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PHILIPPINES:

THE DEVELOPMENT OF THE RICE AND CORN SEED INDUSTRY

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PREFACE

The Department of Agriculture (DA) of the Republic of the Philippines has shown interest in developing the private seed industry, particularly that of corn and rice. In this effort, technical assistance was provided under the Agricultural Policy Analysis Project to assess the development potential and limitations of the corn and rice seed industry, and to offer recommendations for its development within a self-sustaining private sector organization. The assignment was performed by Dr. Federico Poey, who visited the Philippines from May 5 to June 1, 1991, and prepared the technical report from June 3-8, 1991.

Previous DA actions in this area included an external policy review of the national seed industry conducted by M. R. Turner and financed by the Food and Agricultural Organization (FAO). The review took place in January/February and was complemented with a national seed seminar on the subject at the University of the Philippines at Los Baños (UFPL), January 22-24, 1991.

A Feasibility Study on the Improvement of Seed Production and Distribution, and Establishment of Appropriate Seed Storage System presented by the Japan International Cooperation Agency (JICA) in November 1990 also relates to the objectives of this assignment.

Information from the FAO external review and seminar recommendations, as well as from the JICA study were considered along with various other documents relating to the corn and rice grain and seed situation in the Philippines. Coordinated visits to key seed producing and marketing areas, such as Mindanao, Visayas, Isabella, and Los Baños provided the consultant with direct exposure to the actual status of and potential for development of the corn and rice seed industry. It also exposed him to the relative involvement of the official and private seed sectors in the national seed industry.

The assignment was requested by Dr. Bruce Tolentino, Undersecretary of Agriculture, who assigned Ms. Marypaz Perez, PhD, Director of the Technology Development and Regional Coordination Division of the Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCAARD) to be national counterpart. Other persons visited and their institutions are listed in Appendix A.

The consultant deeply appreciates the assistance of Ms. Marypaz Perez, whose knowledge of the Philippine agricultural sector and personal contacts, as well as her dedicated cooperation in the preparation of the technical report, even on holidays and during other hours outside the normal work schedule, were essential for its successful completion. Special gratitude also goes to Ms. Melba Mulimbayan and Ms. Procy Sobreviñas for their secretarial support and collection of statistical data.

ABSTRACT

An analysis of the seed industry and related government activities was conducted to offer specific recommendations for the development of a self-sustaining, private sector seed production and marketing organization. The strategy recommended is particularly relevant to the rice and corn seed industry. It consists of active interaction between private entrepreneurs and representatives of the related official institutions at all levels of decision making in policies and actions related to parental seed allocations, production, processing, marketing, and quality control.

The legal framework and organization of government services recommended are oriented toward a private sector leadership, which would assume principal responsibility for the production and marketing of rice and corn seeds. The formation of a strong National Seed Industry Association to serve as an umbrella for the specialized seed production and import sectors and to render the required services and representations in the legal, technical, training, and communications areas is recommended to assume the leadership role.

A six-member follow-up task force with equal representation from the public and the private sectors is recommended to consider and implement the proposed strategy.

EXECUTIVE SUMMARY

The Department of Agriculture (DA) of the Republic of the Philippines has made a political decision to develop the private seed industry. In this effort, it has asked the Agricultural Policy Analysis Project, Phase II to review the present status of the corn and rice seed industry and its potential and limitations, and to offer recommendations for its development within a self-sustaining private sector organization. The assignment was performed by Dr. Federico Poey, who visited the Philippines from May 5 to June 1, 1991, and prepared the technical report from June 3-8, 1991.

Identification of the main issues that deserve attention regarding the potential development of the rice and corn seed industry is followed by the discussion and presentation of 42 general and specific recommendations. They include a general strategy and action plans within the areas of legal framework, private and public sector organizations, and seed production and marketing of the identified crops. A final chapter offers a detailed plan to implement the proposed strategy and recommendations.

The general strategy is based on procuring the active involvement and commitment of the private seed sector and the related government institutions with a clear and long-term mandate to develop a national, competitive, and self-financed private seed industry. Elements of the strategy include active participation of the private seed sector in all decision making relating to policies and actions on the production, processing, marketing, quality assurance and control, seed as well as seed-related industry promotion, research, and training. This joint involvement should establish clear support from official institutions for development of the private seed industry and create mechanisms to safeguard it from political changes or unreasonable government decisions.

The overall actions and promotion should support the formation of multispecies private seed organizations at provincial, regional, mayor island division, and national levels. Actions should allow for support from regional official organizations in the use of drying and processing facilities and equipment, the availability of basic (breeder, foundation, and registered) seeds for producers, and guidance in the quality control procedures.

The major general and specific recommendations are listed. Key issues are identified and concrete options offered for consideration by the various private/public joint committees to be formed at national and regional levels.

Within the legal framework to be established, specific recommendations are offered for fundamental amendments to the

National Seed Industry Development Act, presently under consideration by the Senate and House of Representatives. These include the balanced participation of five representatives from the public sector and five from the private sector under the coordination of the Secretary of Agriculture (or a qualified seed representative) as chairman with tie-breaking vote power.

Other amendments relate to the non-restricted importation of seeds so as to avoid establishing a protected industry at the expense of limiting the farmers' option to plant superior yielding/quality foreign varieties or to pay lower costs. Other amendments address specific issues that might detract from the otherwise well-defined mandate in favor of the private seed industry development.

A specific administrative order (AO) is recommended for enactment as a temporary regulatory measure to set the guidelines for the expected government/private interactions. A six-member (three private, three public) key Seeds Action Committee (SAC) is recommended to act as advisor and coordinator of the executive institutions, both private and public, involved in the development, promotion, and quality control of a seed industry. Other specific guidelines and functions assigned to the administrative order are recommended.

The expected strong participation and commitment of the private sector requires the formation of a National Seed Industry Association (NSIA) that legally and professionally represents the major crop seed growers and dealers in their production and marketing aspirations. NSIA functions include participation, through specialized committees, in all national and regional decision making and action implementing. Actual and potential seed growers and entrepreneurs need to demonstrate their capacity to accept the Government's challenge. If this organization and motivation is missing, the strategy will fail. An immediate series of four seed industry promotion workshops and a permanent training service responsibility is assigned to NSIA.

Likewise, the public sector should be reorganized to provide the expected support for the private seed industry. Recommendations in this area relate to strengthening the Seed Quality Control Service (SQCS) by integrating its field and laboratory services, delegating authority at the island/division levels, updating quality control field and laboratory procedures and standards (i.e. in rice seed, increase germination to 85 percent and purity to 98 percent) and establishing the Declared Quality Scheme to share quality control responsibilities with the seed industry.

It is also recommended that efficiency, liberation, and release policies in new varieties include better variety descriptions to ensure credibility in the field, as well as

laboratory identification of off-type plants and seeds.

Finally, it is recommended that a national center of excellence in seeds be established at an appropriate university to assume leadership in a continuous training and research program. Training should be at both the academic and the informal levels, including frequent applied courses at island/division, regional, and provincial levels, to reach the expected level of professionalism in the projected private seed organizations.

The development model of new private seed production and marketing organizations has to be adapted to the land tenure system of small farms largely dependent on manual technologies and family labor. This limitation is particularly restrictive for the rice seed industry where seed quality and yield potential of marketed seed is often not dramatically better than home-saved seed, as is the case with hybrid seed corn when compared to local traditional varieties. Another technical limitation is the erratic availability of public parental materials of improved varieties of rice and open pollinated (OP) varieties of corn as a consequence of the present government's paternalistic approach to the seed industry development.

Specific recommendations for alternative approaches for new seed enterprises are based on gradual development initiated at the provincial level--with minimum investment and infrastructure and initial support from government institutions for processing and quality control services--and progressing to a more sophisticated level of development including owned facilities, breeding programs, and organized marketing schemes. A three-stage corn hybrid seed industry development model, based on the supply of parental and breeding materials from ongoing university hybrid breeding programs, is presented as an alternative to form enterprises with initially localized market potential. Other recommendations deal with government/private sector interaction in the supply of rice and corn basic seeds, support services, seed prices, and national marketing policy issues.

An advanced government procurement mechanism of buffer seed stocks contracted to organized private seed organizations is recommended to minimize waste of resources and distortions in rice seed marketing attitudes. The mechanism should allow lower purchasing costs for the government and programmed marketing possibilities for the seed industry.

A six-member follow-up task force to properly consider the recommendations presented and their possible implementation should be formed at the earliest convenience. This task force should evolve into the Seed Action Committee (SAC) established under the temporary administrative order, which will eventually become the Technical Secretariat with the National Seed Industry Council to be installed by the Seed Act. This should allow continuity of purpose

and actions during implementation of the strategy.

One of the priority actions recommended was the organization of a national workshop to promote the private seed sector followed by three regional workshops for potential entrepreneurs to be presented in collaboration with NSIA.

INTRODUCTION

The Department of Agriculture (DA) of the Republic of the Philippines has shown interest in developing the private seed industry, particularly that of corn and rice. In this effort, it has contracted technical assistance from the Agricultural Policy Analysis Project, Phase II (APAP II) to assess the present status of the corn and rice seed industry and the potential and limitations for its development. It is also offering recommendations for development of the industry within a self-sustaining private sector organization. The assignment was carried out by Dr. Federico Poey, who visited the Philippines from May 5 to June 1, 1991.

This report defines the main issues involving in developing the corn and rice seed industries, followed by the discussion and presentation of general and specific recommendations on the strategy within the general areas of legal framework, private and public sector organizations, and production and marketing of corn and rice seeds. A final chapter offers an action plan to implement the proposed strategy and recommendations.

The individuals and institutions visited are listed in Appendix A.

1. PRESENT STATUS ON THE CORN AND RICE SEED INDUSTRIES

The growing demand for good quality rice and corn seeds needs to be met if the productivity of these cereals is to be increased. The area dedicated to these crops has remained stable for the last few years and possibilities for expansion are limited, while average yields increase very slowly.

Therefore, greater productivity is essential to any increase in the national rice and corn grain supply. Productivity can be increased through extensive use of high-yielding varieties and hybrids and increased fertilization. This objective must be accomplished within the framework of the typical small-scale Philippine farmer who depends largely on family labor and manual technologies.

1.1 The Rice Seed Industry

Rice is the country's most important crop based on the levels of production and human consumption. Seed production is carried on by small farmers under a program of paternalistic government guidance that has effectively introduced the use of modern varieties. However, the proportion of certified seed used is small and the system seems to have reached its limits in effectively supplying the expected future demands.

1.1.1 National Grain Production and Consumption

Table 1.1 presents the national output of paddy rice in area, production, and yield from 1981 to 1988, grouped according to three major island divisions and farming systems (irrigated and rain-fed).

The grouping by island division was selected as more meaningful for seed production and marketing considerations than the officially used characterization by 12 regions. It helps to focus the initial seed industry development issues in a logical geographical growth. For this purpose, the island divisions include the following: for Luzon, regions I, II, III, IV, V, and GMA; for Visayas, regions VI, VII, and VIII; and for Mindanao, regions IX, X, XI, and XII.

As shown in Table 1.1 for irrigated rice, the national area planted and the production stabilized around 1.85 million ha, and 5.85 million mt for the period 1985-87, increasing to 1.96 and 6.11 in 1989 from a low of 1.58 and 4.79 million ha and mt, respectively, in 1981. Unitary yield levels were 2.9 and 3.1 mt/ha level for the whole period. Rain-fed rice however, reduced its area and production from 1.76 and 3.12 million ha/mt respectively for 1981 to 1.44 and 2.87 in 1989, while yield remained between 1.8 and 2.0 ha/mt during the entire period.

TABLE 1.1. Rice Area Harvested (100,000 ha), Production (100,000 mt) and Yield (mt/ha) by Farming System and by Island Division Philippines, 1981 – 1988

YEAR	LUZON			VISAYAS			MINDANAO			PHILIPPINES		
	Area (ha)	Prod. (mt)	Yield (mt/ha)	Area (ha)	Prod. (mt)	Yield (mt/ha)	Area (ha)	Prod. (mt)	Yield (mt/ha)	Area (ha)	Prod. (mt)	Yield (mt/ha)
Irrigated												
1981	10.30	29.12	2.83	2.47	6.66	2.70	3.81	12.10	3.18	16.58	47.88	2.9
1982	11.20	34.37	3.08	2.51	7.12	2.84	3.74	11.94	3.19	17.45	53.43	3.1
1983	10.50	30.59	2.90	2.52	6.58	2.61	3.62	11.71	3.23	16.64	48.88	2.9
1984	10.97	31.61	2.88	2.86	7.55	2.64	3.72	12.20	3.28	17.55	51.36	2.9
1985	11.50	35.69	3.09	2.86	8.20	2.87	3.98	14.32	3.60	18.34	58.21	3.2
1986	11.85	36.86	3.11	2.84	8.00	2.82	4.09	14.94	3.65	18.78	59.80	3.2
1987	11.91	36.74	3.08	2.63	7.28	2.77	3.98	14.07	3.54	18.52	58.09	3.1
1988	12.40	37.21	3.00	2.82	8.17	2.90	4.34	15.68	3.61	19.56	61.06	3.1
Rainfed												
1981	8.44	15.09	1.79	5.72	9.87	1.73	3.47	6.27	1.81	17.63	31.23	1.8
1982	7.48	14.53	1.94	5.31	9.18	1.73	3.31	6.19	1.87	16.10	29.90	1.9
1983	7.06	12.25	1.74	4.30	6.96	1.62	2.51	4.85	1.93	13.87	24.06	1.7
1984	7.01	13.54	1.93	4.54	8.35	1.84	2.53	5.04	1.99	14.08	26.93	1.9
1985	7.36	15.36	2.09	4.77	8.88	1.86	2.56	5.61	2.19	14.69	29.85	2.0
1986	7.74	16.27	2.10	5.02	9.32	1.86	3.10	7.08	2.28	15.86	32.67	2.1
1987	6.18	11.56	1.87	5.08	9.79	1.93	2.78	5.96	2.14	14.04	27.31	2.0
1988	6.76	13.77	2.04	4.67	8.62	1.85	2.94	6.26	2.13	14.37	28.65	2.0

Source: BAS

According to island divisions, Luzon represents the largest rice-growing area and highest total production at 1.24 million ha and 3.72 million mt for irrigated rice and 0.76 million ha and 1.38 million mt for rain-fed rice for year 1989. Mindanao was second at 0.43 million ha and 1.57 million mt for irrigated rice and 0.29 million ha and 0.63 million mt for rain-fed rice. Visayas was the lowest at 0.28 million ha and 0.82 million mt and 0.47 million ha and 0.86 million mt respectively for irrigated and rain-fed rice. Mindanao however, demonstrated the highest yield at 3.1 million ha and 2.0 million mt for irrigated as well as for rainfed rice as compared to 3.0 million ha and 2.0 million mt for Luzon and 2.9 million ha and 1.9 million mt for Visayas for irrigated and rainfed rice, respectively, for year 1989. The same tendency is observed during the entire period from 1981 to 1989.

For seed industry development considerations, Luzon represents the highest potential for seed demand. However, the absolute demand levels in the other island divisions also justify local development of seed organizations to serve local demand. Besides, the high transportation and storage costs and relatively low margins for producing and marketing rice seeds justifies a regional approach to develop the rice seed industry as opposed to hybrid corn seed, for example.

Table 1.2 presents the retail prices of milled rice by market grades and island division criteria. Visayas consistently demonstrates higher values for "special" and "fancy" grades, P 10.53 and 10.04, respectively for year 1989), Luzon the lowest, P 8.97 and P 9.23) and Mindanao, with intermediate values, P 9.28 and P 9.43. For ordinary grade, Mindanao shows a considerably lower value, P 6.73, as compared to Luzon, P 8.84, and Visayas, P 8.52. The historic series, however, does not show a consistent trend in the relative island divisions values.

For farmgate values of rough rice, Table 1.3 shows Mindanao with the lowest prices for fancy and special grades for 1990 (P 4.40 and P 4.73), Luzon (P 5.28 and P 4.88), and Visayas (P 5.15 and P 4.97), respectively. Ordinary rice seems to exhibit no clear trends in values among the island divisions. For 1990 these values are P 4.38, P 3.41, and 4.16 for Luzon, Visayas, and Mindanao respectively.

The farmgate and milled rice premiums paid for special and fancy grades should operate as an incentive for farmers to use good quality seed, and constitutes a valid argument for marketing such seed. The uniform maturity and grain type expected from certified seed should contribute to the higher grades' selling values.

Table 1.4 shows the potential area served with certified seeds by island division, estimating 12.6 percent of the area covered with certified seed in 1989. For that year, Luzon and Mindanao had the

TABLE 1.2. Rice Retail Price by Market Grade and by Island Division, Philippines, 1981–1990
(in Pesos/kg)

YEAR	LUZON a/			VISAYAS a/			MINDANAO a/			PHILIPPINES b/		
	Fancy	Spe- cial	Ordi- nary	Fancy	Spe- cial	Ordi- nary	Fancy	Spe- cial	Ordi- nary	Fancy	Spe- cial	Ordi- nary
1981	2.79	2.71	2.59	—	2.71	2.60	2.93	2.78	2.62	2.84	2.72	2.61
1982	3.21	2.94	2.80	—	2.96	2.77	3.34	2.99	2.86	3.26	2.96	2.72
1983	3.56	3.16	2.98	—	3.24	3.06	3.73	3.23	3.08	3.53	3.19	3.03
1984	4.54	4.99	4.38	7.52	5.11	4.67	5.92	5.17	4.84	5.87	5.09	4.63
1985	8.25	6.93	6.28	7.90	6.88	6.63	7.67	6.84	6.47	8.64	7.00	6.40
1986	7.60	6.45	5.95	7.51	6.25	5.73	7.36	6.14	5.81	8.50	6.56	5.92
1987	8.01	6.47	5.77	9.01	6.46	5.96	7.76	6.53	5.87	8.55	6.61	6.00
1988	8.20	6.99	5.29	9.18	7.19	4.32	8.31	7.10	6.56	9.30	7.50	6.60
1989	8.10	8.53	6.02	10.33	8.75	7.31	9.29	8.50	7.15	10.00	8.40	7.80
1990	8.97	9.23	8.84	10.53	10.04	8.52	9.28	9.43	6.73	11.02	9.45	8.90
\bar{X}	6.32	5.84	5.09	6.20	5.96	5.16	6.56	5.87	5.20	7.15	5.95	5.46

a/ Estimated over regional values of each island division.

b/ Value estimated over total number of sample observations.

Source: Adopted from BAS.

TABLE 1.3. Rough Rice farmgate price by region, Philippines, 1981 – 1990 (in Pesos/kg)

YEAR	LUZON			VISAYAS			MINDANAO			PHILIPPINES		
	Fancy	Spe- cial	Ordi- nary	Fancy	Spe- cial	Ordi- nary	Fancy	Spe- cial	Ordi- nary	Fancy	Spe- cial	Ordi- nary
1981	1.44	1.36	1.26	1.35	1.22	1.27	1.35	1.24	1.21	1.41	1.30	1.23
1982	1.53	1.38	1.30	1.50	1.33	1.33	1.44	1.36	1.32	1.46	1.36	1.30
1983	1.87	1.55	1.48	2.02	1.43	1.45	1.44	1.48	1.44	1.61	1.53	1.46
1984	2.70	2.57	2.44	2.59	2.33	2.28	2.93	2.42	2.33	2.82	2.47	2.33
1985		4.22	3.19		3.00	2.90		3.10	2.91		3.25	3.02
1986		2.95	2.69		2.82	2.45		2.69	2.45		2.82	2.54
1987	3.14	2.87	2.62	2.94	2.85	2.53	2.90	2.79	2.58	2.97	2.92	2.57
1988	3.12	3.14	3.06	3.40	3.04	3.15	2.75	3.06	3.19	3.14	3.13	3.14
1989	3.91	4.21	2.70	4.00	4.24	2.56	3.71	4.03	2.90	3.95	4.08	3.90
1990	5.28	4.88	4.38	5.15	4.97	3.41	4.40	4.73	4.16	5.00	4.87	4.26

Source: BAS

**TABLE 1.4. Number and Area of Farms by Farm Size,
Philippines Census Year 1980**

ITEM	NUMBER		AREA (1000 has)	
	1980	:	1980	:
FARM SIZE				
Under 1.0 ha	775,191		369	
1.00 – 2.99	1,578,044		2,522	
3.00 – 4.99	588,151		2,066	
5.00 – 9.99	360,006		2,242	
10.00 – 24.99	103,723		1,406	
25.00 – More	14,608		1,117	
ALL SIZES	3,420,223		9,725	

Source: NCSO. Census of Agriculture 1980

highest values, 13.65 and 14.80 percent, compared with Visayas with only 7.89. Compared to previous years, the increases in Luzon and Mindanao are really outstanding, 9.50 and 7.09 percent for 1988.

An important issue for the seed industry is the market unit pattern that obviously favors larger clients. For the Philippines, this constitutes a strong limitation, as rice is grown by farmers in area units principally under 10 ha. Table 1.4 presents the number of farms and area used according to the 1980 Census of Agriculture. It shows that the farms under 9.99 ha constitute 96.5 percent of the total number of farms.

1.1.2 Use of Improved Varieties

The International Rice Research Institute (IRRI) and the national Philippines Rice Institute (PHILRICE) maintain excellent variety development programs that have introduced modern varieties in an estimated 90 percent of the area dedicated to rice. Nevertheless, the use of first generation certified seed remains low. Table 1.5 presents volumes of seed certified by the Seed Quality Control Service (SQCS) from 1985 to 1990.

After growth in certified seed from 8,721 mt in 1985 to 23,367 mt in 1990, the actual area coverage can be estimated at 14 percent considering an average of 50 kg/ha for the last period.

Much certified seed is either rejected or left unsold due to the lack of both programming for buffer stock requirement and government promotional campaigns. The proportion of unused seed varies from 40 to 60 percent. Therefore, the actual utilization of certified seed is estimated at 10 percent of area planted.

Table 1.5 from BPI describes area harvested, certified seed stock, and area served across the three island divisions. Again, it shows a strong proportion of certified seed that is not actually used for planting.

Certified seed used is produced from approximately 10 varieties developed by IRRI and more recently by PHILRICE. Variety selection and recommendations follow a very intensive procedure, coordinated by the National Seed Board which relies on a Recommendations Committee and a Technical Committee. The latter coordinates a national network of variety performance trials under controlled agronomic conditions and proper statistical analysis in more than 12 locations.

The production of breeder, foundation, and registered seed is programmed and produced by the Bureau of Plant Industry (BPI) through its network of 17 seed farms that operate with top-down programming. Decisions on variety definitions, basic seed allocation, and price guidelines are made through the Department of

TABLE 1.5. Potential Area Served by Certified Seed Rice Stock by Island Division, Philippines, Crop Year, 1985–1989

REGION	1985	1986	1987	1988	1989
LUZON					
Harvested Area (has.)	1,891,390	1,957,390	1,749,680	1,918,410	1,955,060
Certified Seed Stock (mt)	7,394	7,801	9,969	9,115	13,340
% Area Served	7.82	7.97	11.40	9.50	13.65
VISAYAS					
Harvested Area (has.)	759,330	795,630	770,510	749,640	783,770
Certified Seed Stock (mt)	4,440	3,850	2,618	2,446	3,091
% Area Served	11.69	9.68	6.80	6.53	7.89
MINDANAO					
Harvested Area (has.)	655,750	721,150	675,730	726,620	758,450
Certified Seed Stock (mt)	1,678	2,681	2,892	2,576	5,611
% Area Served	5.12	7.44	8.56	7.09	14.80
PHILIPPINES					
Harvested Area (has.)	3306470	3474210	3195920	3394670	3497280
Certified Seed Stock (mt)	13511	14332	15479	14137	22041
% Area Served	8.17	8.25	9.69	8.33	12.60

Source: BPI

Production of BPI and the Regional Seed Coordinators, senior officers not necessarily knowledgeable about seed activities, who are named by the Regional Directors of Agriculture, who collaborate with the presidents of the provincial seed associations.

This consulting procedure is erratic, at best, due to lack of funding for travel and the low priority given it by interested personnel. It is, however, the only formal mechanism in place to introduce new varieties and to deliver good quality seed to rice farmers. In some regions, credibility in the quality of certified seed is low and the association concept of seed growers seems to limit the participation of newcomers in the system.

Seed growers participating in the system are qualified by SQCS and required to form provincial seed growers associations to qualify for allocations of registered seed. This class is also produced by qualified seed growers in some regions.

Seed growers are small farmers who handle their production (1-8 ha) mostly by traditional, manual technologies including sun drying and manual winnowing, sometimes with small homemade equipment. Generally, no brand names are used and seed is sold in new bags with certification tags attached to nearby farmers with no significant marketing input. Sometimes "fixers" get small commissions for directing new clients to seed growers. Selling through existing agricultural input outlets has been generally ineffective.

This general description has some exceptions. At least two seed growers, Mr. B.M. Domingo in Isabella and J.M. Silva in Laguna, have established their own brands, use mechanical air and screens cleaners, and operate relatively higher areas (70-100 ha) under their own administration.

Presently more than 1,500 seed growers nationwide are organized in provincial rice seed growers associations. There is supposed to be a national federation of these associations, but it is not functioning. Their top-down organization may be contributing to the apparent lack of institutional and business motivation.

Recent attempts to make the system more effective include the promotion of seed grower cooperatives, where more centralized handling and marketing represent an evolution toward a more reliable seed enterprise concept. Some of the incentives created, such as credit availability to members, seem to undermine the marketing objectives of the concept. The generally high number of members and the relatively low margins expected at the government guideline prices present possible obstacles to the general success of the cooperative concept.

Again, exemptions can be found when strong leadership is

available. One case is Mr. Enriqueito Tejada, president of a provincial seed cooperative at southern Mindanao, which is upgrading its branded product by requiring its members to process the seed at the nearby government plants and is procuring market opportunities outside the region.

The Government's direct purchase of rice seed to assist farmers during the frequent weather calamities and for subsidized rice production programs have created expectations that affect the seed growers' marketing objectives. The expectations motivate seed growers to plan for production of more certified seed than they can manage locally. If the official purchase does not happen, they sell the seed as grain for human consumption, since rice seed is not treated. This is an extra burden on the breeder-foundation-registered production sequence of high standard seed and on the certification system that jeopardizes their potential purpose.

In summary, the "seed growers" model and SQCS certification procedure that have operated for more than 10 years have successfully introduced new varieties and created reference quality standards with over 20,000 mt of seed produced and certified last year. This is a remarkable achievement considering the very small farm units and practically nonexistent marketing mechanism, but the model has reached a plateau with the lack of new incentives and the vulnerable quality control that makes it unable to meet further growth and credibility.

Table 1.6 describes the projected breeder, foundation, registered, and certified rice seed needs considering a 25 percent area coverage by year five estimated at the January Seed Industry Seminar.

Organization of local seed enterprises based on the present cooperatives and groupings of various seed growers or more entrepreneurial models are required to fill these goals, which are considered conservative.

Present limitations for the development of an effective rice seed industry include:

- Marketing mechanisms
- Insufficient private seed organization
- Insufficient varieties and early release mechanisms
- Credibility of certification system
- Effective representation of seedsmen at decision levels
- Adequate grain marketing policy lobbying

TABLE 1.6. Rice Seed Production and Distribution Target by Seed Class, 1991 – 1995 (mt)

YEAR	BREEDER	FOUNDATION	REGISTERED	CERTIFIED
1990 (Actual)	1.00	75.00	356	23150
Projections				
1991	0.50	7.25	413	28000
1992	0.50	8.00	550	33000
1993	0.50	8.50	550	40000
1994	0.50	8.50	600	44000
1995	0.50	8.50	600	48000

Note: 11% available certified seeds to 25% on year 5. Renewal rate for rice seeds is 4 times (self-pollinated crops).

Source: National Seed Industry Seminar, January 22–24, 1991. Los

1.2 The Corn Seed Industry

Corn is the second most important crop in the Philippines, where more than 4 million hectares are grown. Yellow and white corn are produced for the animal feed industry and human consumption, respectively.

1.2.1 National Grain Production and Consumption

Table 1.7 presents the national output of corn in area, production, and yield from 1981 to 1990, grouped according to island divisions.

The national area and production shows small variations from 1981 to 1985 and then an upward trend in area, production, and yield in 1986. The most significant change occurs in yield where it increases to 1.11 mt/ha from 1.04 the previous year, which contributed to the increased production output of 3.92 million metric tons from 3.35 mt and 3.55 million ha, compared to 3.30 mt in 1985.

Very contrasting values occur at the island division criteria. Mindanao more than doubles area and production, 2.08 million ha and 3.25 million mt, over the combined values for Luzon, 0.87 and 1.03, and Visayas, 0.85 and 0.55, for year 1990. A similar relative trend is apparent for the historic series from 1981.

Table 1.8 presents the national area distribution by grain color, where the upward trend of yellow corn is clear, more than doubling from 1981 to 1990, 0.475 to 1.08 million ha. White corn area has remained very stable around 1.74 million ha.

The domestic consumption of corn for the period 1981 to 1989 is presented in Table 1.9. It shows the more consistent increments in feeds (and waste) consumption, having increased from 2.31 million mt in 1981 to 3.20 in 1989. It is clear from Tables 1.6 and 1.7 that the increasing demand for feed consumption has produced a significant increase in area dedicated to yellow corn.

The retail prices for yellow and white corn are presented in Table 1.10 for the three island divisions and the national average. For yellow corn there is a general trend to be slightly higher than white corn across years and island division groupings. For 1990 the average national prices were P 7.05 and P 6.50 per kilogram for yellow and white corn respectively. Corresponding values for Visayas were P 7.25 and 7.02, and for Luzon, P 7.36 and 6.78, respectively.

The farmgate prices demonstrate a small but opposite trend, where yellow corn sells for slighter lower values than white corn. Table 1.11 illustrates these values from 1981 to 1990 and across

TABLE 1.7. Corn Area Harvested (100,000 has.), Production (100,000 mt) and Yield (mt/ha) by Island Division, Philippines, 198

YEAR	LUZON			VISAYAS			MINDANAO			PHILIPPINES		
	Area	Prod'n	Yield	Area	Prod'n	Yield	Area	Prod'n	Yield	Area	Prod'n	Yield
1981	7.83	6.71	0.86	7.33	4.53	0.62	17.21	19.86	1.15	32.37	31.10	0.96
1982	8.02	6.57	0.82	7.66	5.07	0.66	17.93	21.26	1.19	33.61	32.90	0.98
1983	8.10	6.79	0.84	7.24	4.75	0.66	16.24	19.67	1.21	31.58	31.21	0.99
1984	7.84	6.54	0.83	7.63	5.35	0.70	17.24	21.57	1.25	32.71	33.46	1.02
1985	7.99	7.47	0.93	7.40	4.70	0.64	17.65	22.21	1.26	33.04	34.39	1.04
1986	8.42	8.24	0.98	8.27	5.24	0.63	18.76	25.74	1.37	35.45	39.22	1.11
1987	8.57	8.35	0.97	8.51	5.36	0.63	18.57	26.44	1.42	35.65	40.16	1.13
1988	9.09	9.23	1.02	8.79	5.48	0.62	19.38	29.11	1.50	37.26	43.82	1.18
1989	8.58	8.78	1.02	8.48	5.43	0.64	19.62	25.77	1.31	36.68	39.98	1.09
1990	8.70	10.26	1.18	8.45	5.51	0.65	20.81	32.52	1.56	37.96	48.29	1.27

Source: BAS

**TABLE 1.8. Corn Area by Grain Color Group, Philippines,
Crop Year 1981 –90**
(’000 has)

YEAR	WHITE	YELLOW	BOTH
1981	2763	475	3239
1982	2800	560	3361
1983	2600	551	3151
1984	2624	641	3265
1985	2630	684	3315
1986	2739	806	3545
1987	2759	851	3609
1988	2721	1004	3725
1989	2702	987	3689
1990	2739	1081	3820

Source: BAS

TABLE 1.9. Domestic Utilization of Corn, Philippines, Calendar Year 1981 – 1989
(1000 mt)

YEAR	Net Supply	: Feeds and Waste	: Manufac- ture	: Net Food Supply	: Avail. food capita (kg)
1981	3532	2313	164	989	20
1982	3717	2485	170	994	20
1983	3607	2436	156	952	18
1984	3569	2393	162	950	18
1985	3895	2631	192	100	18
1986	4281	3036	205	968	17
1987	4345	3039	214	1018	18
1988	4390	3067	221	1027	18
1989	4630	3195	231	1130	19

Source: BAS 1989. Statistical handbook on supply and utilization accounts of cereals and cereal products, 1978–1988 (updated)

TABLE 1.10. Corn Retail Price by Grain Color and by Island Division, Philippines, Crop Year, 1981–1990 (In Pesos/kg)

YEAR	LUZON a/		VISAYAS a/		MINDANAO a/		PHILIPPINES b/	
	Yellow	White	Yellow	White	Yellow	White	Yellow	White
1981	2.04	2.22	2.40	1.93	1.92	1.82	2.10	1.99
1982	2.23	2.34	2.30	1.89	1.97	1.98	2.25	2.13
1983	2.33	2.40	2.38	1.38	2.13	2.09	2.34	2.24
1984	3.67	3.19	3.53	2.29	3.29	3.22	3.71	3.61
1985	4.88	3.11	4.87	2.89	4.65	2.19	5.11	4.52
1986	4.77	4.11	4.47	2.80	4.20	3.66	4.95	4.37
1987	5.00	4.10	4.48	3.08	4.10	4.10	5.12	4.62
1988	5.35	4.59	5.88	5.34	4.48	3.47	5.65	5.65
1989	5.26	4.71	5.44	5.42	5.56	5.23	5.95	5.80
1990	7.36	6.78	7.25	7.02	6.39	6.32	7.05	6.50

a/ Estimated over regional values of each island division.

b/ Value estimated over total number of sample observations.

Source: Adopted from BAS.

TABLE 1.11. Shelled Corn Rice farmgate price by region, Philippines, 1981 – 1990 (in Pesos/Kg)

YEAR	LUZON		VISAYAS		MINDANAO		PHILIPPINES	
	Yellow	White	Yellow	White	Yellow	White	Yellow	White
1981	1.30	1.29	1.34	1.34	1.14	1.15	1.30	1.19
1982	1.48	1.41	1.38	1.32	1.19	1.22	1.34	1.25
1983	2.51	1.48	1.47	1.41	1.27	1.31	1.39	1.35
1984	2.95	2.53	2.28	2.25	2.18	2.31	2.36	2.35
1985	2.71	3.04	3.13	2.28	2.56	2.71	2.91	2.80
1986	3.07	2.86	2.81	2.51	2.44	2.44	2.70	2.55
1987	4.59	3.46	2.69	2.73	2.75	2.67	2.96	2.79
1988		3.67		2.81		2.61	3.80	2.73
1989	4.59	4.87	4.52	4.47	4.10	4.13	4.15	4.32
1990	4.41	5.14	3.85	4.93	4.30	4.22	4.43	5.07

Source: BAS

island divisions. For 1990, the national farmgate price averaged P 4.43 per kg for yellow and P 5.07 for white corn. Mindanao showed again slightly lower values as compared to Luzon and Visayas.

It is apparent that market opportunities for hybrid corn seeds may be good for the mid and long term. This depends, however, on the government macro grain policies and infrastructure development.

Presently the national demand for corn grain seems reasonably attainable, and an export potential will require increasing yields as a mechanism to reduce cost and compete on the world market. It will also require reducing transportation and handling costs by improving port roads and port facilities for direct bulk handling and exporting from the islands' ports. The Thailand experience, reaching self-consumption and becoming a traditional corn exporter can be attributed to the increase in productivity largely due to improved hybrids and varieties.

From the seed industry considerations, Mindanao represents the greatest seed demand due to its largest acreage, followed by Luzon and Vizayas with similar demand around 800,000 ha. Absolute values for the three regions demonstrate sizable seed market potential for local firms. However, the price structure for hybrid seed set up by the industry allows for a national approach to producing and selling seeds, as opposed to self-pollinated crops such as rice.

As with rice, the land tenure system of small-scale farmers does not favor large-scale, high-input farming, which limits market possibilities for large unit sales. The hybrid corn seed companies in the Philippines have opened the market and created the demand for their high-priced seed.

1.2.2 Use of Improved Varieties and Hybrids

Present usage of improved seeds for corn varieties and hybrids is relatively low. Production and marketing seeds for improved open pollinated varieties (OPV) have been more limited than for hybrid seed. OPV's production depends on the official sector's basic programming and production of certified seed by selected seed growers and government institutions.

Table 1.12 describes the certified seed volumes of OPVs and hybrid seed for corn from 1985 to 1990 and the relative area served. It is interesting to see the growing production of hybrid seed, from 1,474 mt in 1985 to 6,239 in 1990, as compared to the erratic volumes presented for OPV seeds. The relatively high volume of 1,129 mt reported for 1990 probably does not take into consideration seed not distributed. If second generation OPVs

TABLE 1.12. Certified Corn Seed OP Varieties and Hybrids Seed Production, 1985 – 1990 (in mt)

YEAR	CERTIFIED SEEDS		HYBRID SEEDS	TOTAL
	Station	Private		
1985	44	374	1474	1892
1986	53	415	1910	4270
1987	49	182	2685	5294
1988	48	215	3773	6952
1989	49	155	5089	9329
1990	67	1129	6239	12728

Note: Does not take into consideration SQCS rejections or amounts not sold which can be estimated between 40–60%.

Source: Adapted from SQCS and Pioneer data

and hybrids are considered, the percentage of improved varieties is estimated around 20 percent.

A five-year projected targets presented at the National Seed Seminar in January 1991, described in Table 1.13, shows conservative annual increase to reach 2,100 mt for yellow and 3,500 mt for white varieties of OPVs.

Breeding and testing variety programs were initially developed in the late seventies by the Institute of Plant Breeding (IPB) at UPLB and the University of South Mindanao, and to a lesser degree, at the Department of Agriculture at Isabella in Region II, Visayas at Leyte in East Visaya, and the Central Mindanao University.

A well-funded and highly technical parallel effort to produce hybrid seeds was undertaken by international and national corporations. The initial efforts of Pioneer Seed Company, Pacific Seeds, Dekalb, and San Miguel Corporation depended mainly on imported breeding materials. The early hybrids produced were highly susceptible to the fungus Downey Mildew and corn borer infestations, forcing the companies to abandon, reduce, or merge their efforts.

The use of Ridomil, a systemic fungicide that is applied to the seed, and renewed breeding for resistant lines characterizes the present situation. By 1990 Pioneer Seed Co., which had merged in 1989 with the San Miguel Corporation, produced over 90 percent of the demand, while Cargill was marketing the difference.

These companies maintain strong breeding programs that seem to have been more successful with yellow corn. The white corn market demands a traditional, very flinty corn that apparently the companies have not been able to duplicate or substitute.

The hybrid seed market was developed by highly credited corporations with adequate backing and lack of interference from the official sector. Facilities to import breeding and parental material and market opportunities to sell seeds in subsidized corn growing promotion campaigns, such as the Corn Production Enhancement Project, allowed the companies to benefit from a seller's market and steady growth. The lack of government production campaigns and an excessive supply of grain corn in the market due to a bumper crop and unnecessary imports has lowered the seed selling expectations for the coming season.

The significant hybrid seed market that has been developed confirms the potential demand for high quality seed, despite the highly priced seed and the need for greater marketing efforts to reach a small farmer clientele.

TABLE 1.13. Corn Seed (OPV) Production and Distribution Target by Seed Class, 1991–1995 (mt)

YEAR	FOUNDATION	REGISTERED	CERTIFIED
Yellow Corn			
1990 (Actual)	19.50	156.50	1020
Projections			
1991	0.11	10.00	1300
1992	0.13	11.30	1400
1993	0.14	12.60	1700
1994	0.15	14.00	1900
1995	0.17	15.00	2100
White Corn			
1990 (Actual)	6.60	49.55	158
Projections			
1991	0.17	16.00	2200
1992	0.20	17.20	2400
1993	0.23	19.30	2600
1994	0.25	23.00	2900
1995	0.28	25.00	3500

Source: National Seed Industry Seminar, January 22–24, 1991. Los Banos
Adopted from unpublished data.

The cost of hybrid seed to farmers was P18.00/kg in 1983, P 27.50 in 1985, P 40.00 in 1989, and P 58.33 in 1991.

This experience confirms the experience of other developing countries (i. e. Kenya, Thailand, India, Guatemala) that good quality seed and well conducted marketing schemes are vital to the development of a reliable private seed industry. These achievements are characterized, however, by the hybrid concept of seed production and marketing in crops with high multiplication rates (as in corn, sorghum, and particularly, vegetables).

In the OPVs seed industry development, an example of a successful commercial seed production and marketing operation is found in the province of Bukidnon in Northern Mindanao where Mr. Canama markets his own brand name with yearly production of 70 ha mainly of the white grain OPV IPB Var 4.

There is also evidence that at least one seed grower is attempting to enter the hybrid seed market. This is the case of Mr. Benito Domingo who has added a modest corn breeding program to his already well-established rice and OPV corn seed company in Isabella.

It is evident also that there is ample availability of good, national farmers and entrepreneurs, who would participate in a competitive seed market if given the opportunity.

1.3 General Strategy for the Development of the Private Seed Industry

The required national increases in good quality seed from improved varieties with timely delivery can be achieved through the development of a national, competitive, and self-financed private seed industry. The following discussion develops issues and recommendations for the legal framework, private and public seed organizations, and production and marketing operations for the seed industry that are part of the recommended **General Strategy for the Development of the Private Seed Industry.**¹

Specific recommendations will address the actions and individuals that should lead the development of the Private Seed Industry; they include private and public sector interactions and specific interests in a constructive self-sustaining mechanism.

The following guidelines should, directly or indirectly, contribute to the objective of the strategy--development of a national, competitive, and self-financed private seed industry:

¹ The numbers in parentheses indicate the identification assigned to the recommendation made in this document.

- Active participation of the private seed sector in the decision making mechanisms at national and regional levels that include policy and actions related to production, processing, marketing, quality control, promotion, and training opportunities in seeds.
- Regionalization of actions with active participation of the regional private seed sector. This involves maximum commitment from regional public institutions, universities, seed growers, and commercial enterprises to meet regional seed needs.
- Clear support from the official institutions in favor of the private seed industry development.
- Protections from government policy changes for political or arbitrary reasons to guarantee a safe investment and an environment conducive to business.
- Development of a non-compulsory official seed quality control system to provide norms, services, and guidance to the private seed sector.
- Establishment of a flexible, well-represented and motivated working mechanism to initiate and monitor implementation of this strategy.

2. LEGAL FRAMEWORK

The official regulatory mechanisms that relate to seed activities need to be adapted in order to create long-term confidence for capital investment and commitment while reassuring collaboration from the government institutions for the establishment of a permanent and progressive private seed industry.

2.1 Modifications to the Proposed Seed Act (2)

There is no official comprehensive Seed Law or government mandate to ensure the development and promotion of quality seed production, distribution, and utilization.

There are, however, the Senate Bill 401, and the House Bill 28002 (Appendix B), both presently being deliberated in the Senate and House of Representatives to create what is to be called the National Seed Industry Development Act of 1991.

Both versions are clear in their mandate to promote the private seed industry. However, important operational sections conflict with their intended pro-private sector commitment. A brief review of those sections and recommended modifications follow.

2.1.1 More Private Seed Sector Representation in NSIC (2.1)

As proposed in S.B. 401, the version of May 16, 1990, the National Seed Industry Council (NSIC) will have nine members. Only three would be private sector representatives, all from accredited farmers' organizations. Not even one private seed sector organization is included. If the private sector is to take the expected leadership in seed production and marketing activities, it must be involved in major decision making and implementation.

Therefore, it is recommended that the Council have strong representation from both the public and the private sectors (2.2).

The Council could be composed of 11 members, five from the public sector, five from the private sector, and a chairman with tie-breaking voting power. The members could represent the following specific institutions:

1. Department of Agriculture (DA), Chairman
2. Bureau of Plant Industry (BPI)
3. Institute of Plant Breeding (IPB, UPBL)
4. Crops Research Division (CRD, PCARRD)
5. Philippine Rice Research Institute (PHILRICE)

6. One representative each from the following private organizations:

- a) Rice Seed Growers Association
- b) Corn Seed Growers Representation
- c) The Philippine Seed Industry Association
- d) Farmers Association
- e) Nursery Operators Association

The person selected to represent each institution **should not** have ex-officio status (2.3). An ex-officio appointment could significantly reduce the continuity or assurance of commitment for long-term directions/thrusts identified for the seed industry. It is more convenient to identify individuals assigned to each institution that are committed to seed-related activities. These individuals should be named on a permanent fulltime basis with time dedication rotated among the different members. This would allow continuity in the expected permanent attention to seed-related issues handled by the Council, avoiding the traditional interruptions and inconsistencies in policies due to political or unexpected changes.

The acting members should have the following qualifications: technical training and experience in seed production and technology; and past or current involvement in seed production, evaluation, and/or marketing activities, either in a private capacity or as a government employee.

A compromise might involve accepting the ex-officio representation, but with acting, technical counterparts in that capacity.

It is recommended that the Seeds Action Committee (SAC), proposed for the purpose of monitoring a new temporary administrative order in Section 2.2, become the secretariat as defined in the Senate bill. It has also been recommended that SAC serve as the transitional task force for the consideration and implementation of all proposed recommendations until the Seed Act is fully operational to assure continuity of actions and commitments.

These same recommendations are valid Sections 4 and 8 in the House bill.

2.1.2 Non-Restricted Importation of Seeds (2.4)

S.B. 401, Section 15 (a) restricts importation of "... commercial quantities where the species are being produced

locally ..." This protection of the national seed industry would hinder farmers from benefitting from the highest possible yield quality potential, or lower price, if the local industry is not capable of producing it.

If any such restriction is needed, it should specify only that importation of the same variety of seeds as those produced locally will not be allowed. This decision could be placed in the eventual bylaws or regulations of the law. The same recommendation is valid for the House Bill, Section 12 (a).

2.1.3 Ample Opportunities to Market Seeds (2.5)

S.B. 401 in Section 3 (j) restricts marketing of seed by defining a seed dealer as ". . . any person, firm, agency or corporation engaged only in the marketing of seeds." It is recommended that this clause be eliminated.

2.1.4 Other Modifications (2.6)

In S. B. 401 Section 3. 1, add the words, seed growers, producers and traders so that the sentence reads as follows: "Seed control shall mean the regulation of seed marketing through registration of seed growers, producers and dealers..."

In Section 10, related to the formation of the secretariat, add the following words after "agricultural crop production and development program:" It should also coordinate and motivate actions conducive to the development of the private seed industry."

In Section 13 (b) relating to the functions of the Bureau of Plant Industry (BPI), eliminate production, distribution and so that the sentence reads as follows: "...shall have the direct responsibility for the regulation of..."

In Section 13 related to the functions of Philippine Rice Research Institute (PHILRICE) eliminate registered and certified so that it reads as follows: "...and propagate them into breeders and foundation seeds, and..."

In Section 16 change certified seeds so that it reads as follows: "... Revenues from the sale of government produced non-certified seed and..." The same recommendation applies to House Bill Section 14 (c).

Other modifications in the House Bill should include:

In Sec. 3 (j) add producers so that it reads as follows: "...registration of corn seed producers merchant/dealers..."

In Sec. 9 eliminate guarantee in "...produced in order to endure (and guarantee) the quality..."

At the end of that paragraph completely eliminate the following sentence: Under no circumstances should quality control of locally produced seed be more rigid than that of imported seeds.

2.2 Proclamation of a New Seeds Administrative Order (3)

Until a seed act takes effect, the seed activities need to be regulated and oriented within the defined strategy. The official Administrative Order No. 32, Series of 1988, which outlines present "Revised Policies and Guidelines on Seed Production and Distribution System" is updated and expanded below to include the basic elements conducive to the implementation of the private seed industry. These elements should serve as a transition to the upcoming seed act as modified according to the above recommendations.

2.2.1 Constitution of a Seeds Action Committee (3.1)

A seeds action committee (SAC) should be created to advise and guide the executive departments, boards, private sector seed organization, and other institutions involved in the promotion and quality control of the seed industry. It should function as technical secretariat for the coordination and execution of the proposed guidelines to be proclaimed.

SAC should have six members with equal representation from the private and public seed sectors. The members should be selected from the probable members of the proposed National Seed Industry Council (NSIA) established under the Seed Act. In essence, SAC would represent a transitional stage in the implementation of the National Seed Industry Council, for not only its composition but also its functions. Once the Seed Act takes effect, SAC should take on an advisory role for the NSIA Secretariat. It will also collaborate in the proposed reorganization of the Seed Quality Control Service (see Section 4.1) and should function as a task force for implementation of the recommendations presented in this document (See Section 7).

The private seed representatives should be identified among the leadership of the proposed National Seed Association organization presented in Section 3.1. The public institutions more related to the seed sector are the Seed Quality Control Service (SQCS) at BPI, PCAARD, and the Institute of Plant Breeding (IPB) at the University of the Philippines at Los Baños (UPLB).

2.2.2 Guidelines for Private Seed Industry Promotion Mandate (3.2)

The new administration order should include the following actions:

- Strengthen participation of qualified seed growers, cooperatives, and enterprises in the multiplication of foundation and registered seed stocks of public varieties. (See Section 5.2.)
- Plan and assign production of buffer stock--breeder, foundation, registered, and certified--to related institutions and selected seed growers, cooperatives, and enterprises. (See Section 5.5.1.)
- Promote the Private Seed Industry Development Strategy through activities promoted by SAC. (See Section 2.2.1.)
- Upgrade technical capabilities of seed laboratories personnel, field inspectors, and seed growers. (Section 4.1.)
- Plan the production of breeder, foundation, and registered seed classes for three- to five-year periods at the regional and national levels. This should be addressed by the variety development institutions, government seed producing institutions, and the seed crop growers associations at the regional and national levels with the collaboration of SAC.

In order to reduce the paternalistic government attitude, while recognizing private sector participation, a modified text of Administration Order No. 32 that could be added to the proposed new Administrative Order is proposed:

(1) Production, multiplication, and maintenance of breeder seeds shall be the responsibility of institutions that developed the variety such as: Bureau of Plant Industry, University of the Philippines at Los Baños (UPLB), International Rice Research Institute (IRRI), University of Southern Mindanao (USM), and other public and private agencies and companies involved in the varietal improvement program.

(2) Multiplication and purification from breeder to foundation seeds of public materials shall be done by major experiment stations and seed farms of the BPI and PHILRICE.

(3) Purification, multiplication, and maintenance of breeder seeds shall be the responsibility of the plant breeder of the agency that developed the variety.

(4) The production of certified seeds shall be done by qualified (registered) seed growers, cooperative or enterprises, who would have the freedom to establish their own markets and outlets.

(5) Breeder and foundation seed classes of public varieties shall be allocated to stations/regions/provinces through the Regional Seed Coordinators in cooperation with a technical committee of NSIA in collaboration with SAC.

(6) Registered seed of public varieties shall be distributed to bona fide certified seed producers designated jointly by the regional and provincial seed coordinator and assigned representation of the technical Committee of the NSIA in collaboration with SAC.

(7) Only analyzed, tested, tagged, and sealed seeds produced under the certification system shall be distributed as certified seeds.

(8) No breeder seeds of public varieties shall be distributed by the breeding institutions without proper clearance from BPI, and then only to private seed organizations.

(9) Only the Plant Seed Breeder (PSB) approved varieties will be recommended for certification. Production and distribution of non-recommended varieties are authorized under the producers' or farmers' own responsibility.

(10) The Regional Seed Coordinator and the Technical Committee of the NSIA shall be responsible for monitoring the seed distribution and production program of experiment stations, seed farms, seed cooperatives, private seed companies, and other seed production entities in their area.

3. PRIVATE SEED SECTOR ORGANIZATION

To achieve strong participation of the private sector a formal commitment is needed from the involved seed growers and entrepreneurs that they will assume the major responsibility for the permanent and reliable delivery of high quality seeds to the farmers. In order to achieve this national commitment, it is necessary to clearly define their needs, goals, and responsibilities in the large-scale seed production and marketing operations required.

An effective mechanism is also needed for participation in decision making at the national and regional levels on technical, production, and marketing policies that will have to be implemented in cooperation with the corresponding official institutions. This can only be achieved through organization of an active national association to serve as umbrella group for the private subsectors involved in the seed industry. Recommendations to accomplish this end are presented below.

3.1 The formation of National Seed Industry Association NSIA (5)

The Association should develop a scheme for an organization that represents the production and marketing interests of the major seed crop growers and dealers and receives services and advice in legal, technical training, and public relations matters. The association should represent seed producers and importers at the national and regional levels in all seed-related policy decisions and action implementation. An obvious function of the association is to collaborate with the official seed-related institutions in working out the more suitable mechanisms for the development of the private seed industry.

The organization could serve as an umbrella for producers and importers of seeds for the major crops. For services and advice to its members, the Association should establish corresponding committees for legal, technical, training, and communications and public relations matters. Each committee should have representatives from the major crop chapters. The association should have an institutional representative from each of the three island divisions. It should be economically self-sustaining through a self-imposed contribution mechanism from members, donors, or other sources. During its start-up period, the NSIA leadership should work closely with SAC.

General activities for the suggested chapters and committees are summarized below.

3.1.1 Major Crops Chapters (5.1)

Rice and hybrid corn seed activities have developed in different ways, resulting in two completely different commercial mechanisms for production and marketing. Open pollinated varieties of corn, produced by government institutions, are now handled through the same mechanism as rice seeds.

However, the possible availability of hybrid corn and rice parental material from the government and other international private and public sources to the national private sector should modify this structure, resulting in development of a more "seed integrated" industry, where an enterprise could handle both crops (and maybe others). This integration could well lead the way for enterprises that specialize only in seeds, including wholesale and retail marketing of national production and imports and exports of diversified species.

The inclusion of the importers as an independent chapter seems reasonable. Although they sometimes conflict, their general objective of fulfilling national seed requirements justifies a permanent forum to jointly analyze the most convenient alternatives. It is a fact also, that some companies will operate in both imports and national production, thus participating in more than one chapter. Seed exporters could be classified in the national producers category, as obviously they will first produce the seeds locally.

The present situation calls, then, for four main chapters:

- Corn Seed Producers
- Rice Seed Producers
- Other Crops Seed Producers, and
- Seed Importers

Services to members can be organized in specific committees, each with chapter representatives who should identify the sources of expertise. The service committees should include the following:

- Legal Committee
- Technical Committee
- Training and Communications Committee
- Public Relations Committee
- Honor Committee

3.1.2 Legal Committee (5.2)

Legal responsibilities should include lobbying in Congress for a favorable seed law, ensuring proper execution of agreements and contracts with the government or outside institutions, and advising members on the legal and fiscal procedures to establish to manage their enterprises and seed imports and exports.

3.1.3 Technical Committee (5.3)

Subcommittees to provide special expertise for handling seed-related agronomic, marketing, and research issues could be formed on an ad hoc basis.

For example, the agronomic issues would include the very sensitive production programming of basic seeds and their allocation to private seed growers and enterprises at the national and regional levels. Also, policies on the use of liberated public breeding material and conflicts or modifications of present certification control norms could be assigned to subcommittees (i.e. the Declared Seed Quality Scheme discussed in Section 4.1.5).

Marketing issues could include negotiating for advanced buffer seed stock contracts with the government or participating in government determination of guideline prices.

Research issues could include active collaboration with universities or research institutions in defining, preparing, and conducting biological or marketing research related to seeds.

3.1.4 Training and Communications Committee (5.4)

Important services for which the Association could claim major responsibility are the promotion of the seed industry privatization concepts and opportunities through the presentation of workshops (Section 4.3.1) and the massive training program required to upgrade technical staff for the production, processing, marketing, and quality control activities at the provincial, regional, and national levels (Section 4.3.2).

The workshops should be developed immediately by SAC and followed by this committee, once the NSIA has been formalized. The training activities could be technically coordinated by the recommended Training and Research Center (Section 4.3.2) with logistics and complementary instructors from the Technical Committee of the Association. Other communications issues, such as publication of newsletters and editing or reproduction of technical manuals and support documents for the industry, should be handled by this Committee.

3.1.5 Public Relations Committee (5.5)

The Association objectives and services should be promoted nationally and internationally. Many conferences, symposia, and workshops at the national and international levels are constantly occurring where the seed industry should be considered. Institutional promotional campaigns, procurement of fiscal incentives for the industry, lobbying for international projects and opportunities that have elements related to the seed industry are some of the issues that this Committee could undertake.

3.1.6 Honor Committee (5.6)

This committee should have the responsibility for overseeing ethical behavior of members and taking action when it is necessitated by disputes, conflicts, or other unexpected issues related to the objectives and good name of the association.

3.2 Strengthen Public/Private Seed Sector Interaction (6)

The establishment and progressive development of a national, private seed industry ultimately depend on government understanding and backing. If these are missing, erratic, or insufficient, the private seed industry will be unable to fully develop or will develop more slowly.

Therefore, cooperation between the two sectors is a condition sine qua non. This relationship should exist at all levels, and should involve the continuous interaction of ideas and actions. The interaction should allow for the establishment of permanent and long-term conditions that would prevent any regression due to political actions of future governments. Strong representation of private seed organizations at all levels of government decision making that involve the private seed sector would safeguard against this possibility.

The temporary Seeds Advisory Committee (SAC) recommended (Section 2.2), which would have representation from the eventual leadership of NSIA, should receive the full cooperation of the Association. This would be the most immediate and important opportunity to strengthen the private sector.

To achieve this interaction, the association needs to have an effective mechanism for representation at the regional level, where many decisions are made, and where most companies will be located. This is particularly important within the seed production and allocation mechanism of the public varieties by the institutions of DA, BPI, and the universities. The service committees of NSIA should guide these representatives through an appropriate presence of qualified personnel at the regional and national levels.

4. PUBLIC SECTOR ORGANIZATION

Two official activities directly related to the development of a private seed industry are the quality control services and the liberation and availability of new varieties. In order to expand the possibilities for a growing competitive seed industry, policy changes are recommended as discussed below.

The present Seed Quality Control Service (SQCS), which is responsible for the seed certification system, operates within the BPI. It is managed by a team of 17 professionals at the central office and operates or coordinates 17 laboratories. The Service has suffered various reorganizations that have reduced personnel, financing capacity, and technical effectiveness, principally due to the regionalization of the DA.

Currently, the seed laboratories and field inspectors depend on different divisions at the regional level, reducing the authority and commitment of the central office. The 107 technicians operating the laboratories are mostly well qualified and experienced. However, the 249 field inspectors, who currently have added responsibilities, seem to be poorly trained and motivated. Their salaries and traveling allowances are extremely low.

For example, the 1989 rate of rejection of seed lots was 16 percent, which is high for well-managed seed programs. A major cause of rejection is varietal mixtures. It can be speculated that there are deficiencies at the field level, such as poor inspections, or at the laboratory level, such as excessive standards and/or erroneous identification of varietal mixtures. A major source of insecurity in the quality control is the field inspectors' unreliability, particularly regarding the seed sampling procedures from farmers' seed lots.

The authority of the certification agency in accepting or rejecting seed lots is generally not questioned. Furthermore, there is a tendency to extend the qualified certification standards over time and over seed lots and to expect other benefits besides seed quality, in yield, for example. Yield is an attribute of the variety and not of the certification system, unless reduction in yield results from poor seed germination or vigor.

Obviously, this infallibility or superiority lasts only until a breakdown in the weakest link in the chain of the system, and there are many of them. For this reason, the importance of seed certification responsibility should not be overestimated. The seed producer (field and postharvest) is the main agent in procuring and maintaining seed quality. Certification confirms their capacity to produce high quality seed and not a substitution.

In summary, the certification system is functioning more on dogmatic principles and routine execution of duties than on technical and purposeful commitment of the inspectors, laboratory personnel, and seed growers. The teaching and collaborative function of this type of service to motivate a conscientious attitude toward the increased production of good quality seeds, particularly toward the rice and OPV seed growers, seems to have been relegated to a secondary level of importance. The service has lost credibility and is incapable of serving the higher volume of seed that could be expected if a successful private seed sector industry is to be developed.

Recommendations that should contribute to developing a greater commitment, while expanding the area and volume of service coverage are described below.

4.1 Strengthen SQCS Central and Regional Authority and Commitment (7)

SQCS should have a well-structured organization that makes maximum use of available resources, including outside institutions and private seed sector organizations.

4.1.1 Integrate Field and Laboratory Services (7.1)

Seed field inspectors and laboratory services should be reincorporated under the SQCS administration. Inspectors and seed analysts should work closely in permanent interaction, assisting each other during the peak demand of services. In the island division recommended, this cooperation can be extended among the regions. This concept of cooperation can be extended for training and promotional activities addressed to seed growers and other seed production and marketing organizations in the division.

4.1.2 Expand Central and Regional Management (7.2)

Although it is under the central office administrative control, SQCS should strengthen its regional presence and effectiveness by delegating technical authority and by expanded participation of regional organizations in planning and operations. This regionalization should concentrate the three island divisions.

In addition to this regionalization, active commitment from the seed industry, universities, and plant breeding institutions should be incorporated in the management structure at the central and island division levels of the SQCS. This can be accomplished through Quality Advisory Committees (QAC) that should actively participate in the programming and eventual implementation of the SQCS activities at the central and division levels.

At the national level, QAC could include representatives from SAC, PHILRICE, IPB/UPLB, and NSIA, for example. A typical

Division QAC could include a rice breeder, a corn seed representative, a rice seed representative, a local university seed specialist, and the laboratory heads in the Division. Every QAC should state the number and possible members from its division. Obviously each region would have different representatives in the QAC, although they may come from the same national organization. These committees open opportunities for the Technical Committee of NSIA. Likewise, SAC could participate in the Central Committee and send delegates to the QASSs.

4.1.3 Delegate Authority at Division Level (7.3)

Each SQCS division would control the certification service, seed growers, and sales outlet registration, inspection reports, and issuance of tags and collection of fees through their established regional laboratories and field inspection force. They would play a leading role in the proposed Declared Quality Scheme (Section 4.15).

The Central SQCS office would manage and coordinate administration and financial functions, and supervise and support all other technical activities of the divisions.

This division concept aims to provide more direct service and involves more participation of the regional seed growers and entrepreneurs that would most likely produce and market within that division. Planning and promotional activities could be programmed at the division level, allocating the defined activities among the laboratories and collaborative institutions.

4.1.4 Update Quality Control Procedures (7.4)

All field inspections should be supported by adequate forms on which the inspector demonstrates the precise procedure used in sampling each field according to accepted international methodologies. This should include a diagram of the field, the places sampled, the number of plants in each sample and the numbers of off-types or special interest plants procured.

Well-developed variety description should be used where differential characteristics of each variety are well documented (non-existent now). The relative variation in quantitative characters needs to be defined to properly evaluate plants that are genetically off-type as opposed to those that are environmentally off-type. This knowledge need to be acquired with the assistance of the breeders that developed or produced breeder seed of the commercial varieties. Likewise, the information and capacity to identify off-type plants and seeds should be offered to seed growers, so that they could question the certification system if necessary.

Presently the seed variety descriptions prepared by PHILRICE

are useful only for agronomic purposes, but are inadequate to establish clear differentiation characters for the field inspector and laboratory analyst. Varietal descriptions done by IRRRI consider more characters but do not allow for variation acceptance of quantitative characters.

The certification standards for germination and purity should be increased to 85 percent and 98 percent respectively, in order to improve possibilities for demonstrating superiority of certified seeds and also as a mechanism to discourage non restricted seed producers from entering the system.

4.1.5 Strengthen the Declared Quality Scheme (7.5)

A way to multiply the effectiveness of the limited resources available at SQCS is to strengthen the concept of internal quality control in seed organization by expanding the present "Declared Quality Scheme" effectively used with the hybrid seed corn industry. This concept promoted by FAO, basically consists of delegating to qualified seed production organizations that can demonstrate technical capacity and physical resources as "certification collaborators" to SQCS. They would be authorized to conduct their own field quality control inspections and/or laboratory analysis subject to SQCS spot checks. The certified collaborators would issue their own tags and be subject to annual certification by SQCS.

If demand justifies it, independent private quality control companies offering field inspection and/or laboratory services could also be established. They would charge a fee to the seed companies/cooperatives, offering an independent quality control system to avoid conflict of interest within the seed companies. These companies would be technically updated and "certified" by SQCS.

4.2 Improve efficiency of variety liberation policies (7.6)

The availability of more new varieties and their faster introduction in the seed production/marketing phase will expand opportunities for competing seed enterprises and cooperatives.

It is recommended that the criteria for liberating varieties include more frequent liberation of varieties that could be justified on the basis of regional yield performance, plant or grain quality, and superior agronomic traits, and not only on the basis of superior yields. Also, an early release policy should be adopted to reserve first marketing opportunities for organized private seed organizations. For example, after one year of testing, a variety can be liberated on a conditional basis; if the expected performance is not confirmed in the second year, the variety can be retrieved from the official certification system.

Individual farmers or seed growers should not be candidates for early releases in order to give preference to private seed organizations. The potential for the rapid expansion of the present hybrid corn seed industry, presently dominated by international seed companies, will partially depend on the support that new local firms could receive from the government corn breeding institutions. Since universities including UPBL and the University of Southern Mindanao are presently active in corn hybrid development programs, the recommendations are made as described below:

- Corn inbreds and segregating materials from official programs and universities should be made available to qualified private seed organizations as a means to promote and strengthen private breeding research.
- The early release policy should be coordinated with an accelerated multiplication mechanism of breeder, foundation and registered seed. In the case of rice seed, PHILRICE, in collaboration with SAC and the Technical Committee of NSIA and official seed coordinators, should implement a planning procedure to define areas, volumes, location, timing, and allocation for the basic seed classes mentioned. The same should be done by the corresponding institutions for early and accelerated increase of new corn varieties or hybrids from public institutions.
- This planning should be done at the national and regional levels in a period of no less than three years. The fact that breeder seeds, and to a lesser extent, foundation seeds, constitute relatively lower volumes, allows for more rational allocation planning. Those categories can be produced in fewer locations, provided good storage can be available, for period of two to three years. This planning reduces the chances for contamination and frequent failures in seed delivery. Under unexpected demand, stocks programmed for the second year could be used ahead of time. As the program is reviewed yearly, periodic adjustments in production plans can be implemented.
- It should be the organized seed producers who first market seeds from the new varieties. The level of representation and collaboration that the private seed enterprises are able to manage and sometimes the official seed policies will determine the effectiveness of the recommendations presented.

4.3 Implementation of Promotional and Training Support (8)

The implementation of the proposed strategy requires

immediate and extensive promotion to reach the potential entrepreneurs and to provoke an adequate exchange of ideas among the leadership and potential candidates who would consider and implement relevant decisions.

It is important to consider also that the expected growth of the seed industry will require a guided effort to train all personnel at all levels of the production, processing, marketing, and assurance and quality control phases.

4.3.1 Organization of Seed Industry Promotional Workshops (8.1)

The workshops should be oriented first to the national, high decision level, to develop the necessary commitment from the official and private institutional leadership. Following this high level workshop, at least three regional and provincial workshops at the island divisions should be organized to promote the interest in and commitment to the development of new private seed organizations at the provincial or regional level.

The NSIA should lead the logistics and programming of the workshops in technical collaboration with the universities, SQCS, and other sources of support.

Subject matter for the workshops should be derived from the recommendations presented for the private and official seed sector organizations in Sections 2 and 3.

4.3.2 Organization of Permanent Seed and Training (8.2)

Short Courses. For promotional workshops, two levels of training activities should be implemented: one addressed to decision makers and potential trainers to update and standardize the required course content information; and other numerous, specific, applied short courses offered to practitioners at the provincial and regional levels.

Typical training subjects include the following:

- Seed production (by crops)
- Laboratory seed control
- Seed conditioning and handling
- Seed health and pathology
- Seed marketing
- Seed enterprise management
- Quality control in field, plant and storage

- Seed plant design
- Basic seed maintenance and multiplication

Academic courses (8.3). Undergraduate and graduate level courses should be promoted in all agronomic university programs.

National Seed Center (8.4). A highly specialized National Seed Training and Research Center should be established to provide support for training and research of the highest possible level of expertise at the national and regional levels. This center should develop a Master of Science level specialization in seed technology and production.

The center should be able to offer both academic undergraduate and post-graduate training in all phases of seed production, conditioning, and marketing activities.

The short-term training program recommended in the preceding section should be planned and organized under the guidelines and with the collaboration of the center.

The center should be located at a university, considering the important influence it will have in the region where it is established.

4.4 Extension responsibility to seed growers (9)

Parallel to the recommended private seed organizations, technical assistance for seed production should continue to be provided to individual farmers who produce their own seeds.

The extension service should be especially trained for this responsibility, initiating its production with certified seed. Registered seed should be allocated only to organized seed operations.

5. SEED PRODUCTION AND MARKETING

In corn, the hybrid seed industry has established a very effective system that has grown to more than 1,000 mt a year for the last four years. The growth of the industry is limited only by the effective demand for grain corn that could be developed. The 1990 production of over 6,000 mt of good quality seed to more than 17,000 small farmers confirmed the successful implementation of the hybrid seed corn industry. This production is remarkable considering its high selling cost and difficult marketing conditions. However, these volumes account for only 8 percent of the corn area, a figure that indicates the high potential for more seed industry participation.

In rice, the recent effort to reorganize seed growers associations into cooperatives is a step in the right direction toward more entrepreneurship. In addition, it will help expand production and marketing of rice seed, identify leadership among seed growers, and start to establish brand names and improve marketing possibilities.

The field production of seeds is the major component of the seed industry with regard to investment in area, time, and money. This production can be handled as an integrated activity of a seed enterprise or be contracted out, thereby constituting the raw material for the industry.

In the Philippines, the typical model for rice seed production is an integrated activity, whereby selected seed growers produce, dry, clean, and sell the seed to neighbor farmers or government programs. Contracting out is done in the hybrid corn seed industry, where large corporations contract the seed production with farmers. The corporation then dries, clean, treats, and sells the seed under its brand name and extensive distribution systems.

In both cases the present land tenure system in the Philippines limits the seed production fields to small lots, generally one to seven hectares in size, because of the limit on basic area imposed by the agrarian reform. Both production systems have proven effective in providing the farmers with good quality seed of improved varieties. A limitation, however, is the rate of the increased volume that is required to meet national demands for improved productivity, in both rice and corn.

Another constraint is the limited and erratic availability of parental material of improved rice and open pollinated corn varieties. This may be a consequence of the paternalistic approach in the promotion of seed growers and the lack of effective programming and delivery of breeder, foundation, and registered seed to seed growers.

The following recommendations take these limitations and opportunities into consideration.

5.1 Promotion of Private Seed Organizations at the Regional Level (10)

To promote the gradual development of private seed organizations, it is convenient to motivate seed growers and entrepreneurs within a growing pattern of production and marketing possibilities. The pattern can begin at the provincial level with minimum investment and infrastructure as well as initial government support for drying, processing, storage services, and availability of parental material. As each organization develops within a competitive market, it will need to expand its facilities, production, and distribution infrastructure and sources of parental material, including its own breeding programs.

It seems reasonable that a medium-range objective for new private seed organizations can be to explore the seed market potential, which is limited by freight and comparative regional production and marketing advantages and constraints within each island division. Rice and corn seeds have ample absolute market potentials, as described in Sections 1.1.1 and 1.2.1.

The proposed gradual private seed organization development model should complement existing national organizations, such as the large hybrid corn seed companies (Pioneer and Cargill) and marketing organizations (Ayala Corporation). The model should diversify in other seed crops and develop regionalized markets in competition and/or association with the newly developed private seed organizations.

For rice seed, actual seed growers should become contract growers of larger organizations. These organizations can well be enterprises formed by a group of seed growers evolving to include production, processing, and market infrastructure, and preferably handling more than one crop. They can also originate from agricultural input distributors that may contract production with seed growers, associate with them, or include their own productions in an integrated seed industry.

As an initial promotion activity, NSIA, in close collaboration with SAC, and regional and provincial seed coordinators, and other organization such as universities, NGOs, and church groups, should review local possibilities and encourage current seed growers, seed cooperatives, agricultural input distributors, and enterprising individuals to form private seed organizations.

On the national and regional levels, it is recommended that no less than four workshops be presented in the next six months regarding how to form these organizations. The first workshop

should be at a national level to assure communication interaction and consent for policies at the highest level. The other three should address potential entrepreneurs at the island division level regarding the new opportunities to participate in a private-oriented seed industry. The workshops should be immediately pursued by SAC and the Training and Communications Committee of NSIA, as soon as it is implemented.

Conditions should be established to foster the development of new regional and/or national hybrid corn seed production and marketing organizations. The hybrid seed industry development is favored over models for self-pollinated crops like rice, because of the nature of higher possible margin, renewed seed sales convenience for better results and relatively small storage and transportation needs. The biggest limitation is the source of the parental material.

The availability of promising corn breeding material to new seed organizations can be accelerated through an open private sector oriented policy of the official institutions. IPB and USM are presently involved in corn hybrid development programs. They seem to dispose of well-organized, properly staffed programs to develop competitive hybrids and maintain development of new, improved lines. Both programs have evolved to the stage of performance evaluation of selected experimental hybrids compared to the commercial hybrids. IPB is already participating with experimental hybrids in the national network of variety evaluation sponsored by the National Seed Board.

For the more enterprising and better funded organizations, breeding materials are available from international institutions such as CIMMYT, IITA, U.S. universities, and breeding programs in tropical countries. The exchange of breeding materials can also be negotiated with private companies from those countries.

The strategy should consider making this material accessible to the private seed organizations. Ways to achieve this can be promoted to suit the development of the industry.

First, the national official institutions should make available the parental material (single crosses) of tested hybrids to the industry. The production and marketing of the official hybrids by the individual companies could be initiated utilizing the official designation of the hybrid and/or assigning their own designation to better satisfy their marketing campaigns.

As individual companies develop and strengthen their financial and human resources, they could handle the inbred lines and produce their own parental material.

A third stage of development would have the companies establishing their own breeding programs. The initial source of

breeding material could well be the already developed inbreds of the commercial public hybrids and other inbreds and segregated breeding materials from the official programs.

The following actions are recommended:

- Streamline and increase seed production and marketing possibilities of rice, OPVs, and other crops when possible.
- Develop brand names for private seed organizations and procure new sales outlets.
- Where convenient, promote production diversity of crop seed.
- Promote the possibilities of raising the price of certified seed for new varieties, or when quality standards or growers' prestige justifies it. (Present price regulations do not limit sales prices outside the government, but it is usually interpreted otherwise).
- Train personnel from seed organizations in seed production technology, conditioning, and quality assurance and control practices.
- Promote enterprises to enter the hybrid corn business depending on the IPB and USM breeding material and other international sources.
- Parallel to the seed industry development, continue to promote the present "seed growers" model where no evolution of a "seed enterprise model" is occurring.

5.2 Assurance of Breeder, Foundation and Registered Seed (11)

Parental seed production planning and allocation in collaboration with the seed organizations through the different mechanisms recommended, such as the NSIA Technical Committee (see Section 3.2), should result in adequate availability of registered seed for interested seed growers of public varieties.

The opportunity for qualified seed organizations to produce their own foundation and registered seed would reduce their dependence on the official sectors for parental materials.

5.3 Promotion of Support Services (12)

Private seed organizations should have available drying, conditioning, bagging, and treatment services in the government seed farms. Those installations generally need upgrading, repair, and maintenance, but most importantly, they need to be appreciated

by the potential users. Personnel with knowledge of seed processing and plant design identified by SAC or NSIA should review these plants and recommend adjustments in efforts to motivate by local seed growers to use them.

Portable drying and processing equipment and good storage capacity is needed also. One strategy is to tap NAPHIRE and National Food Authority (NFA) facilities, but capital investment loans or donations will be required to improve the facilities and purchase portable equipment. A reasonable fee should be charged for these services.

The training component should emphasize the advantages of efficient drying, conditioning, and treatment to encourage seed growers to improve their post-harvest practices.

5.4 Production and Maintenance Credit (13)

Land Bank's financial assistance to farmer cooperatives should be extended to include provision for consumption/maintenance loans for seed growers. This or other sources of financing should be procured for private enterprises. A practical form of seed industry loan can be to mortgage seed inventories for a percentage of sales value until sales are realized.

The rule of "no seed, no loan" for DA-assisted programs should be continued to increase certified seed utilization at the farm level.

5.5 Grain and Seed Marketing Policies (14)

Unless the macro marketing components and the necessary market adjustments related to increased production of seeds and grains are properly considered, the success of any comprehensive seed production and industry development program will be limited.

Government policies on grain and seed procurement and distribution, input subsidy, and other macro policies affecting agricultural production should be carefully analyzed in terms of their impact on total agricultural productivity and concomitant changes in the grain seed industry.

5.5.1 Buffer Seed Stocks (14.1)

Current government procurement of seeds should be limited to simply ensuring a seed security or buffer stock for use during calamities and unexpected demand changes.

A target level of procurement (around 5-10 percent) of expected certified seed demand per year for two to three years should be programmed and contracted to qualified seed organizations. This should be done with sufficient time allowed

for seed growers to program their production schedules.

This action will not only reduce the current seed growers' current dependence on the government as the sole or major buyer, but will also encourage them to identify and develop new market outlets for their produce.

Total government purchase in any given year should be discussed with the corresponding NSIA committee which, in consultation with its members and the regional or provincial seed coordinator, would allocate the quota (volume and area of production) for each region, province, and finally, each organized private seed organization.

Emergency purchase for calamities, which has become a regular activity of the DA, should be included in this security stock and funds should be allocated/appropriated accordingly.

Government purchases in support of credit line agency-sponsored agricultural production programs should also be programmed and contracted in advance, following the same mechanism.

This mechanism would achieve a cost savings for the government by promoting a bidding opportunity where contractual prices of certified seed could be purchased below the levels currently set by the government. It will be to the advantage of the organized seed sector to increase its production and marketing volumes in a well-programmed fashion.

5.5.2 Seed Pricing (14.2)

Seed prices should be allowed to float in relation to the market situation, giving premium to quality or promotional differences and encouraging more product differentiation through the use of brand names and other marketing schemes in selling seeds.

Although government checks on unscrupulous growers and traders who could take advantage of unnaturally adverse market situations are needed, they should be as limited as possible and occur only when unfair trade practices (from the point of view of the farmers and seed growers) are rampant.

An adequate margin should be given over the price of grains to encourage private seed organizations to really specialize in the seed business, including temporary storage and not selling the seeds as grains when prices of the latter become competitive. This margin should be identified by each private seed organization, depending on existing marketing possibilities.

Although meant as a guide for government purchases, memos that set prices for government procurement are interpreted by

farmers as price ceilings and they discourage them from making extra marketing efforts to improve their sales. These guideline prices should, in any case, be established in discussions between the government and the NSIA.

5.5.3 Grain imports (14.3)

Policies on grain importation should be carefully considered and adequately programmed to consider potential impact not only on the local grains market, but also on the concomitant changes in seed demand as farmers' production targets are reduced when untimely or excessive importations occur.

Government intervention in grains marketing should be reduced to a minimum to allow market adjustments and natural market forces to stabilize prices and supply/demand for the commodity.

A stable corn and rice grain market is the primary force motivating the development of the seed industry. This market should first satisfy national demand and eventually participate in the export potential. Therefore, the inclusion of the private seed industry development strategy along with the major grain promotion campaigns and projects should be considered.

6. FOLLOW-UP ACTIONS

In the short term, further consultation and implementation of the recommendations presented will require a close follow-up by a knowledgeable and motivated team. The team should have initiative and access to private sector organizations and enterprises as well as to public sector-related institutions, and be able to dedicate adequate time to the required activities.

To achieve effective follow-up actions, the following recommendations are addressed to the Secretary of Agriculture:

6.1 Establish a Seeds Action Committee (SAC) (15)

It is conceived that the members of the team to be assigned to initiate implementation of the above recommendations would eventually be active members of the committees, boards, and councils established as the strategy for developing the private seed industry evolves. A team should function as a task force with ample capacity and authority to initiate and conduct the actions required. As a logical transitional phase, this team should be the one to lead the recommended administrative order proclamation in Section 2.2. Eventually, it can further evolve to be the Technical Secretariat of the National Seed Industry Council defined in the proposed Seed Act.

6.1.2 Composition

A six-member team should be immediately organized. Its composition should be selected, qualified individuals with knowledge of the related seed issues, delegated authority, and time availability. The member from PCARRD should function as chairperson to serve for at least two years or until the Seed Act takes effect, whatever comes first.

The Committee should be assigned to a suitable institution with adequate administrative services and financial resources to support direct administration, travel, and other direct costs from the team members.

6.1.3 Functions

SAC should conduct the following functions:

- Analyze and prioritize implementation of recommendations.
- Coordinate seed activities as defined in the administrative order to be implemented, incorporating timely recommendations when advisable.
- Promote and prepare working sessions within and among

interested parties in preparation for workshops presentation to be offered at national and regional levels.

- Promote the private seed industry in close cooperation with NSIA, when actively established.
- Procure additional international technical assistance.
- Maintain records and report to the Secretary of Agriculture on the constraints and opportunities encountered.

6.1.4 Immediate Action (1.6)

- Review the presented recommendations and consult with corresponding institutions on the feasibility for their implementation in the short or medium term.
- Prepare an action plan covering at least 12 months.
- Prepare a list of collaborators for specialized assignments or consultations and procure their commitment.
- Organize and present seed industry national and regional promotional workshops on the development of the private seed industry.
- Invite qualified members from candidate institutions for the National Seed Industry Council to participate, on an on-call basis, in the SAC internal meetings and sponsored workshops.
- The following specific projects should be implemented:
 - Feasibility study for self-financing mechanisms of NSIA and NSIC.
 - Evaluation of government seed processing support services to the private seed industry, considering additional portable equipment, and self-financed cost structure.
 - Evaluation of government hybrid corn breeding programs and the means to strengthen them through international availability of breeding materials.

- Evaluate extension service improvement of home saved seed quality.
- Development of seed training program and course curricula.

6.2 Explore International Technical Assistance (1.7)

Explore long-term international technical assistance to accelerate the establishment of the permanent mechanism recommended. Examples include start-up investments in the physical installations of the NSIC, NSIA, upgrading of the service laboratory and seed plants, and initial financing of their administrative costs. A self-financing mechanism for this component should be devised through industry taxation on seed sold.

The assistance suggested for a period of two to three years would allow for initial development of capital funds for those components through the accumulation of the fees collected during the life of the project. The international assistance should also finance the services of one or three full-time seed specialists to professionally collaborate with the national seed institutions and enterprises.

7. CONCLUSIONS AND RECOMMENDATIONS

The analysis and discussion of relevant issues in development of a private seed industry in the Philippines resulted in the identification of general and specific recommendations that are included in this chapter. The intent is to focus attention on the actions that must be implemented.

The recommendations should be further discussed by the involved persons from the public and private seed sectors in order to implement appropriate actions.

1. General strategy for the development of the private seed industry
2. Modifications to the Proposed Seed Act (2)
 - 2.1 More private sector representation in NSIC
 - 2.2 Strong representation from the public and private sectors on the council
 - 2.3 Council representation not ex-officio
 - 2.4 Non-restricted importation of seeds
 - 2.5 Ample opportunities to market seeds
 - 2.6 Other modifications
3. Proclamation of new seeds administrative order
 - 3.1 Constitution of a Seeds Action Committee (SAC)
 - 3.2 Guidelines for a private seed industry promotion mandate
4. The formation of a National Seed Industry Association
 - 4.1 Major crops chapters
 - 4.2 Legal committee
 - 4.3 Technical committee
 - 4.4 Training and Communications Committee
 - 4.5 Public relations committee
 - 4.6 Honor committee
5. Strengthening public/private seed sector interaction
6. Strengthening SQCS Central and Regional Authority and Commitment
 - 6.1 Integration of field and laboratory services
 - 6.2 Expansion of central and regional management
 - 6.3 Delegation of authority at division level
 - 6.4 Update of quality control procedures
 - 6.5 Strengthening of the declared quality scheme
 - 6.6 Improvement in the efficiency of variety liberation policies

7. Implementation of promotional and training support
 - 7.1 Organization of seed industry promotional workshops
 - 7.2 Organization of a permanent seed training program
 - 7.3 Workshops
 - 7.4 Academic courses
 - 7.5 National seed center
8. Promotion of private seed organizations at the regional level
9. Assurance of breeder, foundation, and registered seed
10. Promotion of support services
11. Production and maintenance credit
12. Grain and seed marketing policies
13. Buffer and seed stocks
 - 13.1 Seed pricing
 - 13.2 Grain imports
14. Establishment of a seed advisory committee
15. Immediate action to implement recommendations
16. Explore international technical assistance

APPENDIX A

PERSONS AND INSTITUTIONS VISITED

Mr. Abolos	Seed Inspector, Kabacan
Bliss Aday	Pioneer Seed Co., Manila
Josephine Aguinaldo	Seed Technician, SQCS/BPI N.E.
Carlos Andam	PCAARD
Senen Bacani	Secretary, D.A.
Dante Balbas	President, Phil. Seed Industry Ass.
Augusto Baluyut	Assistant Director, BPI
Rustica Bautista	Chief, Crop Production Division/BPI
Apolonio Bautista	Under Secretary for Operations, DA.
Elli Belosilio	Prov. Seed Coord. N. Cotobato
Edmundo Bulatao	Ayala Development Corporation
Richard Burgos	Research Specialist, OED/PCAARD
Ester Capio	Commodity Specialist, CRD/PCAARD
Socorro Carro	Dir. Planning and Evaluation, D.A.
Rodolfo Casco	BF 1, Midsayap
Pedro Castillo	Manager, NSF/IPB
Willy Co	Seed Grower, Allied Botanical Corp.
Carlos Cordoba	Amas Seed Plant
David Dawe	Consultant, AAPP
Herminio de la Cruz	Rice Breeder, PhilRice
Benito Domingo	Seed Grower, Isabella
Erwin Durano	Seed Lab. Pioneer, Gen. Santos
Benjamin Fermil	Prv. Ag. Officer, N. Cotobato
Rodger Garner	USAID/ Manila
Felix Geronio	Seed Grower, N.E.
Elpidio Guevara	Provincial Seed Coord. Midsayap
Randy Haueta	Deputy Director, IPB
Jose Hernandez	Rice Breeder, UPLB
Manuel Lantin	Assistant Secretary, D.A.
Antonio Laurel	President, Ayala Agric. Dev. Corp.
Vicente Lim Jr.	Project Dir. AAPP
Manuel Logroño	Corn Breeder, IPB
Ester Lopez	Assistant Director, CRD/PCAARD
Joel Lumagbas	Production, Cargill, Gen. Santos
Renato Mabesa	Seed Technology, IPB, Los Baños
Abraham Mandao	Assistant Scientist, IRRI
Melchor Manuel	Seed Grower, Kabacan
Willy Masdogan	Seed Prod. Specialist, USM
Antonio Mercado	Corn Breeder, BMD, Isabella
Vicente Muyco	Superintendent, Tupi Seed Farm/BPI
Santiago Obien	Director, PhilRice
Fernando Ocat	Seed Quality, Pioneer, Gen. Santos
Pablito Pamplona	Deputy Director, USMARC/USM
Marypaz L. Perez	Director, TDRCD/PCAARD
Cledualdo B. Perez	Executive Director, PCAARD
Guillermo P. Prat	Administrator, Pioneer, G. Santos
Enriquito Quijada	Pres. Seed Growers Cooperative, Min.

Arcadio Rodolfa	Plant Manager, Ayala Cor. G. Santos
Artemio Salazar	Corn Breeder, IPB
Guillermo Salzedo	Pres. Seed Grower Ass., Kabacan
Emmanuel M. Serrano	Corn Breeder, Pioneer, Gen. Santos
Erlinda Sevilla	Chief, SQCS, ZPI
Bilio Sidio	Provincial Seed Coordinator, Min.
Abel Z. Silva	Seed Grower, AlSCO Dev. Corporation
Bruce Tolentino	Under Secretary, D.A
Sant Virmani	Rice Breeder, IRRI

HOUSE OF REPRESENTATIVES

II. No. 28002

=====
INTRODUCED BY CONGRESSWOMAN ACOSTA, CONGRESSMEN
GUERRERO, PEREZ, ANDAYA, BAUTISTA, SR.,
CONGRESSWOMAN STARKE, CONGRESSMEN ANGELES (R.),
CARLOTO, DIANALAN, AQUINO (F.), ESCUDERO III,
GUANZON, RAMIRO, JR., AND THE MEMBERS OF THE
COMMITTEE ON AGRICULTURE AND FOOD, THE COMMITTEE ON
WAYS AND MEANS AND THE COMMITTEE ON APPROPRIATIONS
=====

AN ACT TO PROMOTE AND DEVELOP THE SEED INDUSTRY IN THE
PHILIPPINES AND CREATE A NATIONAL SEED COUNCIL, AND
APPROPRIATING FUNDS THEREFOR

*Be it enacted by the Senate and House of Representatives
of the Philippines in Congress assembled:*

1 SECTION 1. *Title.* - This Act shall be known as the
2 "Philippine Seed Act of 1970."

3 SEC. 2. *Declaration of Policy.* - It is the policy
4 of the State to promote and accelerate the development
5 of a viable seed industry. For this purpose, the
6 Government shall:

7 ✓(a) Conserve, preserve and develop the plant
8 genetic resources of the nation;

9 ✓(b) Encourage and hasten the organization of all
10 sectors engaged in the industry, integrate their
11 activities, and provide assistance to them;

12 (c) Consider the seed industry as a preferred area
13 of investment;

14 (d) Encourage the private sector to engage in seed
15 research, sowing and development and to take the lead in
16 mass production and distribution of good quality seeds

1 and seedlings; and

2 (e) Provide the local seed industry protection by
3 *regulate the importation of seeds which can be already produced*
4 ~~against unfair~~ competition from imported seeds. *competit*

5 SEC. 3. *Definition of terms.* - When used in this
6 Act, the following terms shall mean as follows:

7 (a) *Seeds* mean plant materials used for planting
8 purposes for the production of food, forage, fibers,
9 industrial crops, oil, orchids, flowers, lawn grasses
10 and trees. Seeds include botanical seed, meristem and
11 clonal propagules such as tubers, corms, cuttings,
12 meristem and micropropagated plantlets;

13 (b) *Seed lot* means a definite quantity of seeds
14 identified by a lot number or other identification
15 marks, or every portion of the bag or any other
16 container of which is uniform for the factors which
17 appear in the label within allowable tolerance;

18 (c) *Seed industry* refers to the different
19 components or chain of activities undertaken by
20 individuals, associations, corporations or firms in the
21 production, processing, testing, handling, grading,
22 storage, and distribution or marketing of seeds for
23 production purposes, with economic benefits;

24 (d) *Seed testing* refers to the accurate and prompt
25 analysis of seed samples to determine seed quality and
26 reporting of the results of the analysis to all
27 concerned;

28 (e) *Seed certification* refers to a system of seed
29 production geared toward maintaining genetic identity
30 and varietal purity of seeds of superior crop varieties;

(f) *Quality control* refers to a systematic approach

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1 to achieve and maintain desired quality standards of
2 seeds;

3 (g) *Seed sample* refers to a quantity of seeds drawn
4 in accordance with the rules for seed sampling
5 promulgated under this Act, and are properly labelled,
6 identified, and submitted for testing;

7 (h) *Labelling* refers to all labels and other
8 written, printed or graphic matter in the container
9 giving information as required in the rules and
10 regulations promulgated under this Act;

11 (i) *Seed producers and traders* refer to any person,
12 individual or juridical, engaged in the production
13 and/or marketing of seeds;

14 (j) *Seed control* refers to the regulation of seed
15 marketing through registration of seed
16 merchants/dealers, compulsory labelling and the
17 establishment of minimum quality seed standards; and

18 (k) *Regulated seed* refers to the kind and/or
19 varieties of crops whose seeds are declared as subject
20 to quality control pursuant to the provisions of this
21 Act.

22 SEC. 4. *National Seed Industry Council.* - There is
23 hereby created a National Seed Industry Council,
24 hereinafter referred to as the Council, to replace the
25 existing Seed Board. The Council shall be composed of
26 the following who, except for the representatives from
27 the private sector, shall serve in *ex officio* capacity:

28 (a) Secretary of the Department of Agriculture,
29 Chairman;

30 (b) Director of the Bureau of Plant Industry,
31 Vice-Chairman and Executive Director;

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- 1 (c) Secretary of the Department of Science and
- 2 Technology, Member;
- 3 (d) Secretary of the Department of Agrarian Reform,
- 4 Member;
- 5 (e) Dean of the College of Agriculture of the
- 6 University of the Philippines, Los Baños, Member;
- 7 (f) Director of the Bureau of Agriculture Research,
- 8 Member;
- 9 (g) Director of the Bureau of Forest Development,
- 10 Member;
- 11 (h) Director for Crop Research, PCARRD, Member; ✓
- 12 (i) Representative of the National Economic and
- 13 Development Authority, Member;
- 14 (j) Director of the Philrice Research Institute, ✓
- 15 Member;
- 16 (k) Director of the Institute of Plant Breeding, ✓
- 17 Member;
- 18 (l) One representative each from the following
- 19 sectors:
- 20 (1) Fruit growers; *new 1 and 2 seed growers*
- 21 (2) Nursery operators; ✓
- 22 (3) Vegetable farmers; *1*
- 23 (4) Orchid cutflowers and ornamental plants
- 24 farmers;
- 25 (5) Edible and non-edible seed farmers;
- 26 (6) Seed traders;
- 27 (7) Philippine Seed Industry Association; and ✓
- 28 (8) *Corn* Cereal seed farmers. ✓
rice
- 29 The representatives of the sectors enumerated
- 30 herein, who shall be nominated by their respective

2 President of the Philippines and shall serve for a term
3 of three (3) years. Only citizens of the Philippines
4 shall be members of the Council.

5 SEC. 5. *Duties, Powers and Functions.* - The
6 Council shall have the following duties, powers, and
7 functions:

8 (a) To formulate policies for the conservation,
9 preservation and development of the plant genetic
10 resources of the nation in consonance with the
11 provisions of this Act;

12 (b) To provide a comprehensive policy and create a
13 healthy investment climate for the development of the
14 seed industry in all its aspects, and delineate and
15 coordinate the activities of the various sectors
16 involved in the industry;

17 (c) To encourage persons, associations,
18 cooperatives and corporations engaged in genetic
19 resources conservation, varietal development, production
20 and processing, quality control, storage, marketing, and
21 distribution of seeds to adopt systems and practices
22 which improve the quality of seeds for distribution to
23 farmers;

24 (d) To identify infrastructure and other support
25 services in priority areas geared toward the development
26 of the seed industry;

27 (e) To formulate comprehensive plans for the
28 national seed industry development program consistent
29 with the updated Medium-Term Philippine Development Plan
30 in order to achieve self-sufficiency in the production
31 of high quality seeds;

1 (f) To formulate policies that will stimulate plant
2 breeding activities;

3 (g). To grant awards, subsidies, and other forms of
4 financial assistance to seed or plant breeders who
5 developed or are developing outstanding varieties or
6 cultivars;

7 (h) To promulgate rules and regulations to
8 implement the provisions of this Act;

9 (i) To provide for the establishment of seedling
10 nurseries in all provinces of the Philippines; and

11 (j) To exercise corporate powers in accordance with
12 the Corporation Code.

13 SEC. 6. *Council Meetings.* - The Council shall hold
14 regular quarterly meetings: *Provided,* That the Chairman
15 may convene the Council in special meetings, or upon the
16 written request of at least three (3) members, to
17 consider urgent matters. If the Chairman cannot attend a
18 meeting, the members present shall select from among
19 themselves a temporary presiding officer. If any of the
20 members shall not be able to attend any meeting of the
21 Council, he shall send a duly authorized representative
22 to exercise his powers and perform his functions except
23 the power to vote. The presence of eight (8) members
24 shall constitute a quorum.

25 The members of the Council shall not receive any
26 compensation: *Provided,* That the members of the Council
27 shall be entitled to travel allowances, to be determined
28 by the Council for every attendance in the meetings.

29 The Executive Director shall be charged with the
30 duty of implementing the policies and guidelines

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1 established by the Council.

2 SEC. 7. *Council Secretariat.* - The Council shall
3 have a secretariat which shall furnish the necessary
4 administration, secretarial and other support services
5 to the Council. The Secretariat shall be under the
6 direction and supervision of the Executive Director.
7 The personnel of the Secretariat shall be appointed, and
8 their compensation fixed by the Chairman of the Council
9 upon the recommendation of the Executive Director.

10 SEC. 8. *Technical Secretariat.* - There is hereby
11 created under the Council a Technical Secretariat which
12 shall assume the functions of the existing Philippines
13 Seed Board Technical Working Groups. The heads and the
14 members of the Technical Secretariat shall be appointed
15 and their compensation and tenure fixed by the Council
16 subject to the Civil Service rules and regulations.

17 The Technical Secretariat shall establish seed
18 standards and formulate systems and procedures for
19 varietal identification, evaluation, nomination, review
20 and approval for registration, commercial release and
21 discontinuation of crop cultivars or varieties in the
22 national agricultural crop production and development
23 program. SAC

24 SEC. 9. *Seed Certification and Quality Control.* -
25 The Council, through the Bureau of Plant Industry (BPI),
26 shall prescribe the standard quality of seeds to be
27 produced in order to ensure and ~~guarantee~~ the quality of
28 such seeds. Seeds which are imported or locally
29 produced and are sold or offered for sale by government
30 agricultural stations, dealer, and growers/producers
31 shall be subjected to the prescribed standard quality in

1 accordance with the provisions and the rules and
2 regulations promulgated under this Act. Under no
3 circumstances should quality control of locally-produced
4 seeds be more rigid than that of imported seeds.

5 To effectively carry out the provisions of this
6 section, the Bureau of Plant Industry (BPI) shall
7 perform the following functions:

8 (a) To sample, inspect, conduct analysis of and
9 test seeds that are locally produced or imported, and
10 are sold or are for sale within the Philippines; and

11 (b) To collect fees for inspection, testing, and
12 analysis of seeds submitted pursuant to this Act and the
13 rules and regulations promulgated hereafter, subject to
14 the approval of the Council.

15 SEC. 10. *Role of Constituent Sectors.* - The
16 Council shall adopt a seed industry development program
17 within ninety (90) days after it has been constituted.
18 The Bureau of Plant Industry (BPI) shall serve as the
19 lead agency in the implementation of the said program.
20 To ensure the effective implementation of this program,
21 the following sectors shall perform the following tasks:

22 (a) The Department of Agriculture (DOA) has the
23 overall task of directing and coordinating the
24 activities of its component agencies in accelerating the
25 development of the seed industry;

26 (b) The Bureau of Plant Industry (BPI) shall have
27 direct responsibility for the regulation of seed
28 production and distribution;

29 (c) The University of the Philippines at Los Baños
30 (UPLB) shall provide leadership in genetic resources

1 conservation through the National Plant Genetic
2 Resources Laboratory (NPGRL) and genetic improvement and
3 varietal development through the Institute of Plant
4 Breeding (IPB);

5 (d) The Philippine Constabulary-Integrated National
6 Police (PC-INP) or the existing law enforcement agency
7 shall extend all assistance in the enforcement of seed
8 industry laws and regulations to attain the objectives
9 embodied in this Act;

10 (e) The Board of Investments (BOI) shall consider
11 the development of the seed industry as a preferred area
12 of investment;

13 (f) The private sector of the seed industry shall
14 direct their collective efforts towards increased
15 cooperation and coordination with the government
16 agencies. Farmers' organizations shall take active part
17 in the conservation of the plant genetic resources of
18 the nation; and

19 (g) Other government agencies not directly involved
20 as participating agencies in the seed program shall
21 cooperate with the Council and its agencies in the
22 implementation of the provisions of this Act.

23 SEC. 11. *Incentives.* - The private sector may
24 avail of the following incentives to develop the local
25 seed industry:

26 (a) Individuals, farmers' organizations,
27 cooperatives, and corporations ^{majority} fully owned by Filipinos
28 shall be entitled to technical assistance from the
29 Government, including training in seed technology, and
30 availment of seeds and results of basic research
31 studies;

1 (b) Technical equipment used in seed processing,
2 sowing; meristem culture, storage and quality testing by
3 individuals, farmers' organizations, cooperatives, and
4 corporations wholly ^{incorporated} owned by Filipinos shall be exempted
5 from duties and taxes during their first five (5) years
6 of operation subject to the following conditions:

7 (1) The equipment are not manufactured domestically
8 in sufficient quantity of comparable quality and at
9 reasonable prices;

10 (2) They are reasonably needed and will be used
11 exclusively by the importer in the operation of its
12 business;

13 (3) Approval of the National Seed Industry Council
14 was obtained prior to the importation;

15 (4) In case the importer transfers, sells or
16 disposes of the equipment without prior approval of the
17 National Seed Industry Council within five (5) years
18 from acquisition, the former shall be solidarily liable
19 with the transferee to pay double the amount of tax
20 exemption given it. The Council may permit transfer,
21 sale or disposition of said equipment within the said
22 five (5) years if made to another person or entity
23 enjoying similar incentives; or for reason of proven
24 technical obsolescence; or for purposes of replacement
25 to improve and/or expand the operations of the importer;
26 and

27 (5) The importer shall not enjoy a similar
28 incentive under the Omnibus Investments Code of 1987;
29 and

30 However, cooperatives organized and registered under

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1 Republic Act No. 6939 shall be covered by Sections 61,
2 62 and 63 of the said law pertaining to the tax
3 exemption privileges of cooperatives.

4 (c) Expenses for research of private Filipino seed
5 producers shall enjoy a two hundred percent (200%)
6 deduction from their gross income in accordance with the
7 rules and regulations to be promulgated by the
8 Department of Finance within ninety (90) days from the
9 effectivity of this Act.

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10 SEC. 12. *Prohibitions.* - The following acts are
11 prohibited:

12 (a) Importation of commercial quantities of species
13 of seeds that are being produced locally, except seeds
14 difficult to grow under ordinary conditions or when
15 allowed by the Council;

16 (b) Exportation of rare species, varieties, ~~lines~~
17 and strains of plants in the country except for
18 scientific or international exchange purposes which
19 shall be determined by the Council; and

20 (c) Such other activities as the Council may deem
21 fit to prohibit.

22 SEC. 13. *Penal Provisions.* - Any person, firm or
23 association who shall violate any provision of this Act
24 or the implementing rules and regulations promulgated
25 pursuant to this Act shall, upon conviction, be punished
26 with a fine of not more than Ten thousand pesos
27 (P10,000.00) or imprisonment of not more than seven (7)
28 years, or both, or cancellation of licenses or permits,
29 at the discretion of the Court: *Provided*, That in the
30 case of a firm or association, the penalty of
31 imprisonment shall be imposed upon the officer/officers

1 who knowingly participated, abetted, or consented to the
2 commission of such punishable acts.

3 SEC. 14. *Seed Fund.* - There is hereby created a
4 special account in the General Fund to be known as the
5 Seed Fund which shall be obtained from the following
6 sources:

7 (a) One million pesos (P1,000,000.00) to be
8 appropriated out of any funds in the National Treasury
9 not otherwise appropriated;

10 (b) The existing Seed Revolving Fund;

11 (c) Revenues from the sale of certified seeds and
12 plants materials, seed processing and testing fees,
13 field inspection fees, seed export and import fees,
14 license fees, issuance of permits to seed growers and
15 producers, fines collected for violation of this Act;
16 and

17 (d) Donations from private or public entities,
18 either domestic or foreign.

19 The Fund, which shall be administered by the
20 Council, shall be used exclusively to finance the seed
21 industry development program.

22 SEC. 15. *Appropriations.* - The amount necessary to
23 carry out the provisions of this Act is hereby
24 authorized to be appropriated in the General
25 Appropriations Act of the year following its enactment
26 into law and thereafter.

27 SEC. 16. *Authority to Search and Confiscate*
28 *Inferior Seed Lots.* - In order to carry out effectively
29 the provisions of this Act, the Executive Director or
30 his duly authorized representatives are hereby

1 authorized to search and seize pursuant to a lawful
2 order of the court seed lots found to be in violation of
3 the provisions of this Act.

4 SEC. 17. *Repealing Clause.* - All laws,
5 presidential decrees, executive orders and other
6 executive issuances, or parts thereof, which are
7 inconsistent with the provisions of this Act are hereby
8 repealed or modified accordingly.

9 SEC. 18. *Effectivity Clause.* - This Act shall take
10 effect upon approval.

Approved,

SENATE
S. No. 401

SENATE OF THE PHILIPPINES
OFFICE OF THE SECRETARY
RECEIVED
DATE: MAY 16 1991
TIME: 5:10 BY: EP

Introduced by Senators Laurel and Aquino
(Per Ctte. Rpt. No. 162)

AN ACT
TO PROMOTE AND DEVELOP THE SEED INDUSTRY IN THE PHILIPPINES AND
CREATE A NATIONAL SEED INDUSTRY COUNCIL AND FOR OTHER PURPOSES.

Be it enacted by the Senate and House of Representatives
of the Philippines in Congress assembled:

1 SECTION 1. Short Title. -- This Act shall be
2 known as the Seed Industry Act of 1991. *NATIONAL SEED*
3 INDUSTRY DEVELOPMENT ACT OF 1991. *ACT*

4 SECTION 2. Declaration of Policy. -- It is hereby
5 declared the policy of the State to promote and accelerate
6 the development of a [viable] PROGRESSIVE seed industry and,
7 for this purpose, the government shall:
8 a. conserve, preserve and develop the PLANT genetic
9 RESOURCES [patrimony] of the nation;
10 b. encourage and hasten the organization of all
11 sectors engaged in the industry, integrate all
12 their activities, and provide assistance to them;
13 c. consider the seed industry as a preferred area of
14 investment;
15 d. encourage the private sector to engage in seed
16 research and development and take full
17 responsibility for mass production and
18 distribution of good quality seeds; and
19 e. [provide protection to] SAFEGUARD the local seed
20 industry against unfair competition from imported

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seeds.

SECTION 3. Definition of terms. -- When used in this Act, the following terms shall mean as follows:

a. ["Act" shall mean the Seed Industry Act of 1988.]

b. ["Board" shall mean the Philippine Seed Board.]

[c] A. "Seed Lot" shall mean a definite quantity of seed identified by a lot number or other identification marks appearing on the label or tag which is printed on or attached to the sack, bag, pouch, packet or any other container, all of which carry uniform specifications.

[d.] B. "Seed" shall mean [sexual and asexual plant materials of vegetable, fruit, forage, fiber and field and plantation crops which are used for seedling purposes and are listed under the rules and regulations promulgated under Section 5 of this Act] **PLANT MATERIAL USED FOR THE PRODUCTION OF FOOD, FORAGE, FIBERS, INDUSTRIAL CROPS, OIL, FLOWERS, GRASSES, HERBS AND AQUATIC PLANTS, INCLUDING BUT NOT LIMITED TO MERISTEM, AND CLONAL PROPAGULES SUCH AS TUBERS, CORMS, CUTTINGS, MERISTEM AND MICROPROPAGATED PLANTLETS.**

C. **FOUNDATION SEEDS SHALL MEAN SEEDS THAT ARE PROGENY OF BREEDER SEEDS SO HANDLED AS TO MAINTAIN A MINIMUM ACCEPTABLE LEVEL OF GENETIC PURITY AND IDENTITY. FOUNDATION SEEDS PRODUCE REGISTERED SEEDS.**

[e] D. "Seed Industry" shall mean the different components of the chain of activities undertaken by an individual, association, corporation, or firm in the production, processing, testing, handling, grading, storage, distribution, and

1 marketing of seeds for agricultural production
2 with economic benefits.

3 [f] E. "Seed Testing" shall mean the accurate and
4 prompt analysis of a seed sample [to determine
5 seed quality, and the reporting of results of
6 analysis to all concerned] BASED ON METHODOLOGIES
7 PRESCRIBED BY THE COUNCIL TO DETERMINE ITS
8 QUALITY.

9 [g] F. "Seed Certification" shall mean [certification
10 by an officially sanctioned agency in such forms
11 as may be prescribed that the collection,
12 conservation, multiplication, production, testing,
13 and distribution of seed lot are in accordance
14 with the procedures, regulations, and standards
15 set by the official seed certifying agency] A
16 SYSTEM OF SEED PRODUCTION BEARED TOWARD
17 MAINTAINING GENETIC IDENTITY, VARIETAL PURITY AND
18 STANDARDS OF QUALITY OF SEEDS OF SUPERIOR CROP
19 VARIETIES.

20 [h] G. "Quality Control" shall mean a systematic
21 approach to determine, achieve and maintain
22 desired standards of seed quality.

23 [i] H. "Seed Sample" shall mean a quantity of seed
24 drawn FROM SEED LOTS in accordance with the rules
25 for seed sampling to be promulgated under this
26 Act, properly identified, labeled, and submitted
27 for seed testing.

28 [j] I. "Label" shall mean any written, printed or
29 graphic representation in any manner on the seed
30 container giving information as required in the
31 rules and regulations promulgated under this Act.

32 [k] J. "Seed Dealer" shall mean any person, firm,
33 agency or corporation engaged ONLY in the

- 1 marketing of seed.
- 2 K. "SEED GROWERS/PRODUCERS AND TRADERS" SHALL MEAN
- 3 ANY PERSON, NATURAL OR JURIDICAL, ENGAGED IN THE
- 4 PRODUCTION, PROCESSING AND/OR MARKETING OF SEEDS.
- 5 1. "Seed Control" shall mean the regulation of seed
- 6 marketing through registration of seed dealers,
- 7 compulsory labeling, and establishment of minimum
- 8 standards of seed quality.

9 SECTION 4. The National Seed Industry Council. ---

10 There is hereby created a National Seed Industry Council,

11 hereinafter referred to as the Council to be composed of the

12 following who shall serve in ex-officio capacity except the

13 representatives of the private sector:

- 14 A. SECRETARY, DEPARTMENT OF AGRICULTURE - CHAIRMAN
- 15 [a] B. Director, Bureau of Plant Industry - [Chairman]
- 16 VICE-CHAIRMAN and
- 17 Executive Director
- 18 [b] C. Dean, College of Agriculture
- 19 University of the Philippines
- 20 at Los Baños, Laguna - [Vice-Chairman]
- 21 MEMBER
- 22 [c. Director, Bureau of Agricultural Research - Member]
- 23 d. Director, Bureau of Forest
- 24 Development Member
- 25 e. Crop Research Director,
- 26 Philippine Council for
- 27 Agriculture and Resources
- 28 Research and Development Member
- 29 [f. Representative, National
- 30 Economic and Development
- 31 Authority Member]
- 32 F. DIRECTOR, PHILIPPINE RICE

1 RESEARCH INSTITUTE

MEMBER

- 2 g. [One representative each from "
3 the association of fruit growers,
4 nursery operators, vegetable farmers,
5 seed producers and seed traders]
6 THREE (3) REPRESENTATIVES FROM
7 ACCREDITED FARMERS' ORGANIZATION
8 to be endorsed by their respective
9 associations and appointed by the
10 Secretary of Agriculture and Food - Member

11 SECTION 5. Duties, Powers and Functions. -- The
12 Council shall have the following duties, powers and
13 functions:

- 14 a. To formulate policies, rules and regulations for
15 the conservation, preservation, and development of
16 the genetic [patrimony] RESOURCES for the
17 implementation of the provisions of this Act;
18 b. To provide a comprehensive policy and create a
19 healthy investment climate for the development of
20 the seed industry in all its aspects, and
21 delineate and coordinate the various activities of
22 the sectors involved in the industry;
23 c. To encourage persons, associations, cooperatives
24 and corporations engaged in genetic resources
25 conservation, varietal development, production and
26 processing, quality control, storage, marketing,
27 and distribution of seeds to adopt such systems
28 and practices that improve the quality of seeds
for distribution to farmers;
31 d. To promote the establishment of infrastructures
and support services geared toward the development
32 of the seed industry;

1 e. To formulate a comprehensive medium and long-term
2 national food industry development program to enable
3 to achieve self-sufficiency in high quality seeds;
4 and

5 f. To adopt and prescribe administrative and
6 technical regulations and procedures for the
7 protection of breeders regarding their developed
8 and registered cultivars.

9 SECTION 6. Council Meetings. The Council shall hold
10 regular quarterly meetings: Provided, That it may hold
11 special meetings when necessary upon the call of the
12 Chairman or upon written request of at least three members.
13 The presence of six members shall constitute a quorum.

14 The ex-officio members of the Council shall not receive
15 any salary or other emoluments: Provided, that the
16 representatives of the private sector shall be entitled to
17 per diems to be determined by the Council for every
18 [attendance in its meetings] MEETING ACTUALLY ATTENDED.

19 [R.F.C. 7. Council Task Force. - The existing
20 Philippine Seed Board shall be maintained as a Task Force of
21 the Council. It shall establish seeds standards, and
22 formulate the systems and procedures for nomination, review,
23 approval, release, entry, and discontinuation of crop
24 varieties in the national agricultural crop production and
25 development program. Only citizens of the Philippines shall
26 be members of the Seed Board.] .pa

27 SECTION 7. CHAIRMAN, DUTIES AND RESPONSIBILITIES.
THE CHAIRMAN OF THE BOARD SHALL HAVE THE FOLLOWING
DUTIES AND RESPONSIBILITIES:

A. TO PRESIDE OVER THE MEETINGS OF THE COUNCIL;

1 THE COUNCIL; AND

2 C. TO EXERCISE SUCH OTHER POWERS AND PERFORM SUCH
3 OTHER DUTIES AS MAY BE VESTED IN HIM BY THE
4 COUNCIL.

5 [SEC. 8. Seed Quality Control. - The Council, through
6 the Bureau of Plant Industry, shall supervise and control
7 the production and testing of seed to insure and guarantee
8 the quality of such seeds. Seeds which are imported or
9 locally produced, and are used or offered for sale by
10 government agricultural stations, dealers, and
11 growers/producers shall be subjected to quality control and
12 seed control in accordance with the provisions of this Act
13 and the rules and regulations promulgated under this Act.]

14 SECTION 8. EXECUTIVE DIRECTOR, DUTIES AND
15 RESPONSIBILITIES. -- THE EXECUTIVE DIRECTOR SHALL HAVE THE
16 FOLLOWING DUTIES AND RESPONSIBILITIES:

- 17 A. TO EXECUTE, DIRECT AND IMPLEMENT THE POLICIES,
18 REGULATIONS AND RESOLUTIONS ISSUED BY THE COUNCIL;
19 B. TO ASSIST IN THE ADMINISTRATION, MANAGEMENT AND
20 SUPERVISION OF THE FUNCTIONAL ACTIVITIES OF THE
21 COUNCIL;
22 C. TO COORDINATE, MONITOR AND EVALUATE THE SEED
23 PROGRAM OF THE DIFFERENT AGENCIES;
24 D. TO ADMINISTER AND MANAGE THE BUDGETARY
25 APPROPRIATIONS AND FINANCIAL DISBURSEMENTS OF THE
26 COUNCIL; AND
27 E. TO SUPERVISE THE COUNCIL SECRETARIAT AND MAINTAIN
28 OFFICIAL RECORDS, FILE AND PROCEEDINGS OF THE
29 COUNCIL.

30 SECTION 9. COUNCIL SECRETARIAT. -- THE COUNCIL
31 SHALL HAVE A SECRETARIAT WHICH SHALL FURNISH THE NECESSARY

1 ADMINISTRATION, SECRETARIAL AND OTHER SUPPORT SERVICES TO
2 THE COUNCIL. THE SECRETARIAT SHALL BE UNDER THE SUPERVISION
3 OF THE EXECUTIVE DIRECTOR. THE PERSONNEL OF THE SECRETARIAT
4 SHALL BE APPOINTED, AND THEIR COMPENSATION FIXED BY THE
5 COUNCIL SUBJECT TO THE CIVIL SERVICE RULES AND REGULATIONS.

6 SECTION 10. TECHNICAL SECRETARIAT. THERE IS
7 HEREBY CREATED UNDER THE COUNCIL A TECHNICAL SECRETARIAT
8 WHICH SHALL ASSUME THE FUNCTIONS OF THE EXISTING PHILIPPINE
9 SEED BOARD TECHNICAL WORKING GROUPS. THE HEADS AND THE
10 MEMBERS OF THE TECHNICAL SECRETARIAT SHALL BE APPOINTED AND
11 THEIR COMPENSATION AND TENURE FIXED BY THE CHAIRMAN OF THE
12 COUNCIL UPON THE RECOMMENDATION OF THE EXECUTIVE DIRECTOR.

13 THE TECHNICAL SECRETARIAT SHALL ESTABLISH SEED
14 STANDARDS AND FORMULATE SYSTEMS AND PROCEDURES FOR VARIETAL
15 IDENTIFICATION, EVALUATION, NOMINATION, REVIEW AND
16 APPROVAL FOR REGISTRATION, COMMERCIAL RELEASE AND
17 DISCONTINUATION OF CROP CULTIVARS OR VARIETIES IN THE
18 NATIONAL AGRICULTURAL CROP PRODUCTION AND DEVELOPMENT
19 PROGRAM.

20 SECTION [9] 11. NATIONAL Seed [Certification and]
21 Quality Control Services. -- There shall be a NATIONAL
22 Seed [Certification and] Quality Control Services which
23 shall be constituted in the Bureau of Plant Industry. It
24 shall have control and supervision over Field Inspection and
25 Control Services, and Seed Testing Laboratories, which shall
26 be established by the Bureau of Plant Industry in various
27 parts of the country as are necessary to insure the
28 attainment of the purposes of this Act. All personnel,
29 funds and equipment of the existing Seed Certification
30 Section of the Bureau of Plant Industry, THE SEED QUALITY
31 CONTROL SERVICES AND THE FIELD INSPECTION SERVICES OF THE

1 DEPARTMENT OF AGRICULTURE are hereby transferred to the
2 herein created body

3 SECTION [10] 12. Functions of the National Seed
4 Quality Control Services. -- The National Seed Quality
5 Control Services shall perform the following main functions:

6 [a. To sample, inspect, conduct analysis of, and test
7 food, fodder, oil, vegetable, fruit, flower,
8 pasture, lawn, and tree seeds that are locally
9 produced or imported, and are sold or exposed to be
10 sold within the Philippines for sowing or planting
11 purposes; and

12 b. To levy, assess and collect fees for inspection,
13 testing, and analysis of seeds submitted pursuant
14 to this Act and to the rules and regulations
15 promulgated hereunder, subject to the approval of
16 the Council.]

17 A. FORMULATE PLANS AND PROGRAMS ON SEED QUALITY
18 CONTROL SERVICES AND ACTIVITIES ON SEED TESTING,
19 PLANT/SEED MATERIAL CERTIFICATION AND OTHER
20 QUALITY CONTROL SCHEMES TO BE DEVELOPED;

21 B. SAMPLE AND CONDUCT SEED ANALYSIS AND ISSUE THE
22 CORRESPONDING REPORT OF ANALYSIS OF SAMPLES DRAWN
23 FROM LOCALLY PRODUCED AND IMPORTED SEED UNDER THE
24 PURVIEW OF THIS ACT;

25 C. CONDUCT FIELD INSPECTIONS OF SEED CROPS, SEED
26 STORAGE AND PROCESSING FACILITIES AND OTHER
27 ACTIVITIES REQUIRED FOR SEED/PLANT MATERIAL
28 CERTIFICATION AND ISSUE THE CORRESPONDING REPORT
29 OF INSPECTION UNDER THE PURVIEW OF THIS ACT;

30 D. CONDUCT OTHER RELATED FUNCTIONS TO THE SERVICES
31 LIKE SEED RESEARCH AND SEED TECHNOLOGY TRAINING
32 FOR THE CLIENTELS OF THE SERVICES;

- 1 E. COLLECT FEES FOR TESTING OF SEEDS, INSPECTION OF
2 CROP FIELDS AND FACILITIES AND FOR ISSUANCE OF
3 PERMITS AND LICENSES, IN RELATION TO THE ACTIVITIES
4 OF THE SERVICE;
- 5 F. SUPERVISE AND COORDINATE ALL OFFICIAL SEED TESTING
6 LABORATORIES IN THE REGIONS AND PROVINCIAL
7 BATELLITE LABORATORIES AND SEED CERTIFICATION IN
8 ALL PROVINCES AND SUB-PROVINCES;
- 9 G. ACCREDIT PRIVATE SEED TESTING LABORATORIES; AND
- 10 H. PERFORM SUCH OTHER FUNCTIONS AS THE COUNCIL MAY
11 PROVIDE.

12 SECTION [11] 13. Seed Industry Development Programs.

13 The Council shall adopt a Seed Industry Development
14 Program within ninety days (90) after it has been
15 constituted, hereinafter referred to as the "Program", which
shall be implemented by its constituent agencies.

- 17 a. Department of Agriculture [and Food] has SHALL
18 HAVE the overall task of directing and
19 coordinating the activities of its component
20 agencies in accelerating the development of the
21 seed industry.
- 22 b. The Bureau of Plant Industry (BPI) shall have the
23 direct responsibility for the [regulation of seed]
24 production, [and] distribution, ~~AND REGULATION OF~~
25 ~~SEEDS,~~ ^{AND REGULATIONS} AND THE IMPLEMENTATION OF THE NATIONAL SEED
26 PROGRAM, INCLUDING BUT NOT LIMITED TO THE
27 MANAGEMENT OF THE EXISTING RESEARCH STATIONS AND
28 SEED FARMS, SEED TESTING LABORATORIES, AND
29 CERTIFICATION SERVICES UNDER A SELF-RELIANCE
30 MANAGEMENT SCHEME.
- 31 [A National Seed Foundation shall be establish at BPI
32 primarily to produce sufficient quantities of good

1 quality foundation seeds of all varieties
2 developed by the public sector.]

3 c. ~~University of the Philippines at Los Baños~~ shall
4 provide leadership in genetic resources,
5 conservation of original genetic diversity through
6 the National Plant Genetic Resources Laboratory
7 (NPGRL) and genetic improvement and varietal
8 development through the Institute of Plant
9 Breeding (IPB).

10 D. ~~PHILIPPINE RICE RESEARCH INSTITUTE (PHILRICE)~~
11 SHALL DEVELOP APPROPRIATE RICE VARIETIES DESIGNED
12 UNDER PHILIPPINE CONDITIONS AND PROPAGATE THEM
13 INTO BREEDERS, ~~FOUNDATION,~~ ^{ISF} REGISTERED AND
14 CERTIFIED SEEDS, AND EXTEND ALL NECESSARY
15 TECHNICAL ASSISTANCE TO ENSURE THE PROPER
16 UTILIZATION OF SUCH SEEDS ON THE FARM LEVEL.

17 [d. ~~Philippine Constabulary/Integrated National Police~~
18 ~~FORCE~~ shall extend all assistance in the
19 enforcement of seed industry laws and regulations
20 to attain the aims and objectives embodied in this
21 order.]

22 e. Board of Investment shall promulgate necessary
23 rules for the development of the seed industry as
24 a preferred area of investment.

25 The private sector of the seed industry shall
26 direct their collective efforts towards a more
27 active cooperation and coordination with
28 government agencies. Farmers' organizations shall
29 take active part in the conservation of the
30 original genetic diversity and [patrimony]
31 RESOURCES.

32 [g. Other government agencies not directly involved as
33 participating agencies in this program shall

1 cooperate with the Council and its agencies in the
2 implementation of the provisions of this order.]

3 SECTION [12] 14. Incentives to the Private Sector.

4 The private sector may avail of the following incentives
5 to develop the local seed industry:

6 a. Individuals, farmers' organizations, cooperatives
7 and corporations fully owned by Filipinos shall be
8 entitled to technical assistance from the
9 government, such as training of their staff in
10 seed technology, availing of foundation seed and
11 results of basic research studies.

12 b. Individuals, farmers' organizations, cooperatives
13 and corporations fully owned by Filipinos shall be
14 exempted from:

15 i. sales taxes during their first five (5) years
16 of operation; and

17 ii. import taxes on technical equipment used in
18 seed processing as well as storage and
19 quality processing.

20 SECTION [13] 15. Restrictions. -- The following
21 **ACTIVITIES** are restricted:

22 a. Importation of seeds in commercial quantities
23 where the species are being produced locally,
24 unless there is shortage. [b. Seed producers
25 and/or traders shall not engage, either directly
26 or indirectly in the trading of pesticides and the
27 resulting farm products(s) from the seed they are
28 producing or trading.] [c] B. EXPORTATION
29 OF rare species, varieties, lines and strains of
30 plants in the country [shall not be taken out of
31 the country] EXCEPT FOR SCIENTIFIC, EDUCATIONAL,
32 AND EXPERIMENTAL PURPOSES.

1 [d] C. [Others as may be defined by the Council]
2 SUCH OTHER ACTIVITIES AS THE COUNCIL MAY DEEM FIT
3 TO PROHIBIT.

4 SECTION [15] 16. Funds of the Council. -- [The sum
5 of One Million pesos is hereby appropriated out of the
6 General Fund of the National Treasury in addition to the
7 existing funds of the Seed fund and such revenues as maybe
8 accumulated from the sale of certified seeds and plant
9 materials, seed processing and testing fees, field
10 inspection fees, seed export and import fees, license fees,
11 issuance of permits to seed growers/producers, fines
12 collected for violation of this Act, and donations from
13 private or government agencies, either domestic or foreign.]

14 THERE IS HEREBY CREATED A SPECIAL ACCOUNT IN THE GENERAL
15 FUND TO BE KNOWN AS THE SEED FUND WHICH SHALL BE OBTAINED
16 FROM THE FOLLOWING SOURCES:

17 A FIVE MILLION PESOS (P5,000,000.00) TO BE
18 APPROPRIATED OUT OF ANY FUNDS IN THE NATIONAL
19 TREASURY NOT OTHERWISE APPROPRIATED;

20 B. THE EXISTING SEED FUND;

21 C. REVENUES FROM THE SALE OF ^{government produced} CERTIFIED SEEDS AND
22 PLANT MATERIALS, INCLUDING BUT NOT LIMITED TO THE
23 INCOME DERIVED FROM THE PRODUCTION OF RESEARCH
24 STATIONS AND SEED FARMS, SEED PROCESSING AND
25 TESTING FEES, FIELD INSPECTION FEES, SEED EXPORT
26 AND IMPORT FEES, LICENSE FEES, FEES FOR THE
27 ISSUANCE OF PERMITS TO SEED GROWERS/
28 PRODUCERS, FINES COLLECTED FOR VIOLATIONS OF
29 THIS ACT; AND

30 D. DONATIONS FROM PRIVATE OR GOVERNMENT AGENCIES,
31 EITHER DOMESTIC OR FOREIGN;

1 Provided, That said fund shall be held in trust by the
2 Bureau of Plant Industry; Provided, "Further That the
3 allocation, utilization and disposition of such funds shall
4 be made by the Council.

5 [SEC. 16. Funds of Major Implementation Agencies. --

6 Funds for the major implementing agencies of this Act shall
7 be appropriated annually out of the funds of the National
8 Treasury and from a Seed Fund for the implementation of the
9 provisions of this Act.

10 a. For plant genetic resources collection and
11 conservation with special efforts on the
12 cooperation of small farmer's organization, P3.0
13 million initial budget, to be gradually increased
14 in its succeeding annual appropriations;

15 b. For genetic improvement and variety development,
16 P3.0 million annually;

17 c. For foundation seed production, P3.0 million
18 initial support for the National Seed Foundation;

19 d. For the development and regulation of the seed
20 industry, P3.0 million initial support for the
21 National Seed Regulatory Center; recurring
22 expenses may be supported by existing
23 appropriations and also from the Seed Fund
24 provided in Section 5.]

25 SECTION 17 Authority to Search and Confiscate Unlawful
26 Seed Lots. -- In order to carry out effectively the
27 provisions of this Act, the Executive Director of the
28 National Seed Industry Council or his duly authorized
29 representative are hereby authorized to search and seize
30 seed lots established in violation of this Act. [For this
31 purpose,] PROVIDED, THAT a search warrant shall first be
32 secured from the proper court and the same shall be

1 served/enforced with the assistance of the [Philippine
2 Constabulary/Integrated National Police] PHILIPPINE NATIONAL
3 POLICE (PNP) or the National Bureau of Investigation.

4 Should the seed lots so searched and seized be found
5 after due hearing, to be suitable for condemnation, in his
6 judgment, the Executive Director is hereby empowered to
7 issue to any of his designated representatives an order for
8 condemnation of unlawful seed lots, in which case the same
9 shall be processed, destroyed, relabeled or otherwise
10 disposed of in such manner as he may deem appropriate;
11 Provided, That in no case shall the Executive Director order
12 such condemnation without giving the claimant an opportunity
13 to apply for the release of said seed or permission to
14 process it in compliance with this Act.

15 SECTION [14] 18. Penal Provisions. -- Any
16 person, firm or association who shall violate any provision
17 of this Act or the implementing rules and regulations
18 promulgated pursuant to this Act shall, upon conviction, be
19 punished with a fine of not more than ten thousand pesos
20 (P10,000.00) or imprisonment of not more than five years, or
21 both, in the discretion of the Court; Provided, That in the
22 case of a firm or association, the penalty of imprisonment
23 shall be imposed upon the officer(s) who knowingly
24 participated, abetted, or consented to the commission of
25 such punishable acts.

SECTION 19. RULES AND REGULATIONS. -- THE COUNCIL
SHALL, WITHIN NINETY (90) DAYS FROM THE EFFECTIVITY OF THIS
28 ACT, PROMULGATE THE NECESSARY RULES AND REGULATIONS FOR THE
29 ENFORCEMENT OF THE THE PROVISIONS OF THIS ACT.

3 with the provision of this Act are, hereby repealed,
4 superseded or modified accordingly.

5 SECTION [19] 21. Separability Clause. -- If any
6 part, section or provision of this Act shall be held invalid
7 or unconstitutional, the rest of the provisions shall not be
8 affected thereby.

9 SECTION [20] 22. Effectivity. -- This Act shall
10 take effect after fifteen (15) days [from] OF its COMPLETE
11 publication in the Official Gazette OR IN AT LEAST TWO (2)
12 NEWSPAPERS OF GENERAL CIRCULATION.

13 Approved,