

**AIRGRAM**

**DEPARTMENT OF STATE**

386 0367 (2)  
PRM 1-5 (PROP)  
PD-AAD-111-81

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TO - AID/Washington TOAID-A- 392

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DATE SENT  
6-26-1969

SUBJECT - PROP - Agriculture Inputs Development

29 p.

REFERENCE -

NON-CAPITAL PROJECT PAPER (PROP)

Country : India Project 386-11-190-367  
 Submission Date : June 26, 1969 - Original  
 Project Title : Agriculture Inputs Development  
 U.S. Obligation Span : FY 1967 through FY 1974  
 Physical Implementation Span: FY 1967 through FY 1974

Gross Life-of-Project financial requirements:

U.S. Dollars : \$4,281,000  
 U.S. Owned Local Currency : Not applicable  
 Cooperating Country Contribution  
 (Trust Fund) Rs. 28,089,000 : \$3,696,000 (Equiv.)  
 Fourth Five Year Plan : Not Applicable  
 Total Cost : \$7,977,000

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## I. Summary Description

### 1. Necessity/Justification/Significance

Production inputs, efficiently used, are essential to the achievement of food self-sufficiency, and India has set ambitious but needed targets for the production and use of critical inputs. In response to the GOI's request, this project has been designed to help achieve the targets relating to fertilizers, seeds, plant protection, and farm implements/machinery. Proposed project activities are directly related to Mission, sector, and program goals and complement and supplement Mission Development Loan programs for production and import of agricultural inputs.

Though the project elements are separate activities directed towards the solution of specific problems, they have been grouped together to secure operational coordination of complementary inputs and achieve maximum impact.

### 2. Project Goals and Targets

The overall goal of this project is to help India reach food self-sufficiency in the 1970's through the achievement of Plan Targets in seeds, fertilizers, plant protection and farm implements and machinery. Tentative Fourth Plan targets are to:

1. Increase the use of seeds of high-yielding varieties of crops from 67,500 tons in 1969 to 189,000 tons in 1973-74 so as to increase the acreage of such crops grown from 27.5 million acres to 60 million acres during the same period.

2. Increase the use of Nitrogen (N), Phosphorus (P<sub>2</sub>O<sub>5</sub>), and Potash (K<sub>2</sub>O) fertilizer nutrients from approximately 2.0 million tons in 1968-69 to 6.6 million tons by 1973-74.

3. Increase the availability of chemical pesticides from 42,225 tons of technical grade material in 1969-70 to 90,305 tons in 1973-74, and increase the number of acres receiving treatment from 168 million acres to 326 million acres in the same period.

4. Increase the supply and availability of farm implements and machinery to satisfy rapidly increasing demand. Illustratively, the estimated annual demand for tractors, power tillers and disk harrows is expected to increase from 36,000, 20,000 and 19,500 units, respectively, in 1968-69 to 68,000, 80,000, and 47,500 units by the end of 1973-74.

The success of the project will be measured by the degree our assistance helps the GOI realize its 4th Plan targets and, ultimately, by the amount of additional food produced.

C. Minimum Levels of Achievement

All project elements and activities are planned as supplements to Indian programs and will be discontinued when the need for such a supporting role no longer exists.

D. General Approach/Plan of Action

On the basis <sup>of</sup> annually prepared "Operational Work Plans," AID will work with designated public and private organizations in promoting four types of agricultural production inputs (seeds, fertilizers, plant protection agents and farm implements/machinery). For example, AID technicians (Table I) will work with the Fertilizer Association of India and the Fertilizer Corporation of India in fertilizer marketing; with the public-sector National Seeds Corporation in seed production, processing and marketing; and the GOI in plant protection and farm machinery-use training. A special effort will be made to improve/build industry trade associations as a part of a calculated plan to reach and influence large sections of input industries directly, as well as Center and State governments indirectly.

The nature and level of assistance will vary between inputs and with the changing situation, but common to all input activity areas will be heavy emphasis on improving input distribution and marketing systems and training personnel (Table II). U.S. technicians and short-term consultants (Table I) will be assigned as needed to key positions where maximum multiplier effect can be obtained. Liberal and extensive use will be made of available local currencies (Table III) to finance demonstrations, industry conferences, local training workshops and training and demonstrational commodities.

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Summary of Inserts

TABLE I

Technicians - Direct Hire/PAGA  
(Number/Man-Months)

<u>Technical Area</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Agr. Adv. (Crops) (Mission Staff)	1/12	1/12	1/12	1/12	1/12
Soils Advisor Fertilizer Promotion (FAI)	1/12	1/12			
Soils Advisor Fertilizer Promotion (FCI)	1/12	1/12			
Soils Advisor Soil testing/fertilizer marketing (IFFCO)	1/9*	1/12*	1/3*		
1 Entomology Advisor Training (CFTI)	1/11	1/12	1/12	1/12	1/12
Pesticides Advisor (PAI)	1/12	1/12	1/12	1/12	1/12
Pest Control Specialist (Mission Staff)	1/12	1/12	1/12		
Agricultural Engineer Farm Machinery (MFA)	1/12	1/12	1/12	1/12	1/12
Agricultural Engineer Farm Machinery Training (MFA)	1/6	1/12	1/12	1/12	1/12
<b>Totals:</b>	<b>9/98</b>	<b>9/108</b>	<b>7/75</b>	<b>5/60</b>	<b>5/60</b>

\*Dollar cost provided by CFT. ~~not included in totals.~~  
1/ PAGA

TABLE I (Contd.)Technicians - Contract-HKI

(Number/Man-Months)

<u>Technical Area</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Seed Storage and Processing Specialist	1/12	1/12	1/12	1/12	1/12
Seed Production Specialist	2/20	2/24	2/24	2/24	2/24
Seed Marketing Specialist	1/10	1/12	1/12	1/12	1/12
<b>Totals:</b>	<u>4/42</u>	<u>4/48</u>	<u>4/48</u>	<u>4/48</u>	<u>4/48</u>

Consultants

(Number/Man-Months)

<u>Technical Area</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Seeds	2/6	-	-	-	-
Fertilizer	7/10	1/10	8/20	2/4	2/4
Plant Protection	1/2	6/9	5/9	4/8	2/4
Farm Machinery	5/10	6/8	4/2	4/2	2/4
<b>Totals:</b>	<u>15/31</u>	<u>13/27</u>	<u>17/31</u>	<u>10/14</u>	<u>6/12</u>

TABLE IIParticipants

(Number/Man-Months)

<u>Field of Training</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Seeds	18/112	16/124	12/120	8/72	-
Fertilizer	64/328	67/248	51/180	-	-
Plant Protection	14/48	20/72	20/72	8/36	8/36
Farm Machinery	18/62	23/60	14/36	14/36	14/36
<b>Totals:</b>	<u>114/475</u>	<u>126/504</u>	<u>97/408</u>	<u>30/144</u>	<u>22/72</u>

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NON-CAPITAL PROJECT FUNDING (OBLIGATION IN '000's)

6

Country: India  
 Project Title: Agriculture Inputs Development

Date:  
 Project No.386-11-190-367

Fiscal Years	APP	L/G	Total	1/ Contr.	Personnel Serv.		Participants US Ag. Contr.	Commodities		Other Costs		
					DH	PASA		CONTR.	Dir US Ag.	Contr.	Dir. US Ag.	Contr.
Prior through Act. FY 1969	TC	G	1393	375	333	76	359	622	-	3	-	-
Oper. Yr. FY 1970	TC	G	699	109	165	4	109	420	-	1	-	-
Budget Yr. FY 1971	TC	G	826	198	168	42	198	417	-	1	-	-
Budget Yr. FY 1972	TC	G	675	194	121	43	194	317	-	-	-	-
Budget Yr. FY 1973	TC	G	456	190	102	43	190	121	-	-	-	-
Budget Yr. FY 1974	TC	G	<del>232</del>	16	102	39	16	75	-	-	-	-
All Subs.Yrs.	TC	G	-	-	-	-	-	-	-	-	-	-
Total Life			4281	1082	991	247	1066	1972	-	5	-	-

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Exchange Rate 1 = Rs 7.50

Project No. 386-11-471-01

Fiscal Years	AIB Controlled Local Currency		Other cash contribution cooperating country	Other Donor Funds (\$ Equiv)	Metric Tons	CCC Value Freight (\$ 000's)	World Market Price (\$000)
	US Owned	Country* Owned (\$ Equiv) in 000's					
Prior through Act. FY 1969	-	718	-	-	-	-	-
Oper. Yr. FY 1970	-	1690	-	-	-	-	-
Budget Yr. FY 1971	-	511	-	-	-	-	-
Budget Yr+1 FY 1972	-	399	-	-	-	-	-
Budget Yr+2 FY 1973	-	206	-	-	-	-	-
Budget Yr+3 FY 1974	-	172	-	-	-	-	-
All Subs.yrs.	-	-	-	-	-	-	-
<b>Total Life</b>		<b>3696</b>					

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\* GOI Trust Fund administered by USAID

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## II. Setting of Environment

The crop successes of the past two years have created an optimistic atmosphere in agriculture which is spreading to all parts of India. Bright prospects for quick financial gains have produced a surge of interest and activity on the part of those in agriculture and those servicing agriculture. The introduction of new technologies has made possible dramatic increases in agricultural productivity and profitability.

The rush to capitalize on the new technologies has accentuated old and/or produced new formidable problems which will have to be solved or eased if the generally prevailing favorable conditions of agricultural improvement and investment are to be maintained. Major current problems directly related to inputs are those of quality control, supply, marketing, prices, lack of trained manpower, wastage, and Center-State policies/regulations.

Quality control problems have been produced by rapidly increasing quantities of diverse inputs. Legal and administrative improvements, although outside of the specific U.S. efforts of this project, need to be carried out by well-trained specialists through uniform operating procedures. Though progress is slow, the GOI and the States are aware of the needs and are moving to institute required changes. The Center's efforts to pass needed, improved fertilizer control legislation have been thwarted largely by vested sectional interests and politics. A new National Seed Act has been passed, but is yet to be implemented by the States.

The increasing shift to a market-oriented agriculture based on the use of production inputs has made supply and distribution arrangements critical. Existing infrastructure and logistical arrangements, developed to handle a largely subsistence agriculture, do not appear to be adequate to the task of orderly and timely supply and re-supply of inputs to thousands of supply points/markets necessary to service the millions of farmers of India.

Under the urgings of the Center to increase output to achieve ambitious targets, emphasis has been on production, to the neglect of marketing, creating, perhaps, the most pressing problem of individual manufacturers and producers of inputs - the need to build up marketing organizations to handle their products. The problem isn't simply a straight-forward build up of marketing organizations and dealer-sales service outlets; it is complicated by uncertain, often unfavorable, input price ceilings and policy differences between the States and the Center. Unrealistically low ceiling prices, uncertainties as to State policies affecting the private sector, such as in some states, the marketing monopolies of the cooperatives in the sale of fertilizers, seeds, pesticides and machinery, and, the role of State-controlled

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Agri-Industry Corporations, act as disincentives to building adequate private marketing organizations. The Center's policies are generally favorable to private manufacturers and producers, and some of the less-favorably inclined States appear to be slowly coming around.

A major constraint to extending and increasing the use of inputs is a general deficiency in all input areas - the lack of trained people to produce, market and use the new technologies. Most enterprises, public and private, usually produce substantially below capacity, and the lack of trained administrators, technicians and workers is a primary cause. Almost all recognize the need to improve and expand their marketing and sales staffs, including the retail outlets, and they are moving in that direction. On the use side, the Central Government through the agricultural extension services has stepped-up farmer training programs, the national crop demonstrations and other demonstrational programs to accelerate the rate of adoption of the new technologies.

Needless waste, with food losses variously estimated between 15% to 20%, and preventable economic losses are occurring at every point - supply, use of inputs, production and storage - throughout the entire agricultural input-output system. Waste, careless handling, unsatisfactory storage, poor maintenance, misuse and abuse of equipment, deterioration, and losses to pests appear to be widespread throughout India. A solution appears to be through education to develop an understanding of the nature of waste, the consequences and means of prevention, and, through the introduction of quality standards in marketing and pricing of inputs and food produced.

While India is moving forward in agricultural production on a rising tide of optimism and hope, generated by initial successes of two good crop years in a row, developing problems could overtake the successes and slow down, even reverse, the progress which has been made. Responsible public and private organizations are moving to undertake programs and actions which could overcome the justifiable concern that the effort may be too little and too late.

### III. Strategy

Mission policy has been and continues to be to encourage and support favorable agricultural policies and programs. The activities under this Agricultural Inputs Development Project have been worked out with the GOI in support of their and our goals in agriculture (See FY 1970 Program Memorandum). In particular, planned activities have evolved as a result of Mission assistance to the GOI in identifying and analyzing requirements to achieve Plan Targets.

Activities have been selected which possess potential for significant impact and improvement of the problems and conditions described in Section II. Only those activities have been chosen which can have a wide spread or multiplier effect; resource utilization, therefore, has been a major selection criterion. Fertilizer marketing is an example of the use of this approach to activity selection. By providing a marketing specialist to the Fertilizer Association of India, a fertilizer industry trade association, the marketing activities of practically all fertilizer manufacturers in India can be influenced directly or indirectly by one AID technician.

All planned activities are designed to support host country efforts and programs. A major thrust of each activity, explicit and implicit, is institution-building, i.e., organizing, establishing concepts and operating procedures, and training personnel. A special, perhaps unique, planned strategy is to encourage and support the growth and development of industry trade associations which can become powerful forces for influencing input policies and actions by government and industry while promoting and building the private business sector in agriculture.

The project and its several sub-elements/activities tie in directly to other Mission agricultural activities and complement and supplement Mission Development Loan programs. For example, the research, education and extension programs of the Agricultural University Development Project are directly related to use of inputs through the development of new technology and education and training programs for its use. The Agricultural Production Project is in one aspect an input-use project at the farmer level. The Soil and Water project provides for improvement of the soil, the basic resource for food production, and increased availability of water, without which other inputs can not be used. The Rice Research Improvement Project provides new technology as related to inputs for rice; and the Rural Electrification Project is directed to providing energy to complement the use of inputs; thus, there is a direct connecting relationship between the Mission's major agricultural technical assistance projects. The same thing holds true for Mission non-project loans which are used to a great extent for the production and import of agricultural inputs.

#### IV. Planned Targets, Results, and Outputs

To achieve food self-sufficiency in the early 1970's, India has set ambitious targets for the production and use of inputs. It is the overall objective of this project to assist with the achievement of targets for fertilizer, seed, plant protection, and farm implement/machinery.

### 1. Seed

To accelerate the spread of high-yielding crop varieties which provide the biological base for the use of inputs for increased production, the GOI has set the following acreage targets:

#### High-Yielding Varieties Targets\*

<u>Crop</u>	(In Millions of Acres)				
	<u>1969-70</u>	<u>1970-71</u>	<u>1971-72</u>	<u>1972-73</u>	<u>1973-74</u>
Rice	11.00	12.50	15.00	20.00	25.00
Wheat	7.00	8.00	11.00	13.00	15.00
Maize	3.00	4.00	4.50	5.00	5.00
Sorghum	3.00	4.00	5.00	6.00	8.00
Pearl Millet	3.00	4.00	4.50	6.00	7.00
<b>Totals:</b>	<b>27.00</b>	<b>32.50</b>	<b>40.00</b>	<b>50.00</b>	<b>60.00</b>

\*Fourth Five Year Plan Working Group, Ministry of Agriculture, 1968.

This sub-activity will help achieve the above targets through programs to increase the use of quality seeds. Specifically, through programs with the National Seeds Corporation (a GOI corporation), the GOI and Indian States, and private industry, this sub-activity will help to develop:

- a. Effective foundation seed producing units capable of multiplying breeder seeds in sufficient quantity to meet local needs;
- b. Effective seed certification and seed control programs;
- c. A sound registered-certified seed production and processing industry in the private sector;
- d. Effective seed promotion programs and efficient systems for marketing and distributing certified seeds and hybrids;
- e. Programs to integrate seed testing laboratories into the overall seed production program to assure that quality seeds are made available to growers.

## 2. Fertiliser

The GOI has proposed the following fertilizer consumption targets for the Fourth Five Year Plan:

### Fertiliser Targets in Millions of Tons\*

<u>Year</u>	<u>Nitrogen (N)</u>	<u>Phosphorus (P<sub>2</sub>O<sub>5</sub>)</u>	<u>Potassium (K<sub>2</sub>O)</u>
1968-69	1.7	0.65	0.45
1969-70	2.0	0.85	0.55
1970-71	2.4	1.00	0.70
1971-72	2.78	1.20	0.82
1972-73	3.22	1.44	0.95
1973-74	3.75	1.74	1.11

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\*Fourth Five Year Plan Working Group, Ministry of Agriculture, GOI, 1968.

This sub-activity will help India achieve the above planned targets through programs:

- a. develop sound, effective fertilizer distribution and marketing programs;
- b. increase fertilizer production (through participants training only).

## 3. Plant Protection

The GOI plant protection targets and pesticides requirements through 1973-74 have been set as follows:

**Plant Protection Targets by Years\***

(In Millions of Acres)

Kind of Treatment	1969-70	1970-71	1971-72	1972-73	1973-74
1. Seed Treatment	49.40	61.75	74.10	86.45	98.80
2. Rat Control	19.76	24.70	29.64	34.58	39.52
3. General Pest Control	14.82	19.76	24.70	24.70	29.64
4. Intensive Treatment	82.74	98.80	113.62	133.38	148.20
5. Weed Control	1.23	2.47	4.94	7.41	9.86
<b>Totals:</b>	<b>167.96</b>	<b>207.48</b>	<b>247.00</b>	<b>286.52</b>	<b>326.04</b>

**Pesticides Targets by Years\***

1969-70	1970-71	1971-72	1972-73	1973-74	1974-75
(Tons of Technical Grade Chemicals)					
42,825	54,200	66,185	78,360	90,305	101,875

\*Fourth Five Year Plan Working Group, Ministry of Agriculture, 1966.

This sub-activity will help to achieve the above targets and thereby reduce foodgrain losses thru programs with the GOI, Indian States, and the Indian pesticides industry to:

- a. Promote the use of effective, economical plant protection/foodgrain protection techniques, materials/chemicals and equipment for effective pest control;
- b. Establish and develop a national plant protection surveillance and control system and assist with the training of survey personnel;
- c. Determine needs, availability and demand for pesticides;
- d. Conserve and protect foodgrains through improved pest control in storage warehouses and installations;
- e. Promote educational programs in crop and food protection;
- f. Assist the Pesticides Association of India to expand and develop into a strong, service-oriented, trade association.

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#### 4. Farm Implements/Machines

The goals of this sub-activity are to:

a. Encourage the GOI and Indian States to adopt policies and programs favoring the growth of a strong farm equipment industry to service the needs of Indian agriculture;

b. Assist the public and private sectors with:

(1) implement/machinery-use training and demonstration programs;

(2) implement/machinery distribution and market programs including sales service and custom hiring programs;

c. Encourage and assist with the organization and development of a trade association to service and promote the growth of a strong farm equipment industry.

#### V. Course of Action

##### General

The USAID will work with designated public and private sector organizations in carrying out mutually agreed upon programs. The U.S. contribution will be limited primarily to technicians, consultants, participant training, and demonstrational activities/pilot projects and will be supplementary to the main Indian contribution. Precise inputs from both sides will be spelled-out in annual "Operational Work Plans." General plans follow:

##### Seeds - 367.2

USAID has contracted with Mississippi State University to provide the services of a four-man Seeds Team to assist the National Seeds Corporation (NSC) carry out its current functions as a foundation and certified seed producer and seed certifying agency. It is planned that NSC, whose operations now are India-wide because of the lack of a private seed industry capable of meeting current production targets, will gradually withdraw from large scale seed production and certification activities as State and private sector seed programs develop, and concentrate its programs on foundation seed production. In the interim, it will be necessary to improve NSC's operations in order to sustain the effort to fulfill seed requirements/targets, while promoting State and private sector programs. Thus, the most effective, perhaps only, way of achieving both objectives with a minimum input is through the NSC.

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From FY 1970 through FY 1973, the Seed Team (Table IV) will undertake the following activities:

1. Two Seed Production Specialists stationed at NSC's regional offices at Poona, Maharashtra and Pantnagar, Uttar Pradesh will assist:

NSC regional and state seed officials in locating and establishing a sufficient number of private seed growers of registered and certified seed to provide adequate quantities of these seeds on a commercial basis to cultivators;

NSC and GOI seed marketing officials at regional and state levels to develop seed dealers and marketing channels to distribute NSC foundation seeds to private producers, cooperatives, and other certified seed producers and to the cultivators;

NSC regional and state personnel to develop an organization to apply seed certification standards effectively at the local level;

NSC and GOI officials at State, regional and national levels to develop and implement training programs for seed producers and processors in effective production and processing techniques;

NSC personnel to formulate programs to encourage farmers to use pure certified seeds;

NSC, Ministry of Agriculture, and other appropriate agencies to cooperate in the development and implementation of training and field demonstration programs for seed producers, extension personnel, and cultivators.

2. One Seed Processing and Storage Specialist stationed at NSC headquarters in New Delhi to work country-wide with NSC personnel will:

Assist in establishing and maintaining efficient seed processing and storage units for foundation seed production and promote the efficient use and maintenance of seed machinery and equipment.

Assist the NSC to form a consulting service to assist state governments to develop their foundation seed processing and storage facilities and to guide private organizations in designing their seed processing plants;

Determine equipment needs for seed processing and storage and assist in modifying and designing equipment which can be produced locally;

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Develop training and demonstration programs for seed processors and handlers which result in greater efficiency and savings to the seed industry.

3. One Seed Marketing Specialist stationed at NSC headquarters in New Delhi will assist NSC, state seed personnel, and seed producer organizations to identify marketing problems and develop and implement programs which help solve identified problems; assist NSC to prepare and conduct training demonstration programs in more efficient and profitable marketing of seed grains.

The GOI and the Indian States are stepping up the formal training of seed personnel through special short courses conducted by NSC and the Indian Agricultural Research Institute and through academic training at the State agricultural universities. Participant training (Table V) under the project will be designed to support local programs by "training trainers" and providing advanced technical training not available in India. In addition, special educational tours will be arranged for key Center and State officials and businessmen to study seed industry operations in the U.S.A.

In support of the technicians and targets of the project, local demonstration materials and commodities, teaching aids, seminars and training workshops will be provided. Limited U.S.-procured training aids and commodities may be procured to increase the effectiveness of the U.S. technicians.

TABLE IV

Seed Technicians & Consultants - Contract  
(Number/Man-Months)

<u>Technical Area</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
<u>Technicians</u>					
Seed Production Specialist	2/20	2/24	2/24	2/24	2/24
Seed Storage & Processing Specialist	1/12	1/12	1/12	1/12	1/12
Seed Marketing Specialist	1/10	1/12	1/12	1/12	1/12
Totals:	4/42	4/48	4/48	4/48	4/48
<u>Consultants:</u>					
Vegetable Seed Processing and Storage Specialist	1/4	-	-	-	-
Seed Processing Engineer	1/2	-	-	-	-
Totals:	2/6	-	-	-	-

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TABLE V

Seed Participants  
(Number/Man-Months)

<u>Field of Training</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Seed Technology	6/72	2/24	2/24	-	-
Seed Processing	2/12	3/18	4/24	4/24	-
Seed Marketing	2/12	4/48	4/48	4/48	-
Seed Production	-	2/24	2/24	-	-
Seed Industry Organization and Operations	8/16	5/10	-	-	-
Totals:	<u>18/112</u>	<u>16/124</u>	<u>12/120</u>	<u>8/72</u>	<u>-</u>

Fertilizer - 367.1

USAID currently is providing two fertilizer marketing experts - one with the Fertilizer Association of India (FAI) and one with the Fertilizer Corporation of India (FCI) - to assist the fertilizer industry with marketing programs. It is contemplated that USAID through agreement with the GOI will arrange to pay the local costs of an additional marketing specialist, provided by Cooperative Fertilizers International (CFI), an organization of U.S. cooperatives, who will work with the Indian Farmers Fertilizer Cooperative (IFFCO). Through these arrangements, U.S. marketing specialists will be working with three key Indian organizations. FAI is a strong, well-developed fertilizer trade association that effectively represents the Indian industry and promotes fertilizer use India-wide. FCI is a public sector, government-owned corporation which will soon be the largest single fertilizer producer in the world. IFFCO is a co-op of Indian cooperatives which are the largest distributors of fertilizers in India. Thus, the three U.S. advisors (two supplied by A.I.D. and one by U.S. cooperatives) working with and through FAI, FCI and IFFCO will be able to influence, directly and indirectly, the marketing policies and programs of practically all fertilizer manufacturers and distributors in India. In the past, A.I.D. assisted the GOI and most of the Indian States in the establishment of soil testing laboratories. These laboratories represent important resources for increasing fertilizer use. To capitalize on these assets, the Mission will bring in a consultant for four to six months in FY 1970 to develop plans as to how they can be more effectively used to increase fertilizer use.

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For the period FY 1970 through FY 1972, the following activities will be undertaken:

FAI - One Soils Advisor (Fertilizer Promotion) will continue to work with the Fertilizer Association of India (FAI) to help:

Conduct training programs in fertilizer marketing, sales promotion and sales service for fertilizer manufacturers, distributors and cooperatives;

Initiate and conduct a comprehensive fertilizer demand and market study;

Establish within FAI the capability to perform economic and statistical studies related to fertilizer production, demand, distribution, marketing and use;

Improve and expand FAI's publications and audio-visual services and establish a fertilizer information reference service; and,

Conduct the annual All-India Fertilizer Seminar, regional seminars and a marketing workshop with the help of short-term consultants.

FCI - One Soils Advisor (Fertilizer Promotion) will continue to work with the Fertilizer Corporation of India (FCI) to help:

Improve marketing organization, staffing, and other activities;

Develop more adequate fertilizer distribution methods and channels and out-of-plant buffer-stock storage facilities;

Organize and conduct in-service sales training programs for marketing personnel of the Trombay, Sindri, Mangal, Gorakhpur, and Namrup plants; and

Improve and expand fertilizer use, sales service, and educational extension-type programs for farmer-cultivators.

IFCO - The specialist provided by Cooperative Fertilizers International will help establish a marketing organization and program for the IFCO-owned fertilizer plant due to come on stream in FY 1971. Prior to the plant's start-up, this advisor will concentrate on; organizing a marketing staff, training personnel, conducting a seeding program, and strengthening cooperative fertilizer marketing programs.

USAID will provide local currency support for this technician.

General - For the period FY 1970 thru FY 1973, USAID will finance technicians, consultants (Table VI) and participants (Table VII) to support planned activities in fertilizer production, marketing and sales service.

TABLE VI

Fertilizer Technicians and Consultants

(Number/Man-Months)

<u>Technical Area</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
<u>Technicians</u>					
Soils Advisor Fertilizer Promotion (FAI)	1/12	1/12	-	-	-
Soils Advisor Fertilizer Promotion (FCI)	1/12	1/12	-	-	-
Fertilizer Marketing Specialist (INFCO)	1/12*	1/12*	1/3*	-	-
Totals:	3/36	3/36	1/3	-	-
<u>Consultants</u>					
Marketing (FAI & USAID)	5/5	4/2	4/4	2/4	2/4
Engineering (CE/R)	2/8	2/8	4/16	-	-
Totals:	7/13	6/10	8/20	2/4	2/4

\*Dollar Cost provided by CFI.

TABLE VIIFertilizer Participants

(Number/Mon-Months)

<u>Field of Training</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Marketing & Sales Promotion	8/32	8/32	5/20	-	-
Market Research	3/18	3/18	-	-	-
Agricultural Communications	3/12	3/12	-	-	-
Training Methods & Techniques	4/20	4/20	-	-	-
Economics & Logistics of Fertilizer Distribution (High Level)	3/6	3/6	-	-	-
Fertilizer Engineering; Technology, Mgmt., Etc.	43/145	46/160	46/160	-	-
<b>Totals:</b>	<b>64/233</b>	<b>67/248</b>	<b>51/180</b>	<b>-</b>	<b>-</b>

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**Plant Protection - 367.3**

USAID will provide a GOI-requested Entomology Advisor - Training, for the national Central Plant Protection Institute (CPPTI) at Hyderabad to assist with preparing personnel to staff plant protection positions throughout India, with special attention to pest surveillance and control activities. In addition, USAID expects to provide a Pesticides Advisor to work full-time with the Pesticides Association of India (PAI). The Association's request for a U.S. specialist is being considered by the Government of India. If the position is approved, the way will be open to assist pesticides manufacturers and distributors with marketing programs primarily, while helping to build the PAI into a strong, representative, industry trade association.

To complement the activities of the GOI-requested programs and U.S. technicians, a Mission staff Pest Control Specialist is proposed to work with the public and private sectors, and the Agricultural Production and Agriculture University Development teams with insect and rodent control programs to reduce foodgrain losses in the field and from harvest to the point of consumption and promote educational programs in crop and food conservation and preservation. His primary assignment will be to work with the Center in developing and carrying out demonstrations and pilot projects. These activities will be financed with U.S. Trust Fund 101(k), or U.S. Uses rupees and will be sufficiently large and convincing to have a significant impact on attitudes, policies and production, e.g., insect control on rice for an entire district by conventional and/or aerial techniques.

The GOI has indicated that it may be in a position to utilize additional U.S. technical assistance in FY 1971 in upgrading and improving plant surveillance and control activities in the various states, leading to the establishment of a coordinated, nationwide system. Currently, according to the GOI, it has resources to concentrate only on present programs, particularly those in the Intensive Agricultural Districts. Since the imperatives of protecting food-grains in the field require a mission position of response, should assistance be requested, provision is made beginning in FY 1971 to provide USDA-PASA personnel, consultants and technicians, to survey, define and implement programs if necessary.

To support the above programs, disseminate information, coordinate activities and generally promote pest control programs, seminars and workshops, using consultants and locally available American and Indian personnel, will be undertaken in collaboration with governmental and non-governmental organizations.

For the period FY 1970 through FY 1973, the following activities are planned:

EPPI - The Entomology Advisor - Training, expected to arrive during the first quarter of FY 1970 will assist the MFA's Central Plant Protection Training Institute, plan and develop sound training programs in plant protection, with special emphasis on surveillance and control methods. As a national training center, the institute's curricula will be designed to meet the personnel and technical requirements of the Center and State Governments. Tentative GOI nationwide plant protection personnel requirements for the Fourth Five Year Plan period through 1973-74 are placed at 7194. Current strength is approximately 2000. It is planned that the Institute will play an important role in providing entrance, in-service, and refresher training for significant numbers of the increased staff over the next few years.

PAI - If the proposed Pesticides Advisor position to PAI is approved by the GOI, the present Entomology Advisor will shift to the position. He will act as a general advisor to the Association and affiliated members (totalling 72, which is practically all of the manufacturers, formulators and distributors of pesticides in India). He will work on distribution, marketing and sales promotion, pesticides market requirements, and general organizational, administrative, and technical programs to strengthen PAI, including the training of personnel. With respect to training, selected persons in PAI and representatives from the industry will be given training in the United States and third countries in technical and management subjects, such as pesticides formulation and technology, plant operations, quality control, and marketing and sales promotion. In-country, industry seminars and conferences will be supported by short-term consultants and specialists

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from the U.S. pesticide industry as a means of encouraging cooperation within and growth of the Indian pesticides industry.

Mission Staff - It is proposed that the functions of present present Entomology Advisor and Biologist - Rodent Control Specialist be combined into one position under the designation: Pest Control Specialist. This specialist (non-GOI requested) will serve on the Mission staff and help develop and carry out policies and programs in plant protection and rodent control. He will be available to work with Mission Agricultural Production and Agricultural University Development Teams and advise and assist the public and private sector organizations with plant protection and rodent control programs. Contingent upon agreement with the GOI to finance demonstrational and other activities with Trust Fund and or U.S. Uses rupees, he will help with such things as: assisting the Plant Protection Directorate and the state of Uttar Pradesh with a comprehensive demonstration on approximately 10,000 acres of rice; assisting the Food Department with demonstration of steel bin storage to protect food grains in selected villages; assisting the GOI, the Indian States and private organizations with training workshops, conferences and seminars on rodent control, grain sanitation, and plant protection. Additionally, he will assist in the selection and programming of participants in plant protection and rodent control and with arranging for the services and use of special consultants.

Summarizing, the following U.S. inputs by years are proposed:

TABLE VIII

Plant Protection Technicians and Consultants

<u>Technicians</u>	<u>(Number/Man-Months)</u>				
	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Plant Protection Advisor Training (CPPTI)	1/11	1/12	1/12	1/12	1/12
Pesticides Specialist(PAI)	1/12	1/12	1/12	1/12	1/12
Pest Control Specialist	1/12	1/12	1/12	-	-
<b>Totals:</b>	<b>3/35</b>	<b>3/36</b>	<b>3/36</b>	<b>2/24</b>	<b>2/24</b>

TABLE VIII (Contd)

Plant Protection Technicians and Consultants

(Number/Mon.-Months)

<u>Consultants</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
USAID/USA Plant Protection Surveillance and Control	-	3/6	2/6	2/6	2/4
Pesticides Industry (PAI)	-	2/2	2/2	2/2	-
Grain Sanitation/Storage	1/2	1/1	1/1	-	-
<b>Total:</b>	<b>1/2</b>	<b>6/9</b>	<b>5/9</b>	<b>4/8</b>	<b>2/4</b>

TABLE IX

Plant Protection Participants

(Number/Mon.-Months)

<u>Field of Training</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Pesticides Marketing and Sales (PAI)	3/12	3/12	3/12	3/12	3/12
Pesticides Formulations and Production (PAI)	3/12	3/12	3/12	3/12	3/12
U.S. Pesticides Industry Organization & Operations (PAI)	6/12	6/12	6/12	-	-
Surveillance & Control (GOI and States)	2/12	4/24	4/24	2/12	2/12
Aerial Plant Protection Detection and Control Procedures	-	<del>4/12</del>	4/12	-	-
<b>Totals:</b>	<b>14/48</b>	<b>20/72</b>	<b>20/72</b>	<b>8/36</b>	<b>8/36</b>

Additional rupee requirements will be based on agreed upon amounts negotiated in P.L. 480 agreements for use under the provisions of Section 104 (k). Currently, approximately 14 million rupees are available.

The magnitude of the U.S. inputs are considered adequate to carry out projected programs.

Farm Implements/Machinery - 367.4

For FY 1970 thru FY 1973 it is proposed that:

One USAID direct hire Agricultural Engineer (Farm Machinery) be attached to the Ministry of Food and Agriculture to assist with (a) evaluating, planning and introducing farm equipment and machines suitable for large and small farms, with special regard for the mechanization requirements of multiple and intensive cropping programs and systems; and (b) developing farm machinery supply, distribution and service systems in the public and private sectors, with special attention to the operations of the Center and State sponsored Agro-Industry Corporations and private manufacturer-operated farm machinery supply centers and custom-hire services. If U.S. efforts to organize a farm machinery trade association are successful, plans are to re-classify this position so as to provide an advisor to the association. This situation could develop about FY 1972.

One direct-hire Agricultural Engineer (Farm Machinery Training Specialist) be attached to the Ministry of Food and Agriculture to assist with (a) the establishment of farm machinery utilization training centers proposed to be established by the Center and States during the Fourth Plan (Tentatively, 15 are planned), (b) the reorganization and improvement of training programs and facilities at the two existing centers (Hissar and Budni), and (c) the preparation of teaching materials and training aids.

Five short-term consultants will be secured in FY 1970 to assist with a Ministry of Agriculture-sponsored All-India Farm Machinery Seminar - Workshop and participate on an Indo-American Farm Machinery Study team which will review and evaluate current problems of the Indian farm machinery industry. It is expected that circumstances may become favorable for the organization of a farm machinery trade association. Thus, by FY 1971 it may be worthwhile to bring representatives of the U.S. farm machinery industry to India for short periods to help promote the idea and catalyze action. Further, where opportunities develop, the services of U.S. consultants will be secured to assist with conferences and meetings to promote (a) investment in the farm machinery industry

and (b) contacts and possible collaboration between the Indian and U.S. farm machinery industry.

Participant training will be provided to support planned programs where needs exist for training not available in India. It is expected that those needs will be in specialized areas, such as, implement design, sales promotion and sales service, and custom hire type operations.

Trust Fund rupees be used to help finance planned seminars, conferences, demonstrations and training materials, and possible pilot tractor-machinery custom hire projects. TC funds will be used to purchase prototype implements and selected training aids and materials. Summarizing, the following U.S. inputs by years are proposed:

TABLE X

Farm Implements/Machinery Technicians and Consultants

(Number/Man-Months)

<u>Technical Area</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
<u>Technicians</u>					
Agricultural Engineer Farm Machinery (MFA)	1/12	1/12	1/12	1/12	1/12
Agricultural Engineer Farm Machinery Training (MFA)	1/6	1/12	1/12	1/12	1/12
<b>Total:</b>	<b>2/18</b>	<b>2/24</b>	<b>2/24</b>	<b>2/24</b>	<b>2/24</b>
<u>Consultants</u>					
Farm Machinery Conferences and Seminars	5/10	4/4	2/1	2/1	1/2
Trade Association Development		2/4	2/1	2/1	1/2
<b>Total:</b>	<b>5/10</b>	<b>6/8</b>	<b>4/2</b>	<b>4/2</b>	<b>2/4</b>

**TABLE XI**  
**Farm Machinery Participants**  
 (Number/Man-Months)

<u>Field of Training</u>	<u>FY 1970</u>	<u>FY 1971</u>	<u>FY 1972</u>	<u>FY 1973</u>	<u>FY 1974</u>
Farm Implement/Machinery design and testing	3/18	2/12	2/12	2/12	2/12
Custom Hire Operations	7/28	3/12	-	-	-
Farm Machinery Plant Management & Production	3/6	6/12	3/6	3/6	3/6
Farm Machinery Marketing and Sales Promotion	3/6	6/12	6/12	6/12	6/12
Farm Machinery Training Methods & Techniques	2/4	6/12	3/6	3/6	3/6
Totals:	18/62	23/60	14/36	14/36	14/36

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**MEMORANDUM**

**DEPARTMENT OF STATE**

Proj. No 3860367  
PV

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CLASSIFICATION

For each addressee, check one ACTION INFO

TO - **Ambassy NEW DELHI AIDTO A 698**

FROM - **AID/Washington**

get 7/1/70

SUBJECT - **Agriculture Inputs PROP Review #386-11-190-367**

REFERENCE - **TOAID A-592**

DATE SENT  
**12-24-69**

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The subject PROP was reviewed by NESA/W representatives and Messrs. Podol and Bauman on October 31, 1969.

The project was approved with the following exceptions: (1) the project termination date (PTD) of FY 1973, as contained in the FY 1970 Congressional Presentation, will be adhered to rather than the PTD of FY 1974 requested in the PROP and (2) the second farm machinery advisor position is not approved. The total project cost, as shown in the attached Project Authorization, was reduced accordingly. If additional assistance beyond FY 1973 is needed, we will consider extension of the project after we have had additional opportunity to evaluate project performance. The issues discussed in the PROP review are set out below.

Farm Machinery

The major issue raised in this review involved the proper policy concerning farm mechanization. The issue is to what extent should farm mechanization be introduced after it begins to displace labor-intensive agricultural techniques and create unemployment. There is general agreement among NESA/W staff and outside consultants that some mechanization is proper, for example: (a) to plant the high yielding varieties at precise depths; (b) to speed harvesting and permit multiple cropping; (c) to artificially dry foodgrains to prevent spoilage, sprouting and other losses; (d) to replace labor inputs in areas of labor shortages; and (e) to provide pumping and irrigation. NESA/W staff suggested that there is a need for a study of GOI policy and development of USAID strategy concerning farm mechanization. Mission representatives pointed out that some studies have been made in this area, but that no concrete conclusions have emerged. We all

PAGE 1 OF 1 PAGES

DRAFTED BY <b>RLP Rucker</b>	DATE <b>NESA/SA</b>	PHONE NO. <b>20489</b>	DATE <b>12/16/69</b>	APPROVED BY <b>Maurice J. Williams, AA/NESA</b>
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AID AND OTHER ATTACHMENTS

**NESA/SA:KToll (draft)**      **NESA/SA:CHRees** *Rees*      **NESA/ID:BBabry (subs)**  
**NESA/SA:RJMasot**      **UNCLASSIFIED**      **NESA/TECH:JMBLano (subs)**  
**NESA/ID:ARosow (subs)**      **CLASSIFICATION**      **NESA/DP:JGagan (draft)**

agreed that this issue needs further study and AID/W encourages the Mission to focus on this problem.

As a related matter, the PROP proposal for a second farm machinery advisor was discussed and was not approved at this time. It was doubtful that the position could be filled because of OPRED and, furthermore, it was agreed in the review that private sector industry should provide training for their clients in the maintenance and operation of farm machinery. It was generally recognized that assistance in developing programs to train ~~train~~ trainees and to insure maximum utilization of equipment may be necessary at some future time.

#### Rodent Control

NESA/W representatives stressed encouragement of more rodent control programs and our requirements for more information in terms of keeping ourselves and Congress ~~informed~~ informed of GOI efforts to solve the problem of food losses due to rodents. Mission representatives indicated that there is some interest in developing rodent control programs in India, although rodent control as such has not yet been assigned the highest priority by the GOI. We encourage the Mission to make increased efforts to stimulate GOI programs in this area.

NESA staff stressed during the review that other projects, Ag Promotion (AP) and Ag Universities (AUD), etc., have plant protection personnel which could be utilized for rodent control activities. The coordination of personnel who have responsibilities for rodent control, regardless of which project, is considered desirable. ~~by the~~. AID/W would appreciate more information on the rodent control activities and programs of plant protection personnel already at post. This information would greatly help to bring AID/W up to date on Mission sponsored activities in this field.

ROGERS