PROMESA

Projecto de Mejoramiento de Semillas

Quarterly Report
October-December, 1999

Submitted to the
United States Agency for International Development
Under Contract No. 524-C-00-98-00025-00

Development Alternatives Incorporated (DAI)
7250 Woodmont Avenue, Suite 200
Bethesda MD 20814

in association with Cargill Technical Services

January 29, 2000

PROMESA
Proyecto de Mejoramiento de Semilla

DAI
Development Alternatives, Inc

A

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Proyecto de Mejoramiento de Semilla

January 29, 2000

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Subject: Quarterly Report-Fourth Quarter 1999
Reference: Contract No. 524-C-00-98-00025-00

Dear Ray:

Pursuant to the referenced contract requirement, Development Alternatives, Inc. (DAI) herewith submits its Quarterly Report on PROMESA's activities during the fourth quarter of 1999.

Should you have any technical questions regarding this submission, please do not hesitate to call me at 267-0454. Questions of a contractual nature may be referred to Ms. Margarita Cronin, Senior Contract Administrator (301) 718-8699.

Sincerely,

King Bash
Chief of Party
PROMESA/DAI

Proyecto de Mejoramiento de Semillas PROMESA

Enclosure: As stated

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PROMESA[1]
Quarterly Report
July-September 1999

PROJECT GOAL AND OBJECTIVES

PROMESA's goal is to rapidly increase the use of improved seed by small and medium-scale farmers in Nicaragua. Improved seed raises farm productivity and increases farmer incentives to invest in soil conservation methods. Farmers who adopt new agricultural technologies like improved seed produce larger marketable surpluses and generate income to raise living standards, particularly those of subsistence farmers, many of whom are women.

PROMESA helps private sector organizations promote the use of improved varieties and guarantee seed quality. It helps farmers conduct field demonstrations, share technical information, and decide what varieties to plant. It helps seed companies provide technical information to small farmers, thereby complementing the work of public extension services, and encourages public seed organizations like the MAG-FOR and INTA to provide services the private sector cannot offer. It assists the MAG-FOR in developing policies appropriate for the development of the seed industry.

PROMESA is organized into three programs, corresponding to its primary objectives.

1. Introduce new improved varieties and hybrids;
2. Help private seed companies produce and market seed profitably; and
3. Advocate for a policy environment that stimulates transparent and active seed markets and promotes private seed company development.

Fourth Quarter Highlights

A major shift in attitudes and willingness of the MAG-FOR and INTA to work with PROMESA occurred in the fourth quarter of 1999. For example, PROMESA worked with both organizations to develop a proposal to jointly advocate for new seed policies to establish PVP offices, revise the Seed Law, establish a Biosafety Commission, and promote the use of improved seed.

New Varieties Introduced

1. According to a survey of Mitch victims, the Red Cross relief package containing hybrid maize seed was preferred to packages of equal monetary value that included open-pollinated maize seed. PROMESA is helping seed companies, NGOs, and producer expand their seed distribution systems in 2000 to capitalize on this demonstration effect.
2. Registered sesame seed (ICTA R-198) imported from Guatemala;
3. Seed multiplication of black beans, a NTAE for small farmers.

Private Seed Companies Growing

1. Field days demonstrate maize hybrids and improved varieties, in cooperation with CARE, UPANIC, CIPRES, PRODES, COCABO, the UNA, the Agricultural College in Esteli, and private farmers; the MAG-FOR's Direccion General de Semillas (DGS) participated in 40 percent of the field days to promote their seed certification services;

[1] PROMESA (Proyecto de Mejoramiento de Semillas) is a USAID agricultural development project managed by DAI (Development Alternatives Inc.) under contract number 524-C-00-98-00025-00.

2. Needs assessments of seven UNAG Bancos de Semillas (small farmer seed cooperatives) in Leon, Esteli, Boaco, and Carazo;
3. Drafted cooperative agreements with small farmer seed cooperatives – COOPPMAT, UCOOM, UNAG Bancos de Semillas and ASOPROL - to develop them into commercial seed businesses;
4. Reassessed RSA roles and reallocated resources based on a strategic decision to prepare Nicaraguan seed companies to expand to regional seed markets and partner with foreign seed companies newly attracted to Nicaragua; and
5. Initiated negotiations between a Nicaraguan and foreign seed company to import new seed varieties and establish a new seed distributor in Nicaragua.

Seed Policies Improved

1. Plant variety protection (PVP) law passed;
2. Study tour of plant variety protection (PVP) program in Argentina;
3. DGS stopped the sale of Guatemalan table potatoes imported for seed;
4. Farm survey to measure changes in seed markets and in the use of improved seed;
5. New program designed to advocate for new seed policies.

STTA Consultant Activities

Joe Cortes

- Designed PROMESA's seed policy program (Appendix 1);

Roy Bosley

- Redesigned COOPPMAT's potato storage facility in Matagalpa; UESA accepted the redesign;
- Recommended introducing new potato varieties, including processing-quality potatoes.

Hector Cordoba

- Supervised farm survey of seed users and markets;
- Assembled data for regional seed market study;

Ann-Marie Thro

- Conducted workshop for MIFIC and the MAG-FOR on U.S. PVP program;

James Chapman

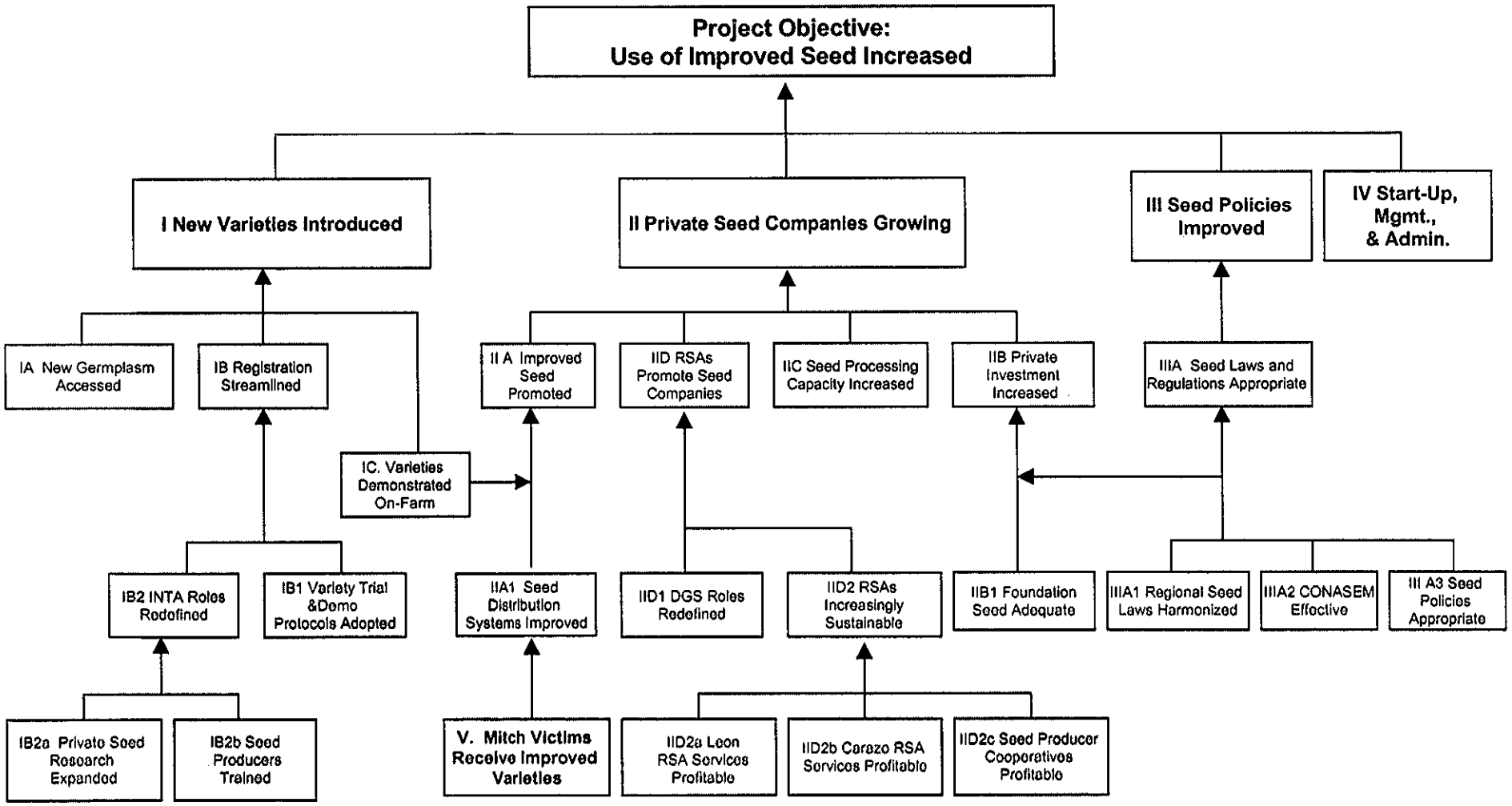
- Management visit to determine changes needed in the project contract.

Danilo Benavides

- Assessed the impact of the MAG-FOR's PNAPP program on seed markets in 1999 (Appendix 2).

PROMESA

RESULTS FRAMEWORK



OBJECTIVE I - NEW VARIETIES INTRODUCED

Ia. New Germplasm Accessed

Planned for Fourth Quarter
Conduct an information campaign to educate policy-makers, farmers, and consumers on agricultural biotech products.
Develop regional export markets for black beans.

Accomplishments
- Designed an agricultural biotech information campaign, summarized in the policy program proposal in Appendix 1;
- Imported registered sesame seed from Guatemala; and
- Planted 10 mz. of traditional varieties of black beans for seed multiplication in Nueva Guinea. We will also plant 6 manzanas of two improved black bean varieties in Esteli (Table 1). INTA evaluated these improved varieties in validation trials in Postrera.

Table 1
Bean Varieties with Export Potential

Category	Variety	Comments
Unimproved Mexican Varieties[2]	Jamapa	Black bean
	Flor de Mayo	Pink bean
Improved Black Bean Varieties	DOR-500	Black bean
	DOR-390/Negro Tacama	Black bean

Discussion
PROMESA is working with the INTA, UESA, APENN, and the MAG-FOR to develop black beans as a new NTAE crop. We are pursuing a "learning by doing" approach to black bean production and marketing. This approach will accelerate the process of variety assessment, field demonstrations and seed production. For example, in Apante we are assessing the yield potential of traditional Mexican varieties, and export them to Mexico as grain, rather than as seed. This pilot program, involving all stages of seed and grain production and export commercialization, will be conducted on a small scale to minimize risk.

As we multiply and evaluate traditional varieties, we will multiply small quantities of four improved black bean varieties, and test-market them in Central American, Mexican, and Caribbean markets. If we identify varieties that yield well in Nicaragua and can be marketed successfully in other countries, we will have sufficient seed to expand production in Apante 2000. If the varieties are well adapted to Nicaraguan growing conditions and export markets are profitable, we can rapidly expand the black bean program to produce 18,000 tons of grain for export in March 2001.

Plan for Next Quarter
- Import small quantities of high protein maize (HPM) hybrids from El Salvador for on-farm demonstrations in Primera.

[2] Unimproved Mexican bean varieties provided by Dr. Ernesto Salin at the Estacion Experimental dd Veracruz ENEFAP, are susceptible to bacterial and viral diseases in Nicaragua.

Ib. Registration Streamlined

Planned for Fourth Quarter
Discuss regional harmonization of seed registration costs at regional seed law meetings. If a regional agreement is reached, engage the DGS in a review of national registration costs.

Accomplishments
- OIRSA seed law harmonization agreement signed by all Central American countries.

Discussion
On October 8, a regional technical committee made up of the directors of national plant and animal health programs in Central America signed an agreement to harmonize seed registration requirements. On October 22, this agreement was signed by OIRSA and all the ministries of agriculture in Central America.

The harmonization agreement reduces requirements for new variety evaluation and validation trials. The two years of evaluations can now be based on either regional PCCMCA seed industry trials, or on national trials. The validation trial period is reduced from two years to one crop cycle, the cycle when the crop is primarily grown.

Plan for Next Quarter
- Assist the MAG-FOR to change its operating regulations to be consistent with the newly harmonized regional agreement.

IB1. New Demonstration Protocols Adopted

Planned for Fourth Quarter
Field demonstration protocols with farmers, farmer associations, NGOs and PVOs planting field demonstrations in Apante.

Accomplishments
In December, PROMESA and its partner organizations – gremios, NGOs, seed producer associations, private seed producers - held five field days to demonstrate improved varieties and hybrids. The field days in Leon, Dario, Sebaco, and Boaco (Table 2) demonstrated commercial maize, including standard hybrids HS-5G and HR-94, new hybrids (H-53 and H-59) imported from El Salvador H-53 and H-59, the INTA's new hybrid HN-951, and standard open-pollinated varieties NB-6 and NB-S to more than 650 farmers (Table 3).

Table 2
Field Days in December
Demonstrating Maize Varieties and Hybrids

Location	Co-sponsors	No. of Participants
Leon	CARE, APROSENIC	73
Dario	UPANIC	185
Managua	INTA	40
Sebaco	UPANIC	25
Boaco	UPANIC	135
	Total	458

Table 3
Maize Hybrids and OP Varieties
Demonstrated in Field Days – December 1999

Category	Name	Producer	Distributor
Hybrids	HS-5G	Cristiana-Burkhard	AgroCentro
	HR-95	Seminol	SAGSA
	H-93[3]	DICTA[4]	PROSELA
	H-97[5]	DICTA	PROSELA
	HN-951[6]	INTA	NA
Open-pollinated Varieties	NB-6	INTA[7]	various
	NB-S[8]	INTA	various

Discussion
PROMESA's 1999 variety demonstration program included 46 maize trials conducted by INTA and 41 on-farm trials with private seed companies, producer associations and PVOs/NGOs (Appendix 3). While the trials and field day programs have been highly successful and well attended by farmers, we consider this program to be insufficient in number to effectively demonstrate the potential impact of field demonstrations and field days on the use of improved varieties[9]. To convince seed companies, NGOs, and gremios to conduct their own on-farm demonstrations and field days, PROMESA should continue conducting demonstrations and field days for several more crop cycles. A proposal to fund this promotional program is under consideration by USAID as part of the Policy Supplemental contract modification. The results of the field days will be monitored by extensive farm surveys conducted every 18 months.

Plan for Next Quarter
- Field days in Pueblo Nuevo and Boaco; and
- Reassess on-farm variety demonstration protocols.

IB2. INTA Roles Redefined

Planned for Fourth Quarter
Develop cooperative programs between INTA and PROMESA.

Accomplishments
- PROMESA and INTA are implementing a black bean seed program, including traditional black beans varieties that will be used to produce grain for export to Mexico. We are also multiply seed of improved black bean varieties. The objective of this pilot program is to identify production problems and marketing obstacles that must be addressed before the

[3] Introduced by PROMESA in 1999.
[4] Centro Nacional de Tecnologia Agropecuaria de El Salvador.
[5] Introduced by PROMESA in 1999.
[6] INTA's first hybrid to near commercialization.
[7] INTA produces and sells foundation seed to commercial seed producers.
[8] Drought-resistant.
[9] Thousands of on-farm demonstrations were held each year during El Salvador's highly successful hybrid promotion program in the 1970's.

MAG-FOR undertakes another large-scale black bean export program. Aureleano Llano, responsible for INTA's bean research program, is primarily responsible for defining and providing technical support for this program;
- Held field days for more than 650 farmers to demonstrate maize hybrids; and
- Conducted a strategic planning meeting with INTA's foundation seed unit. Agreed to hold another meeting in January with seed producers – producer associations, NGOs, cooperatives, and individual seed producers - to anticipate demand for foundation seed and establish a system for INTA to produce foundation seed under contracts with commercial seed producers.

Discussion

INTA completed its annual work plan for 2000 in early December. On December 10, Ing. Betanco, Deputy Director of INTA announced INTA's new priorities in his speech to graduates of PROMESA's seed training program. INTA intends to support regional seed producer associations and foster the development of the private seed sector during its next four-year program.

On October 8, INTA's new Director Genaro Muniz called a meeting with PROMESA and ANAR to identify ways to increase the use of improved rice varieties, including (1) helping rice farmers become seed companies, (2) protecting breeders' intellectual property rights over new varieties, (3) maintaining the genetic purity of improved varieties, and (4) using field demonstrations and field days to promote the use of improved varieties. PROMESA subsequently met with ANAR's Board of Directors to discuss changes in rice markets. Rice mills are raising standards and refusing to buy rice that fails to meet them. These new requirements are forcing producers to reconsider the use of improved seed. PROMESA has been unsuccessful in developing a cooperative agreement between INTA and ANAR, although each asserts a commitment to a program to promote new rice varieties.

INTA asked PROMESA for assistance in expanding its hybrid validation trial program. We donated hybrid maize seed to INTA's program in 1999. INTA wants us to donate both hybrid maize and sorghum seed in 2000.

Plan for Next Quarter
- Include high-protein maize hybrids in INTA validation program in 2000;
- Develop a plan for a cooperative program with the INTA to promote the use of improved varieties and hybrids;
- Recruit INTA's assistance in comparing seed production costs in different Central American countries; and
- Conduct a meeting between seed producers (producer associations, NGOs, cooperatives, and individual farmers) and INTA's Seed Unit to anticipate foundation seed demand.

IB2a. Private Seed Research Expanded

Planned for Fourth Quarter

Assist in marketing GRAINCO as an ongoing seed company, rather than dismantling it and selling it piecemeal.

Accomplishments
- GRAINCO developed a new sorghum variety – CH-86 - in its research program in Chinandega, and sold 4,922 quintals of it in 1999; and

- Evaluated the UNA study of red bean inoculants and concluded that (1) most farmers using the inoculant GRAINCO and UPANIC donated in 1999 said it was effective, but (2) its effectiveness is not supported by scientific evidence (see Appendix 4).

Discussion
The INTA's Centro de Investigacion de Oleojinosas (CIO) is evaluating 15 new soybean varieties imported from CIAT/Bolivia.

Plan for Next Quarter
- Assess the results of an UNA student's independent research on red bean inoculants.

IB2b. Seed Producers Trained

Planned for Fourth Quarter
Workshop on seed company management and marketing.

Accomplishments
- Conducted a workshop using case studies on soybean, maize, and sesame markets. This participatory workshop integrated research, production, and distribution factors in a market-driven approach to identify commercial opportunities in soybean, sesame, and maize seed production; and
- Conducted a dual-purpose graduation ceremony and field day to demonstrate new sorghum varieties at INTA's CNIA research station.

Discussion
PROMESA's training program in 2000 will be more integrated and focused on seed marketing. It will include (1) accessing information on Internet sites, including PROMESA's future web-site , and seminars conducted by UCA, UNAN, and INCAE business school professors.

Plan for Next Quarter
- Meet with the UNA to define the seed training program for 2000.

IC. New Varieties Demonstrated On-Farm

Planned for Fourth Quarter
Demonstrations of maize hybrids and improved bean varieties in Apante;

RSAs host field days.

Accomplishments
- PROMESA and its partner organizations – gremios, NGOs, seed producer associations, private seed producers – planted 41 on-farm field trials in Nueva Segovia, Esteli, Jinotega, Matagalpa, Boaco, and the Occidente (Table 4).

Table 4
On-Farm Demonstration Trials
Planted during October-December 1999

Cooperating Organization	Department	City
UPANIC	Chinandega	Tonalá
Particular	León	Pozoltega
COCABO	Boaco	Tierra Maria
COCABO	Boaco	Boaco Viejo
COCABO	Boaco	Mombachito
COCABO	Boaco	Tierra Maria
Ing. Alan Montoya	Matagalpa	Pancasán
Ing. Alan	Matagalpa	La Dalia
UPANIC	Jalapa	
UPANIC	Jalapa	
UPANIC	Jalapa	
UPANIC	Carazo	Masatepe
UPANIC	Nueva Segovia	Jalapa
UPANIC	Nueva Segovia	Jalapa
UPANIC	Nueva Segovia	Jalapa

Discussion

While activities conducted by PROMESA are valuable and have achieved significant results, there is a need to redouble efforts to institutionalized demonstration protocols in Nicaraguan organizations. PROMESA is working with organizations with longer life spans - producer associations, cooperatives, PVOs, and NGOs – to promote improved seed using standard demonstration protocols. With the exception of ASORESEM's role in the field day in Leon, however, RSAs played only minor roles in field days. RSAs will play larger roles in hosting future field days (Table 5).

Table 5
On-Farm Demonstration Program in 2000

Type of Demo	Season	No. of Demos
Irrigated trials	Verano (Jan–May)	3
Rainfed trials	Primera (May-Aug)	5
	Postrera (Sept-Nov)	7
Total		15

Plan for Next Quarter

- UCOOM to host field day in Pueblo Nuevo in February;
- Develop plans for RSAs and other organizations to begin implementing field trials and demonstrations for farmers in 2000.

OBJECTIVE II – PRIVATE SEED COMPANIES GROWING

IIA. Improved Seed Promoted

Planned for Fourth Quarter
Conduct a mass media promotion program to complement field days demonstrating new varieties and hybrids.

Accomplishments
- Broadcast radio advertisements during baseball games in Matagalpa;
- Flew banners to advertise improved seed varieties available at COOPPMAT in Matagalpa; and
- Faxed 530 invitations to field days.

Discussion
PROMESA used radio announcements in a promotional campaign to complement the distribution of seed and tech-packs after Hurricane Mitch. We will measure the effect of this farm survey in a survey conducted in December. This survey will also measure the program's impact on the sale of complementary production inputs on grain yields, and the likelihood that farmers will repurchase improved seed next year.

PROMESA also tested several promotion methods, including radio announcements, roadway signs and banners, and faxed invitations. One month of broadcasts during baseball games achieved less than expected results, as few farmers purchased seed directly from COOPPMAT's office in Matagalpa. Our tentative conclusions on seed advertising are summarized below.

- On-farm demonstrations and field days are the best way to convince small farmers to try improved seed varieties;
- Brochures, summarized field trial results, and web-sites are the most cost-effective media to complement field days;
- Mass media advertising can complement field days and targeted campaigns, but is ineffective as a stand-alone promotion method; and
- Targeted sales campaigns involving price discounts and credit are the best ways to market large volumes of seed to NGOs and PVOs that distribute seed to small farmers.

The most cost-effective seed marketing methods are the traditional ones used by Nicaraguan farm supply companies that target large farmers and PVOs/NGOs willing to pay premium prices. Buyer incentives include credit, in the form of deferred payment, and price discounts. This strategy minimizes promotion and technical support costs, but is inappropriate for expanding seed markets and distribution systems to small farmers. Market development strategies, sometimes called "missionary marketing," are needed to expand seed markets by reaching out to small farmers. Market development strategies are expensive. In the short run, they raise costs without increasing income proportionately. Only when a critical mass of small farmers enters commercial seed markets and buy seed on a regular basis will it become profitable for farm supply stores to address small farmers with aggressive promotional programs.

In general, PROMESA's work is gender-neutral, since both men and women grow basic grains, and would benefit from using improved varieties. Many subsistence farmers, who need improved varieties to produce marketable surpluses and enter into commercial production, are

women. The choice of crop and variety to plant is made by heads-of-households, many of whom are women, particularly in northern areas of Nicaragua. Women also play important roles in farm-saved and artesanal seed production, selection, and processing. Women are responsible for many of the commercial seed processing operations, including cleaning and removing off-types. There are many qualified women agronomists in the MAG-FOR's DGS, INTA's Seed Unit. and PROMESA.

But traditional field days and conventional technical outreach efforts tend to reach men, rather than women. Most participants in PROMESA's field days in December were men. The seed producer associations PROMESA work with - COOPPMAT and UNAG's Bancos de Semilla, are primarily made up of men. We need a program using women agronomists from the MAG-FOR's DGS, INTA's Seed Unit and PROMESA to work with women's cooperatives and organizations like UNAG's Women's Section.

PROMESA will develop a web page for the seed industry[10], which will be linked to the MAG-FOR's Intra-net web pages, and automatically updated by Intra-net databases. Once developed, PROMESA will turn the seed industry web page over to RSAs, the Direccion General de Semillas, or CONASEM. Any of these institutions could maintain the web site at minimal cost.

Plan for Next Quarter
- Develop a brochure for maize production;
- Give RSAs responsibilities and resources for promotion program;
- Define content of seed industry web-site; and
- Develop outreach programs targeting women farmers.

IIA1. Seed Distribution Systems Improved

Planned for Fourth Quarter
Assessment of alternative seed distribution systems in Central America;
Pilot farmer-dealer seed distribution system.

Accomplishments
- Established 3 farmer-dealers in a pilot program in Matagalpa and Jinotega to sell bean seed and donated bean seed inoculant.

Discussion
The results of the pilot farmer-dealer system in Apante were less than expected. Better planning, more aggressive promotion program, and higher dealer incentives are needed to establish an effective farmer-dealer system in Primera.

Plan for Next Quarter
- Develop plan for farmer-dealer system in Primera.
- Finalize the assessment of Central American seed distribution systems.

[10] PROMESA also offered to assist the MAG-FOR in developing its Intra-net web pages.

IIB. Private Investment Increased

Planned for Fourth Quarter
Study of Central American seed markets, including comparative and competitive advantages in seed production.

Accomplishments
- Regional seed market study, incorporating national and regional data with farm studies conducted in 1998 and 1999, is underway. The results of this study will be available in the first quarter of 2000;
- Initiated negotiations between local and foreign seed companies to introduce new hybrids and produce hybrid seed in Nicaragua; and
- Assisted in establishing a new seed importer and distributor in 2000.

Discussion
Nicaragua's foreign investment climate is improving. Corinto is modernizing its port facilities and Chiquita is relocating its headquarters from Guatemala to Chinandega. PROMESA will take advantage of these changes to initiate negotiations between Nicaragua and multinational seed companies to produce seed in Nicaragua.

Plan for Next Quarter
- Evaluate initial findings of the regional market study;
- Compare 1999 farm survey results to 1998 results; and
- Plan investment conference, including participation of national, regional, and multinational seed companies.

IIB1. Foundation Seed

Planned for Fourth Quarter
Conduct a meeting with INTA's Unidad de Semilla, which is responsible for producing foundation seed, to establish a system for assessing the demand for foundation seed. Hold meetings with seed producers, distributors, farm associations, PVOs, and NGOs to promote INTA's foundation seed.

Accomplishments
- INTA's Seed Unit and PROMESA agreed to convene seed producers to promote foundation seed production contracts. Due to delays in establishing INTA's work plan for 2000, the meeting between the INTA and seed producers was rescheduled to January; and
- Imported foundation sesame seed (ICTA R-198) from Guatemala for production of certified seed.

Discussion
Markets for foundation seed are relatively small, compared to markets for certified seed. Nevertheless, a market information system that tracks and anticipates the demand for foundation seed is needed because it would provide the following benefits.

- Improved ability of the INTA's Seed Unit to respond to changes in seed markets;
- Increased financial sustainability for the Seed Unit;
- Increased effectiveness of the INTA in introducing improved seed varieties;

- Reduced risks to seed producers by insuring a reliable supply of foundation seed; and
- Improved availability of commercial seed to small farmers.

Plan for Next Quarter
- Conduct a meeting between the INTA and seed producers to anticipate the demand for foundation seed; and
- Design a program in which the INTA maintains the purity of improved rice varieties;

IIC. Seed Processing Capacity Increased

Planned for Fourth Quarter
Potato specialist to assess COOPPMAT's plans for a potato storage warehouse;
Conduct a study of regional seed markets and processing capacity.

Accomplishments
- Bean seed processing completed;
- Conducted trial seed packaging in 10-lb. bags; and
- Study of regional seed markets and processing capacity in progress (see IIA1).

Discussion

Since July 1999, PROMESA has assisted COOPPMAT develop and present a series of proposals to UESA to build a warehouse for table and seed potatoes. STTA potato expert Roy Bosley evaluated and revised the warehouse design in November. Based on Bosley's new design, UESA finally approved COOPPMAT's potato warehouse design.

Plan for Next Quarter
- Use the results of the regional seed study to assess the need for new seed processing plants;
- Assess the feasibility of reactivating Anasemillas rice seed processing plant in Tipitapa;
- Assess the national and regional seed processing capacity; and
- Revise the financial analysis of COOPPMAT's potato warehouse.

IID. RSAs Promote Seed Companies

Planned for Fourth Quarter
Assist RSA members in helping their members market seed.

Accomplishments
- RSA managers met with six municipal governments (Posoltega, Quezalquaque, Chichagalpa, Chinandega, and Tonala) to promote the use of improved seed produced by RSA members;
- Assisted UCOOM develop an 18-month business plan to increase seed production and enter new commercial markets. (Previously, UCOOM produced seed primarily for approximately 4,000 small farmers who are members of 6 cooperatives in Leon and Chinandega.)
- Assisted UCOOM negotiate with a multinational seed company to import and distribute seed and produce new seed products in Nicaragua; and

- Conducted a needs assessment of UNAG's Bancos de Semilla in Esteli, Boaco, Leon, and Carazo; PROMESA's support to these Bancos will include parent seed stock, technical assistance and training in seed production, and market information system.;

Discussion
PROMESA changed its strategy for helping seed producers become seed companies. Instead of relying on RSAs to promote improved seed and help farmers develop into seed companies, we adopted a faster, more direct approach. After its success in providing services directly to COOPPMAT, a rapidly expanding potato and bean seed cooperative in Matagalpa, we decided to offer similar support to other small farmer cooperatives.

PROMESA will use reflows from seed sales to finance technical assistance in seed production, processing, and commercialization by COOPPMAT (red bean and potato seed), UCOOM (open-pollinated maize, sorghum, and soybeans), and ASOPROL (red beans). This reassessment of the RSA roles, and reallocation of project resources, is an extension of the original RSA strategy, rather than its abandonment. It is a strategic decision to complement our policy advocacy activities by preparing Nicaraguan seed companies to service the regional seed market and partner with foreign seed companies newly attracted to Nicaragua.

Plan for Next Quarter
- Convince RSAs to participate in field days to demonstrate new varieties and hybrids; and
- Provide assistance to UNAG's Banco de Semillas in Boaco to install and calibrate its seed processing equipment;

IID1. DGS Roles Redefined

Planned for Fourth Quarter
Establish the CONASEM and conduct a formal assessment of DGS seed registration fees and penalties in 2000.

Convince the DGS to stop the importation of Guatemalan table potatoes for use as seed.

Accomplishments
- DGS stopped the sales of Guatemalan table potatoes for use as seed, thereby eliminating a vector for plant diseases that remain in the soil for years.

Discussion
Due to the scarcity of high-quality bean seed at the beginning of the Apante 1999 season, and the premium price of bean seed compared to bean grain[11], the MAG-FOR's PNAPP (Programa Nacional del Apollo al Pequenos Productores) program purchased bean grain and sold it as seed. PNAPP asked the INTA's Seed Unit, rather than the DGS, to analyze the quality of grain used as seed. PROMESA analyzed the impact of PNAPP's seed procurement programs and will present the results to the MAG-FOR in an effort to change PNAPP seed procurement policies. In the future, we hope PNAPP will procure and distribute seed, rather than grain to be used as seed.

[11] Bean seed sells for a 30-40 percent premium over cleaned and selected bean grain-used-as-seed. Seeding rates for high-quality bean seed is 40 percent lower than bean grain-used-as-seed. Therefore, seed is cheaper than grain-used-as-seed on a area basis, particularly considering the labor costs of replanting and thinning required when planting grain.

But changes in seed procurement policies will be insufficient unless PNAPP has a reliable source of high-quality seed. PROMESA will therefore assess the feasibility of guaranteeing an adequate seed supply for the MAG-FOR's programs, and will work with the DGS and seed producers to produce the seed. This program would also require close coordination with the INTA's foundation seed program. It would set an important precedent in organizing a large number of seed producers to service a large market market, and would contribute to the long-term organization of the national seed system.

Plan for Next Quarter

- PROMESA and the DGS will share their assessments of PNAPP's program and its impact on bean seed markets with MAG-FOR policy makers.

IID2 RSAs Increasingly Sustainable

Planned for Fourth Quarter
None

Accomplishments
None

Discussion
After Hurricane Mitch, there is renewed interest among NGOs and small farmer cooperatives in adopting improved seed. PROMESA met with Save the Children and Project Concern International in December to advise them on seed production activities and offer support. We will provide parent seed stock to these organizations. Ideally, we will help them develop some of their members into commercially viable seed production and distribution businesses.

Plan for Fourth Quarter, 1999

- Help RSAs reach out more aggressively to PVOs and NGOs, and to groups of female farmers; and
- Formalize PROMESA's ad hoc approach to assisting seed production cooperatives develop into seed businesses.

IID2a. Leon RSA Services Profitable

Planned for Fourth Quarter
Expand the seed quality control program to include laboratory services.

Accomplishments

- 640 manzanas of seed production in Leon and Chinandega meets ASORESEM quality control standards.

Discussion
The Leon RSA decided to reduce members' payments for PROMESA's quality-control program from 1 percent to 0.5 percent of seed sales. Despite reduced income expectations ASORESEM will complete its quality control services to seed producers. The RSA's quality control experience in 1999/2000 sets an important precedent by showing that private sector seed

organizations can conduct "certification" services, and provides useful information on the potential costs and profitability of these services.

If new directors are elected to the ASORESEM board in January 2000, PROMESA will help them develop plans to provide new services to seed producers. If the current board is reelected, we will reallocate our support to seed production cooperatives.

Plan for Next Quarter
- Reassess plans for the Leon RSA after its board of directors meeting.

IID2b. Carazo RSA Services Profitable

Planned for Fourth Quarter
Evaluate the seedling quality control program and decide whether to repeat it in 2000;
Technical assistance in seedling production;
Establish technical and commercial linkages between Nicaraguan and Costa Rican nurseries.

Accomplishments
- Seedling quality evaluation conducted; results are discussed below.

Discussion
Even without the subsidy program, there would have been sufficient demand for seedlings by large producers to exhaust the RSA members' stock. The subsidies were insufficient to stimulate coffee and fruit orchard renovations by small farmers. The subsidy had little effect on incomes of RSA members. Seedling sales were to generate income for the RSA quality control programs. Since the subsidy program stimulated few sales, it generated little income for the RSA. PROMESA will not repeat this program. Instead, we will focus on providing technical assistance for seedling production and disease control, introducing new nursery products, and establishing links between Nicaraguan and Costa Rican nursery business. The other activities planned for the fourth quarter of 1999 were rescheduled for the second quarter of 2000.

Plan for Next Quarter
- Provide technical assistance in seedling production;
- Establish technical and commercial linkages between Nicaraguan and Costa Rican nurseries; and
- Assess the feasibility of introducing new, annual flower varieties to nurseries.

IID2c. Seed Producer Cooperatives Profitable

Planned for Fourth Quarter

Accomplishments

Discussion
PROMESA's approach to seed company development has born fruit, but needs to be strengthened to increase coverage. Our approach typically involves a site visit, a needs assessment, definition of program goals and objective, preparation of a proposal document, and a series of meetings to custom-design a seed company development program.

In the first quarter of 2000, we will begin to work with an additional six seed organizations - the UNAG Bancos de Semillas. To manage this rapid program expansion, we need control systems to track the progress of organizations along a predictable path of development. To provide the services needed by a growing number of seed organizations, we need to train staff in a well-defined organizational development method.

Plan for Next Quarter

- Define an approach to seed organization development, and define it in a model that can be replicated to other organizations of seed producers;
- Develop a cooperative agreement with UCOOM to use reflows to rapidly expand its seed business;
- Develop a new cooperative agreement with COOPPMAT to produce bean seed; and
- Conduct a study tour for small seed organizations to observe their larger counterparts in Matagalpa and Leon.

IIID2c1 Matagalpa Potato Cooperative Programs Profitable

Planned for Fourth Quarter

Matagalpa RSA contracts with small farmers to produce bean seed in Apante.
DGS to stop Guatemalan table potatoes imported for use as seed potatoes;
Contract consultant to evaluate the design for potato warehouse in Matagalpa;
Meet with INTA to define a program to use true potato seed to test and multiply into commercial seed potatoes.

Accomplishments

- Matagalpa RSA contracted with approximately 40 small farmers to produce bean seed in Apante;
- DGS stopped the sale of table potatoes imported from Guatemala for use as seed;
- UESA approved the design of the potato warehouse developed by COOPPMAT, with the assistance of STTA Roy Bosley; and
- INTA/Esteli stops selling true potato seed to farmers and agrees to develop a plan to multiply it into mini-tubers and seed potatoes.

Discussion

Table potatoes spread diseases that are difficult to eradicate, and remain in Nicaraguan soils for at least three years, making infested fields unsuitable for potato production. Local sources of seed potatoes – seed imported from Guatemala and Canada, true potato seed imported from Chile, and mini-tubers produced by INTA in Esteli - were available to substitute for the Guatemalan table potatoes that would otherwise have been used as seed. PROMESA assisted COOPPMAT in importing seed potatoes from Guatemala and multiplying mini-tubers produced by INTA. PROMESA assisted INTA in importing true potato seed from Chile.

Had we been able to convince INTA to share a portion of the true potato seed with COOPPMAT, it would have strengthened technical linkages between PROMESA and INTA and promoted Matagalpa RSA activities. PROMESA successfully petitioned INTA to stop selling the donated seed ins small packets, but it seems unlikely that INTA will release seed to COOPPMAT for multiplication into seed tubers.

Plan for Next Quarter

- Supervise seed potato and bean seed production in Apante; and
- Meet with INTA to develop a plan to multiply true potato seed into mini-tubers and seed potatoes.

IID2c2 UNAG Bancos de Semilla

Planned for Fourth Quarter

NA, new activity.

Accomplishments

- Conducted needs assessments of Bancos de Semilla in Esteli, Carazo, Leon, and Boaco.

Discussion

UNAG organized small seed producers in 14 communities in Esteli, Carazo, Leon, and Boaco into five Bancos de Semilla, i.e., seed producer cooperatives. The objective of these Bancos when they were formed was to produce the seed required by more than 4,000 small farmers in these 14 communities. After three years of PL-480 funding and various weather-related and institutional setbacks, the Bancos produced seed on 56 mz. In 1999, including 30 mz. of sorghum, 13 mz. of maize, and 13 mz. of beans.

Each of the Bancos is at a different level of development, and has different needs. The Banco in Carazo consists of small farmers who produce traditional bean varieties using artesanal methods. It needs high-quality foundation seed and technical assistance in seed production. Each of the Bancos de Semilla in Esteli are at different stages of development. One is preparing to sell seed; another wants to barter it; and another is floundering without direction. The Banco in Boaco is relatively sophisticated, and has specialized seed processing equipment. It needs assistance in installing the equipment and developing efficient sales and distribution systems. UNAG asked PROMESA to assist the Bancos de Semilla in the following ways.

- Business planning;
- Foundation seed of improved varieties;
- Market information system to connect Bancos de Semilla with other seed producers and consumers;
- Seed quality control system; and
- Assistance in advocating for delegation of seed certification authority to UNAG.

PROMESA's initial program with UNAG will include the following activities.

- Certified seed for use as parent seed;
- Training to UNAG seed technicians in modern seed production methods;
- Assist Bancos conduct on-farm demonstrations and field days to promote improved varieties;
- Build a web-site containing a database of seed producers and consumers; and
- Assess the feasibility of using the Fondo de Asistencia Tecnica (FAT) to fund technical support to the Bancos;

Plan for Fourth Quarter, 1999

- Formalize the program with the Bancos de Semilla in a formal cooperative agreement with UNAG; and
- Install seed processing equipment in the Banco in Boaco.

IIID2c3 UCOOM Cooperative in Leon

Planned for Fourth Quarter

Negotiate an agreement to import and distribute seed.

Accomplishments

- Assisted UCOOM in developing a business plan to use reflows to increase seed production and enter new commercial markets; and
- Assisted UCOOM negotiate with a foreign seed company to become a distributor and producer of new seed products in Nicaragua.

Discussion

UCOOM is well positioned for growth. Using PROMESA's revolving seed fund, generated from reflows from seed sales, UCOOM can expand rapidly without increasing its debt burden. CUOOM, like COOPPMAT, will serves as an important example for the Bancos de Semillas to emulate.

Plan for Next Quarter

- UCOOM to host field day in Pueblo Nuevo in February;
- Develop a formal cooperative agreement to develop UCOOM's seed business; and
- Continue to assist in negotiations with foreign seed companies.

OBJECTIVE III - SEED POLICY IMPROVED

IIIA. Seed Laws and Regulations Appropriate

Planned for Fourth Quarter
Develop a long term policy program designed to advocate for changes in the national seed law and regulations.

Accomplishments
- Drafted a proposal for a seed policy program proposal to USAID.

Discussion
The MAG-FOR helped design, and actively supports, the seed policy program. APENN and other producer associations will also be involved in the program. PROMESA reprogrammed funds from other project activities to keep the policy program on track until the end of February, when we expect supplemental funding. Approval of program is imminent.

Plan for Next Quarter
- Seek MAG-FOR, INTA, and private sector compliance and support for the new seed policy program; and
- Secure program approval and funding from USAID.

IIIA1. Regional Seed Laws Harmonized

Planned for Fourth Quarter
Industry leaders continue to participate in meetings to harmonize seed laws and regulations.

Accomplishments
- Participated in meeting in Honduras to harmonize seed phytosanitary requirements.

Discussion
The final meeting of the first phase of seed harmonization will take place in January in El Salvador. A subsequent summary and planning meeting may take place in December. The second phase, if funded by the World Bank, will begin in 2000. The focus of phase two will be on harmonizing regulations for the introduction of new seed technologies.

Plan for Next Quarter
- Sponsor UCOOM's participation in a seed law harmonization meeting in San Salvador; and
- Develop a long term plan to implement regional seed law harmonization agreements.

IIIA2. CONASEM Effective

Planned for Fourth Quarter
Develop a long-term advocacy plan to establish CONASEM with majority representation by the private seed sector.

Accomplishments
- Developed an 18-month plan to revise the 1998 Seed Law.

Discussion
The MAG-FOR decided to establish the CONASEM based on the composition defined in the 1998 Seed Law, arguing that the private seed sector is in an early stage of development, and lacks the vision needed for seed sector development planning. PROMESA will assist the MAG-FOR in identifying appropriate candidates for the CONASEM.

Plan for Next Quarter
- Assist the MAG-FOR in establishing the CONASEM and a subcommittee to define its regulations.

IIIA3. Seed Policies Appropriate

Planned for Fourth Quarter
Develop a plan for a new seed policy advocacy program.

Accomplishments
- Worked with the MAG-FOR in developing a plan for a new policy advocacy program.

Discussion
A major shift in attitudes and willingness of the MAG-FOR and INTA to work with PROMESA occurred in the fourth quarter of 1999. This shift coincided with the appointments of Roberto Bendana as policy advisor to MAG-FOR Minister Jaime Cuadra, and of Genaro Muniz as Director of INTA. PROMESA worked with both organizations to develop a proposal to jointly advocate for new seed policies. The MAG-FOR, INTA, and PROMESA will also jointly undertake a new seed promotion program which will compliment private sector promotion activities, and be directed at financial institutions and NGO seed policies. We expect this program to rapidly expand the market for improved seed to small farmer development projects, and change agricultural credit policies to require producers to plant improved seed.

Plan for Next Quarter
- Finalize policy advocacy plan and recruit private seed sector to actively support it.

IIIA3a. PVP Legislation Approved and Implemented

Planned for Fourth Quarter
Assist in the development of PVP draft regulations.

Accomplishments
- Conducted a study tour to Argentina to review PVP regulations. The DGS participated in this program to define PVP regulations. DGS director Javier Eslaquit, Santiago Rodriguez, a lawyer from the MAG-FOR's central offices, and MIFIC consultant Rene Urue reviewed Argentina's PVP program and regulations;
- Held a two-day workshop to Nicaragua conducted by the Commissioner of the USDA's PVP program to explain the U.S. PVP system and assist Nicaraguan policy makers evaluate PVP policy alternatives; amd

- Distributed draft of PVP regulations on December 17 for review and comments by public and private sector stakeholders.

Discussion

For nine months, PROMESA provided technical support to MIFIC, the MAG-FOR, and the Environmental Commission of the National Assembly to revise the PVP law in order to make it compatible with UPOV membership requirements. We held more than fifteen seminars to define PVP issues and address public concerns. As a result of these efforts, the MAG-FOR, INTA, and several farm organization actively supported the law.

Support for the PVP law in the Liberal Party and the Environmental Commission was weak. The US Embassy curtailed its support while property rights lawyers in Washington debated whether to support Nicaragua's bid for UPOV membership under its 1978 regulations. Nevertheless, on October 20, 1999 the Nicaraguan legislature passed a plant variety protection (PVP) law to (1) bring the nation into compliance with international practices and standards of plant variety protection, (2) protect the intellectual property rights of plant breeders, and (3) stimulate crop research. Within 60 days after the publication of the law in the official "Gazette" the executive branch must define regulatory procedures to govern the law's implementation (Appendix 5).

The current draft of PVP regulations is consistent with the recommendations of US PVP Commissioner Dr. Ann-Marie Thro. The regulations face two more rounds of modifications ,first by the MAG-FOR and MIFIC and then by the National Assembly. The deadline for submission of PVP regulations to the National Assembly is February 29.

Plan for Next Quarter

PROMESA will continue providing technical assistance to define appropriate PVP operating regulations. Members of a PVP study tour to Argentina in November decided that with minor modifications, the Argentine PVP system, similar to the US system, is appropriate for Nicaragua. If adopted, Nicaragua's new PVP system will be a major departure from its previously envisioned system of government-run trials.

- Conduct workshop for members of Nicaragua's private sector to review and comment on draft regulations;
- Conduct workshop to finalize the regulations;
- Recruit UPOV (International Union of Variety Protection) to assess the new PVP law's consistency with international standards;
- Submit PVP regulations to the National Assembly;
- Train MAG-FOR PVP technicians to implement new PVP law; and
- Assist MIFIC and MAG-FOR in writing PVP regulations for submission to the National Assembly by February 29.

IIIA3b. Seed Law Revised

Planned for Fourth Quarter

Develop a proposal for reviewing and revising the 1998 Seed Law as part of a comprehensive policy analysis and advocacy program.

Accomplishments

- Developed proposal for reviewing and revising the 1998 Seed Law (Annex XX)

Discussion

Nicaragua's current seed legislation discourages, rather than promotes, the introduction of new seed varieties. The 1998 Seed Law inhibits the development of the private seed sector by creating disincentives to new technology introductions. Four examples of the problems created by the seed law are listed below. These and the following aspects of seed legislation need to be reviewed and revised.

1. National Seed Council provides inadequate representation to the private seed sector;
2. Seed certification by the Direccion General de Semilla is mandatory and excessively rigorous;
3. Seed certification fees are unreasonably high by international standards; and
4. Variety evaluation and release requirements are protracted and expensive.

The activities scheduled for next quarter are expected to lead to the following results.

1. Transparent review and modification of current seed legislation, with wide participation from private and public sector representatives;
2. Passage, publication, and wide dissemination of a new seed law and regulations; and
3. New seed law and regulations that promote introductions of new seed technologies to the benefit of producers and consumers.

Plan for Next Quarter

- Conduct focus groups of private sector participants to identify problems with the current seed law and regulations.

IIIA3c. Biotechnology Policies Appropriate

Planned for Fourth Quarter

New activity

Accomplishments

- Developed a proposal and action plans for reviewing biotech policies (Appendix 1).

Discussion

Nicaragua lacks a clear, coherent, scientifically valid regulatory policy to regulate the introduction of agricultural biotech products. Given recent advances in the science of genetic engineering, an examination of the public policies governing the introduction of biotech products and a program to educate agricultural technicians, producers, and consumers regarding the potential economic benefits and environmental impacts, is needed. Two examples of biotech products with important potential benefits and low environmental impacts are herbicide-tolerant and Bt crops.

- Herbicide-tolerant maize, soybeans, and sorghum can lower production costs and erosion by reducing herbicide applications and tillage; and

- Bt maize, sorghum and cotton can eliminate the need for pesticide applications for some economically important insect pests. They can also cut production costs and environmental impact by reducing pesticide applications and eliminating damage to beneficial insects.

PROMESA's biotech policy programs is not designed to promote agricultural biotechnology, but to educate public decision-makers, producers, agribusiness, and consumers to stimulate a scientific dialogue to guide in the formation of policies that provide access to the economic benefits of biotech products while simultaneously minimizing their risks.

Plan for Next Quarter

- Attend short course in Costa Rica on agricultural biotechnology for policy makers, including future members of the National Biosafety Council;

IIIA3d. Improved Seed Promoted

Planned for Fourth Quarter

New policy advocacy activity.

Accomplishments

- Designed a program to advocate for policies that will increase loans to agricultural producers.

Discussion

Following the environmental and economic devastation caused by Hurricane Mitch, NGOs and PVOs are assisting in the recovery of the agricultural sector by distributing seeds to producers who lost their seed stocks. But instead of distributing improved seed, many NGOs and PVOs are distributing grain to be used as seed, thereby reducing the genetic uniformity and physical quality of seed, spreading seed-borne diseases, and increasing overall production costs and risks. This practice of using grain for seed is due, in part, to the scarcity of improved seed in Nicaraguan markets, to inefficient market information systems, and to the reluctance of some organizations to introduce new seed technologies to small producers. To increase the use of improved seed in NGO and PVO agricultural programs, PROMESA will conduct a series of advocacy activities to change the attitudes and practices of NGOs and PVOs regarding the appropriateness of new seed technologies for small farmer development programs.

Many commercial banks in Nicaragua are reluctant to make loans for agricultural production due to the perceived risks inherent to biological production processes and the variability in yields and profits. The agricultural lending that does occur does not require producers to use improved seed, which would reduce production risks and enhance yields and profits. PROMESA will provide support and technical assistance to APENN to conduct a policy dialog with commercial bankers. PROMESA will help APENN promote banking policies and procedures that encourage producers to adopt and use improved seed, including the following activities and to increase agricultural lending. PROMESA will assist APENN in the following activities.

Plan for Next Quarter

- Meet with donor organizations to discuss the potential benefits of improved seed, and the experience of NGOs and PVOs; and

- Workshops with the NGO/PVO community to discuss their seed production and distribution programs and to develop sustainable market distribution systems for improved seed;
- Conduct a rapid reconnaissance survey of key agricultural lending institutions to determine their production lending policies and receptivity to collaborate with PROMESA.

IV. Start-up, Management, and Administration

Planned for Fourth Quarter
None

Accomplishments
- Developed proposal and budget for a supplemental policy program; and
- Analyzed the costs of supporting the emergency seed program in response to Hurricane Mitch.

Discussion
The emergency seed program cost $231,000 from PROMESA's core budget, in addition to the $600,000 from OFDA. USAID declined to backfill these expenses, so rebudgeting and a reassessment of anticipated project results will be required.

Plan for Next Quarter
- Obtain USAID approval for supplemental policy program
- Establish separate accounts for supplemental policy program funds;
- Conduct an internal audit; and
- Rebudget and reassess project results in light of USAID's decision not to backfill Mitch-related emergency seed costs.

V. Mitch Victims Receive Improved Varieties

Planned for Fourth Quarter
Distribute 30 quintals of beans to 300 Mitch victims in Posoltega.

Accomplishments
- The MAG-FOR, PROMES, and the POSOLTEGA Alcalde distributed 240 quintals of beans, the by-product of seed processing in Matagalpa and Esteli, to approximately 2,400 families in refugee camps in Posoltega during the week before Christmas;
- Offered to provide high-quality, low-cost, open-pollinated maize seed in Primera; and
- Participated in an assessment of the Red Cross seed distribution program.

Discussion
A Honduran consulting company named ESA monitored the Red Cross emergency seed distribution programs for Hurricane Mitch victims in Honduras, El Salvador, and Nicaragua. Different combinations of relief supplies were distributed in each country. The Nicaraguan relief package containing food, hybrid maize seed, bean seed, fertilizer and $30 in cash was preferred to other packages of equal monetary value that included back-pack sprayers and open-pollinated maize seed.

The decision to include hybrid maize seed and cash was controversial. The introduction of new crop varieties is inconsistent with conventional wisdom in the relief community. Cash donations to poor farmers is inconsistent with popular opinion in much of the donor community, which expressed skepticism that small farmers would optimize the use of cash. Nevertheless, the Red Cross took a chance which, with the help of an accurate census, an exceptional distribution system, and the support of PROMESA, paid off[12]. The Red Cross is pleased with the results and is assessing the feasibility of distributing seed again in 2000.

The Red Cross hybrid maize seed distribution created a massive demonstration of hybrid maize. PROMESA will capitalize on this demonstration effect by helping seed companies, PVOs, NGOs, and producer associations expand their seed distribution systems in 2000. We expect many of the small farmers who planted hybrids in 1999 to save grain for use as seed, despite repeated warning of yield declines. We expect many farmers to notice these declines and demand hybrids in 2001.

Plan for Next Quarter

- Work with the MAG-FOR, the mayor of Posoltega and local NGOs to develop a program to provide high-quality, low-cost maize seed to refugees in Primera.

[12] Two additional factors may have contributed to the effectiveness of cash donations. The cash donations were distributed by checks, a novel form of payment. Farmers may have considered checks to be less liquid and otherwise different from common currency. This factor may have contributed to the use of cash donations for investment in fertilizers and other production inputs, instead of using it for household consumption.

HIGHLIGHTS OF FUTURE ACTIVITIES

JANUARY-MARCH 2000

New Varieties Introduced

- Include high protein maize seed for demonstration program in Primera; and
- Coordinate INTA's foundation seed unit with NGO and commercial producers.

Private Seed Companies Growing

- Strategy and plans for UNAG Bancos de Semilla;
- Cooperative rice seed program with ANAR, involving INTA foundation seed produced under the supervision of the DGS, registration of new rice varieties, and demonstration plots;
- Maize seed sale to Euroaid for distribution to Mitch victims in Tipitapa; and
- Results of regional seed market study.

Seed Policies Improved

- PVP regulations submitted to National Assembly;
- MAG-FOR initiates establishment of CONASEM;
- Implementation of regional seed harmonization agreements at the national level;
- Meeting between NGOs, farmer associations, seed companies, and INTA to anticipate foundation seed needs; and
- Integrate public and private sector seed organizations into the seed promotion program.

Project Management

- Modify project contract to include the new seed policy program and change it from a cost-plus-award-fee to a cost-plus-fixed-fee contract.

Appendices

Appendix 1 Seed Policy Program Tables
1. Plant Variety Protection Policy Program
2. Seed Law Review Program
3. Biotechnology Policy Program
4. Seed Promotion Program

Appendix 2 Impact of PNAPP Seed Procurement Program

Appendix 3 Variety Demonstration Plots

Appendix 4 Assessment of Red Bean Inoculant Research

Appendix 5 PVP Law Passage - Summary

Appendix 6 Acronyms

Appendix 1

COMPONENT: PLANT VARIETAL PROTECTION (PVP) POLICIES
OBJECTIVE: Promote development of new plant materials and ensure Payment of royalties to developers.

ACTIVITIES	RESULT	QUANTITY	DATES
Reconnaissance and observation trip In support of the development of PVP Law Regulations. Four specialists From MFIC, MAG-FOR and PROMESA To Argentina.	- Draft PVP Law regulations - Draft registration procedures and technical analysis	- 4 airline tickets and per diem for four travelers, for 6 days.	20-26 Nov/99
Preliminary discussions of the PVP Law regulations with the USDA PVP Representative	Draft PVP regulations reviewed and adapted to Nicaragua conditions.	1 airfare 1 consultant for 5 days	29 Nov - 3 Dec/99
Prepare draft PVP regulations And distribute for comment.	Review and comment from appropriate public and private individuals and organizations.	-	Dec/99
Meeting with private sector reps To discuss their comments on the draft Regulations.	Assessment and recommendations of private sector and appointment of private sector representative to finalize regulations.	20 participants	Dec/99
Two-day working group meeting to Finalize PVP regulations	Regulations finalized and submitted to the President's Legal Counsel	13 people for 2 days	Jan-00
Publish and distribute PVP Law and Regulations	Wide distribution to producer associations, ministries, universities, seed producers, research centers and cooperatives.	300 copies of the PVP Law and Regulations	Feb-00
Trip to USDA PVP office for training In new variety analysis.	Trained PVP technician.	1 travel for 5 days	Feb-Apr-00
Reviews of the implementation of Variety registry and technical analysis Procedures.	Implementation of revised registry procedures and technical analysis according to international standards	Two consultants for 5 days	Aug-00
Review by the International Union of Plant Variety Protection (UPOV)	Implementation of registry procedures and technical analysis according to international standards	1 review	-
Creation of PVP Office within GON with appropriate software.	PVP Office functioning efficiently	Office equipment.	Feb-Mar-00
Seminar on procedures for registry of new varieties under the PVP Law	30 public and private researchers aware of procedures for registration.	- 30 participants (Meeting room and lunch)	Mar-00

COMPONENT: SEED LAW
OBJECTIVE: Promote the regulatory framework to encourage the use of seed.

ACTIVITY	RESULT	QUANTITY	DATE
Three private sector focus groups to Analyze the Seed Law and Regulations.	Preliminary proposal of a new Seed Law.	3 focus groups 1 consultant for 3 days 12 participants for 3 meetings	1st Jan. 2000 2nd Feb. 2000 3rd May 2000
Workshop to identify opportunities and Constraints in commercial seed markets With the participation of international Seed companies and the MAG-FOR.	MAG-FOR policy assessment team fully informed of the opportunities and constraints.	1 workshop	Apr-00
Conference on: "Strategies for the Development of the Nicaraguan Seed Industry" with the participation of the Public and private sectors	Wider participation in discussions of alternative solutions involving: - Seed Law - Accreditation of seed certification - Agricultural credit tied to the use of Improved seed.	3 meetings 40 participants for 3 days 2-person consultancy for 5 days Report publication - 200 copies	May-00
Follow-up to agreements made at the conference with 2 workshops on each of the following topics: - National Seed Commission - Quality Control - Evaluación y liberación de variedades	Draft of proposed Seed Law and Regulations	10 participants for 6 meetings	1st June 2000 2nd July 2000
Workshop for three working groups to Develop the final proposal of the Seed Law and Regulations	Proposed Seed Law and Regulations Presented to the MAG-FOR, with Signatures of key supporters.	1 consultant for 5 days 30 public and private sector participant for 2 days	Aug-00
Disseminate proposed Seed Law.	Public discussion of proposed Seed Law.	2 press conferences 1 notice en 3 periodicals	Aug.-Sept. 2000

2 working lunches with the Council on Production of the National Assembly And with the Party leaders (lobbying) Lobbying (lunch) with key Congressmen	Favorable evaluation of the Law. Approval of the new Seed Law.	Lunch for 20 participants 1 consultant for 10 days Lunch for 30 parliamentarians - 1 consultant for 5 days	Sept.-Oct. 2000 Nov-00
Meeting to install the National Seed Council (CONASEM) in accordance With the Law and three meetings to prepare the regulations. Publish new Seed Law and Regulations	National Seed Council (CONASEM) operative - Regulations approved Widespread dissemination of the Seed Law and Regulations	4 working lunches with 10 participants 500 copias	Nov/00-Jan/01 Feb-01

OMPONENT: BIOTECNOLOGY POLICIES
OBJECTIVE: Expand knowledge of Biotechnological vegetable material products
o facilitate the decision making process based on science

ACTIVITY	RESULT	QUANTITY	EXECUTION DATE
Dissemination of information on Biotechnologically derived vegetable roducts to agricultural technicians and ublic consumers in Nicaragua	- 1000 agricultural technicians informed - 35,000 families received supplements in the newspapers - 185,000 people covered by radio broadcasts - 300,000 people read articles on Biotechnology products from the press conference	- 1000 informative newsletters for agricultural technicians with BI-monthly circulation (9 issues) - 35,000 newspaper supplements - 300 radio advertisements - 6 press conferences	February/00-June/01
Participation in a 5 day course on the " Genetic Transformation of Plants: Bio-ecurity and risk evaluation."	1 person prepared and provided with the necessary contacts to carry out a Biotechnology course for Nicaragua	- Airplane ticket - Expenses/Per Diem for 1 person for 6 days	January 30 - Feb 5/00
A 5 day National course for 15 participants on the " Genetic ransformation of plants: Bio-security and risk evaluation."	15 potential future members of the National Committee on Bio-security, trained in this area	- 4 consultants for 5 days - 4 Airplane tickets - Per Diem/Expenses for the 4 consultants for 7 days - Per Diem/Expenses for 15 participants for 5 days - Materials & documents - Rent of site for 5 days	Mar-00
National seminars to highlight the asic principles of Biotechnology and the experience of other countries for: 20 producers & salesmen - 60 agricultural technicians from the private and public sectors - 80 people from the general public	Professionals & the general public informed on the advances of Biotechnology applied to vegetable material	- 2 consultants for 5 days - Per Diem/Expenses for 2 consultants for 7 days - Materials - Rent of site for 3 days	Marzo/00

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study tour of Costa Rica & Argentina or the USA to observe in situ the research and management of iotechnological vegetable material roducts for the 10 members of the National Bio-security Committee and 2 people from PROMESA	10 Representatives from the National Bio-security Committee and 2 from PROMESA completely informed on the procedures applied to Biotechnological vegetable products for the purpose of making decisions based on science	- Lunch for 160 people - 12 Airplane tickets - Per Diem/Expenses for 12 participants for 11 days - Logistical support, local transportation & translation	Apr-00
3 National seminars to analyze the "Probability of the occurrence, judicial amework, and field trials for: - 20 producers & Sales people - 60 private and public sector gricultural technicians - 80 people from the general public	Preliminary conformation of a National Bio-security Committee	- 2 consultants for 5 days - 2 airplane tickets - Per Diem/Expenses for 2 consultants for 6 days - Materials & documents - Rent for site for 3 days - Lunch for 160 people	May-00
workshops for the analysis & preparation of Bio-security regulations with full participation of the National Bio-security Committee	A group of Bio-security regulations based on science	- 2 consultants for 5 days for 3 workshops - 2 airplane tickets for 3 workshops - Per Diem/Expense for 2 consultants for 5 days and 3 workshops Per Diem/Expenses for 12 participants for 3 workshops for 3 days - Documents & materials for 3 workshops	1st Workshop June/00 2nd Workshop August/00 3rd Workshop October/00

COMPONENT: SEED PROMOTION PROGRAM

BJECTIVE 1: Promote the use of improved seed through NGO and PVO rojects and other promotional activities.

CTIVITY	RESULT	QUANTITY	IMPLEMENTATION DATES
onduct meeting with NGOs and PVOs discuss the use of improved seed in relief and development projects.	PVOs and NGOs understand the importance of using improved seed varieties.	1 meeting	Mar-00
onduct field trials and hold field days to demonstrate results from using mproved seed varieties.	Farmers and NGO/PVO technicians understand the importance of using improved seed varieties.	40 field trials 20 field days	Jan/00 - Jun/01
roadcast radio announcements of the Advantages of planting improved seed.	Farmers understand the benefits of using improved seed.	100 radio/TV spots	Jan/00 - Jun/01
ublish and distribute technical nformation on the production and use of improved seed varieties.	Farmers and NGO/PVO technicians have access to technical information about improved seed and modern grain production practices.	1,000 copies	Jan/00 - Jun/01
onduct meetings with NGOs, PVOs, and INTA to determine seed needs and ources of improved seed varieties.	Establishment of a system to improve coordination between NGOs, PVOs, seed producers, producer associations, and INTA.	20 participants	First meeting - Mar/00 Second meeting - Jun/00
tudy tour for NGO/PVO technicians to Matagalpa, León and Carazo to neet with seed producer organizations, Cooperatives, and seed companies.	Linkages between NGOs, seed producers and seed producers, and INTA strengthened. Improved distribution channels and increased use of improved seed.	15 participants for 5 days	Jul-00
acilitate seed production contracts etween NGOs and producers of improved seed varieties.	Five seed production contracts signed between NGOs and seed producers	10 meetings	Dec-00

COMPONENT: IMPROVED SEED PROMOTION

OBJECTIVE 2: Promote the use of improved seed through agricultural credit

ACTIVITY	RESULT	QUANTITY	EXECUTION DATE
Conduct survey to measure effect of Improved seed on yields in Primera and Postrera 1999/00.	Data demonstrating production increases due to improved seed.	40 farmers surveyed	Dec/99 - Jan/99
Interviews with managers of banks and ag credit institutions to determine whether Agricultural lending policies require farmers to use improved seed.	Short list of banks to participate in pilot program requiring farmers to use improved seed as a condition for agricultural credit.	9 interviews with bank managers	Feb-00
Two workshops with representatives of banks and credit institutions, producer Organizations, INTA, and PROMESA. Use regional and national data to show Productivity gains due to improved seed.	Pilot program tying credit to the use of improved seed.	20 participants in 2 meetings 1 consultant for 3 days 4 days of per diem for consultant	1st meeting Feb/00 2nd meeting March/00
Discussions with bank managers Concerning procedures for pilot credit Program.	Definition of requirements for access to credit, and zones or regions of implementation.	5 meetings	Apr-00
Meetings with local credit managers in Selected regions concerning sources of Improved seed varieties.	Regional banks and credit institutions know where to buy improved seed.	5 meetings	Apr-00
Participation of banks and credit Institutions in a national seed conference.	Panel presentation of the pilot program and discussion with working groups.	5 bank and credit representatives	May-00
Radio and literature dissemination of Information on credit and sources of Improved seed.	Farmers informed about access to, and conditions for, agricultural credit, and sources of improved seed.	750 radio announcements 9 paid notices 1,000 information packets on credit programs and seed sources.	May-00

Appendix 2

ANALISIS DEL EFECTO DEL PROYECTO PNAPP/MAG-FOR EN EL MERCADO DE LA SEMILLA DE FRIJOL - APANTE 1999 -

ANTECEDENTES:

A través de los años se han implementado una serie de programas de semillas para mejorar la producción nacional, sin embargo estos programas no han dado sus frutos ya que el rendimiento promedio nacional no muestra mejoría significativa. Casi todos lo programas no logran los resultados ya que no hay una industria y una cultura de semilla que masificada en la producción nacional de frijol.

Han existido una serie de programas de promoción de la producción de semilla y de la producción de grano, sin embargo en la mayoría de casos no ha existido coordinación entre estos programas, siendo los resultados muy pobres. El rendimiento promedio anual desde 1970 hasta 1998 no mejora, oscilando 10 QQs./Mz, que es el más bajo de la región Centroamericana (Gráfico). Incluir el gráfico en esta parte. Más bien durante la década de los años setenta el rendimiento promedio anual fue de 11 QQs./Mz. Estimamos que entre otros factores, la calidad de la semilla utilizada es un factor muy importante, si asumimos que a la semilla se le atribuye un 40 % de contribución al rendimiento real del cultivo.

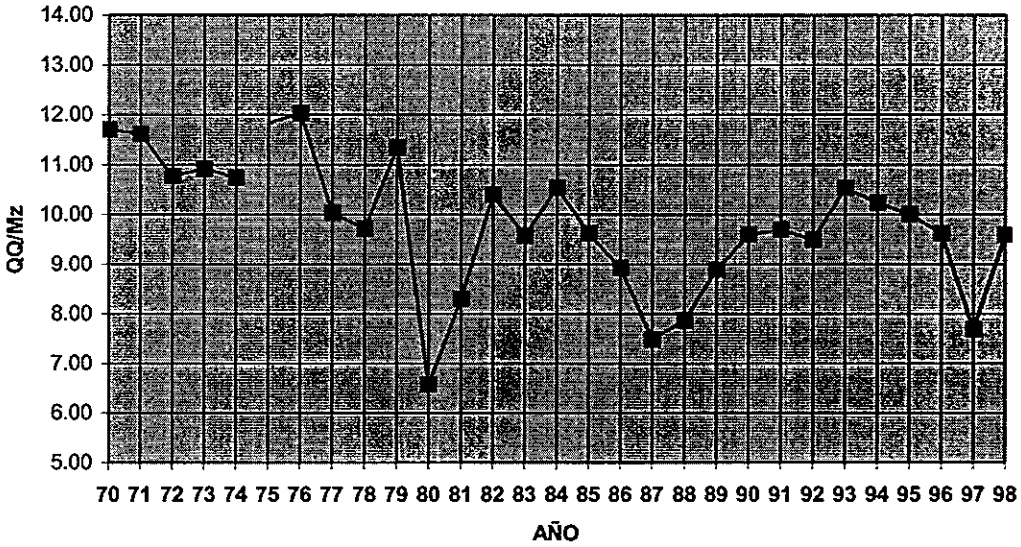
Se ha identificado que actualmente en Nicaragua existen programas de financiamiento agrícola, de asistencia técnica y capacitación entre otros, que son dirigidos al pequeño productor. Sin embargo también es evidente que estos programas no consideran que la calidad de la semilla es muy importante para los resultados de los proyectos. En casos que se considera importante la calidad de semilla, este concepto no es completo y lo que se realiza es la promoción de la producción de semilla de baja calidad o se suministra a los productores grano comercial seleccionado, que no cumple con los requisitos de calidad. Inclusive semilla que ha sido certificada por la Dirección de semillas del MAG-FOR no es tomada en cuenta en estos programas.

El Plan Nacional de Apoyo al Pequeño Productor (PNAPP), adscrito al MAG-FOR es conocido como un programa del Gobierno de Nicaragua con fin de promover la pequeña producción de Nicaragua. Desde el ciclo 97-98 el plan ha venido apoyando al pequeño productor con préstamos en insumos, como es el caso entrega directa de semilla para la producción de Granos Básicos ó bien con bonos para insumos. Estos bonos pueden ser utilizados por los pequeños productores beneficiarios para recibir agroquímicos en la casa comercial de su preferencia.

Para la siembra de la época de Apante 1999/2000 el PNAPP continua apoyando al pequeño productor y se plantea la meta de siembra de 17,350 manzanas de Maíz y Frijol para beneficiar 13,597 productores en las diferentes zonas que es posible esta siembra. Ante tal meta el PNAPP hizo pública la demanda de 10,000 QQs. de Semilla mejorada de Frijol.

Demanda que se presenta en el mercado de forma repentina a finales de Octubre de 1999 y sin ninguna planificación ni tiempo para planificar ó para promover la producción de semilla de calidad para este programa ya sea por instituciones afines dentro del MAG-FOR o por el sector privado.

RENDIMIENTO PROMEDIO ANUAL FRIJOL (PERIODO:1970-1998)



OFERTA DE LA SEMILLA DE FRIJOL EN APANTE 1999/2000

De acuerdo a lo establecido por la Ley de Producción y Comercio de Semillas, el MAG-FOR a través de la Dirección General de Semillas es la única entidad autorizada para certificar y avalar la comercialización de semillas
Durante la época de Primera 1999, en el ámbito nacional, las únicas áreas establecidas para la producción de semilla y avaladas por la DGS fueron:

1. Areas del Proyecto de Mejoramiento de Semilla (PROMESA); 330 manzanas en la zona de la Concordia Jinotega.
2. Areas de la Cooperativa Agropecuaria de Servicios: Productores de Papa de Matagalpa (COOPPAMAT R.L.); 153 manzanas en la zona de Matagalpa.
3. Areas de multiplicación entre el INTA y la Escuela Católica de Agricultura y Ganadería (ECAGE); aproximadamente unas 30 manzanas en Estelí.

La gran parte de áreas establecidas por PROMESA y COOPPAMAT fueron afectadas por períodos de sequía durante su desarrollo y períodos lluviosos en cosecha lo que ocasiono una serie de descartes, reducción del rendimiento y pérdidas Post-cosecha. Como resultado de un total estimado de 7000 qq solamente fue posible obtener 2300 qq

Sin embargo es oportuno señalar que existen por todo el país organizaciones de productores que producen semilla de manera artesanal, sin la supervisión de la DGS, y que carecen de la calidad requerida. No obstante estas semillas pueden tener cierto nivel de sanidad y calidad comparadas con el grano comercial que es usado como semilla.

COMPRA DE SEMILLA POR EL PNAPP

En vista que el PNAPP no puede hacer compra directa de semillas designo a Agropecuaria LAFISE para realizar dicha actividad, apoyando al PNAPP en identificar fuentes de semilla. Además el PNAPP solicito información a la Dirección de Semillas quien hizo del conocimiento que COOPPAMAT y PROMESA contaban con semilla etiquetada de categoría apta.
COOPPAMAT a través del Ing. Edmundo Saenz estableció los contactos con LAFISE y el PNAPP presentando proforma de propuesta de abastecimiento de semilla para este plan a un precio de C$ 750.00/qq y cheque de garantía por C$ 10,000.00 a favor de LAFISE, requisito para negociar. LAFISE y el PNAPP argumentaron que el precio de la semilla era demasiado alto, dado que el presupuesto disponible tenía un techo máximo de C$ 600.00/qq.
COOPPAMAT argumento que la calidad del producto tenía su costo los cuales debía recuperar además que la calidad del producto permitía utilizar menos cantidad de semilla lo que al final hacia a esta más barata que los granos que tradicionalmente se comercializan como semilla.

El Ing. Sáenz oferta la semilla al Sr. Gonzalo Castillo Director de la Delegación Matagalpa del MAG-FOR quien le manifestó que el PNAPP abastecería de la semilla a esta Delegación con las compras a través de LAFISE, y que solicitaría al PNAPP la compra de 500 QQs. de semilla etiquetada por la DGS, para establecer un programa de semilla en la zona.
Finalmente, no se recibió respuesta a esta propuesta aparentemente el PNAPP tomo otra decisión al respecto ó no se realizo la solicitud por el Ing. Castillo.

COOPPAMAT estableció su programa de producción de semilla de frijol en el marco de un convenio de cooperación con PROMESA, se estableció el precio de venta uniforme de US $65.00 equivalente a C$ 800.00con base a registros de costos y gastos de acopio, transporte, beneficiado tomando en cuenta que el precio debía permitir a COOPPAMAT recuperar los costos invertidos. Posteriormente PROMESA acepta considerar como aporte, algunos gastos de apoyo en el establecimiento de este tipo de iniciativa y que el precio se estableciera en C$ 750.00/qq. Asumiendo que a este nivel de precio se recuperaban los costos más importantes y se evita caer en subsidio del precio que afectaría en el futuro resultados de la actividad de semilla de COOPPAMAT.

Ing. Erwin Gutiérrez del PNAPP solicito semilla de frijol a PROMESA. sin embargo, el precio C$ 750.00/qq imposibilito la compra de la semilla. Se le explico al Ing. Gutiérrez las consideraciones sobre el precio de la semilla la calidad y bondades de esta, no obstante no motivo el interés de compra por parte del PNAPP. Tuvimos conocimientos que para la selección de los lotes de grano comercial el PNAPP gestionó el análisis de germinación y calidad por parte del INTA. Técnicos del INTA procedieron a tomar muestras de lotes de grano almacenados en locales como el Mercado Oriental, Bodega de ENABAS de Matagalpa, bodegas privadas en el Mercado Guanuca de Matagalpa. Técnicamente, esta prueba únicamente da fe de la capacidad de germinación del grano y se omiten aspectos más importantes en la selección de la semilla como vigor, pureza y limpieza, humedad. No se cuenta con los datos oficiales de las cantidades de grano comprados por LAFISE, ni de los precios de compra[13]. Esto ha venido sucediendo por tres años consecutivos, de esta manera

[13] Respecto a los precios en el mercado de Guanuca se maneja que el precio osciló entre los C$ 420.00 y los C$ 480.00. Contrario a la información manejada en las oficinas del MAG-FOR De C$ 480 a C$ 520

se desperdicia una demanda atractiva de semilla. que en la que podrían participar diferentes organizaciones de productores de semillistas.

Dado la negativa de reconocer que semilla mejorada por sus bondades tiene, en cualquier parte un precio alto y la incapacidad de COOPPAMAT de facilitar menor precio el PNAPP-LAFISE no realizan ninguna compra de semilla a COOPPAMAT. Consideramos que el PNAPP no utilizó la única fuente de abastecimiento de semilla mejorada de calidad no fue adquirida por el PNAPP, y contrariamente el plan orientó la compra de grano comercial en los mercados locales de Managua y algunos departamentos como Matagalpa.

IMPACTO DEL PROGRAMA COOPPAMAT PROMESA E INFLUENCIA DEL PNAPP A LOS MERCADOS DE SEMILLA

Es importante tomar en cuenta la experiencia de los productores que participaron en la siembra de áreas para producción de semilla en la época de Primera y la presente, implementada por COOPPAMAT en Matagalpa y PROMESA en la Concordia.

- La semilla producida bajo la supervisión de la DGS tanto en campo como en beneficio y el seguimiento por el técnico de COOPPAMAT garantizó que la calidad de la semilla a comercializar presentará una optima calidad no influyendo que la categoría fuese Apta para siembra.

- Los productores de semilla recibieron un pago superior al precio del grano comercial como premio por la calidad, ya que la semilla etiquetada recibió un manejo intenso durante el cultivo, lo que implico mayores costos de producción que el cultivo de grano comercial. Estos productores se sienten motivados a producir semilla de calidad, lo que es una buena base para desarrollar un mercado de semilla.

- Los productores de semillas asumen que la calidad de semilla que puedan proporcionar al PNAPP garantiza mejor rendimiento en condiciones favorables de clima y en condiciones adversas que la siembra de grano comercial.

- Igualmente aseguran que con semilla de calidad se utilizan solo 50 lbs/manzana de semilla y no 80 lbs/manzana común al utilizar grano. Esto se debe a la pureza varietal excelente vigor germinación pureza física y fitosanitaria. En términos económicos la semilla de buena calidad cuesta C$ 375.00/manzana al utilizar 50 lbs/manzana; contrario al uso de grano comercial para siembra el costo que es de C$ 416.00/manzana al recibir el productor 80 lbs de grano/manzana y al precio de C$ 520.00/qq que aparentemente acopio el PNAPP. Esto demuestra que el costo de semilla es más bajo utilizando material mejorado y el productor recibe adicionalmente de beneficio las bondades de la calidad del material.

- Distribuyendo grano comercial se afecta al productor por la presencia de enfermedades transmitidas por semilla y el bajo potencial productivo, de esta manera estimamos que el PNAPP contradice su objetivo de facilitar semilla de buena calidad que permita elevar los niveles de producción, además desconoce la función de la Dirección General de Semillas en cuanto a la promoción de la producción, certificación y uso de semilla mejorada.

- Distribuyendo grano comercial el PNAPP no reconoce las bondades de la semilla mejorada y su costo de producción, porque se basa únicamente de acuerdo al precio y no a la calidad

- Con esta política el PNAPP estimula la retención de grandes cantidades de grano por parte de comerciantes hábiles y con los contactos necesarios para abastecer esta demanda e implica una distorsión en el mercado que desmotiva cualquier iniciativa Otro aspecto que estimula esta política es el hecho que programas como el PNAPP no son integrales al no incluir dentro de su programa el uso de semilla mejorada. En Matagalpa se pudo apreciar que algunos comerciantes que abastecieron de grano al PNAPP para la siembra de Apante ciclo 98/99, consideraron dentro de sus planes de retención de grano la demanda del PNAPP para el Apante del presente ciclo.

RECOMENDACIONES

1. Unificar esfuerzos alrededor del PNAPP para que este facilite semilla de buena calidad a los beneficiarios de los proyectos, de esta manera promoverá una mejoría de los rendimientos, calidad de las cosechas y aumentará los rendimientos promedios nacionales.

2. Coordinar una sesión de trabajo entre el PNAPP, DGS, INTA y PROMESA con el objetivo de establecer una planificación estratégica con miras a proporcionar al PNAPP las fuentes seguras de abastecimiento de semilla de buena calidad

3. Conocer el plan anual de demanda de semilla por parte del PNAPP con el objetivo de involucrar a cooperativas y asociaciones de productores impulsadas por PROMESA que sean encargadas de producir la demanda que requiere el PNAPP, al mismo tiempo establecer el mecanismo apropiado para que el INTA supla a través estas organizaciones a través de contrato de producción, semilla de categoría registrada

4. PROMESA esta dispuesta a apoyar todos los esfuerzos posibles encaminados a fortalecer el Sistema Nacional de Semillas, la promoción e incremento del uso de semilla mejorada y se pone a la disposición de la Dirección General de Semillas para iniciar conjuntamente dicho esfuerzo.

5. Este mecanismo permitirá renovar periódicamente la semilla que los pequeños agricultores guardan para sus próximas cosechas y al mismo tiempo el PNAPP ampliaría los beneficiarios de su programa.

Appendix 3

Ubicación de Parcelas Demostrativas Maíz para Postrera de1999.

Nombre del Productor	Organización que da asistencia técnica / Particular	Departamento	Localidad	Finca	Area	Fecha Siembra
1. -	UPANIC	Chinandega	Tonalá		2 mz	No ha empezado
2. –Federico Baltodano	Particular	León	Pozoltega		2 mz	25/08/99
3. – Rosa Urbina	COCABO	Boaco	Tierra Maria		1 mz	5/10/99
4. –Francisco Guzmán	COCABO	Boaco	Boaco Viejo		1 mz	6/10/99.
5. -	COCABO	Boaco	Mombachito		1 mz	6/10/99
6.-	COCABO	Boaco	Tierra Maria		1 mz	5/10/99
7. – Rodrigo Kuesterman	Ing. Alan Montoya	Matagalpa	Pancasán	El Retiro	2 mz	No ha empezado
7. – Rodrigo Kuesterman	Ing. Alan	Matagalpa	La Dalia	La Primavera	2 mz	No ha empezado
8. -	UPANIC	Jalapa			2 mz	Agosto
9. -	UPANIC	Jalapa			2 mz	Agosto
10. -	UPANIC	Jalapa			2 mz	Confirmar siembra
11. – Escuela de Estelí	Técnicos Esc. Estelí	Estelí	Esc. Estelí		3 mz	No ha empezado
12. –	UPANIC	Matagalpa	Sébaco	Finca Sta. Isabel	2 mz	28/09/99
13. -	Technoserve	Matagalpa	Sébaco		2 mz	No ha empezado
14. – Anastacio Valle	CARE	Matagalpa	Dario	El Hato	1 mz.	27/08/99
15. – Marlon Flores	CARE	Matagalpa	Dario	El Hato	1 mz.	27/08/99
17. – Adrian Ruiz	CARE	Matagalpa	Dario	El Malinche	1 mz.	28/08/99.
18. - Manuel Castrillo	CARE	Matagalpa	Dario	Las Delicias	1 mz.	28/08/99.
19. -	CIPRES	Esteli	Pueblo Nuevo		2 mz	28/09/99
21. – Wilfredo Somarriba	CARE	Matagalpa	San Ramón	El Horno	2 mz	15 – 30 Ag.
22. -	PRODES	RAAS	Nueva Guinea		4 mz	Agosto (confirmar fecha)
23. – UNA	Técnicos UNA	Managua	Tipitapa	El plantel	4 mz.	Agosto

Ubicación de Parcelas Demostrativas de Frijol para Postrera de1999.

Nombre del Productor	Organización que da asistencia técnica / particular	Departamento	Localidad	Finca	Area	Fecha Inicio de Siembra
1. – Alvaro Pérez	UPANIC	Carazo	Masatepe		5 mz	12
2. – Rudi Martinez	UPANIC	Nueva Segovia	Jalapa		3.5 mz	8 Octubre
2. - Mario Córdova	UPANIC	Nueva Segovia	Jalapa		3 mz	11 Octubre
3. - Evenor Perez	UPANIC	Nueva Segovia	Jalapa		3 mz	11 Octubre
4. -	CARE	Matagalpa	San Ramón		1 mz	7 de Septiembre
5. -	CARE	Matagalpa	San Dionisio		1 mz	7 de Septiembre
6.-	CARE	Matagalpa	Matagalpa Sur		1 mz	7 de Septiembre
7.-	CARE	Matagalpa	Sébaco		1 mz	7 de Septiembre
8.-	UPANIC/ CARE	Matagalpa	Apatita		5 mz	No se inicia

Ubicación de Parcelas Demostrativas de Sorgo para Postrera de1999.

Nombre del Productor	Organización que da asistencia técnica / particular	Departamento	Localidad	Finca	Area	Fecha Inicio de Siembra
1. – Yader Real	UPANIC	Chinandega	San Juan de Las Pencas		5 mz	31/08/99
2. – Nubia Baca	UPANIC	Chinandega	San Juan de Las Pencas		5 mz	31/08/99
2. - Leonardo Ayala	UPANIC	Chinandega	Filadelfia		5 mz	29/08/99
3. - Sandra A. Hernandez	UPANIC	Chinandega	Filadelfia		5 mz	29/08/99
4. – Adrian R. Mejia	UPANIC	Chinandega	San Juan de las Pencas		5 mz	31/08/99
6. – Vicente Salmeron	UPANIC	Chinandega	San Juan de las Pencas		5 mz	31/08/99
7.- Arturo Caballero	UPANIC	Chinandega	San Juan de las Pencas		5 mz	31/08/99
8. – Francisco Tuckler	UPANIC	Chinandega	San Juan de las Pencas		5 mz	31/08/99
9. - Orontes Lacayo	Particular	León	Minas las Marias	Aguas Calientes	3 mz	28/08/99
10. –Carlos Montealegre Deshon	Particular	Chinandega	Calle los Millonarios		2 mz	3/09/99

Appendix 4

October 5 1999

TO: Ray Baum

From: King Bash
Cc: Paul Crawford, Bill Greenwood

Ref: Red Bean Innoculants

In Apante 1998/99, the Universidad Nacional Agraria (UNA) conducted 28 on-farm trials in Jinotega, Boaco, and Nueva Guinea to determine the effects of rhizobia bateria innoculants on red bean seed. Several field observations were recorded during the crop cycle, but most of the results summarized in the attached report resulted from farmer interviews and subjective assessments, rather than field measurements.

Participating farmers were instructed to follow their normal bean production practices except for the use of innoculant, which they were to apply to seed before planting. Most farmers innoculated a portion of their seed, but others innoculated all of it. Some used fertilizers, sut others used none. Consequently, the interactions of soil type, fertility, and innoculant performance remain untested.

Most farmers reported increased vegetative growth in plots treated with innoculants. Almost all reported increased yields, which they attributed to the innoculant. These results indicate that small farmers will rapidly accept the new bacterial innuculant technology. Their willingness to pay for the innoculant is unknown, however, since participants received it at zero cost.

While the subjective assessments of farmers indicate good market potential, there is no scientific evidence that the rhizobia are effective. Field observations indicate that innoculant tend to increase vegetative growth in some varieties, but have no effect on DOR-364, the most common improved bean variety in Nicaragua.

PROMESA technicians believe that innoculants can reduce fertilizer needs for red bean production. But we remain unconvinced that the bacterial strains used in GRAINCO's innoculant effectively reduce fertilizer requirements or increase bean yields.

PROMESA agrees with UNA researchers who conclude that additional research is needed. PROMESA will continue assisting GRAINCO in assessing markets for rhizobial seed innoculants, but will not actively promote the new technology until more information is available.

Appendix 5

Legislative Approval of UPOV-Compliant
Plant Variety Protection Law

A	: King Bash
DE	: Julio munguía Sandoval
REF	: Informe sobre aprobación de Ley DOV
FECHA	: Managua, 22 de octubre de 1999

A continuación le informo a detalles los resultados del proceso de aprobación de la Ley para la Protección de las Obtenciones Vegetales, discutida en plenario de la Asamblea Nacional los días Martes 19 y Miércoles 20 de Octubre del presente año.

El debate de la Ley dio inicio a las 10:56 a.m. del día Martes, funcionarios y asesores del MIFIC realizaban el cabildeo necesario para obtener los votos indispensables entre los diputados de gobierno para la aprobación de la Ley. Se acordó aprobar la Ley capítulo por capítulo

PROMESA hizo acto de presencia con un total de 11 personas (productores de APROSUR, ASORESEM-OCCIDENTE y COOPPAMAT, Investigadores, Técnicos y Comercializadores). Igualmente hicieron presencia miembros del Centro Humbolt acompañados de hojas de papel con leyendas de NO A UPOV!! UPOV=PRIVATIZACION las que mostraban en alto a los diputados durante el debate.

Con el Arto 1 se inicio un debate intenso, luego que el presidente de la Comisión Guillermo Selva propusiera modificación en dicho artículo para excluir el párrafo dos sobre los transgénicos lo cual generó una fuerte discusión participando un total de 15 diputados, de ellos 10 de la Bancada Sandinista, 4 de la Bancada Liberal, y 1 del MRS.

Los argumentos en contra tanto de la moción como de la Ley fueron entre otros:

1. Protesta por la ruptura del consenso que la comisión había dictaminado con respecto a la Ley. Exigieron que esta protesta constara en el Acta de la sesión
2. Intromisión de cambios por parte del MIFIC por presiones de transnacionales como MONSANTO y de asesores extranjeros.
3. Los materiales transgénicos son peligrosos para la salud humana y la biodiversidad en Nicaragua. Y que los EE-UU es el mayor consumidor porque el mercado Europeo y Japonés han cerrado sus puertas a estos productos y variedades.
4. Las transnacionales se apoderan de los materiales y variedades autóctonas de Nicaragua y las patentaran como propio, inclusive se espera la aprobación de la Ley porque en EE-UU hay variedades Nicaragüenses que las transnacionales vendrán a patentar como suyas.
5. La Ley fue escrita por intereses foráneos de organismos internacionales y asesores extranjeros traídos con urgencia a Nicaragua, para convencer a la comisión
6. Que en el acta del 1978 no están contemplados las variedades transgénicas y porque si Nicaragua se va a adherir a dicha acta se esta plasmando en la Ley.
7. Que esta Ley entra en contradicción con el Arto 172 de la Constitución Política de Nicaragua.
8. Que con esta Ley están en clara desventajas los pequeños y medianos productores quienes serán dependientes de las transnacionales y del poder económico.
9. Que con la Ley no se sabrá que tipo de semilla entrará a Nicaragua y se darán situaciones como con la introducción del Cáñamo.

10. Leyeron carta de FENACOP (Federación Nacional de Cooperativas) que es filial de la UNAG, contradiciendo la carta enviada por Alvaro Fiallos aduciendo que este la envío en su carácter personal sin consultar con las bases y directivos de la UNAG

Estos fueron los argumentos centrales durante la discusión de la Ley en los dos días de debate. Por su parte el presidente de la Comisión fundamentó con mucho rigor los cambios y modificaciones que la Ley requería y logró coordinar con otros diputados tanto de la Comisión del Ambiente como del resto del plenario los cambios requeridos en cuanto a las observaciones de fondo.

Los artículos más conflictivos fueron el 1, 32 y 89. Inclusive la sesión el primer día fue necesario suspenderla en dos ocasiones por la protesta de la oposición en vista que no había el quórum necesario de los liberales para la aprobación, debido a la poca disciplina de los diputados quienes se retiraban a cada momento del recinto de discusión. Fue necesario dar 20 minutos de receso para poder reunir nuevamente a los diputados. Sin embargo, por el mismo motivo al final del primer día la sesión se suspendió definitivamente a las 3:15 p.m. cuando se discutían dos mociones al artículo 32.

Una de las mociones fue introducida por los liberales y la otra por el diputado de Camino Cristiano, lo que conllevó negociación entre liberales y Camino Cristiano para que no se diera a lugar la moción de este último. Felizmente la negociación llegó a buen término cediéndole al diputado de Camino Cristiano la opción de incluir en la integración del Comité Calificador para la Protección de Variedades Vegetales a la Universidad Nacional Agraria y Universidad Nacional Autónoma de Nicaragua núcleo de León lo cual quedó consignado en la Ley.Arto 70.

Esta negociación motivo a que la sesión del día Miércoles se iniciara hasta las 11:56 a.m. y creando mucho descontento entre la bancada sandinista que también había negociado con dicho diputado. Esta moción fue importante destrabarla porque contenía elementos negativos que implicaban mayores requisitos para la condición de la protección lo que estaba en contra de los requerimientos de UPOV.

Finalmente el último Artículo de fuerte debate fue el No 89, los liberales propusieron la eliminación y sustitución por otro, generando airadas protestas y discusión poniendo tensa la situación porque los liberales enfrentaban el mismo problema del día anterior, el abandono del recinto. Ante esta situación la bancada sandinista propuso un nuevo artículo que entre otras cosas decía lo siguiente:

> "El Estado de Nicaragua signatario de la Convención de Diversidad Biológica deberá respetar, preservar y mantener los conocimientos, las innovaciones y las prácticas de las comunidades indígenas y locales."

Otro elemento tensionante fue la propuesta de un nuevo artículo por parte del diputado del MRS, quien propuso el siguiente artículo:

> "Está Ley entrará en vigencia hasta que la Asamblea Nacional haya regulado las variedades y materiales transgénicos y hasta ese momento se publicará en la Gaceta Diario Oficial."

De aprobarse alguna de estas dos mociones y sobre todo la última de nada hubiesen servido los esfuerzo y la aprobación de la moción del Artículo 1 porque la Ley no hubiera cumplido con los requerimientos de UPOV y por consiguiente la adhesión a ninguna de las dos actas. Estas dos mociones fueron descartadas y se aprobó únicamente la moción liberal.

A continuación detallo los cambios y modificaciones realizados a la Ley:

- **Artículo 1.** Se eliminó el segundo párrafo que excluía a los transgénicos

- **Artículo 3.** Se modificaron las definiciones Variedad Protegida, Registro y Comité Calificador

- **Artículo 9.** Modificación de forma por citar artículos equivocados

- **Artículo 16.** Se eliminó el inciso 6 que exigía la inscripción en el registro de cultivares
- del MAG-FOR.

- **Artículo 17.** Se modificó el concepto de novedad de acuerdo a lo estipulado

- **Artículo 32.** Se eliminó el inciso g) sobre pago a terceros

- **Artículo 57.** Se eliminó el segundo párrafo y se le agregó lo siguiente: El Obtentor debe presentar cada año la información y documentación que se consideren necesarios para el control del mantenimiento de la variedad

- **Artículo 70.** Se le agregó en la integración del Comité Calificador a la Universidad Nacional Agraria y la Universidad Nacional Autónoma de Nicaragua (León)

- **Artículo 73.** Se eliminó la frase: El RPI declarará la nulidad....., por La Autoridad Judicial declarará la nulidad.... Este cambio fue de acuerdo a lo Estipulado

- **Artículo 89.** Se eliminó su contenido y en sustitución se modificó así: la presente Ley establece la tutela de los derechos de propiedad intelectual del obtentor; los derechos para importar, distribuir y comercializar semillas se regularan por la Ley No 280 Ley de Producción y Comercio de Semillas y su respectivo reglamento.

Debido a la difícil situación en cuanto a negociación y discusión de la Ley fue necesario no mocionar las 22 modificaciones que incluían aspectos de transcripción, forma y otros.

En conclusión la Ley fue aprobada con las modificaciones de fondo que se habían estipulado

A continuación detallo el resultado de la votación tanto de los artículos, mociones de cambios o artículo nuevos, así como la votación por capitulo.

ARTICULOS/MOCIONES CAPITULOS	VOTACION			RESULTADOS
	SI	NO	ABSTENCION	
Artículo 1 (modificación)	48	14	3	Aprobado
Artículo 3 (modificación)	49	26	3	Aprobado
Capitulo I	46	27	0	Aprobado
Capitulo II	48	26	0	Aprobado
Articulo 16 (modificación)	46	6	0	Aprobado
Artículo 17 (modificación)	49	10	0	Aprobado
Capitulo III	48	6	0	Aprobado
Capitulo IV	47	16	0	Aprobado
Artículo 32 (modificación)	48	1	1	Aprobado
Capitulo V	50	10	2	Aprobado
Artículo 57 (moción)	66	0	1	Aprobado
Capitulo VI	66	1	0	Aprobado
Capitulo VII	49	10	2	Aprobado
Artículo 70 (moción)	64	2	2	Aprobado
Capitulo VIII	53	8	1	Aprobado
Capitulo IX	51	5	2	Aprobado
Artículo 73	48	11	3	Aprobado
Capitulo X	49	16	2	Aprobado
Capítulo XI	47	9	3	Aprobado
Capitulo XII	48	10	2	Aprobado
Capitulo XIII	48	11	3	Aprobado
Capitulo XIV	48	15	3	Aprobado
Artículo 89 (modificación)	49	9	3	Aprobado
Moción nuevo Articulo *	36	42	2	Rechazada
Moción nuevo artículo **	35	45	3	Rechazada

* Moción Bancada Sandinista
** Moción del MRS

Acronyms and Techincal Terminology

ANAR	Asociación Nicaraguense De Arroceros
APENN	Asociación Nicaraguense De Productores y Exportadores De Productos No Tradicionales
BID	Banco Interamericano De Desarrollo
CATIE-MIT	Centro Agronómico Tropical De Investigación y Ensenanza
CIAT	Centro Internacional De Agricultura Tropical
CIMMYT	Centro Internacional De Mejoramiento De Maiz y Trigo
CNIA	Centro Nacional De Investigación Agropecuaria
FOSEMAG	Fortalecimientos De Los Servicios Que Brinda El Minst.Agrop.
GRAINCO	Granos Industriales S.A.
INTA	Instituto Nicaraguense De Tecnologia Agropecuaria
MAG-FOR	Ministerio Agropecuario y Forestal
MARENA	Ministerio Del Ambiente y Recursos Naturales
MIFIC	Ministerio De Fomento, Industria y Comercio
ONG	Organisaciones No Gubernamentales
PCCMCA	Programa Cooperativo Centroamericano De Los Cultivos y Alimentos
PRM	Programa Regional Del Maiz-RSA
PRODES	Proyecto De Desarrollo Rural En La Zona De Nueva Guinea -Muller-Rama
PROMESA	Proyecto De Mejoramiento De Semillas
PROSELA	Productores De Semilla Certificada Super Semillas Agro's El Salvador
SAGSA	Servicio Agricola Gurdian S.A.
UCOOM,R.L	Unión De Cooperativas Multisectoriales , R.L
UESA	Unidad De Estrategia De Seguridad Alimentaria
UNA	Universidad Nacional Agraria
UNAG	Unión Nacional De Agricultores y Ganaderos-Matagalpa
UPANIC	Unión De Productores Agropecuarias De Nicaragua
UPOV	Unión Internacional De Proteccion y Obtenciones Vegetales
ZAMORANO	Escuela De Agricultura Panamericana- Zamorano

Specialized Terminology

Primera	May-August Crop cycle
Postrera	August-November Crop Cycle
Apante	November-February Crop Cycle
Manzana	0.7 ha.