

AIRGRAM

DEPARTMENT OF STATE

Proj. 4970189.3 (10)
PD-ADD-754-A1

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TO - AID/W TOAID A-183

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FROM - DJAKARTA

SUBJECT - Non-Capital Project Paper (FROP)

REFERENCE - TOAID A-535, April 1, 1968

Country: Indonesia

Project No.: 497-11-110-189, 03

Submission Date: _____ Original X Revision _____

Project Title: Assistance to Agriculture

U.S. Obligation Span: FY 69 through FY 75

Physical Implementation Span: FY 69 through FY 75

Projected Gross Life-of-Project Financial Requirements:

U.S. Dollars **\$3,447,000**

U.S. owned local currency **None**

Cooperating country cash contribution **Undetermined**

Other donor **None**

Total \$3,447,000

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OF

DRAFTED BY <i>[Signature]</i>	OFFICE AGR/PRO	PHONE NO.	DATE 3/17/69	APPROVED BY <i>[Signature]</i> Deputy Director
AID AND OTHER CLEARANCES CONT: CIMartin OEA: ELAucher PRO: DWlocl				CONT-1, AGR-1, PRO-2, OEA-20 OEA.

A. SUMMARY DESCRIPTION

Indonesia is potentially rich in agricultural resources. Through judicious planning and the allocation and application of government resources in the amounts and ways now planned, the nation expects to become self-sufficient in food production and develop a net exportable surplus within five years; i.e., by the completion of the Five Year Plan. To make this possible, significant amounts of technical and material assistance from several major donors are required to rehabilitate the nation's infrastructure, develop and ensure availability of new high-performance agricultural inputs, and introduce modern agricultural methodology.

This AID project is specifically designed to strengthen the administration, organization and operations of Project Bimbingan Massal (BIMAS), an existing Indonesian agricultural extension program which promotes increased food grain production. Project BIMAS successively covers geographically specified farming areas with a program leading to rationalized distribution, wide-scale application of modern technology, and the supply of new agricultural inputs.

AID assistance to BIMAS includes both this technical assistance project and a development loan component.

1. Technical assistance is currently provided by a team of three agricultural extension advisors; an extension advisor, an extension training advisor, and an extension agronomist - specializing in seed production, distribution and processing. Three additional technicians will be added in FY 1971. Participant training in both the United States and in third countries will provide selected Indonesian agricultural technicians with in-depth training in modern technology. A limited commodity component will provide for the import of vehicles for USAID technicians, various educational and demonstration materials, seed testing and processing equipment, and office equipment and supplies.

2. An initial allotment of \$640,000 from AID DL 016 has been made to finance the procurement of land development, seed production and processing equipment, and vehicles. An additional \$10 million from Loan 016 has been allotted to finance the procurement of fertilizers. From an anticipated new DL loan, approximately \$1.2 million will be used for additional seed production and processing equipment, extension vehicles, pumps for irrigation, and grain drying, storage and processing equipment. About \$5 million of the new loan will be used for fertilizers in the food production sector.



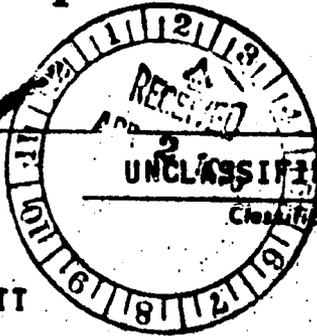
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Annex A

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ACTION AID-



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TAGS:

SUBJECT: PRP'S FOR FISHERIES AND SECONDARY CROPS

REF: (A) STATE 036238 (B) STATE 060235

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1. AGENCY REVIEW HELD MARCH 21 ON SUBJECT PRP'S. FOLLOWING ISSUES/POINTS RAISED IN REVIEW SHOULD BE FULLY ADDRESSED WHEN PREPARING ASSISTANCE TO AGRICULTURE PP AS PROPOSED REFTEL A.

2. SUGGEST REVISED ASSISTANCE TO AGRICULTURE PROJECT BE BROKEN DOWN INTO DISCREET SUB-PROJECTS AS IN CASE OF FAMILY PLANNING PROJECT NO. 188. FOUR SUB-PROJECTS MIGHT BE: (A) MARKETING OF AG INPUTS; (B) AG PLANNING; (C) SECONDARY CROPS; (D) FISHERIES. EACH SUB-PROJECT WOULD HAVE SAME SECTOR GOAL AND SIMILAR/PARALLEL PROJECT PURPOSE. PP'S FOR EACH SUB-PROJECT COULD BE SUBMITTED SEPARATELY TO SIMPLIFY PREPARATION AND REVIEW PROCESS.

3. NARRATIVES OF BOTH PROJECT REVIEW PAPERS CONSIDERED WEAK. BETTER-THAN-AVERAGE LOGICAL FRAMEWORK MATRICES SUGGESTED MISSION KNOWS MUCH MORE ABOUT PROJECTS THAN REFLECTED IN NARRATIVES. OUTPUTS IN PARTICULAR SEEMED WELL THOUGHT OUT.

4. FISHERIES. A. PROJECT NOT CLEARLY DIRECTED TO SMALLER FISH-FARMERS. TO DEMONSTRATE RESPONSIVENESS TO CONGRESSIONAL MANDATE, NEED PROFILES, INCLUDING

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PAGE TWO

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INCOME ANALYSIS, OF TARGET GROUPS, BOTH IN TERMS OF PRODUCERS AND CONSUMERS. B. COST AND RETURN OF BRACKISH WATER POND NOT CLEAR. NEED TO DISTINGUISH BETWEEN ANNUAL COSTS AND ONE-TIME COSTS. IN TABLE ON PAGE 8, ARE RETURNS TO TRADITIONAL TECHNOLOGY THOSE PRESENTLY EARNED, OR DO EVEN THESE RETURNS REFLECT SOME IMPROVEMENT OVER CURRENT EARNINGS? C. COSTS OF TECHNICAL ASSISTANCE CONFUSING. PAGE 13 INDICATES 48 M/M WHILE LOGFRAME INDICATES ONLY 12 M/M. D. NEED DETAILED DISCUSSION ABILITY OF GOI TO MANAGE PROJECT AND POTENTIAL FOR REPLICATION ELSEWHERE IN COUNTRY. E. ARE THERE EXISTING PACKAGES OF IMPROVED PRACTICES READY FOR PROMOTION PROGRAM? MOST IMPORTANT TO SHOW WE WILL NOT BE PROMOTING UNTESTED TECHNIQUES. F. ENVIRONMENTAL IMPACT STATEMENT WILL BE REQUIRED IN PP FOR THIS SUB-PROJECT. G. OUTPUT TARGETS SEEM OPTIMISTIC. SINCE SUB-PROJECT LIFE WILL BE TWO YEARS RATHER THAN THREE AS ENVISIONED IN PRP, WILL BE NECESSARY TO SCALE DOWN ACTIVITY TO MAKE IT FEASIBLE.

5. SECONDARY CROPS. A. PROFILE OF SMALL FARMER IN INDRAMAYU INCLUDING INCOME DISTRIBUTION, LAND HOLDING, ETC., REQUIRED. WILL PROJECT TEND TO EXACERBATE INCOME DISPARITIES IN REGION; THAT IS, HOW WILL PROJECT STRATEGY ENSURE THAT SMALLER, POORER FARMERS, WILL HAVE AT LEAST EQUAL ACCESS TO NEW TECHNOLOGY AND IMPROVED INPUTS AS WOULD LARGER FARMERS? B. BENEFITS SHOULD BE DESCRIBED IN DETAILED NARRATIVE AND QUANTIFIED WHEREVER POSSIBLE. C. INFORMATION NECESSARY ON SPECIFIC CROPS TO BE PROMOTED AND ON DEGREE OF CONFIDENCE IN NEW CROP PACKAGES TO BE PROMOTED. ARE PROVEN MULTI-CROPPING SYSTEMS PAST THE RESEARCH PHASE? D. WHAT WILL LONG-TERM EXPERTS BE DOING, ESPECIALLY IN MARKETING? E. NEED DETAILED DISCUSSION ABILITY OF GOI TO MANAGE PROJECT AND POTENTIAL FOR REPLICATION. F. AS WITH FISHERIES SUB-PROJECT, THIS ACTIVITY WILL NEED TO BE SCALED DOWN TO TWO-YEAR TIME-FRAME.

6. REVIEWERS SERIOUSLY CONSIDERED REQUESTING SUBMISSION REVISED PRP'S FOR THESE SUB-PROJECTS. REVIEWERS DECIDED AGAINST RESUBMISSION PRP'S ON BASIS THAT NEW INFORMATION FROM CONSULTANTS DUE NEXT TWO MONTHS ESSENTIAL FOR REVISION AND WHEN THIS INFORMATION IS AVAILABLE MISSION SHOULD HAVE VIRTUALLY ALL IT NEEDS FOR COMPLETE PP'S. AS COMPROMISE, SUGGEST MISSION CONSIDER ASKING LEN OTTO TO BRING PP'S TO AID/W FOR REVIEW IN DRAFT DURING IDY CONSULTATION AT BEGINNING OF HOME LEAVE. KISSINGER

BUDGET SUMMARY

Fiscal Years	Ap	L/C	Total	Personnel	Partici-	Commo-	Other
				<u>Serv.</u> AID	<u>pants</u> U.S. Agencies	<u>dities</u> Dir. US Ag	<u>Costs</u> Dir. & US Ag
Prior thru Act. FY 68	-	-	-	-	-	-	-
Oper. FY 69	TC	G	245	105	40	100	-
Budg. FY 70	TC	G	550	65	320	150	15
B + 1 FY 71	TC	G	730	200	320	200	10
B + 2 FY 72	TC	G	660	200	300	150	10
B + 3 FY 73	TC	G	605	200	300	100	5
All Subs.	TC	G	657	400	150	107	-
			<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Total Life			3,447	1,170	1,430	807	40

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B. SMALLER/ENVIRONMENT

The catalog of ills in the Indonesian agriculture sector is long. As a result of the economic and social dislocations of the 1965-67 period there was a substantial breakdown in the infrastructure and in the performance of agriculture institutions. Insufficient budgets, over-staffing and ineffective programming resulted in low levels of performance by government services organizations in all areas of agriculture.

Food production, and particularly rice production, has been insufficient to meet demands. Imports of rice exceeded 1 million tons from 1961 to 1964, but have been cut back since then because of foreign exchange shortages. Per capita caloric consumption (of which 50% is from rice) is estimated to be only 1700 per person per day; the minimum requirement is judged to be 2100. Total rice availabilities have fluctuated considerably during the past several years. Table I shows rice production and imports between 1957 and 1968.

Table I

RICE STATISTICS
(in thousands of metric tons)

<u>Year</u>	<u>Production a)</u>	<u>Imports b)</u>	<u>Population d)</u> (000)
1957	7,630	-	89,160
1958	7,980	-	91,153
1959	8,290	-	98,259
1960	8,760	89	97,088
1961	8,270	1,064	97,450
1962	8,890	1,096	99,580
1963	7,930	1,076	102,007
1964	8,420	1,025	104,145
1965	8,840	193	106,972
1966	9,140	306	109,593
1967	9,320	347	112,311
1968	10,680	700 c)	115,130

- a) Source: Central Bureau of Statistics. Rice statistics must be used with care, as there is more than one official series.
- b) Source: IBRD after the Central Food Board (BUL).
- c) Estimated.
- d) Source: Central Bureau of Statistics.

In the urban areas a large portion of the average family's budget is for rice, and rice prices tend to be an important determinant of other prices. Partly because of a desire to stabilize consumer prices in the short run and partly to limit government expenditures for rice distributed as payment in kind to civil servants and the military, the government has historically tried to hold prices down by buying cheaply at the peak of the harvest (or importing during the lean season) and "injecting" rice into the market as the price begins to rise. As a consequence, the price of rice in Indonesia traditionally ranged from 50 to 75 percent of the world market price, resulting in an artificially low return to the producer, who had little incentive to grow more rice than he and his family could consume. Adding to the farmer's difficulties was the fact that while rice prices were depressed, the cost of imported fertilizer -- purchased at a continually depreciating exchange rate -- rose. The system has now been changed. In 1968 the government established a price "floor" to govern domestic purchases by the Central Food Board (BUL) for distribution to government employees and sale through the injection program. The Central Food Board concentrated its domestic purchases in the May-July period, when market supplies from the major crop were at their highest level; the price paid was very close to the world market price and was related to the price of urea on a one-to-one ratio; i.e., the Central Food Board paid for a ton of rice approximately what the farmer had to pay for a ton of fertilizer. IF credit ceilings combined with the unusually large dry season crop in 1968 placed a severe strain on this program and prices of rice drifted below the support level in the fall of 1968. The GOI is now considering means to more effectively ~~assure~~ assure a reasonable balance between rice prices and input costs.

The GOI has several programs currently in operation within the agricultural sector:

1. BIMAS. The BIMAS program is designed to increase the production of rice through a combination of extension activities and the coordination of other service organizations which provide physical inputs and farm credit. The central theme of BIMAS is to assist farmers to improve production through the application of five principles:

- a. use of highly productive seed varieties,
- b. proper fertilization,
- c. efficient use of irrigation,
- d. control of pests and diseases, and
- e. use of improved cultural practices.

A plethora of research information in Indonesia and elsewhere is available to show that through the use of modern technology yields of rice can be increased several fold. The BIMAS program was initiated to provide information and guidance to farmers, to assure that the necessary inputs would be available at the farm level, and to make credit available to permit the farmer to acquire these inputs. The farmers are given credit at the BNI at 3% per month for the inputs made available to them.

The early BIMAS program -- undertaken on a limited scale -- demonstrated that farmers could increase yields by as much as 90%. As the program was expanded marginal increases dropped considerably. While this was in part due to extending the program to less suitable soil, less well irrigated lands, and less productive farmers; to a large extent it was also the result of over-extending the supply organizations and credit institutions, and ~~was~~ exceeding the informational and educational capabilities of the extension service. The achievement of a high level of BIMAS performance on an ever expanding scale is dependent upon improvements in these institutions.

2. BIMAS Baru. BIMAS Baru or New BIMAS, initiated in 1967, is based on the use of new higher yielding seed varieties from the International Rice Research Institute (IRRI). Quantities of experimental seed of IR-5 and IR-8, better known locally as PB-5 and PB-8, were obtained from IRRI in 1965 by the Central Institute for Agricultural Research at Bogor. Based upon the favorable results of the initial ~~was~~ trials more seed was imported in 1966 for large scale trails. In the 1968-69 wet season 350,000 hectares were planted with these new varieties. Because of the potential higher yielding capabilities of these varieties, the GOI is increasing the seed supply as rapidly as possible and converting much of the BIMAS area to the new seed. The fertilizer requirements of these varieties are higher than that for the local varieties, necessitating a higher level of credit allocation.

3. INMAS. INMAS is an acronym for "Intensifikasi Massal" or Mass Intensification in which farmers apply the same five practices of agriculture as in the BIMAS. In the INMAS system, the farmers have to pay cash for the inputs. The INMAS program planned for the wet season 1968-69 is 850,000 ha. ~~Realized increases in production are expected to be 20-30% over the 1968-69 level.~~

The INMAS program is generally carried out in areas where the BIMAS program has earlier been implemented, where the farmers have benefited from extension services and received inputs on credit. Therefore, these farmers are assumed to be familiar with the five-point intensification practices and in the use of required inputs.

4. BIMAS GOTOING BEROING. The BIMAS Gotoing Beroing is another type of intensification project; cooperation in food production is established between the Indonesian Government and nationals of foreign companies or governments. Examples of such cooperation are the contracts with ~~the~~ CIBA, COOPA, and Hoechst.

The Indonesian Government and CIBA, a European pharmaceutical firm which also manufactures pesticides, signed an agreement in Djakarta on 24 May 1968 which provides that CIBA will make available a package of physical inputs, funds and services valued at US \$40 per ha for a part of the land under the BIMAS

project; ~~the Indonesian Government will cover the credit of US \$10 per hectare~~
~~backwards~~ The project covers an area of 300,000 ha; 100,000 ha each in East
 Java, Central Java and West Java. Fertilizer is applied at the rate of 125 kg
 urea and 75 kg triple superphosphate per ha. Insecticide is applied by aerial
 spraying and, where required, by use of knapsack sprayers. The farmers pay no
 interest on the credit in kind received, and will reimburse the GOI for the
 inputs at the rate of 360 kg milled rice per ha, ~~roughly equivalent to~~
~~1/6 of their crop~~ or 1/6 of their crop depending upon local arrangements. The
 ERCC is responsible for collecting repayments in rice.
 Other newly initiated BIMAS COTONG ROJONG Projects are designed around a contract
 with Hoechst of Germany, which will provide inputs sufficient/on arrangements
 similar to CIBA's, and a contract with the COOPA organization which will cover
 190,000 hectares in West Java for the 1969 dry season ~~and 200,000 for the 1969-70~~
~~season~~ /to plant 100,000 hectares in the 1969 dry season in East Java

In the 1969 program and budget of the Directorate of Extension, considerable
 emphasis is placed on rice seed production. A priority objective is the estab-
 lishment of six centrally and strategically located seed farms in Central Java,
 East Java, South Sulawesi, North Sumatra, South Sumatra and Lampung. These
 farms will eventually serve as multiplication centers for the production of
 foundation seed from breeder seed stocks which will also be produced at these
 farms. A simple seed quality laboratory will be established to be used for
 inspection and control of all seed production activities at the provincial level.
 The San Hyang Seri Institute at Sukamandi will produce foundation seed for use
 in West Java. Similarly, CRIA at Bogor and several special sub-stations will
 multiply foundation PB 5 seed during the 1968-69 wet season. Extension seed
 (also known as second generation "certified" seed) will be produced at the
 village level. These specially assisted village seed production projects will
 vary from 10 to 25 hectares in size. In order to be selected for special
 emphasis and assistance, the village seed farms must agree to participate within
 the general guidelines and concepts of the Rice Seed Year Campaign. The village
 activities will center around extension seed multiplication and related activities.
 High quality seed produced in the major planting season of 69-70 will be adequate
 to plant more than 90,000 hectares. Since adequate rice seed can be produced
 for one-third of the total irrigated rice production area every third year,
 total coverage can be achieved in three years.

The GOI's ~~annual budget for 1969~~ for the establishment of the six seed centers
 described above is presently being determined. Technical and commodity assistance
 from AID is needed to assist in upgrading the centers. The six seed centers have
 been chosen from Extension Seed Farms already in existence; they will be improved
 and expanded to bring about an increase in the production of foundation seed.

The GOI will allocate funds for rehabilitating the selected Extension Seed Farms;
 there will be ~~request~~ request for major renovation of buildings, seed storage structures,
 drying floors, ~~batch drying~~, ~~benches~~ and other facilities.

~~XX~~

The GOI has recently announced that for 1969/70, the first year of the Five Year Plan, 43.1 billion rupiahs have been allocated from the Development Budget and other sources for the agricultural sector. From 1969/70 to 1973/74 a total of 395 billion rupiahs will be budgeted to agriculture -- the largest amount for any single sector in the economy. The availability of funds for agriculture as compared with the insufficient budgets of the past will give a strong boost to the viability of the government service organizations affected.

A considerable amount of recent background information on agriculture in Indonesia is contained in the Report of the Asian Development Bank's Technical Assistance Mission to Indonesia on "The Production and Availability of Foodstuffs in Indonesia" (December 30, 1967), and its Asian Agricultural Survey (March 1968). Also of importance is the IBRD study Economic Development of Indonesia, Vol. III (February 12, 1968), which draws extensively from the "Report on Agricultural and Related Problems in Indonesia with Special Emphasis on Food Grains -- July 1967" by Leon A. Mears (enclosed with TOAID A-25, July 25, 1967). The IBRD's original study is supplemented and updated in Current Economic Position and Prospects of Indonesia, Vol. II (October 1, 1968). The kinds of policies which AID hopes to encourage in Indonesia are described in a second paper by Prof. Mears, "An Approach to the Rice Problem in Indonesia", November 7, 1967. A more recent paper, "A New Look at the BIMAS Program and Rice Production", May 1968, by Mears and Saleh Affif, makes a critical evaluation of BIMAS in terms of performance and impact on the national economy.

C. STRATEGY

The distribution of population in relation to land resources, the rather substantial physical infrastructure which already exists in the populated areas, and the availability of new technology mean that the primary emphasis of agricultural programs should be on increasing productivity of land already in cultivation rather than on expanding the area under cultivation. This requires:

- (a) applied research to refine standards on fertilizer application rates, times, and methods of application in different areas; to develop more effective insect control measures; and to test higher yielding rice varieties for local adaptability and resistance to disease and pests;
- (b) an intensified educational program to instruct farmers on new technological innovations;
- (d) improvement of the distribution system for production inputs;
- (e) increasing credit availability and improving the system for administering credit;

- (f) increasing the capacity of the rice drying and storage facilities;
(g) rehabilitation and expansion of irrigation systems and improving the transportation system;
- (h) assuring an effective marketing system which can maintain a price relationship between production inputs and rice prices at levels which provide sufficient incentives to the farmer.

The foregoing constitutes major long term undertakings on the part of the GOI. USAID will assist only in certain aspects of the overall program. AID assistance will be limited to the BIMAS rice program. It should be realized, however, that BIMAS incorporates methods which the GOI expects to generalize for increasing production of other food commodities. Now, and in the immediate future, BIMAS will concentrate on rice because of the key role of this commodity in the economic life of the country. Subsequently, it is the GOI's intention to apply the BIMAS program to maize, soybeans, peanuts, etc.

The proposed AID project encompasses three broad action areas:

(1) Improvement of farmer education and information services:

Two AID technicians - an agricultural extension advisor and an extension training advisor - have been assigned to work with the Directorate General of Extension. Their principal activity is to organize a massive demonstration program which will initially be concentrated in a discrete geographic area in Central Java. Expansion to other areas will follow as the organization and training methods are proven effective in the initial area of concentration. USAID technicians will train extension agents at the Kabupaten, Kecamatan and village level.

(2) Seed improvement, production and distribution:

A major need exists to upgrade the system of rice seed multiplication with a view to eventually incorporating legal and technical controls over the production of "certified" rice seed. Until a seed law is formulated and enforced, however, various intermediate steps can be incorporated within the present system to improve seed quality and to increase the quantities of improved varieties such as PB5. When the system of multiplication is improved, the GOI will be ready to rapidly multiply for distribution the newer and better varieties of rice as they are developed and released.

(3) Assistance in drying and storage of rice:

An important consequence of the BIMAS and related programs is an increase in the amount of rice which moves through commercial channels. The extensive use of new rice varieties will also force certain changes in

harvesting and handling practices. Consequently, some important changes in post-harvest handling of rice will take place. More rice will be handled and stored in the form of rough rice instead of in stalk padi as is currently done. This will require a different approach to drying and storage. There is thus a need to introduce modern drying and storage methods. USAID will provide technical assistance and limited commodities for installing and placing in operation a demonstration unit. The capital items required will be provided with DL loan funds.

Other AID-financed inputs which support BIMAS directly or indirectly include:

1. Food for Work projects for rehabilitating and/or expanding irrigation and drainage systems;
2. Technical assistance for higher agricultural education;
3. A study of agriculture research organization, administration and orientation by a joint U.S. and Indonesian team as a follow-up to the workshop on food, held with AID support in June 1968 in conjunction with the U.S. National Academy of Sciences;
4. DL foreign exchange credits for equipment, fertilizer and pesticides.

Efforts have been made to interest U.S. firms in establishing joint ventures in fertilizer and other input distribution systems, including facilities for bulk handling, mixing and bagging of fertilizer. While much interest appears to exist there have not been any concrete developments so far.

Other donor activities tie into the BIMAS framework through assistance in such areas as fertilizers, irrigation, and seed inspections. The following is a list of the activities of other donors which points out the inter-relationship, but not duplication, of agricultural assistance to Indonesia.

1. The Harvard Development Advisory Service, sponsored by the Ford Foundation, is studying means for establishing a rational and administratively feasible program for maintaining a relationship between factor cost and the price of rice to the farmer with the goal of providing the farmer with sufficient incentive to use the new inputs.
2. The ADB is providing an agronomist specializing in soil fertility to work toward refining fertilizer recommendations for different areas. A water management engineer is assigned to work with the Department of Rural Irrigation of the Ministry of Agriculture to develop a program for improving water utilization. The ADB is

also studying two irrigation projects in Central Java which may be funded with ADB loans.

3. The IBRD has approved a \$5,000,000 loan for rehabilitation and improvement of irrigation systems. A \$2,000,000 loan for project studies is also expected to contribute indirectly to the overall rice production effort.
4. The FAO is carrying out fertilizer demonstrations in Jogjakarta Province in conjunction with the Freedom From Hunger campaign.
5. The Federal Republic of Germany is providing technical as well as commodity assistance in two selected areas. Fertilizer and insecticides from the FRG, provided on a grant basis to the GOI, are given to farmers in Central Java and West Sumatra as credit in kind, under supervision of FRG technicians. Repayments will be used to establish a revolving fund for procurement of inputs in subsequent years.
6. The Government of France is providing personnel and commodities to carry out a fertilizer trial and demonstration program in the area which has recently been opened to irrigation by the Djatiluhur dam.
7. The United Kingdom and the FAO both made studies of rice processing during the second half of 1968. It is understood that the U.K. may provide assistance in drying and storage of rice.
8. The Government of Japan is assisting in the training of seed inspectors and training of mechanics who will specialize in farm equipment.

D. PLANNED TARGETS, RESULTS, AND OUTPUTS

With its agricultural resources Indonesia should not only be self-sufficient in the production of foodstuffs, it should also produce an exportable surplus of sizeable proportions. The fact that after two decades of independence Indonesia is neither self-sufficient nor a net exporter of agricultural commodities is both an indictment of the old order and a challenge to the new.

AID-financed projects in the field of agriculture have food self-sufficiency and improvement in the trade balance as their ultimate goals. Thus, in the long run, success of this project or lack thereof will be measured in import and export trade figures. When Indonesia no longer has to import rice or rice substitutes and is, in fact, exporting to other markets, success will have been achieved.

Table II gives a projection of targets of the Five Year Plan with respect to rice production and the utilization of inputs.

TABLE II

FIVE YEAR PLAN TARGETS FOR RICE PRODUCTION AND EMPLOYMENT OF INPUTS

	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Production in Millions of Tons ⁽¹⁾	10.5	11.4	12.5	13.8	15.4
Area in Millions of Hectares Total	7.60	7.96	8.32	8.76	9.30
BIMAS & IRMAS	1.80	1.50	1.00	.40	0
BIMAS Baru & IRMAS Baru	.79	1.40	2.15	3.08	4.00
% Of hectareage in intensification program ⁽²⁾	34.1	36.4	37.9	39.7	43.0
Projected per Ha. yield of milled rice - tons ⁽³⁾	1.38	1.43	1.51	1.58	1.66
Seed Production of New Varieties PB5 and PB8 in 1,000 tons	42.00	64.50	92.40	120.00	144.00
Fertilizer requirements in 1,000 tons					
Urea	430	530	676	800	960
Triple super phosphate	215	265	325	400	480
Pesticide requirements in millions of dollars	16.6	17.5	18.5	20.1	22.0

(1) 1968 production is now estimated at 10.68 million tons, up from 10.16 because of unusually good weather conditions.

(2) In 1967 and 1968 the intensification program reached 1.6 and 1.9 million ha., respectively.

(3) 1967 yield was 1.23

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Approximately 50% of the total rice hectareage on Java is scheduled to be brought under the BIMAS, INMAS and BIMAS BARU intensification programs during the period of the Five Year Plan. The average yield is projected to increase by .28 tons of milled rice per hectare. To achieve this level of increase it will be necessary to obtain much higher yields on land under intensification projects since the remainder of the land on Java is either planted in upland rice or is poorly irrigated land which cannot support important increases in yields. The yields from the intensification program area will need to average about 2.5 tons of milled rice per hectare or slightly over 1 ton more than the overall average on Java. BIMAS -INMAS yields to date have ranged from .89 tons to 2.0 tons higher than non BIMAS - INMAS yields. With increasing use of new seed varieties the yield increase should be near the higher end of the range. The quantitative measure of success of the project will thus be in terms of (1) the area which can be brought under the intensification program and (2) the efficiency of the program as measured by average yields on the intensification area.

In addition to the goal of self-sufficiency in rice, this AID project is designed to strengthen and improve the extension service, the seed production structure, the fertilizer distribution and marketing structure, the rice handling system, and various credit institutions. The benefits to be derived from the increased viability of these institutions will extend far beyond an increase in the output of rice.

E. COURSE OF ACTION:

USAID assistance under BIMAS is initially confined to Central Java. Central Java was selected as the area of concentration because (1) it has the highest population density per unit of arable land; (2) approximately 90% of the farmers have to purchase rice for eating purposes at some time during the year; (3) most of the better trained Indonesian agricultural officials reside and work in Central Java; and (4) there is a need to reduce the potential for social disorder by improving individual welfare in this area.

The project will begin with the establishment of 1/10 hectare demonstration plots in 1,500 villages in the 1969 dry season. The number will be increased to 2,500 in the 1969-70 wet season and reach 3,000 by the 1970 dry season. The program will involve the training of about 700 lower level extension agents and will reach about 750,000 farmers, involving 450,000 hectares of rice land. In 1971 and subsequent years the area of training and demonstration will be expanded in keeping with the administrative capabilities of the provincial extension organization.

A "kit" or package will be provided for the demonstration plots which will be established in the villages. The kit will contain recommended and approved quantities of fertilizer, insecticides and rodenticides, and will be accompanied

by information on improved practices and techniques necessary to produce high yielding rice. Extension training at the lower level through the use of mass educational communication materials will play a major role in educating the farmer in the new techniques of rice production.

Beyond the three U.S. technicians now assisting BIMAS in extension work, it is anticipated that there will be a need for three additional specialists in FY 1971: one expert in handling and management of grain processing, one knowledgeable about credit institutions, and a third to assist PERTANI in fertilizer handling and distribution.

1969

Out-of-country training for Indonesian technicians will begin in FY 1969, when 20 participants are programmed for training in the United States and 45 for third country training in such fields as seed processing, certification and multiplication; drying and storage; agriculture information and communications; rice production; and agriculture program planning. The areas of participant training will vary as the project progresses and needs are defined.

The procurement of commodities under the commodity component of this project is scheduled to begin immediately. There will be a continuous procurement of ~~various~~ educational and demonstration materials, seed processing and production equipment, and office supplies and equipment for the life of project. The commodities procured with the \$640,000 from AID DL 016 will arrive in October and November of 1969. The \$10 million of fertilizers is scheduled for a September-October, 1969 delivery. Commodities from the additional \$1.2 million from the anticipated new DL loan would arrive in the Fall of 1970 and Spring of 1971.

LYDMAN