannot be lost. Further however, building from the advances described in Section III, progress needs to be made toward gathering support for R&D activities of mutual benefit with other related programs, particularly when developments advance southward. This logical next-step activity was strongly endorsed by all levels of PROCINORTE’s affiliates.
* **Building on the progress made in PROCINORTE’s science support work and the needs now developed, perhaps complementary research support activities could be mounted with USDA/NIFA**. In addition, likely financial support groups would include FONTAGRO to link upcoming proposals involving countries needing the more “upstream” science and technology support PROCINORTE is uniquely suited to mobilize and produce. Since none of the PROCINORTE countries are members of FONTAGRO and therefore they are not subject to funding, proposals could be developed with FONTAGRO members countries that require these essential needs.

Other activities might be with supporting design and implementation services for the upcoming “new era” country-level R&D institutional development activities now being mobilized by the IDB and WB. Many interviewees pushed for a large grant proposal that could be forwarded to the Bill and Melinda Gates Foundation or the Howard G. Buffett Foundation.

1. **Program Operations and Organizational Adjustments:** For this first period of the transition phase of PROCINORTE toward a more sustainable structure, targeted program support and operational activities must be employed across various areas. The BOD plays a vital steering oversight role and its work has helped bring us to today’s important juncture. However, the nature of the program now in place demonstrates its stretched capacities. Additional support activities are required as PROCINORTE’s TF products increase.

The annual BOD PROCINORTE meeting agenda focus to try to resolve all crucial points appears to have reached its limit. In addition, the TF requires other follow up mechanisms apart from the vitally important but diminished levels of annual work plan meetings. Some key activities are delayed or just “fall between the cracks.”

In the context of the ES’s part time support to PROCINORTE, the implementation of this Plan will result in this “hub “unit becoming much more active. Earlier, the need for a part-time person was expressed (possibly a graduate student), to assist in outreach publications work. More work will also be required. Additional work adjustments and roles for the ES are listed.

Suggested PROCINORTE Management And Operational Interventions

* **Strategizing for Possible Broader Range of TF Topics:** The region and the world are changing rapidly and globalization’s dynamics, particularly on the trade development front, must be looked at far more seriously and strategically. So that the best use of the increased resources is appropriately made, program management and future development agenda activities also need to be considered. These include: 1) review of current research portfolio to ascertain those activities that, with just a limited additional financial or technical support could advance more quickly; and 2) preparation of the substantive expanded TF R&D agenda which with expanded financial support, could hopefully commence over the next two years.
* **Carry out quarterly follow up meetings with national members to review progress and provide recommendations to help advance TF work:** Assuming delegation by the BOD, under the direction of the designated country-level PROCINORTE BOD Assistant, at least one per TF (or grant permission to also facilitate) quarterly follow up meetings could be held with national members to review progress and provide recommendations to help advance their respective work. Comments for opinions regarding the work of PROCINORTE colleagues could be discussed. Reports would be prepared and the PROCINORTE ES copied for her follow up assistance as appropriate.
* **BOD conduct quarterly Skype review as follow up to annual meeting and to advance policy, strategic, and operational issues as needed**: The issues and challenges are many and growing and require more regular “follow up” tracking and monitoring services. Regular meetings should be held with minutes taken. Where needed, the ES should be able to facilitate or undertake important follow up actions, under the BOD’s direction.
* **TF annual meeting follow ups**: Building from the essential nature of these sessions that form the knowledge and action base and substantive grist for each TF, it is important that core implementation activities also advance regularly. Perhaps follow up assistance is needed on the key decisions such as the preparation of a grant fund proposal request; improvement of the TF’s web page, etc. Clearly each leader has specific responsibilities but on occasion, special assistance will be needed from the ES, to include support, perhaps from the mentioned part-time grad student as needed, and the respective BOD member.
* **Expanded institutional contacts**: With the appropriate support, the ES becomes a much more active “facilitator and provider” as originally stated in the Declaration. This would include expanded activities with the PROCIS, FONTAGRO, and related Washington, DC bases mentioned above to advance the key thematic agenda.
* **Ancillary Support from IICA Representatives in Northern Region**: To help advance and promote the growing but still fragile and broader PROCINORTE agenda in the most expeditious ways, it may be useful for the ES to engage with each IICA country representative in Ottawa and Mexico City. Also with IICA Representative’s support, the ES could engage with the respective embassies in Washington D.C. for targeted supportive and information exchanges.

### VII. CONCLUSION

The evolution and application of the PROCI region-wide concept has been brought to an entirely different and perhaps unanticipated stage. Within a dramatically different and changing trade-led world and an increasingly stressed agricultural R&D support structure, the new era R&D architecture has yet to be structured. In the Southern Hemisphere, except for the Southern Cone, the traditional hemispheric structures for agricultural R&D have deteriorated radically over the last three decades, and particularly so for the regions’ smaller and medium economies. Even in the North, inter-related budgetary, political, and institutional factors have intervened to begin to weaken premier structures or at least force major adjustments, some of which may not prove beneficial.

As presented, PROCINORTE for its innovative and special facilitating, operational approach and even with some major deficiencies, is beginning to offer a highly productive and cost effective means to advance in critically needed areas. If appropriately supported over the next five years in the manner suggested, it has the potential to spark greater and much broader gains.

In light of the broader LAC setting and PROCINORTE’s progress within its still nascent base, evolving from the findings and conclusions reached, PROCINORTE’s second Strategic Plan comes at a most critical juncture. The Northern Region’s unique response to agricultural trade opportunities and particularly its future economic and trade ties to a growing list of LAC countries means that PROCINORTE’s next phase must be positioned to more systematically advance its two-pronged geographic mandate.

In the major institutional void in which IICA has been toiling so valiantly for such a long period, a new Technology Innovation process is commencing to which PROCINORTE is uniquely positioned to contribute. More agile and responsive R&D support mechanisms linked to “upstream” knowledge and technologies becomes increasingly critical to serve the large LAC institutional base outside the Southern Cone. Further, PROCINORTE’s productive technological and professional ties with state-level and university R&D and also the largest agribusiness support base in the world can result in a productive second phase positioned to advance a more productive strategic, institutional, and technical relationship across its bases.

PROCINORTE is confronting a major cross roads period at a time when funds are becoming scarcer yet agricultural production and trade issues become more critical in light of climate change and a growing population. It is time to prudently reflect on the complex circumstances and on the good work advanced by PROCINORTE’s dedicated scientific and management cadre to date. The time is now to press forward with a strategic tri-lateral focus with its accompanying operational challenges to advance more aggressively and productively the PROCINORTE’s Mission.

1. North American Free Trade Agreement [↑](#footnote-ref-1)