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QUARTERLY REPORT

FOR GRANT No. AID-LAC-IGR-1297



**INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES – OAS
CROP CREDIT INSURANCE PROJECT**

QUARTERLY REPORT

FOR JULY 1, 1980 - SEPTEMBER 30, 1980

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IICA



**INTER-AMERICAN INSTITUTE OF AGRICULTURAL SCIENCES – OAS
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1

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Pursuant to Section C(1) of Attachment 1 of the above cited grant and Amendment 2 dated May 30, 1980, I have prepared the following Quarterly Report for the major activities of the remainder of the project.

During the third quarter all elements of the project became fully operational in the three countries originally foreseen in the grant document. The final country, Ecuador, has signed the technical assistance agreement. This agreement between the newly created insurer, CONASA, and IICA, will permit us to begin actual operation at an early date.

Should you wish any further information, please contact me.



Dr. William M. Gudger

Chief, Crop Credit Insurance Division

WMG/rpg.

Project Activities in Panamá

The project in Panamá is proceeding successfully with a planned expansion and diversification of the insurers' portfolio in both crops and livestock. In addition, the premium for the livestock portfolio is being recalculated based upon 3 years of experience. The average premium on most animals has increased from 2% to 2.5%. This adjustment has been necessitated by the increasing rate of losses. However, at 2.5% the livestock insurance probably is the least expensive available in the world. In addition, young bulls and heifers are now insured between 6 months and 18 months of age. Feeder pigs have also been added to the portfolio. The overall livestock program's experience is displayed in Table 1. With the slight increase in average premiums and the new additions to the livestock portfolio, ISA hopes to lower the loss ratio by 2 points. Future plans are to include fowl and perhaps shrimp pond insurance.

The new agricultural cycle began only two months ago and thus no data is available yet on total area under insurance. It is likely that the total insured area will increase somewhat as two new crops, beans and industrial tomato, are passing from the pilot stage to become regular lines of insurance. New crops are under active study. They include tobacco, coffee, sugar cane and citrus fruits, the later two on a named peril basis. Table 2 provides an overview of the growth of ISA to date.

The plans for the group life insurance are well advanced and it is hoped that the new product can be in place early next year. Under the bylaws of ISA, this insurance may not be issued by ISA. It is therefore necessary to negotiate with the private sector.

The advanced state of the research work will be reported in an extensive document presented to AID/Washington in October. In summary, however, our data is nearing completion and we can now begin the analysis to measure the impact of insurance on the small farmer. We expect to produce the first empirical results within 3 to 6 months. A further explanation of this component is contained in this document.

TABLE 1

PANAMA

LIVESTOCK INSURANCE PROGRAM

AGRICULTURAL YEAR	NUMBER OF POLICIES*	NUMBER OF HEAD	TOTAL COVERAGE	PREMIUM INCOME		INDEMNITIES PAID		UNLOADED LOSS RATIO**
				Unearned	Earned	# HEAD	\$	
1979-80	830	11.677	3,555,882	170,077	61,937	211	64,191	103.7 %
T O T A L	1,114	15,069	4,304,869	207,158	72,011	248	72,922	1.01%
1° May-30 August 1980***	316	5,315	1,618,186	7,684***		84	17,666	

* includes collective policies,

** Administrative expenses and contribution to reserves are excluded.

*** Unearned premium not yet calculated. Therefore the loss ratio is not available although we estimate it at around 75%.

TABLE 2

PANAMAAGRICULTURAL INSURANCE PROGRAM

AGRICULTURAL YEAR	NUMBER OF PROGRAMS	NUMBER OF POLICIES			NUMBER OF HECTARES	TOTAL COVERAGE	PREMIUM INCOME	INDEMNITIES PAID		UNLOADED LOSS RATIO**
		TOTAL	INDIVIDUAL	COLLECTIVE				HECTARES	\$	
1976-77	1	10	10	---	130	\$ 27,257	1,233	68	1,588	128.8 %
1977-78	3	315	254	61 (N/A)	5,410	1,129,579	58,723	219	17,784	30.3 %
1978-79	3	525	464	61 (N/A)	7,307	1,867,511	103,741	847	93,731	90.4 %
1979-80	5	1,544	1,520	24 (908)	19,213	6,184,838	358,742	1,939	129,970	36.2 %
T O T A L		2,394	2,248	146	32,060	9,229,185	522,439	3,073	43,073	46.5 %
1° May-30 August 1980***		132			4,501	1,921,059	97,455	70	3,962	4.1 %

* collective policies have the total number of members insured under the policy in (parenthesis)

** administrative expenses and contribution to reserves are excluded.

*** dry cycle agriculture and thus atypical of annual total to be expected. Most is irrigated agriculture.

The overall technical development of the insurer is impressive. It has learned a complex technology in a very brief time and utilized it with considerable skill. The financial state of the insurer in our opinion, could be improved markedly. The reserve remains very small and the writings to reserve ratio probably about 15 to 1 without including the governments \$1 million guarantee. Including the guarantee in the reserve, the writings to reserve is around 3.5 to 1. The management opted to operate another year without an offered reinsurance contract in order to capitalize the reserve. The paradox of a new and underfinanced insurer is that the purchase of reinsurance absorbs most of the funds that would be used to capitalize a reserve. We view the insurer a technically viable but still highly exposed to a severe loss or a series of serious losses which could decapitalize the company. Recently, the Panamanian government announced that it would pay the cost of ISA's commercial reinsurance and the business is being negotiated in the London market for the 1981/82 agricultural year. This is a very hopeful development and we believe that it will permit the orderly capitalization of a reserve.

Project Activities in Ecuador

As we noted in the last Quarterly Report, IICA has succeeded in establishing a financially strong insurer. The new insurer, Compañía Nacional de Seguros Agropecuarios (CONASA) was established as a mixed. public and private, capital insurer with an initial capital of 1.7 million sucres. This capital will be augmented by 90 million sucres from the Banco Central over the next four years. Ecuador's generous contribution thus will produce a 5 or 6 to 1 matching ratio to the subgrant. In addition we expect part of the Central Bank's rediscount fund will be used to continue capitalizing CONASA.

The first act of the new Board of Directors was to name John Campuzano the manager of CONASA. The new manager was formerly IICA's technician in Panamá and is well trained in agricultural insurance.

At present, CONASA is beginning to recruit personnel and prepare the necessary documents for the approval of the Superintendencia. As soon as the staff is recruited, IICA will carry out initial training in Ecuador and Panamá.

On October 15, IICA and CONASA will sign the basic collaborative agreement with the Ecuadorian Vice President and the U. S. Ambassador to Ecuador as witnesses. Under this grant, IICA can begin to cover the insurer's operational expenses for the forthcoming year as well as contracting consulting talent to assist CONASA in the organization of the insurer and training of personnel.

We expect that we can initiate insurance operations in the first quarter of 1981. The first crop to be insured will probably be rice in the Guayaquil area, followed by corn in the mountains and livestock insurance, initially on the coast. We are hopeful that the life insurance can be included in the initial policies.

After a very long and difficult process of convincing the Ecuadorians to proceed and negotiating the 90 million Sucre contribution, we foresee a smooth and rapid development. Indeed, the project has been so well received that we expect the insurer to confront for more demand for its insurance that it is technically advisable for CONASA to insure. The insurer is financially very strong; we must work rapidly to strengthen its technical capabilities to enable it to meet the demand for its services.

Project Activities in Bolivia

Our insurance program in Bolivia is moving ahead with the first insurance operations. Table 3 displays the initial results. Our pilot project in the Cochabamba area has 26 agricultural insurance policies covering 17 hectares. The longest insured plot is 1.5 hectares; the smallest, .5 hectares. The largest loan is \$1,360 while the smallest is \$352. Of the total insureds 20 (77%) have chosen the recommended technology while only 6 (23%) have elected to utilize intermediate technology. We believe that we are off to a good start in reaching small farmers and in promoting the adoption of modern technology. In fact we selected a zone characterized by small farm agriculture and structured our coverage limits to provide a progressive larger coverage with each more advanced level of technology.

TABLE 3

BOLIVIA: AGRICULTURAL INSURANCE PROGRAM - COCHABAMBA POTATO INSURANCE PROGRAM

Agricultural Year	Number of Policies	Number of Hectares	Total Coverage	Total Premium	Indemnities Paid		Unloaded Loss
					Hectares	\$b	
1980-81	26	17	\$b546,269	\$b627,000	N/A	N/A	N/A

In our initial operations several problems have emerged that are related to the weak infrastructure in Bolivian agriculture. Many farmers have complained that the technology developed by the Instituto Boliviano de Tecnología Agropecuaria is inadequate and/or that the required inputs are unavailable or arrive in poor condition. This is certainly true of seed potatoes. In an attempt to help overcome some of these problems, ASBA is running fertilizer trials to develop realistic yield figure upon which to base its coverage limits and is studying the possibility of contracting the production of seed potatoes which will be supplied at cost to the insureds instead of a cash credit. The expansion of the insurer into these non-traditional areas has been necessitated by the lack of adequate technology and seed potatoes.

A far more serious problem has emerged as the result of the recent change of governments in Bolivia. As a consequence, there has been an almost complete turn over at the Banco Agrícola de Bolivia (BAB). As a consequence of the present state of relations between Bolivia and the United States, it appears likely that funding from T-059, T-065 and P.L. 480 will be curtailed. ASBA has been informed that BAB will not have funds next year to loan to its clients, notwithstanding that the insurer will guarantee a very high rate of recovery in the insured portfolio.

The situation in BAB requires the insurer to work with other lenders. However the \$1 million reserve from P.L. 480 is tied to the clientes of BAB.

We will attempt to negotiate a change in the P.L. 480 - BAB - ASBA agreement to permit insurance of other lenders. At present, we are engaged in preliminary conversations with the Banco de Cochabamba, Banco del Estado, Banco de La Paz, Banco de Potosí and FENACRE.

Working with any of these institutions would require issuing insurance to some clients outside the mission's definition of "small". These banks do indeed have some quite small farmers but within each group we must take some who do not meet the definition. At this stage, we believe unless these changes can be negotiated ASBA will have to suspend insurance operations until the situation at BAB is normalized. We remain hopeful however that the necessary changes can be negotiated. The initial attitude of AID/Bolivia was one of both understanding and support.

In addition, ASBA is continuing to request the Bolivian government to study the possibility of providing a regular source of capitalization to permit the insurer to continue to gradually expand its coverage. The insurer appears to continue to enjoy the strong support of the new government and a decree law may be forthcoming.

Present plans for growth are to initiate insurance of one new crop in the same zone (Cochabamba) during the next cycle and one crop in another department during the following agricultural cycles.

Despite the frequent and unpredictable changes of government in Bolivia, it is probably that we will be able to continue our program's steady development. Clearly Bolivia is the most difficult country assigned to us by the grant but as long as ASBA is able to operate technically feasible insurance program with the insurer's staff selected on the basis of their professional preparation, we remain cautiously optimistic about our ability to work our way through very troubled political waters.

Project Activities in Research

Considerable progress was achieved in refining the conceptual framework for research at the farm, banking and sector levels as well as the insurance management model during the third quarter of 1980. During this period, the research program emphasized analysis of currently available data in Panamá previously organized in computer files and field surveys in Panamá and Bolivia.

In terms of methodological refinements there is already in existence a farm model (LP) for analyzing the effects of credit insurance; an econometric specification of production functions to measure technological change and over time effects of credit insurance; a simulation model to measure farm debt capacity and changes due to income stabilization effect through credit insurance. There is also available a portfolio management model for decision making by the insurance company; this model, applicable in all countries, is originally being built with data for Panama's ISA. A sector model to determine comparative

effects of stabilization policies is being tested and will be used next year with data from Panamá.

The historical data available for Panamá on yields (1970-78) and the four years of experience of ISA (1976-79) has been organized in IICA's computer center and it is now ready for statistical analysis. Preliminary tests of the data reveal considerable differences in variability of yields by crop, by province and by farm strata, which in turn suggests the need for differentiated insurance premiums and coverages with the same degree of disaggregation. The analysis of ISA's experience indicates a considerable capacity for risk management by adjusting the proportions in ISA's portfolio. The data also provides valuable information in terms of occurrence of disasters and the magnitude of yield losses associated with them and monthly distributions of field inspections. An exhaustive analysis of this data is to be presented in the next quarter. The data is also being used in ISA portfolio management model.

In regard to field surveys, two have been completed during this quarter, one of tomato producers in Panamá and one of potato producers in Bolivia. The one in Panamá is now being processed in IICA's computer center in San José and will be used for characterizing tomato producers and testing for differences in yields and incomes among farmers with and without credit and with and without insurance. The sample contains 130 observations and each questionnaire includes as many as 80 data figures. Initial tests indicate that although

there are no significant differences in levels of input use among farmers, those with credit insurance obtained yields that were 12 percent higher than those without insurance. Also, the income of those in the first group that were affected by disasters, was on the average US\$250 larger than the second. That was the average amount paid by ISA to the Banco de Desarrollo Agropecuario, to cancell loans of farmers hit by adverse experiences.

The potato grower's survey in Bolivia includes 150 observations and from each questionnaire the data is being processed in La Paz through a contract with a local data management office. We have selected 107 variables to be transferred to IICA's computer center for further statistical analysis.

Beginning on September 1, the research team has incorporated Gustavo Arcia, a recently graduated Ph.D. in Agricultural Economics from the University of Missouri. Arcia's background and research capabilities on the aspects of risk in agriculture is expected to increase considerably the team's capacity of work. Other contributions to the research during this quarter have been developed by Peter Hazell (International Food Policy Research Institute), Andrew Hogan (University of Wisconsin) and Gregory Hanson (University of Minnesota).

CRONOGRAM OF ACTIVITIES

BOLIVIA

4th Quarter 1980

OCTOBER

1. Close of first cycle's acceptance of applications.
2. Supervision and risk management in Melga and Colomi to control losses.
3. Meeting of Board of Directors to study and possibly approve:
 - a. Diversification to non-BAB credit sources.
 - b. Expansion to other crops.
 - c. Inclusion of credit life and actuarial study of premiums
4. Carry out fertilization tests to help develop adequate technology.

NOVEMBER

1. Initial evaluation of information from field surveys.
2. Preparation of 1982 insurance plan.
3. Negotiations with AID/B, P. L. 480, and BAB to modify agreements and permit ASBA to operate with other lenders.
4. Evaluation of fertilization tests in Colomi, Aguirre and Cotán.
5. Preliminary survey of other crops and zones to be insured in the next cycle.
6. Reprogramming of activities for 1981.
7. Negotiations with other lenders.
8. Submission of credit life documents to the Superintendencia for approval.

DECEMBER

1. Continue field inspections.
2. Prepare 1981 plan for Board of Directors approval.
3. Submission of credit life program for Board of Directors approval.

YEAR 1981

JANUARY

1. To establish contacts with the Private Bank authorities in order to add private bank's clients to the insured portfolio.

Bolivia

2. To collaborate in the available statistical data study in order to establish basis to an insurance against insolvency for death of the farmer.
3. To assist in the selection of the second insurable crop on the Melga-Colomi zone.

FEBRUARY

1. Inspection of the Lequezana zone, interview with farm leaders, personnel of the Experimental Station of Chinoli, authorities from MACA and Banco Agrícola de Potosí.

MARCH

1. Inspection of the Melga-Colomi zone, in order to assist the Inspectors in the preparation of the Notice of Termination of Harvest.
2. To prepare a draft of the cattle insurance project to its application to the milk herd in Cochabamba.

APRIL/JUNE

1. To advise in the elaboration of the Insurance Program for the cultivation of Miska potato.
2. To assist in the preparation of a form in order to make a survey about the "Impact of the Insurance" in the Melga-Colomi zone.
3. To revise all forms, the policy and regulations based upon the results of the first insured year.
4. To analyze the result of the essays about fertilization, conducted by IBTA and CID.

JULY/SEPTEMBER

1. To advise in the preparation of the Insurance Program for the cultivation of the potato based upon the results of the fertilization tests and for a second harvest or for an integral insurance in the Melga-Colomi zone.

Bolivia

2. To advise in the preparation of the Insurance Program for the cultivation of the potato in the Lequezana, Potosí zone.
3. To prepare forms for the follow up survey in Melga, Colomi and Lequezana zones.

OCTOBER/DECEMBER

1. Inspection of works carried out in the Insured zones of Cochabamba and Potosí.
2. Preparation of the Working Plan for 1982.
3. Meeting with the agricultural authorities from another institutions and another departments in order to establish bases for the extension of ASBA activities.

YEAR 1982

1. To advise in the selection of new areas and new harvests, for its insurance on this year.
2. To prepare the Cattle Insurance Program.
3. To prepare a Crop Credit Life Insurance Regulation against insolvency because of farmer death.

YEAR 1983

1. Collaborate in the reaching of the goals fixed in the different Agreements of ASBA, but specially in the one suscribed between the Governments of the United States of America and Bolivia about food products commerce, signed in 1978 and that created the P.L.-480 Program, Title III, which subsidies the insurance premiums.
2. Begin at mid-year to terminate operations and negotiate complete Bolivian funding or liquidation of the company.

CRONOGRAM OF ACTIVITIES

E C U A D O R

4 QUARTER 1980

OCTOBER

1. Seminars in Guayaquil and Quito to select initial staff of the insurer.
2. Surveys of various zones to identify insurance needs.
3. Development of policies, forms, and other documents for submission to the Superintendencia for approval

NOVEMBER

1. Organize accounting, reserving, auditing, information flow and administrative systems.
2. Establish offices in Quito and Guayaquil.
3. Negotiate agreements with lenders whose loans will be insured.
4. Initial in country training of the field staff.

DECEMBER

1. Submission to the Board of Directors the Insurance plan for 1981 for Crop, Livestock and Credit-life programs.
2. Continuation of field training in-country and possibly in Panamá.

YEAR 1981

1. Insurance of initial 100 policies, probably rice in the Cuenca de Guayaquil.
2. Inclusion of an additional 50 policies in the highland area, probably corn.

Ecuador

3. Development and inclusion of the credit-life product.
4. Issuance of the first 25 livestock policies.
5. Evaluation of experience of the initial crop cycle and review of levels of coverages and premiums.
6. Begin evaluation of initial results of research work on the insured farms.
7. Preparation of 1982 Insurance Program and submission of document to the Board of Directors.

YEAR 1982

1. Expansion of insurance program to cover a larger area of rice, thus increasing the number of policies to 200. Inclusion of an additional 50 corn policies in another highland zone.
2. Training abroad for field personnel.
3. Expansion of livestock policies to 50.
4. Reevaluation of premium structures and coverage levels.
5. Initial studies of new zone and crops, especially in the eastern part of the country.
6. Development of the first research product measuring the impact of insurance at the farm level.
7. Development and submission to the Board of Directores of the 1983 insurance program.

YEAR 1983

JANUARY/JUNE

1. Reevaluate 1982 experience and adjust premiums and coverage.
2. Increase rice policies to about 350, corn to 100 and livestock to 100.
3. Initiate preparation of the final report to AID/ and the government of Ecuador.
4. Begin "gearing down" for the August 1983 project termination.
5. Prepare sectoral level evaluation of insurance.

CRONOGRAM OF ACTIVITIES

P A N A M A

4th Quarter 1980

OCTOBER

1. Computerization of ISA,
2. Operationalization of the portfolio model.
3. Initiation of variable premium structure.

NOVEMBER

1. Review of reinsurance proposals,
2. Programming of operations for 1981.
3. Development of microeconomic analysis of the impact of insurance at the farm level.

DECEMBER

1. Annual Review of operations, premium and coverages.
2. Introduction of credit life product
3. Post harvest surveys.

YEAR 1981

1. Expansion of insured crops to include at least two additional crops.
2. Inclusion of private bank lenders in ISA portfolio.
3. Initial test of sectoral impact of insurance.
4. Beginning of individualization of premium based upon 5 years of experience utilizing portfolio management model.
5. Preparation of a proposal for administrative, legal, and financial restructuring and recapitalization of the insurer.

YEAR 1982

1. Preparation of a national operations plan based upon the Government of Panamá's decisions on administrative and financial restructuring.
2. Recruit and train additional field staff for a national program.
3. Expansion of insurance to additional crops in all zones of the country.
4. Assist in renegotiating reinsurance coverages and premiums.
5. Completion of two years research at the farm level and tentative results at the sectoral level.

YEAR 1983

JANUARY/JUNE

1. Review and restructure premiums and coverages.
2. Begin "wrap up" research at farm and sectoral levels and prepare final report and recommendations to AID/W and the Government of Panama.
2. Prepare final confidential Report to ISA on IICA's recommendations for future development of the institution.
3. Assist in renegotiation of reinsurance.

CRONOGRAMA

PROGRAMA DE INVESTIGACIONES, 1980-81

Actividad	1980												1981											
	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Set	Oct	Nov	Dic	Ene	Feb	Mar	Abr	May	Jun	Jul	Ago	Set	Oct	Nov	Dic
1. DESARROLLO DEL MARCO CONCEPTUAL	[Gantt chart bars for 1980-1981]																							
1.1.1 Modelo de Decisión	[Gantt chart bar]																							
1.1.2 Modelo de Manejo de Deudas e Invers.	[Gantt chart bar]																							
1.1.3 Funciones de Producción para medir cambio tecnológico	[Gantt chart bar]																							
1.1.4 Factores determinantes de actitudes hacia el riesgo	[Gantt chart bar]																							
1.2.2 Procedimientos para determinación de Primas y Coberturas	[Gantt chart bar]																							
1.2.3 Modelo de Admin. de Cartera	[Gantt chart bar]																							
1.3.2 Conceptualización de la Oferta y Demanda de crédito con seguro	[Gantt chart bar]																							
1.4.2 Conceptualiz. de un Modelo Sectorial con precios endógenos	[Gantt chart bar]																							
2. GENERACION Y MANEJO DE INFORMACION	[Gantt chart bars for 1980-1981]																							
2.2.2 Información producida como parte de la experiencia de ISA	[Gantt chart bar]																							
2.2.3 Información sobre áreas y rendimientos de los principales cultivos	[Gantt chart bar]																							
2.2.4 Primera Encuesta de Productores de Tomate	[Gantt chart bar]																							
2.2.5 Primera Encuesta de Agricultores en Chiriquí	[Gantt chart bar]																							
2.2.6 Segunda Encuesta de Productores de Tomate	[Gantt chart bar]																							
2.2.7 Segunda Encuesta de Productores de Chiriquí	[Gantt chart bar]																							
2.3.2 Primera Encuesta de Productores de Arroz en Ecuador	[Gantt chart bar]																							
2.3.3 Segunda Encuesta de Productores de Arroz en Ecuador	[Gantt chart bar]																							
2.4.2 Primera Encuesta de Productores de Papa en Bolivia	[Gantt chart bar]																							
2.4.3 Segunda Encuesta de Productores de Papa en Bolivia	[Gantt chart bar]																							
2.4.4 Experimentos de Fertilización en Papa en Bolivia	[Gantt chart bar]																							
2.5.1 Organización del Archivo de Datos en la Sede Central	[Gantt chart bar]																							
3. ANALISIS EMPIRICOS	[Gantt chart bars for 1980-1981]																							
3.1.1 Análisis de Inform. del ISA	[Gantt chart bar]																							
3.1.2 Caracteriz. de Var. de Rendimientos y Cálculo de Primas-Panamá	[Gantt chart bar]																							
3.1.3 Implementac. y Uso de Modelo de Fincas para Agric. en Chiriquí-Panamá	[Gantt chart bar]																							
3.1.4 Implementac. y Uso de Modelo Simulación en Coclé-Panamá	[Gantt chart bar]																							
3.1.5 Análisis Comparativo de Nivel Tecnológico entre productores de Tomate-Panamá (2 años)	[Gantt chart bar]																							
3.1.6 Implementación y Uso de un Modelo de Administración de Cartera del ISA	[Gantt chart bar]																							
3.1.7 Análisis del Efecto del Seguro sobre la Demanda y Oferta de Crédito	[Gantt chart bar]																							
3.1.8 Implementación y uso de un modelo sectorial para Panamá	[Gantt chart bar]																							