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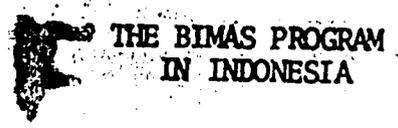
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Selected Papers

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1. The BIMAS Program for Self-Sufficiency in Rice Production
Alexis Rieffel (now USAID/Indonesia) 1969
2. Indonesia's Green Revolution: The Abandonment of a Non-Market
Strategy Towards Change
Gary E. Hansen, 1970
3. Episodes in Rural Modernization: Problems in the BIMAS Program
Gary E. Hansen, 1971

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The BIMAS Program in Indonesia - Selected
Papers. Alexis Rieffel and Gary E. Hansen.
1972(?).
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The BIMAS program for self-sufficiency in
rice production.
Indonesia's green revolution: Abandonment
of a non-market strategy towards change.
Episodes in rural modernization: Problems
in the BIMAS program.
1. Agri extension work - ID. 2. Green revolution - ID.
Rice - ID. 4. Rural dev - ID " Agricultural credit - ID.
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October 1969. Cornell
University.

THE BIMAS PROGRAM FOR SELF-SUFFICIENCY
IN RICE PRODUCTION*

Alexis Rieffel

BIMAS is a system of agricultural extension, planned and on a mass scale, that aims to raise agricultural production, and at the same time to increase the prosperity of farmers (specifically) and of society (in general)--all in the context of building a just and prosperous society based on Pantjasila, by the will of God.

Soedarsono Hadisapoetro, 1967

In 1964, faced with the fundamental problem of population growth that was substantially more rapid than the growth of food production, and moved for reasons of nationalism to strive for self-sufficiency, Indonesia gambled on a "home-grown" solution: the BIMAS program.¹ In the short space of three years, a small-scale pilot project was transformed into a "united-front" assault on traditional patterns of rice production in virtually every rice-growing district in the nation. Although the success of the program to date has not been extraordinary, it is worth examining both as a type of approach to the basic problem of "agricultural transformation," and as an example of Indonesia's capacity to undertake programs of national development.

The immediate objective of BIMAS is the straightforward one of increasing production, of rice in this case. It has a three-pronged approach which presents to the farmer: (1) an "ideology" of modern rice farming; (2) credit to purchase a "package" of modern inputs; and (3) intensive guidance. The

* The field research for this study, undertaken from May to September 1968, was made possible by the International Development Studies Program, Fletcher School of Law and Diplomacy, Tufts University.

1. The acronym "BIMAS" is from bimbingan massal, mass guidance. It is reasonable to suspect that BIMAS was inspired to some extent by the agricultural programs of Mainland China, although no direct evidence of such influence is available. BIMAS also resembles, in some respects, the "package program" initiated in India under the guidance of the Ford Foundation, but again, there is no evidence that the "package program" approach was emulated by the originators of BIMAS.

first component is the ideology of *pantja usaha* (five endeavors): proper soil preparation; proper irrigation; use of improved seed varieties; use of fertilizer; and use of pesticides. The second is the BIMAS package, consisting of a sufficient amount of credit (channeled through the village-level agricultural cooperatives) to obtain the necessary seed, fertilizer and pesticides. Third is mass guidance, a concentrated effort by local agents of the Agricultural Extension Service, supplemented by university students, to spread the meaning of *pantja usaha* and to ensure delivery of the package elements "to the right place at the right time."

The *pantja usaha* has been the most effective and the cooperative-administered credit package the least effective component. For Indonesian society in the long run, however, the involvement of students may be the most significant aspect of BIMAS.

The Origin and Expansion of BIMAS²

No important efforts in the field of agricultural extension were made in Indonesia before the Revolution. The first program of note following Independence was the establishment of Rural

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2. Published material on BIMAS in the English language includes, among others: Asian Development Bank, Report of the Technical Assistance Mission to Indonesia to Advise on the Production and Availability of Foodstuffs in Indonesia, 2 Vols., (Manila, December 30, 1967) [Restricted]; Asian Development Bank, Report of the Technical Assistance Mission to Survey and Advise on the Indonesian Rural Credit System, 2 Vols. (Manila, December 13, 1968) [Restricted]; Government of Indonesia, Indonesian Science Institute (LIPI), Draft Report of the NAS-LIPI Workshop on Food, Djakarta, 27 May - 1 June 1968, 2 Vols. (Djakarta) [Mimeographed]; International Bank for Reconstruction and Development, International Development Association, Economic Development of Indonesia, 6 Vols. (February 12, 1968) [Restricted]; Leon Mears and Saleh Afiff, "A New Look at the BIMAS Program and Rice Production in Indonesia," Bulletin of Indonesian Economic Studies, No. 10 (June 1968), pp. 29-47; D. H. Penny, "Agricultural Extension for the Masses," BIES, No. 2 (September 1965), pp. 60-63; E. A. Roekasah and D. H. Penny, "BIMAS: A New Approach," BIES, No. 7 (June 1967), pp. 60-69; United Nations, Food and Agriculture Organization, Report of the FAO Survey Team to Indonesia, 23 January - 23 February 1967 (Djakarta: reprinted by Direktorat Pertanian Rakjat, 1968).

Education Centers (*Balai Pendidikan Masyarakat Desa*, or BPMD). The BPMD were to be focal points of a broad range of development activities; the original intention was to establish one in each *ketjamatan* (sub-district) in the country. But the costs of purchasing land and constructing and equipping a facility were much higher than anticipated, and, as of 1968, BPMD existed in barely twelve percent of Indonesia's *ketjamatan*.³

The next noteworthy effort was made soon after the transition to Guided Democracy/Economy. Emergency Law #16 of 1959 established a Board for Food Production and Land Development. The board can claim one accomplishment: the establishment, by 1961, of 500 Paddy Centers (*Padi Sentra*)⁴ which provided fertilizer, improved seeds, and production credit to rice farmers. Repayment was in kind at the end of each season. Unfortunately, the Padi Sentra failed. Credit was so easy to get that the farmers did not feel compelled to repay it; the low price set for rice in repayment of credit was a negative production incentive; and the personnel operating the centers were insufficiently trained relative to the large number of tasks they were expected to perform.⁵ The Padi Sentra program was officially terminated in 1964.

The year 1959 is also notable for the inauguration of the Three-Year Rice Production Plan, a massive effort to achieve self-sufficiency in rice by importing fertilizer and organizing the *petani* (peasants) to increase their production. A national command was established to oversee the program (*Komando Operasi Gerakan Makmur*, or KOGM); at the village level, executive bodies were formed to coordinate the work of the *petani* who were all (in theory) organized into ten-man teams. One innovation in this scheme was that it combined efforts to deliver the inputs necessary to expand production with efforts to "change the mentality of the farmer."⁶ The scheme failed because it was too

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3. In 1968, 371 BPMD: see: Rapat Kerdja Pangan 1968, Masalah Institutional, Working Paper No. 5 (Djakarta, 1968), p. 8; 3164 *ketjamatan* in 1955, according to Nugroho, Indonesia: Facts and Figures (Djakarta: n.p., 1967), p. 33. In the current five-year plan, the existing BPMD will be improved.
 4. Reportedly, the Paddy Center program was based on the Philippines' success with a similar institution. United States Economic Survey Team to Indonesia, Indonesia: Perspective and Proposals for United States Economic Aid (New Haven: Yale Southeast Asia Program, 1963).
 5. Soedarsono Hadisapoetro, Bimbingan Massal Sebagai Sistem Penjualan Pertanian (Jogjakarta, 1967), p. 6.
 6. Djatianto Kretosastro, BIMAS S.S.B.M. (Djakarta, 1962), p. 7.

diffused: this was "guided extension" parallel to Sukarno's Guided Democracy; but the number of qualified leaders was insufficient to exert the leverage necessary to approach the objectives of the plan; and it proved impossible to coordinate delivery of inputs on such a massive scale.

In the early 1960's, then, great concern was directed toward increasing rice production (for political as well as economic reasons), but considerable disillusionment about the possibilities existed, considering the blatant failure of all previous efforts. Obviously, new ideas were required. The Agricultural Institute in Bogor (hereafter referred to as IPB, from *Institut Pertanian Bogor*, the name adopted in 1963 when it separated from the University of Indonesia), in keeping with its position as the best agricultural faculty in Indonesia at that time, developed the new initiatives. Nevertheless, this involvement of the college in agricultural extension in 1963 represented a departure from IPB's past traditions. In the first place, very few of its students came from rural backgrounds, and second, no more than one month of the five-year curriculum was devoted to village-level work because graduates rarely became extension officers. The bulk of Bogor's graduates went to work in the Agricultural Ministry or on the estates (plantations).

The pilot project for the BIMAS concept, located in the Karawang District east of Djakarta, was proposed by an instructor at IPB and sponsored by the Ministry of Education. How did it happen that the Ministry of Education, rather than the Ministry of Agriculture, sponsored this first attempt? Briefly, it is because a few individuals were strategically placed at the proper time, in particular, Prof. Dr. Ir. Tojib Hadiwidjaja, the present Minister of Agriculture and former Dean of the Faculty at IPB, who became Minister of Education in March 1962. The Law on Higher Education of 1961 (No. 22) had listed service to society as a third "duty of higher education," in addition to the traditional duties of teaching and research. As Education Minister, Prof. Tojib created an institute to supervise the universities in their implementation of the "third duty"--the *Lembaga Koordinasi Pengabdian Masyarakat* (LKPM), Coordinating Institute for Service to Society. At the same time, Ir. Djatiyanto Kretosastro, a lecturer in the Agronomy Department at IPB, had conceived of a new approach to agricultural extension based on the principle of intensive guidance. He presented it to a conference sponsored by the Agriculture Ministry in July 1963, but the response there was not encouraging. Therefore, he turned to LKPM, where his proposal was received enthusiastically.

Although there is no room here to develop a case supporting the contention, it appears that the imaginative action which produced the BIMAS program was in response to the nationalist fervor of the period. Confrontation with Malaysia had begun in

December 1962; the growing strength of the Communist Party (PKI) was alarming the traditional power structure; Sukarno was exhorting his people to greater efforts by invoking the spirit of Marhaen--the mythical peasant who symbolized the rural masses. Despite a tendency to remain aloof from the peasantry, the elite, which automatically includes all university students and graduates, felt under pressure to demonstrate positively its support of the *Pantjasila* (Five Basic Principles of the State) ideology. The BIMAS program answered this need.

Pilot Projek Pantja Usaha Lengkap,
Karawang, 1963/1964

Ir. Djatianto's proposed new approach to agricultural extension was tested in the field during the 1963/1964 wet season (on Java, roughly November through May). It was known as the "Complete Pantja Usaha Pilot Project" because its hypothesis stated that the most promising route to increased rice production involved assisting the petani in cultivating according to pantja usaha. To paraphrase Ir. Djatianto's description, it was a form of "action-research" designed to channel (in a concentrated manner) new ideas and techniques to farmers in order to increase their awareness and thus make them self-supporting. In the socio-economic field, the Project would lay the groundwork for effective *koperta* (agricultural cooperatives) and determine costs of production, costs of living, and credit needs. In the educational field, it would provide practical training for agriculture students on the one hand and introduce science to the rural areas on the other.⁷

Twelve students, in their fourth or fifth years at IPB, were selected to participate in the Project. They received special training before arriving at their sites, in mid-September 1963, and they remained in the Project's three villages until the harvest. Altogether, the Pilot Project encompassed 162 cultivators (thirteen per student) and 103 hectares (eight per student). In each village, the yields of the participants exceeded six tons of dry stalk padi per hectare. Compared with the yields of non-participants, the Pilot Project results ranged from 40% to 145% higher, depending on the village.

In the principal account of the Karawang Project, Ir. Djatianto stated that the doubling or tripling of yields achieved by the Project "proved" that the approach adopted was correct.⁸ Due to methodological shortcomings, however, the subsequent written records do not support the claim. How, then, did the

7. Djatianto, BIMAS, pp. 56-70.

8. Ibid., p. 12.

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Karawang Project become the springboard for a nation-wide program? The best guess is that Ir. Djatianto was the right salesman with the right product in the right place at the right time. He was imaginative enough to draw on his experience with the Project to formulate a logical expansion of the technique which could be applied on a nation-wide basis, and he knew where to take his idea.

Demonstrasi Massal, 1964/1965

The transformation of Ir. Djatianto's concept from a pilot project to a nation-wide program took place within a matter of months. The crucial point of transition came in September 1964 during the annual working meeting of the provincial heads of the Agricultural Extension Service in Djakarta. Before discussing the proceedings of this meeting, one needs to explain the distinction between the national and the provincial extension services, and to describe how they are related to the Agriculture Ministry.

Consistent with the administrative structure of the Indonesian Government, each province has an autonomous agricultural extension service known as *Diperta* (*Dinas Pertanian Rakjat*, Office of People's Agriculture, as distinct from Estate Agriculture). Each *Diperta* provincial head is appointed by the province's governor and is fully responsible for the implementation of agricultural extension within his province. The national extension service is responsible for drawing up and funding national programs and for providing the provincial services with the technical information and material necessary to fulfill their responsibilities. The national extension service was known as *Djaperta* (*Djawatan Pertanian Rakjat*, Service for People's Agriculture) until 1965. Subsequently, it was brought directly into the Ministry of Agriculture as the *Direktorat Pertanian Rakjat* (*Dirtara*, Directorate of People's Agriculture) under the Agriculture Department.

Troubled by the earlier failures to achieve self-sufficiency in rice production, the Agriculture Ministry in 1963 was groping for a new approach. In July of that year, the Ministry sponsored a conference of graduates from the agriculture faculties in order to get some ideas for a new system of agricultural extension. This meeting declined to consider Ir. Djatianto's original proposal.

At approximately the same time each year, a working meeting is called by *Dirtara* for all the *Diperta* heads in order to review the previous year's production, check progress in the current year, and plan the coming year's programs. In the 1963 meeting, in September, the Agriculture Ministry decided that any new rice production campaign must be concentrated in areas with the best

potential for production increases and also must be administered through the koperta. In December 1963, Djaperta invited representatives of the agriculture faculties and representatives of the peasant mass organizations to a seminar called to draw up a new agricultural extension system. Their conclusions became official policy. Two of them are translated below to illustrate the spirit of the endeavor.⁹

a. The peasant class, which at this time faces difficulties in the socio-economic field and delays in the education field, consequently needs special attention in order to create a favorable climate that will stimulate the passion for work in raising the production of important crops.

b. The seminar emphasizes the need for a basic change in agricultural extension (in its objectives as well as its method and organization) so that agricultural extension will in fact fulfill its role as a tool of the Revolution.

Finally, by the annual working meeting of the extension services in September 1964, the preceding fourteen months of debate had produced a new national program to increase rice production. The details resulted from a special committee set up to formulate a program to involve students in agricultural extension. Representatives of all the agencies concerned with agricultural development participated in the discussions, including the social service institute LKPM of the Department of Higher Education, the eight agricultural faculties, the Farmers' and Fishermen's Cooperative Bank (*Bank Koperasi Tani dan Melajan--BKTN*, now known as BNI Unit II), the National Federation of Agricultural Cooperatives (*INDUK KOPERTA*), and the State Fertilizer Trust (*P.N. Fertani*). The special committee discussions focused on a working paper submitted by the leader of the Karawang Pilot Project, Ir. Djatianto. Rather than being a simple review of the Karawang Project, however, this working paper set forth detailed guidelines for the implementation on a large scale of a new kind of extension approach. In fact, Djatianto's presentation was so well prepared that his plan was accepted virtually *in toto*. One minor departure was an acreage target of 11,000 rather than 10,000 hectares. Significantly, however, it was decided to locate *DEMAS* (*Demonstrasi Massal*, Mass Demonstration) units in fifteen of Indonesia's provinces, rather than restricting them to Java's three provinces as suggested by Djatianto. It was also agreed at the working meeting that the administrative costs of *DEMAS* would be shared by the Department of Higher Education and Dirlara. BKTN agreed to provide cash credit to the participating petani through the koperta, and P.N. Fertani along with the Diperta undertook to sell inputs to the petani through the koperta.

9. Ibid., p. 11.

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Because of the crucial nature of this working paper, it is worth reviewing here briefly.¹⁰ Djatianto entitled his paper "A Plan for Mass Demonstration for Self-Sufficiency in Food-stuffs" (*Rentjana Demonstrasi Massal, SSBM*). He began with the assertion that extension conducted in an intensive manner, as tested in the Karawang Project, could potentially double or triple rice yields. Experience indicated that the largest effective unit of intensification was 50 hectares with two students guiding about 100 farmers. Because the number of final-year agriculture students in Indonesia's eight agricultural faculties was only 400, this limited the number of intensification units to 200, covering 10,000 hectares.

Ir. Djatianto outlined three sets of prerequisites for the success of DEMAS; they governed the choice of areas in which to carry out DEMAS, the conditions which students and other DEMAS workers must fulfill, and the equipment and materials. Concerning the choice of areas, Ir. Djatianto distinguished between the technical/physical prerequisites including high-yield-potential factors (fully-technical irrigation, infrastructure, locally-proven seed varieties and cultivation methods) plus risk-reduction factors (flood-free and disease-free plots) and the social prerequisites, including cultivator-owned land and freedom from the negative influence of cities. The prerequisites for the students and other workers were (to paraphrase the working paper):

a. A strong mentality: willingness to sacrifice, desire to help society, consciousness of the meaning of the Message of the People's Suffering and of the third goal of the Indonesian Revolution (a just and prosperous society), proper conduct (i.e., total integration of thought, feeling and action) with the petani participating.

b. Technical knowledge: practical, not just theoretical, knowledge of soil cultivation and all stages of rice production; also general knowledge about agriculture and village sociology.

c. Strong and healthy physique: capable of assisting the petani in all his tasks for up to fourteen hours per day.

In the last part of his working paper, Ir. Djatianto drew up a detailed schedule for implementing DEMAS:

10. Ibid., pp. 123-145 for complete text.

A. Preparation for DEMAS

1. DEMAS Command Structure

DEMAS is a cooperative program including all the institutions involved in agriculture. On the highest level, the program is directed by a committee composed of the directors of all the institutions concerned. The program is carried out by an Executive Committee headed by the Director of DIRTARA, and includes representatives of all institutions concerned. At the provincial level, DEMAS is administered by the Deans of the Agricultural Faculties in the province and the head of the respective Diperta along with representatives of BKTN (for credit) and P. N. PERTANI (for fertilizer). At the kabupaten level, similar groups are formed, and at the unit level, the program is run by the local extension agent, the students assigned to the unit and various local leaders.

2. Local Extension Organization

Everyone concerned at the local level must participate in decision-making. The koperta, however, is the focal point of all efforts.

3. Coaching

Practice is as important as theory for all DEMAS workers (students, extension agents, etc.). One month of coaching will be given for all workers before starting the program.

4. Preparation of Material and Equipment

Equipment for workers (uniforms, notebooks, guide manuals), materials for cultivation (seeds, fertilizer, pesticides, tools), and extension materials (bicycles, films, pamphlets) must be available on site before they are needed.

B. Implementation of DEMAS

Workers must arrive at the unit one month before seeding. On site, workers must acquaint themselves with the locality and draw up a master plan for the season. Indoctrination of farmers must be scheduled. The workers must learn to adjust their behavior to local expectations. An inventory of material needs must be completed. The activities of the koperta must be monitored. Each worker must personally prepare a one-half to one hectare demonstration plot. All effective methods of extension must be utilized.

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C. Evaluation of DEMAS

At the end of the season, a thorough evaluation of the program must be undertaken.

Considering that the working meeting at which the DEMAS program was adopted adjourned in the middle of September when planting for the wet season rice crop was beginning in many areas, the speed with which the program was implemented is remarkable. The number of units actually set up matched the target. Even more significant, the yield increases in DEMAS exceeded the yield increases attained in the Karawang Project: the average yield for DEMAS plots was seven tons of dry stalk padi per hectare compared with three tons for non-DEMAS control plots.

At least in Central Java, the success of the program was due in large measure to the nationalist fervor of the students who participated in it. At the beginning of September 1964, the students at Universitas Gadjah Mada organized a conference to summarize the previous year's efforts and to prepare the next group of students for the second year of the program. To illustrate the spirit of the period, a few excerpts from the proceedings of the conference are offered here. The conference actually was sponsored by the Agriculture Faculty (Gadjah Mada) Company of the Jogjakarta Students' Regiment, and it had three themes:¹¹

1. To integrate the Jogjakarta Students' Regiment with the society to carry out Amanat Takari by raising food production through BIMAS S.S.B.M.

2. To implement the Five Foundations of the Revolution, with BIMAS S.S.B.M. in order to carry out the Message of the People's Suffering.

3. To be successful in standing on our own two feet in the field of food production--thereby ensuring the victory of NEFOS [New Emerging Forces] over OLDEFOS [Old Established Forces].

The students designated their effort "Operation Service" (*Operasi Bhakti*) with the stated intentions:¹²

. . . to transform the productive and progressive manpower of the peasant class into a pillar of the revolution by breaking down the archaic methods of agri-

11. Universitas Gadjah Mada, Fakultas Pertanian, Musjawarah Operasi Bhakti I: Mahasiswa Tugas BIMAS S.S.B.M. tgl. 2 s/d 3 September 1965 (Jogjakarta, 1965), p. 13.

12. Ibid., p. 4.

culture that are traditional (instinctive) into ways of farming that are rational.

This task of service is not a pretext for putting ourselves among the petani; we must be capable of giving them a realization and a consciousness in consonance with the passion of the revolution.

For six months we will leave our school benches to plunge ourselves among the petani without counting gain or loss.

In closing, the conference issued ten directives including the following:¹³

4. Students . . . will strive for the common goal of . . . transforming the individualistic/traditional petani into a cooperative petani, a *gotong-rojong* [mutual self-help] petani, and a rational petani. . . .

8. . . . With BIMAS . . . the koperta . . . will become a means of rubbing out the vestiges of capitalism and feudalism and all other forms of exploitation.

Bimbingan Massal S.S.B.M., 1965/1966

The year 1965 was a pivotal one for Indonesians. The turmoil which began in September in Djakarta spread throughout the country and ultimately led to the replacement of the Sukarno regime by a "New Order." It was also the year in which BIMAS was born.

BIMAS grew out of a series of meetings or seminars in 1965. The first meeting, held in Jogjakarta on July 3, was sponsored by DIRTARA and attended by the heads of the three Diperta on Java, by the Deans of the Agricultural Faculties, and by a representative from the National Federation of Agricultural Cooperatives (INDUK KOPERTA). This meeting drafted seven instructions which formed the basic "compass" for the following year's rice self-sufficiency program. The important points included changing the name of the program from DEMAS to BIMAS and determining that the program would cover 150,000 hectares and would mobilize all available students at agricultural high schools, agriculture-related academies, university faculties, and also cadre from the cooperative movement and extension agents.

In mid-July, President Sukarno formed a National Food Council (KOTOE Instruction No. 46 of 1965), containing an Operational

13. Ibid., pp. 79-80.

Unit for Food responsible for "mending, upgrading, and coordinating" the mass intensification efforts of BIMAS. As a result responsibility for the implementation of BIMAS was transferred from Dintara to the highest administrative level of the Government. The purpose for the change was to guarantee that all the non-agricultural inputs (such as credit, transportation, and marketing) would be made available as required.¹⁴

In the middle of August, the major planning meeting for BIMAS 1965/1966 was held in Djakarta. The participants included the Departments of Agriculture, Higher Education, and Transmigration/Cooperatives, twenty-two Deans of the Faculties of Agriculture, Forestry, Fishing, Animal Husbandry, and of the Teacher Training Institutes, the Bank (BKTW) and the INDUK KOPERTA. By an order of President Sukarno, the conclusions of this August meeting became the official directives for implementing BIMAS, and all Government organizations were instructed to follow them.¹⁵

1. Basic Policy. BIMAS is an extension tool for rapidly and massively raising production. By 1969/70, BIMAS is to put into practice complete pantja usaha on all sawah cultivated in Indonesia. The koperta is to be given full support on all sides in carrying out BIMAS. The objective of BIMAS is complete national self-sufficiency, including fertilizers and pesticides.

2. Fundamentals of Implementation. In ketjamatan with DEMAS units, there will be ten to fifteen times as many BIMAS units in 1965/66 [than there were in the previous year]. Every other ketjamatan must have at least one unit. All inputs will be provided to units which are participating for the first time; in each subsequent year, every unit must become increasingly self-sufficient to the point where it no longer requires programmed assistance to follow full pantja usaha. The koperta must employ full-time administrators for the program.

3. Organization. As in DEMAS, executive commissions will be formed at each administrative level with representatives of all organizations involved. In addition, each executive committee will be backed up by a committee of experts. At the local level, the petani in each unit are to be divided up into teams for soil preparation, fertilizer application, irrigation, etc.

14. Note that this action amounted to a repetition of the KOGM system of organization in 1959 which was a failure.

15. Djatianto, BIMAS, pp. 152-156.

4. Sampling. For evaluation purposes, sampling of yields must be done scientifically in accordance with instructions from the Expert Committees.

5. Choosing Units. Plots must be chosen which have maximum potential for yield increases, which are visible to non-participants which are representative of soils in the ketjamatan, which belong to people who believe in the program and will follow it faithfully.

6. Improved Seeds. Fertilizer-responsive improved varieties must be used. Provision must be made for supplying such seeds to areas surrounding the units as well as to the units themselves.

7. Organic Fertilizer. Chemical fertilizers must be supplemented by organic fertilizer as much as possible; to provide incentives for their use, contests will be conducted for the best results with organic fertilizer.

8. Processing and Marketing. These are as important as increasing production if BIMAS is to bring about a higher standard of living for the petani.

9. Becoming Self-sufficient. Participants in each unit must decide how to accumulate capital from the yield increases to make the koperta self-supporting.

10. Koperta Maturity.¹⁶ The koperta must become fully mature in order to reach the stage of Indonesian socialist agriculture that is based on gotong rojong while respecting the right of individual ownership.

Less than two months after the details of BIMAS 1965/66 were settled, just as most students were preparing to leave for the villages, the "September 30th Movement" took place. In spite of the turmoil which followed, BIMAS was implemented. The acreage target, in fact, was exceeded (158,000 ha. rather than 150,000 ha.), although there were only 2,789 units instead of the planned 3,000 units. Out of the 25 provinces, eighteen had BIMAS units and close to 1500 students were mobilized (less than half the students were from agricultural faculties). The yield increases were disappointing, however: five and one-half tons per hectare in BIMAS as against three tons per hectare

16. In Indonesian jargon, the "maturity" (*pendewasaan*) of a cooperative indicates its degree of effectiveness or level of development.

outside BIMAS;¹⁷ partly perhaps, because the social turmoil during the 1965/66 wet season had resulted in late planting and improper care during the growth period. The dilution of the extension effort and bottlenecks in delivering the inputs (including credit), however, were probably more important factors.

BIMAS Programs, 1966 to 1968

Planning for the 1966/67 wet season began in April 1966, at a special BIMAS conference in Tretes, East Java.¹⁸ It was decided at the conference that BIMAS in the coming wet season would cover 1.3 million hectares (up from 150,000 hectares in the previous wet season), including 300,000 hectares in a special program near Djakarta designed to fulfill the needs of the capital (*Projek Dewi Sri Djaja*). In order to carry out a program on such a massive scale, the conference called for the participation of all university students, not just those in agriculture-related Faculties.

In fact, the BIMAS program in 1966/67 was not carried out on the fantastic scale envisioned at the Tretes meeting. The acreage target only tripled from 150,000 hectares to 480,000 hectares (in twenty provinces) and the actual coverage realized was slightly over 450,000 hectares. The number of students involved increased from 1500 to 2500, and there were sharp increases in the number of extension service and koperta workers assigned to BIMAS. In addition to the special project for Djakarta, there was a similar effort organized for the city of Medan in North Sumatra (*Projek Pangan Medan Djaja*--on 50,000 hectares). Another noteworthy innovation in the 1966/67 season was the contract awarded to the Swiss chemical consortium, CIBA, for aerial spraying 30,000 hectares of rice fields in South Sulawesi. The spraying was done on credit and repayment in kind was arranged by the provincial government.

The most significant change in BIMAS 1966/67 was the method of financing the program. The Tretes conference had proposed that financing be integrated with the operations of *KOLOGNAS*

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17. In BIMAS 1965/66 and all subsequent years, the Department of Higher Education no longer played a direct role in the planning or the financing of BIMAS. In 1965/66 BIMAS was funded by the National Food Council, Dirlora, and the National Bank. (BNI Units I and II).
 18. The dry season rice crop became involved in BIMAS for the first time in the 1966 dry season (April through September): more than 100,000 hectares in three provinces. Credit arrangements were changed as detailed for 1966/67 BIMAS. No students participated in this season or any subsequent dry seasons.

(*Komando Logistik Nasional*, the command responsible for purchasing and distributing rice for the civil service and the military). Certain funds in the national budget had been allocated to KOLOGNAS for the purchase of rice in 1967. Rather than using these funds directly for the purchase of rice, a part of them (30%) was transferred to BIMAS to finance the 1966/67 program with the provision that this credit be repaid in kind from the increase in production on BIMAS plots, up to an amount equal to the purchases planned by KOLOGNAS for 1967.¹⁹

The 1967 dry season BIMAS program was reduced from 100,000 ha. to 12,000 ha., but these were divided among eight provinces rather than three as in the previous dry season. In the 1967/68 wet season, BIMAS was not expanded significantly; the problems of rapid growth started to catch up with the program, especially the problems of credit repayment and extension personnel. Less than half of the credit extended the previous year had been repaid, and the non-agricultural faculties of the universities were no longer willing to send their students into the villages for six months. The actual acreage covered by BIMAS in 1967/68 was 472,000 hectares. No data is available on yields.

By the 1967/68 season, the whole program had become rather confusing. One confusion was the distinction between BIMAS financed by the provinces and national BIMAS; another was the separate administration of projects like Dewi Sri Djaja and Medan Djaja. Still another was the inauguration of quasi-BIMAS programs: *INMAS*, short for *intensifikasi massal*, in which the participants were responsible for their own financing; *BIMAS Gogo Reutjah*, covering plots planted for dry rice cultivation that are converted to wet cultivation if sufficient rain is forthcoming; *BIMAS Bardikari*, where the inputs were financed either by provincial funds or by the farmers themselves; *BIMAS CIPA*, where the inputs were provided by the Swiss pesticide manufacturer, CIBA, on credit; *BIMAS Baru* (New BIMAS), for promoting the new "miracle" rice varieties PB5 and PB3; *KOPAN*, a special development plan in Sumatra that was promoting the cultivation of high yielding rice varieties; "free" BIMAS, a proposal put forward by the Governor of South Sulawesi to use the differential in the price of rice between Makassar and Djakarta to purchase fertilizer and other modern inputs for the program; not to mention a number of small, local programs sponsored by sugar mills, rice mills, manufacturing companies--such as P. T. Mantrust in West Java--and government or private estates.

The target for dry season BIMAS in 1968 was 424,000 hectares in eleven provinces, and estimates are that 50% of the target was achieved.

19. Djatianto, *BIMAS*, p. 174.

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The BIMAS Program, 1968

From 1964/65 to 1967/68 BIMAS grew from 11,000 hectares to almost 500,000 hectares (out of six million hectares of sawah throughout Indonesia). This rapid expansion was the result of pressures from different directions. First the Government was anxious to eliminate the need to import rice. Second, for implementing BIMAS, the Diperta received special funds from the center in proportion to the size of the BIMAS program in their respective provinces. Third, individual farmers and groups of farmers exerted pressure to expand BIMAS because they wanted to cash in on what they considered to be a windfall. The expansion of BIMAS was limited by the number of students available for guidance and the funds necessary to finance and administer the program. Demand for BIMAS programs far exceeded supply, which explains the appearance of the BIMAS-type programs mentioned earlier.

In this section, the highlights of BIMAS as it appeared in mid-1968 are reviewed.²⁰ First, the BIMAS package is examined, along with two recent elaborations on the basic package, i.e., BIMAS Baru and BIMAS CIBA. Then in successive sub-sections, comments are made on the relationships between BIMAS and the Koperta, the students, and the petani.

The BIMAS Package and Two Recent Elaborations

For each of the elements of the BIMAS package, there have been difficulties of delivery "in the right place at the right time." However, the most serious difficulties have arisen with the administration of credit.²¹ A thorough study of BIMAS credit alone would have required more time than was available for this entire study. Nevertheless, several features of the credit system stood out clearly enough to be commented on here. In the first place, petani frequently stated that not enough credit was available, i.e., they wanted to use more fertilizer than they could buy with the credit provided. In the second place, more than one-half of all credit extended to petani in

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20. Generalizations about the program, unless otherwise indicated, apply most directly to the province of Central Java where the bulk of field research for this study was carried out with the cooperation of Fakultas Pertanian, Universitas Gadjah Mada, Jogjakarta.
 21. The responsibility for credit has been assigned to Unit II of the National Bank (Bank Negara Indonesia, or BNI Unit II).

Indonesia is provided by the private sector.²² In the third place, since dry season BIMAS 1966, only half of the credit available for BIMAS has been taken by BIMAS participants.

How are these apparent inconsistencies explained? Partly because, as a national policy, the BIMAS package is "selective," a petani can therefore opt for less than the full package. In practice, when the petani does not select the full package, he only takes credit for fertilizer (or part of the fertilizer), leaving unused the credit for transportation, soil preparation, cost of living, or, most disturbingly, pesticides. Another part of the explanation is that when the BIMAS credit is not available at the right time (or administrative complications have arisen), the petani is forced to turn to private sources. Also, BIMAS credit is only available for rice production and presumably a large portion of the private credit is supplied for other crops. In addition, the BIMAS package is the same throughout the nation although local needs vary greatly from area to area. In other words, the package fulfills the needs for average soil conditions, but the majority of farmers cultivate land with input requirements that either exceed or fall short of the mean.

Another noteworthy feature of the credit system is the practice of using land as security for credit. A question that needs further study is the extent to which the land guarantee prevents cultivators who do not own sawah from obtaining BIMAS credit (conceivably, in virtually all cases, the home of the cultivator is sufficient to guarantee the loan).

The most significant difficulty with BIMAS credit has been repayment. Ever since the beginning of BIMAS, there have been serious repayment problems, perhaps because the Government has never seized the land of any petani who defaulted on his payments. In 1966/67 BIMAS, the rate of non-repayment was exceptionally high. In Projek Pangan Medan Djaja, for example, out of Rp. 40 million credit supplied, only Rp. 10 million was repaid on time.²³ The accepted explanation for the problem in 1966/67 is that repayment in kind was a mistake. It was in this year that credit for BIMAS came from KOLOGNAS, with the provision that it be repaid in kind. As a result of this 1966/67 experience, Dirlara now supports repayment in cash as a matter of principle. One problem with repayment in cash is that the rate of inflation is usually higher than the rate of interest charged, so that less than the real value of the credit is repaid. Consequently, repayment in cash introduces an element of subsidy into the BIMAS program, an aspect which deserves further study.

22. Government of Indonesia, LIPI, Draft Report, p. 36.

23. K. Sebahang, Projek Pangan Medan Djaja 1966/67 (Medan, 1968), p. 35.

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The two major components of the BIMAS package, fertilizer and pesticides, have been handled with different degrees of success. The determination of the recommended fertilizer dose is a process too involved to describe here, but the outcome is that the dosage recommended, on a nation-wide basis, is too large for the more traditional farmers and too small for the more progressive ones. The distribution of fertilizer has been the responsibility of the state-owned P.N. Pertani. In the early years of BIMAS, complaints about faulty delivery of fertilizer were commonplace. However, in the areas of Java where this research was conducted in 1968, complaints about P.N. Pertani's performance were rare, and the enterprise appeared to be moving forward vigorously with a program of building local depots.

As far as pesticides are concerned, critics of the BIMAS program agree that it has failed to spread the use of pesticides to an extent commensurate with their need or potential benefit. The most widely used pesticide has been a liquid spray, enderin. A severe problem encountered in the use of all sprays has been the distribution and maintenance of sprayers. Many different kinds of sprayers have been tried, none of which have proven to be entirely satisfactory. Even aerial spraying has been tried.

In the summer of 1968, preparations were being made for two programs in the BIMAS family that are of special interest: BIMAS Baru and BIMAS CIBA. The value of the BIMAS Baru credit package is roughly 25% greater than the value of the "normal" BIMAS package (1968/69) because it includes a 50% greater dosage of fertilizer in order to maximize the yield from the new "miracle rice" varieties, PB5 and PB8, which the BIMAS Baru program is designed to promote.²⁴ The new varieties are short-stalk, fertilizer-responsive, fast-maturing varieties that have been successfully cultivated on a large scale in the Philippines, India, Thailand, and Vietnam. Preliminary trials in Indonesia indicate that the new varieties will double the yield increases which result from participation in BIMAS--the average per hectare increase in normal BIMAS is 1.6 tons of dry stalk padi; in BIMAS Baru the anticipated increase is 3.0 tons.²⁵

BIMAS Baru is a logical elaboration of the BIMAS program, although questions do arise. Will the Government be able to multiply the necessary amount of seed and distribute it on time?

24. PB stands for Peta Baru ("new" Peta) and the designation is based on the fact that one of the genetic ancestors of the IR5 and IR8 varieties developed at the International Rice Research Institute in the Philippines is an improved Indonesian variety called Peta.

25. Pemerintah Indonesia, Rapat Kerdja Pangan 1968. Program Produksi Padi/Beras 1969 dan 1970, Working Paper No. 2 (Djakarta, 1968), p. 8.

Is the recommended fertilizer dosage in the "new" package optimum or less than optimum? How adaptable will the new varieties be in practice when cultivated widely; will the anticipated high yields materialize and will the varieties be resistant to local diseases? Will the necessities of cutting PB5 and PB8 with a sickle rather than a knife and of threshing in the field rather than in the home, as traditionally done, constitute barriers to their acceptance? Will the taste of the "miracle" varieties be acceptable to the Indonesian petani?

The second new member of the BIMAS family, BIMAS CIBA (also known as BIMAS Gotong Rojong or Company BIMAS), is something of a bastard, and faces most of the difficulties implied by that epithet. CIBA is the Swiss-based chemical consortium which carried out an aerial-spray project in South Sulawesi in 1966/67. The firm produces an insecticide called Dimecron 100 that is available in a concentrated form particularly suited for application by aircraft. On May 24, 1968, CIBA and the Government of Indonesia entered into a contract which provided that the company would apply their insecticide three times to 300,000 hectares of sawah (100,000 hectares in each of the three provinces of Java) in the 1968/69 wet season.²⁶

The Government in turn agreed to pay CIBA US \$40 per hectare, or a total of US \$12 million (subsequently raised to US \$52.50 per hectare or US \$15.75 million). In addition to the fertilizer and insecticide provided, CIBA agreed to pay the Government a Rp. 40 per hectare Management Fee to administer the program, to bear the cost of transporting the materials to the sites, to provide the Extension Service with a specified number of jeeps, motorcycles and bicycles, and to assume certain other minor costs.

To say that BIMAS CIBA is a bold undertaking is an understatement. There is some question, however, as to who is being bold: CIBA or the Government of Indonesia. In one respect, CIBA is not exposed to any risk: a group of Swiss banks have guaranteed hard-currency payment to CIBA. On the other hand, it is unlikely that CIBA is simply interested in short-term profit-making: the company has other interests in Indonesia (pharmaceuticals and dye-stuffs) that would be jeopardized if BIMAS CIBA were to fail. Still, it appears to be the Government of Indonesia that has gone out on a limb. The difficulties added together are imposing: the ordinary administrative/logistical problems encountered in Indonesia introduce a high degree of uncertainty into any undertaking; the petani who participate in BIMAS CIBA have no choice in the matter; the plots chosen must be adjacent to each other in a large block for aerial

26. The contract contains an option for carrying out the program on 400,000 hectares in the 1969/70 wet season, and anticipates the continuation of the program for a total of five years.

spraying; the plots must be planted at the same time within any given block--maximum variance is two weeks--and with the same variety of seed in order for the spraying to be effective on the entire block; the borders of the blocks must be sprayed by hand; and the petani participating must pay for the project by surrendering as much as one-fifth of their net production. BULOGNAS will be responsible for collecting the payments, i.e., CIBA has no responsibility for repayment. This last difficulty is likely to be the most serious one.²⁷

BIMAS and the Koperta

Indonesia's emphasis on cooperatives is a natural outgrowth of her ideology, as formulated principally by Sukarno. In particular, cooperatives are considered to be an institutionalization of the gotong-rojong concept that is central to the Indonesian ideology. Nevertheless, the development of cooperatives in Indonesia has proceeded at a very slow pace, as illustrated by the fact that there was no national law dealing with cooperatives until 1965 (Law No. 14). That law established three classes of cooperatives: consumer, producer and service. It also set forth ten operating principles for cooperatives including voluntary membership, equal responsibility for all members, and decision-making by a consensus resulting from mutual consultation. With regard to agricultural cooperatives specifically, Law No. 14 of 1965 restricted membership in koperta to owner-cultivators and agricultural laborers. Also, the koperta were organized in federations at each administrative level: *pusat* (core) koperta at the *kabupaten* (district) level, *gabungan* (combined) koperta at the province level, and *induk* (lit. mother) koperta at the national level. The Law also defined the activities of the koperta to include improving methods of production, research, planning, marketing, education, and information.²⁸

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27. Recent (July 1969) newspaper articles in Djakarta have described BIMAS CIBA in West Java as a complete failure. At the same time, the BIMAS CIBA project will be continued in the 1969/70 wet season, and other foreign companies are undertaking similar projects (Hoechst from West Germany--250,000 hectares; Coopa from Italy--150,000 hectares; A.H.T.--60,000 hectares; and Mitsubishi from Japan--25,000 hectares). Figures from correspondence with Agriculture Ministry official, August 1969.
28. On December 18, 1967, Law No. 14 of 1965 was repealed and a new Law on the Basic Regulations for Cooperatives (No. 12) enacted. The important articles of the new law provide for the elimination of inactive and unqualified cooperatives.

As was described in the previous section, the koperta were given a central role in the BIMAS program at an early stage (DEMAS 1964/65). In fact, the program was set up in such a way that the petani could not participate in BIMAS unless they were members of a *primkoperta* (primary agricultural cooperative). This requirement sparked the formation of koperta on a massive scale that no prior effort had been able to achieve. Unfortunately, at present, the vast majority of koperta exist in name only, serving no function other than to qualify members for participation in BIMAS. Out of the 17,000 primkoperta that are registered, there are literally no more than a handful that are exercising any initiative.²⁹

There are conflicting interpretations of the relationship between BIMAS and the koperta. On the one hand, members of the cooperative movement frequently express their belief that BIMAS ruined the primkoperta. They argue that no cooperative can be viable unless it is created "from below." BIMAS forced the organization of koperta "from above" at such a precipitous pace that the preliminaries necessary to make the koperta viable were never completed. On the other hand, officials in charge of BIMAS tend to feel strongly that the koperta hurt BIMAS. These officials point out that the extension service, even supplemented by students, is not large enough to cover more than ten percent of Indonesia's sawah thoroughly. The goal of self-sufficiency, however, requires that BIMAS cover at least 25% (i.e., the area that is double-cropped). BIMAS can only reach its goal, then, if the koperta in fact are capable of administering the program in most areas. Since the koperta have proven themselves incapable of the task, BIMAS is unable to achieve its objective.

There is fairly universal agreement as to the reasons for the failure of the koperta. The following are cited most frequently:³⁰

1. The peasants have no faith in the primkoperta because of early irregularities and because they see no tangible benefits accruing from membership.
2. The members are not morally/mentally prepared for koperta membership, nor do they have sufficient knowledge of the objectives and methods of the koperta.

29. The figure for registered primkoperta is for 1967. Pemerintah Indonesia, Rapat Kerdja Pangan 1968, Masalah Institusional, Working Paper No. 5 (Djakarta, 1968), p. 5.

30. Universitas Brawidjaja, Fakultas Pertanian, Pengantar Pantja Usaha BIMAS S.S.B.M. 1966-1967 (Malang, 1966), chapter six; Samedri Sumintaredja, Peranan Perguruan Tinggi Dibidang Penelitian dan Pendidikan . . . (Djakarta, n.d.), p. 17; Djatiyanto, BIMAS, pp. 105, 117.

For this reason, they do not exert any control over the activities of the leaders.

3. The leaders are not morally/mentally prepared to lead the koperta. In part, this is due to the low prestige accorded to koperta leaders in Indonesia. Normally, the koperta staff is unpaid, or receives only a nominal salary--which encourages irregularities. An additional weakness in koperta leadership is inadequate training.

4. The higher levels in the koperta hierarchy fail to exert effective guidance and control over the primkoperta.

5. There are no manuals establishing practical guidelines for leaders and members.

6. The primkoperta lack capital and facilities. A partial explanation for this shortcoming is inflation: the high rate of inflation prevailing in Indonesia seems to discourage the accumulation of capital by cooperatives as much as by businesses and individuals in general.

7. The koperta cannot compete with the local moneylender as a source of credit. The moneylender gives credit without administrative formalities, on short notice, and for non-agricultural purposes.

In short, the koperta is known as "the bogeyman of the peasant."³¹ In spite of great expectations and arguments that the koperta is the institution most suited to the Indonesian setting for the development of agriculture, the koperta is not pulling its weight.

BIMAS and the Students

The use of students in development programs is not unique to Indonesia. However, there is no evidence to suggest that the use of students in BIMAS was inspired by the example of any other country. In fact, the origin of BIMAS as described earlier offers convincing evidence that BIMAS is *sui generis*.

In order to avoid exaggerating the role of students in BIMAS, it should be pointed out that the students are not considered by all involved to be a permanent feature of the program. Rather the students are seen as temporary elements that will be

31. Djatianto, BIMAS, p. 106.

withdrawn gradually as the koperta develop the capability of independently promoting increasingly high levels of agricultural production.³²

There is no space here to review the educational structure in Indonesia as it relates to agriculture. Suffice it to say that children begin elementary school at the age of seven or eight. Six years of elementary school are followed by three years of middle school and then three years of high school. Graduates of high school can pursue higher studies at vocational academies, teacher training institutes or universities. The first two have three-year curricula; universities have a five-year curriculum with the terminal degree considered to be the equivalent of a master's degree. Only eighteen percent of the population has completed the six years of primary school.³³

Below the university level, there are vocational schools for agriculture at both the middle school and high school levels. There are also Cooperative Academies and Agricultural Academies. No figures are available on the number of these schools, but they are certainly few and far between. It is worth noting here that the curricula for the primary schools and the general junior and senior high schools, even those located in rural areas, do not presently include agricultural subjects.

Some basic data about students in higher education is presented in Table 1. In terms of our interests here, the important features to note are: the small proportion of students in agriculture--five percent; the large proportion of students in the first year--49%; and the small number of agriculture graduates.

There are three points to be made about the agriculture faculties as they relate to BIMAS. First of all, the curriculum devotes little time to agricultural development problems and village studies. Since the majority of agriculture graduates are expected to go on to careers in the plantations, the sugar mills, the Agriculture Ministry, the research institutes, or in teaching, it is assumed that they have no specific need for training in rural development.

Second, all students are required to perform six months of *praktek umum* (general practice) outside the university before graduation. It seems logical for students to fulfill their *praktek umum* requirement by participating in BIMAS. Although this may have been the original intention, in practice most

32. Soedarsono Hadisapoetro, Bimbingan Massal, p. 11.

33. Figure for 1964/65, from W. Brand, "Manpower Situation in Indonesia," Bulletin of Indonesian Economic Studies, No. 11, p. 62.

Table 1

Statistics on Higher Education, 1967

I. Total Number of Students in State and Private Universities and Institutes		
Private schools	18,000	
State schools	<u>110,000</u>	
Total	128,000	
II. Students in State Universities and Institutes		
--Non-exact departments (law, economics, politics, psychology, sociology, public administration, public relations, literature):		52%
--Exact departments (medicine, pharmacy, biology, physics, chemistry, mathematics, engineering, agriculture, geology):		31%
Of which agriculture:		5%
--Teacher training institutes		<u>17%</u>
		100%
III. Distribution of Students by Year of Study, State Universities and Institutes		
First year	49%	
Second year	19	
Third year	16	
Fourth year	9	
Fifth year	6	
Sixth year	<u>1</u>	
	100%	
IV. Total Graduates, 1950-1967, State Universities and Institutes		
Medicine	5,038	23%
Law	4,453	21
Engineering	3,175	14
Economics	2,586	12
Education	1,437	7
Agriculture	1,355	6
Other	<u>3,788</u>	<u>17</u>
Total	21,832	100%
V. Estimated Graduates, 1967, State Universities and Institutes		
--Assuming all sixth-year students and 5/6 of the fifth-year students graduate:		6,600
--Of which agriculture graduates number (assuming the ratio of graduates in agriculture is the same as the ratio of students enrolled in agriculture)		330 (= 5%)

Source: Government of Indonesia, Department of Education and Culture, Directorate of Higher Education, Report of the Statistics Team on Higher Education in Indonesia (Djakarta, 1967).

students have found it necessary to perform praktek umum in addition to participating in BIMAS--thereby lengthening an already excessive course of study. In 1967, the Directorate of Higher Education instructed all universities to integrate praktek umum into the five-year curriculum, but in the middle of 1968, it was doubtful whether the faculties would in fact follow the spirit of the instruction.

Third, by the summer of 1968, enthusiasm about BIMAS in the agriculture faculties was obviously rather low. IPB, in fact, refused to participate in 1967/68 BIMAS for a number of reasons, among them uncertainty about who was going to pay the expenses of the students and dissatisfaction with the excessively rapid expansion of the program. At other faculties, when mandatory participation in BIMAS was lifted, most students preferred to undertake their praktek umum in places more pertinent to their aims (i.e., plantations, mills, etc.).

Students who are "BIMASed" may or may not serve in their native villages. The only instance of students being sent specifically to their own villages as a matter of policy was in 1965/66 BIMAS when political turmoil created a serious problem of security. Clearly different patterns have emerged in different provinces: in North Sumatra, the practice has been to have students work only within their suku (linguistic/ethnic group);[✓] in Central Java, on the other hand, students have been deliberately sent to areas far from their place of origin. Sometimes students have been able to live with relatives in the villages or towns to which they are assigned. In general, however, the students have lived in the home of the village chief--which appears to be a satisfactory arrangement. Basic expenses of the students have been paid by the BIMAS program. In Central Java, in 1967/68, students received money for transportation to and from their site plus an "honorarium" of Rp. 1,300 per month (twice the basic salary of the sub-district extension agent). Up to Rp. 1,000 went to the village chief for room and board and to a special fund to pay the expenses of monthly meetings of BIMAS students in the region. The payment of the "honorarium," however, was often late and occasionally less than prescribed. It was interesting to observe that the female students participated as fully as the male students. The only concession made to their sex was the practice of stationing them in pairs (boy-girl teams were tried at first but proved to be unsatisfactory).

In the 1967/68 BIMAS, each student was responsible for 400 hectares on the average, and there was little contact with the cultivators participating in the program.³⁴ Normally, the

34. The data about students is based on a questionnaire completed in February 1969, by 41 male students of Fakultas Pertanian, Universitas Gadjah Mada, Jogjakarta, who had participated in BIMAS 1967/68 in Central Java.

students communicated with the petani through special lectures. Most of their time was spent preparing and conducting these lectures, participating in koperta meetings, assisting in the distribution of credit, seeds, and fertilizer, supervising pesticide application, and measuring yields at the time of harvest. Usually, the students were not able to work individually with more than 100 or 200 cultivators--roughly 20% of the BIMAS participants in their assigned area. Considering that the students were at their sites for less than 200 days, their work with individuals could not have been very intensive.

Surprisingly, the extension agents expressed no resentment that the students were being paid so much despite their lack of experience. In general, the extension services indicated that they did not expect the students to be very effective as teachers of new agricultural techniques. Rather, their significant contribution consisted simply of their presence, which inspired the petani or exerted a "corrective psychological influence."³⁵ Elsewhere, the Government has explained its support of student participation in BIMAS by arguing that it builds character, trains the students to identify and solve problems, stimulates their imagination and creative thinking, and satisfies their appetite "for adventure in ideas and in action."³⁶

It was also interesting to observe that the petani and local officials appreciated the efforts of the students. Although the local people did not feel they had learned a great deal from the students, the prevailing sentiment was one of pleasure at the interest the students were taking in village life. Frequently, the statement was made that the students made BIMAS "*lebih sempurna*" (more perfect).³⁷ On the whole, it appeared that the greatest impact of the students was in conveying the concept of pantja usaha in a meaningful way to the petani.

As for the students themselves, they listed five benefits of participation in BIMAS: the opportunity to translate theory into practice and to learn where the two do not coincide; sharing their knowledge with the petani; experience in working with petani for those whose careers will lie in that direction; exposure to village life for those who have not been exposed to it and do not expect to be after graduation; and insight about diseases, local varieties of crops and local agricultural practices that is not available in the formal curriculum.

35. Pemerintah Indonesia, Rapat Kerdja Pangan 1968, Perkreditan, Working Paper No. 6 (Djakarta, 1968), p. 5.

36. Bachtiar Rifai, Mass Demonstration . . . (Djakarta, n.d.), p. 8.

37. However, there was a consensus that the participation of non-agricultural students (in 1966/67) was worthless.

Many students who participated in BIMAS also reported that the experience caused them to reorient the focus of their studies. Occasionally, this meant switching from a technical specialty to the socio-economy department of the Faculty, which emphasizes extension. More often, it meant minor changes of interests, as for example, from rubber tree diseases to coffee plant diseases because during his BIMAS service the student met a coffee estate manager who offered him a job after graduation. The only other faculties that have successfully organized the students to "*turun ke desa*" (descend to the villages) in keeping with the Three Aims of Higher Education are the medical faculties. The agriculture students take pride in their efforts to serve society and find they can assume positions of leadership in the university as a result of the experience.

BIMAS and the Petani

On Java, rice farmers generally considered BIMAS to be a good thing, as evidenced by demands that the program be continued in areas where it has operated already or that the program be established in areas not yet "BIMASed." In a number of places, the petani did not want any part of it or had had enough of it. But these areas were the most progressive ones, from an agricultural point of view, where the petani were accustomed to cultivating in accordance with *pantja usaha* and where the private sector was able to supply the modern inputs required. For the petani in these areas, BIMAS was more of a nuisance than a benefit.

As was mentioned in the previous section, the petani appreciated the participation of the students in BIMAS, although they did not claim to have learned a great deal from the students. Attendance at the lectures given by students was not remarkably good, but the reported reason was that most petani were occupied by other jobs (day labor, hair-cutting, cart rental, etc.) when they were not working in the fields. With regard to other aspects of BIMAS, the expected complaints were voiced about administrative inefficiency which caused the late arrival of fertilizer and pesticides, repayment in kind, high fertilizer prices, and low rice prices.

One of the cliches often heard in discussions of BIMAS was that the petani should be the "subject" rather than the "object" of the program. In other words, the petani should exercise control over the program, manipulating it to suit their needs instead of being pushed around by the program. The underlying idea was that BIMAS could only be successful if the petani took an active part in the program and thereby established a "vested interest" in it. In spite of the rhetoric, there was no evidence that the petani were playing any more than a passive role; certainly targets for the program were derived from the desires of

high-level planners rather than being aggregated from locally-determined objectives and capabilities. There were not even any institutional mechanisms through which the petani could participate in determining which plots would be eligible for the program.

The most important question about BIMAS is its long-term impact on rice cultivation. The aim of the program is clear enough: to make available to the petani the wherewithal necessary to cultivate rice at the high level of production required to make the nation self-sufficient without special efforts on the part of the Government.

The success of BIMAS must be measured, then, not simply by the increases in rice production that take place, but also by the degree to which the petani can maintain high yields with their own efforts. In the first case, it is clear that BIMAS has succeeded in achieving substantial gains, but for the second, the evidence is less certain. When this research was begun, two specific points of inquiry were the pattern of participation in BIMAS and the effect on yields when the petani left the program. Unfortunately, the research was not concentrated in any one location long enough to get satisfactory data on these points. A few general observations are made here, however, prefaced by the warning that the great variability between provinces, within provinces, and even among villages in a given district makes generalization very hazardous. The first observation pertains to the manner in which initial participation in BIMAS was determined. We have mentioned that the national targets were set with a view to maximizing the area covered given the restraints set by the funds, material, and personnel available. For all practical purposes, this national target was divided among the provinces through a bargaining process (the special management fee for BIMAS from the center being an important supplement to the funds budgeted for the Diperta by the provincial governments). In a similar fashion, targets were set by the provinces for each kabupaten, by the kabupaten for each ketjamatan, and by the ketjamatan for each *kuwurahan* (village). The village chief then had to decide which of his petani could participate in BIMAS, and the criterion of giving priority to those plots with the best potential for yield increases along with the minimum risk of crop loss was not always followed. Often there were simply more plots in the village that qualified than there was credit available. It was also necessary to take into account that if there were mills in the vicinity, a portion of the village sawah had to be planted in sugar cane. Generally political factors seemed to prevail in deciding which petani participated in BIMAS, but precisely how was impossible to determine.

The second observation pertains to the length of time (number of consecutive seasons) that individual petani were able to participate in BIMAS. In the academic discussion, there was a

consensus that a petani must participate for three to five consecutive seasons before becoming *berdikari*.³⁸ In practice, however, participation for that long occurred infrequently. In fact, as a matter of policy in East Java, petani were eligible to receive BIMAS credit only once. In Central Java, this was generally the case, not as a matter of policy but because the village chiefs were compelled to give everyone a chance to participate. On an average, it is likely that the majority of petani participated for between one and two consecutive seasons.

The third observation concerns the behavior of yields when participation in BIMAS was terminated. Here the estimates were most contradictory. Curiously, students and local leaders shared the view that yields did not fall, but higher-level authorities believed that yields fell if the petani did not participate in BIMAS for at least two consecutive seasons.³⁹

The concluding observation relates to the specific question of how many petani were *berdikari* because of BIMAS. Again, due to the limited scope of the research, it is not possible to do any more than state a belief that BIMAS succeeded in making some petani *berdikari* who would not have been otherwise. In general, it should be noted that the achievement of this independent state has not been due to the activity of koperta. Rather, it has been a question of combining the availability of modern inputs (seeds, fertilizer, pesticides) with knowledge about their use--all within the context of favorable price relationships.

As a final note for this review of BIMAS as it appeared in 1968, the differences between regions are stressed once again. The preceding observations are most applicable to Java, specifically Central Java. BIMAS in Bali has been conducted on a somewhat haphazard basis partly because there was no agricultural faculty in Bali until 1967, partly because the Diperta has been grossly understaffed, and partly because the Balinese are among the most progressive farmers in Indonesia already. In South Kalimantan, BIMAS was considered to have failed in the last three seasons, mostly because the petani are so backward--not "fertilizer-minded," fearful that pesticides will kill their livestock, more interested in petty trade than in farming. In North Sumatra, BIMAS has not done well because of the lack of preparation, both of students and of petani, and serious difficulties encountered in supplying fertilizer. Outside of Java, the only major rice-growing area making progress in raising rice production was South Sulawesi (which was not visited in the

38. *Berdikari*, an acronym from "berdiri atas kaki sendiri," means "standing on one's own two feet."

39. In my opinion, conclusive research on participation patterns and yield patterns would be more beneficial than research on any other aspect of BIMAS.

course of this research), and apparently BIMAS did not have as much to do with that province's success as had the dynamism of local leadership.

Conclusion

It is too early to evaluate BIMAS thoroughly. Quite possibly, sufficient data will never be available to do the program justice. Nevertheless it does seem possible to discern the general tenor of the conclusions which would emerge. As successes, BIMAS can count the involvement of students in development and the spread of *pantja usaha*. It has also been responsible for some increases in production, but whether these have been worth the effort or not remains to be established by comprehensive cost-benefit calculations. What was the full cost of the program, including administrative costs and opportunities foregone? What was the value of the increased production plus the benefits of student participation?

The growth of the program may be interpreted as a positive indication of the Indonesian government's ability to carry out development programs. At the same time, the sharpest lesson of the BIMAS experience is that the rapid expansion of a national program of this nature is likely to be counterproductive--once the point has been reached where leadership is so diluted that it loses its leverage. The most striking feature of the statistics on BIMAS is the progressive decline of average yield increases among BIMAS participants as the program grew (3.5 tons of stalk padi per hectare in 1964/65; 1.6 tons per hectare in 1968/69--anticipated). Whereas the area of the program increased forty-fold in the first four years of the program (11,000 hectares to 470,000 hectares), the total increase in rice output attributable to BIMAS grew only twenty-fold (37,000 tons of stalk padi to 752,000 tons).

A balanced evaluation of BIMAS must also consider the alternatives. First of all, it needs to be demonstrated that self-sufficiency in rice production is the proper objective for Indonesia at this time. There are economic costs involved in reaching that objective about which few people seem to be concerned, as for example, the loss of relatively cheap P.L. 480 rice in the event that Indonesia has the kind of rice boom recently experienced in the Philippines. Even defining the point of self-sufficiency is a complicated issue: is domestic production sufficient to maintain the present level of per capita rice consumption (approximately 90 kg. per capita per year) the point of self-sufficiency, or is that point only reached when the 1900 level of consumption (110 kg.) has been restored? Second, it is necessary to determine whether price incentives alone can be effective enough in increasing rice production to make a national program such as BIMAS unnecessary. Or possibly (but improbably),

the best approach to increasing production is to rely on private sector sponsorship of programs like BIMAS CIBA. Finally, some minor institutional modification of the koperta might be enough to transform the koperta from playing a passive role to playing an active role in agricultural development.

In any case, Indonesia's attempt to achieve self-sufficiency in rice production in general, and the BIMAS program in particular, are fascinating and fruitful areas of study for scholars interested in Indonesia's development. Preliminary estimates for the 1969 rice crop, issued by the Agriculture Ministry in August 1969, indicate that the harvest will fall short of the target for the first year of the new five-year plan, thereby casting some doubt on the likelihood of self-sufficiency in 1973 as anticipated in the Plan. Nevertheless, history does not always repeat itself, and the sincerity of the present effort suggests that it will succeed where previous efforts failed. One of the most encouraging aspects of the BIMAS effort is that it was originally conceived by Indonesians and was tailored to the Indonesian setting rather than copied from another country or derived from some abstract model. To carry the analogy further, while the basic pattern is sound, some modifications are necessary to make the program *tjotjok* (fit perfectly). In fact, the proper prescription probably involves reducing the program closer to the small size that existed when its success was so pronounced--at least until the administrative/logistical/technological capabilities of the nation improve enough to support a larger program.



Sutan Sjahrir

**INDONESIA'S GREEN REVOLUTION:
The Abandonment of a Non-Market
Strategy Towards Change**

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The year 1970 constitutes a critical juncture in agricultural development in Indonesia, for it marks a major turning point in the formulation of policies to increase rice production. During the 1960's, the government's strategy to increase rice production has been predicated upon the use of non-market mechanisms in the distribution of agricultural inputs. The peasant's traditional prerogatives of choice in the selection and combination of inputs had been directly preempted and vested in the government's own regulatory instrumentalities, the public bureaucracy. This approach was incorporated into Indonesia's five year plan, launched in 1969, one of the major goals of which is the achievement of self sufficiency in rice production by 1973. By early 1970, however, it had become painfully apparent to government planners that this strategy would not usher in the desired Green Revolution, let alone sustain a long-run increase in production equal to the minimal food needs of the population. Official production reports from early 1970, indicated that crop yields were lagging substantially behind anticipated targets and that many peasants were becoming increasingly defiant of government efforts to introduce the new technologies of rice production.¹ It was therefore, in a mood of concern and anxiety, that

1. In March 1970, the Ministry of Agriculture released a report indicating that achievement had fallen short of its intended goal. Thus, yields from the miracle rice seeds (IR5 and IR8) had achieved 65.17% of their target and conventional seeds had attained 75.47% of their target. Berdikari, March 10, 1970.

President Suharto made an incognito visit to the rice fields in April 1970, in order to discern for himself the basis of mounting peasant animosity against his regime's program.² One month later, the President terminated the existing program and higher level officials feverishly set about devising a new set of policies to achieve the rice production goals of the five year plan. The President's abrupt abandonment of a strategy which had prevailed for nearly a decade and its failure to substantially enhance peasant productivity, deserves closer examination, for it clearly illuminates some of the problems associated with bureaucratic action and the introduction of high-level technologies in low income countries.

II

The Indonesian government's early approach toward rural modernization received its initial impetus in 1963, when the Institute of Agriculture in Bogor successfully conducted a series of village experiments in methods of encouraging peasants to adopt more advanced techniques of rice cultivation. These trials seemed to verify the basic project assumption that close and

2. Press reports in early April 1970, indicated that President Suharto and aides, in disguised identity, travelled to several villages in West and Central Java. Three reporters accompanied Suharto and recorded his reactions and conversations with the peasantry. Their press accounts of these interactions revealed that Suharto's inquiries about the government's rice program generally evoked a negative reaction from peasant respondents. Peasant complaints tended to center upon issues of administrative deficiency, i.e., government fertilizer was delivered late, or the fear that they would be defrauded and victimized by government officials. For press accounts of the visit see Kompas, April 14, 15, Pikiran Rakjat, April 18, Indonesian Raya, April 14, and Berita Yudha, April 15, 16, 1970.

enduring interaction between a change agent (extension worker) and the peasant results in the acceptance of new technologies and in higher productivity. Nevertheless, the results also revealed that peasants were constantly making modifications in the recommended practices, and many insisted in using a mixture of the old and new methods. The project, therefore, underlined a basic uncertainty as to whether the initial improvements in rice production would endure or whether the peasant would slip back into his old traditional patterns.³

The Institute's village experiments represent a landmark in the history of efforts to achieve higher rice productivity in Indonesia, as these studies occurred at a time when government programs had achieved few results and thus public officials were impatiently seeking new approaches to the problem. Government planners seized with alacrity upon the Institute's experiment as the answer to Indonesia's chronic rice deficit, and the project was thereafter transformed from a shortlived university experiment in three villages into a massive national program that stretched throughout the 1960's.⁴ More importantly, numerous changes subsequently occurred which

3. For a brief discussion on the Bogor Institute of Agriculture and its role in the development of this project, see D.H. Penny and E.A. Roekasah, "Bimas; A New Approach to Agricultural Extension in Indonesia," Bulletin of Indonesian Economic Studies, No. 7, June 1967, pp. 60-69. For the most detailed account of this project, see Djatijanto Kretosastro, Bimas SSEM: Bimbingan Masal Swa Sembada Bahan Makanan, Djakarta, Direktorat Pertanian Rakjat, 1967.

4. Thus, in the wet-season of 1964-65, the project was expanded from its initial three villages of 100 hectares to 11,000 hectares. In ensuing years, the area burgeoned to a high of 475, 761 hectares in the wet-season of 1967-68. Most of this effort was concentrated on the island of Java. The program came to be identified as "Bimas," an acronym derived from "Bimbingan Massal" or "Mass Guidance."

served to transform this national program along lines hardly recognizable by reference to the standards of the initial project. Thus, for example, the Institute's experiment was a highly flexible and cautiously administered project with an emphasis upon a mutual exchange between peasant and extension agent. However, once the project was expanded into a national effort, these virtues were abandoned, and the emphasis was now less upon a personal interaction between innovator and recipient, and more upon the bureaucratic implementation and organizational promotion of a large and unwieldy government program.⁵

The rigidities which came to encumber this program were pre-eminently embodied in the government's approach toward the distribution of inputs to its peasant clientele. In this instance, there was a definite bias against deferring to the judgement of the peasant in the amount and kind of inputs necessary for optimum growth. Thus, the market mechanism, which would permit the peasant to select the "right" combination of inputs, was eschewed in preference for the planning mechanism, which vested the power of choice in the hands of the bureaucracy. In practice, the government prescribed the kind and amount of fertilizer and pesticides and distributed these inputs in the form of a packet. In devising the "packet concept," it was intended that each peasant would receive a standard quantity of pesticides and fertilizer, and while some variations in the packet contents were authorized at an administrative level, these modifications were marginal in scope.

5. This transformation was most evident in the manpower allocated to work with the peasantry. Whereas, the initial guideline for the Institute's project was one extension worker per 50 to 75 peasants, by 1968, the ratio was up to 300-350 peasants. The Institute severed its relationship with the government's campaign in 1967, as many of its staff felt that the program had been expanded too rapidly and thereby its impact dissipated by administrative inefficiency and negligence.

The distribution of a uniform input mix not only reflected a lack of confidence in the peasant's capacity to effectively perform his role as a rational decision-maker, but it also constituted an attempt to rectify certain deficiencies in the government's decision-making process. Government records on soil composition and agricultural conditions were either non-existent or unavailable for immediate channeling into the policy making process. The development of a packet concept constituted an attempt to surmount this shortcoming in that the packet contents represented an educated guess on the combination of those factors of production considered most conducive to achieving optimum yields. In addition, the use of the packet formula corresponded with the requirements of a non-market strategy toward rural growth. Bureaucracies are goal achieving entities which seek to dispense their services according to a definite set of rules and regulations, and the packet approach, with its emphasis upon an invariable input-combination, meshed quite well with this administrative imperative.

While the packet formula was designed to reduce the peasant's freedom of choice in the selection of fertilizer and pesticides, in practice, the administration of this task fell wide of its mark. The rural bureaucracy lacked the necessary manpower and control over its own internal hierarchy which would be needed to compel peasants to react in a manner consistent with government directives. Thus, many peasants sold to local vendors a portion of the inputs distributed by the government, which either in quantity exceeded the peasants perceived needs or in terms of quality failed to measure up to his expectations. In effect, the emergence of an informal and illegal market mechanism, served to modify and tailor the services of an inflexible bureaucracy to meet the needs of its peasant clientele. It

also tended to rectify some serious deficiencies in administration action; for example, government fertilizer and pesticides frequently arrived at villages sites after the planting season had started and peasants were able to rechannel these inputs onto the local market.

Throughout the period from 1964 to 1968, the formal attributes of public policy, i.e., bureaucratic allocation continued to be off-set by a series of informal practices, i.e., market allocation, which gave vent to peasant attempts at maximizing the value of government inputs. A weak rural bureaucracy was unable to exact full peasant compliance with government directives and the same maladies of administrative incapacity gave rise to some serious tensions in many areas of government peasant interaction. This was most apparent in the mounting accumulation of debts, as, with increasing frequency, peasants were failing to repay the government for the credit extended to them in the form of fertilizers and pesticides. Many peasants resisted payment because their yields were low and/or for reasons related to their growing dissatisfaction with government services. The peasant's most common complaints were related to the lack of adequate instructional aid from the extension service, the procedural and logistical problems of securing fertilizer and pesticides in time for planting, and the partial appropriation of inputs and credit repayments by corrupt officials.

In response to this growing problem of peasant indebtedness, government banks refused, after 1967, to extend credit to any peasant with debts still outstanding from former government programs. This policy immediately precipitated an administrative crisis, for the effect of this prohibition was to subvert the entire program to increase rice production. Since many villages were still in debt they could not receive additional

government loans in order to secure pesticides and fertilizer. On the basis of technical considerations alone, many of these villages were considered the most fertile target areas, and their exclusion from additional loans resulted in a rapid diminution in the areas eligible for government credits.⁶

III

The ensuing paralysis in government rice programs and the need to undertake some drastic measures to alter this condition was further accentuated by an excessively long dry-season in 1967 and an attendant decline in the supply of rice in late 1967 and early 1968. The government's response to this emergency clearly unfolded in mid 1968, when it signed a contract with Ciba, a Swiss pharmaceutical and chemical firm, to saturate 300,000 hectares of prime rice lands on Java with high yield seeds, fertilizer and pesticides for the 1968-69 wet-season. The contract obliged Ciba to deliver these inputs at the village level and also apply pesticides through aerial spraying. For many officials, the "Ciba" formula seemed to be the answer to Indonesia's rice problem, in that reliance upon external sources of assistance would compensate for the administrative shortcomings of local institutions which had not performed well in the old program. This confidence in external assistance led to the demise of the old program, and, in late 1968 and early 1969, Ciba, and a number of other foreign firms from

6. This contraction was dramatically manifested in the dry-season of 1968, when a pre-season target was set at 413,000 hectares and only 247,000 hectares was achieved. In the following 1968-69 wet-season, 261,400 hectares were included in this program, and in the 1969 dry-season the total declined to 76,300 hectares. Statistics secured from Rice in Indonesia, prepared by James Hawes, Agronomy Advisor, USAID/Indonesia, May 1970, pp. 43.

Japan and West Germany, were contracted to undertake a massive campaign to achieve a Green Revolution by 1973.⁷ This program was well underway by 1969, with large areas of Java receiving pesticides and fertilizer to cultivate the new miracle (IR5 and IR8) rice seeds.⁸

There were several aspects of this new policy which were expected to elicit a more positive peasant response. In particular, the value of the inputs made available through the old program were subject to price fluctuations on the international market and the Indonesian government was never certain how much foreign currency would be available for the purchase of fertilizer and pesticides. It was, therefore difficult for the peasant as well as the government to plan and implement programs under conditions where the price and supply of inputs were not predictable. In the new program this problem was resolved, as the companies provided short-term credits to the government for the purchase of these items at a price which remained stable for the duration of the contracts. In addition, on the output side, the new contractual program, as it was initially conceived, appeared to possess a definite advantage over that of the old program. In the old program the peasant had to make a repayment in kind (rice) or money equal to the credit advanced to him by the government; in the new program the peasant would make a repayment in kind equal to 1/6 of his yield. In

7. The firms included in the program were Ciba (Switzerland), Hoechst (West Germany), A.H.T. (West Germany) Mitsubishi (Japan), and Coopa, a company registered in Europe, but with considerable backing from Indonesian entrepreneurs.

8. The original Ciba target included 300,000 hectares for the 1968-69 wet-season, and with the addition of the other companies, the target rose to 550,000 hectares for the 1969 dry-season, and 1,115,000 hectares for the 1969-70 wet-season. Hawes, *op. cit.*, pp. 43. The new post 1968 program was now identified as Bimas Gotong Rojang.

In short, the peasant could make his cost-benefit projections within a more stable environment. Thus, there was a fair degree of predictability on the input side of the calculation; the price of fertilizer and pesticides would not fluctuate over a wide margin and the 1/6 formula was more beneficial to peasant interests; repayment was not an absolute amount as in the old program but one that was pegged to the actual yield and, therefore, more in accordance with peasant capacity to pay. In theory then, the new program seemed to offer a definite set of advantages on both the input and output side of production. This would only obtain however, if the government did not renegotiate the contracts and thereby alter the cost-benefit ratio midway through the growing season.⁹

Aside from the above described features, the post 1968 program was essentially cast in the same mold as the pre-1968 approach toward agricultural production. Thus, the market mechanism was again shunned, and the foreign companies, acting in concert with the indigenous bureaucracy, dispensed a standard dosage of fertilizer and pesticides for each hectare included in the target area. The new program, however, was more explicit and thorough going in its application of this strategy, and administrators were more intent upon making sure that the peasant used the packet contents

9. Stability on the prices of inputs were generally assured for the duration of one rice growing season, as the contracts were valid for this period of time. A new set of contracts were negotiated for each wet and dry-season. It is assumed here that peasants knew that the balance of values in the input-output ratio would remain stable, but there is no evidence that peasants in fact were aware of this new element of predictability in the post-1968 program. The evidence does suggest however, that even if the peasant was informed of these advantages, he would be inclined not to trust the government's promises to adhere to these terms. In the peasant's view, the government had heretofore frequently reneged on its commitments and his suspicion was born out again when, in September 1969, the government revoked the existing contracts in order to renegotiate their conditions.

in their entirety. The government's efforts to circumscribe even further the opportunities for the peasant to exercise some discretion in his cultivation pattern rested in great part, upon the fact that the new miracle rice seeds were extremely dependent upon a higher dosage of inputs, more so than conventional seeds. It was therefore, assumed that greater effort would have to be exerted to prevent the peasant from persisting in his former practices of selling inputs to local vendors and, perhaps combining the new seeds with his traditional input formula. In short, the adaptation of a new technology was construed as necessitating a reduction in peasant autonomy.

The most dramatic innovation devised to reduce the possible hazards of peasant indiscretion and non-compliance concerned the distribution of pesticides. Whereas, in the old program, pesticide application was undertaken by giving over sprayers and pesticides to participating peasants, under the new program, this was accomplished through aerial spraying. The foreign concerns supplied airplanes and pilots for these operations. Aerial spraying appeared to be a more effective method because its application did not depend upon the initiative and skill of the peasant. Heretofore, hand-spraying had not been successful because peasants either did not possess the mechanical skills to maintain the machines or they did not apply the proper dosage. Many peasants tried to economize by avoiding the use of the pesticides. Aerial spraying now transferred this area of

decision-making from the peasant to the government bureaucracy.¹⁰ This added a new element of coercion, for in order to profit from the benefits of aerial spraying, it was imperative that the planes be permitted to sweep across large areas of land. Thus, pressure was applied upon peasants with contiguous plots to enroll in the program, as the planes could not skip from one small paddy to another and effectively administer the spray.

The use of aerial-spraying also involved a more authoritarian approach in the distribution of seeds and fertilizer. The government arbitrarily identified large tracts of rice-lands for the use of IR5 and IR8 seeds in order to comply with the requisites of aerial spraying and the attendant need for contiguous plots to use the same inputs. It also followed that these peasants were compelled to receive a prescribed dosage of fertilizer consistent with the needs of a particular seed. Likewise, the old program had depended upon village initiative in transporting the inputs from government warehouses, and it frequently occurred that peasants were less than punctual in securing the material. In order to avoid this logistical lag in the new program, the foreign firms now assumed the task of transporting the inputs directly to the village. In effect, this reduced even more the amount of peasant control over the program. Formerly, a village could have given its initial and tacit approval to participate in the program, but

10. Since a substantial portion of Indonesia's annual rice crop is destroyed by pests, securing more effective methods of pests control, i.e., aerial spraying, would yield a sizeable return in production in and of itself. Thus, the Director General of the Department of Agriculture, Dr. Sadikin, indicated to the press in April 1970, that 10% of Indonesia's annual rice crop was consumed by pests and that with effective spraying for one or two years, not only would the pests be eliminated but so would be need for subsequent spraying. See Indonesia Raya, April 15, 1970.

then withdraw by failing to make an appearance at the warehouse. Now, however, once the application process was initiated, the village had no choice but to receive the inputs. The core element of the government's post 1968 strategy toward rice production stressed the transfer of decision-making from the peasant to the public bureaucracy.

Initially, the new contractual approach to rice production appeared to be a workable solution for Indonesia's rice problem, and by late 1969, it appeared that rice production was on the increase.¹¹ Nevertheless, it was increasingly clear that these gains were being purchased at enormous political and economic costs. The program was extremely large, covering vast areas of Java and including millions of peasants. Within the context of the realities of the Indonesian bureaucracy, the size of the program made it susceptible to wide-scale inefficiency, waste and corruption. Not even the highly touted foreign companies, with their boundless resources, could resolve these problems and strengthen their tenuous position in the rural sector. Peasants and regional officials were becoming increasingly adamant in their opposition to the government's contractual program and the onerous burdens it imposed upon the rural sector. By mid 1970, these economic and political pressures were of such magnitude and scope as to impel a radical turnabout in government policies and a sudden tossing overboard of the post 1968 rice program.

11. Thus, on October 9, 1969, after a meeting with President Suharto, Minister of Agriculture Thojib explained to the press that production for 1969 would exceed the plan target of 10.5 million tons of rice. Finally, on April 23, 1970, in a television interview, the Minister stated that rice production in 1969 had exceeded the plan target of 10.5 and actual production was 10.79 million ton. See Berdikari, October 10, 1969, and Pikiran Rakjat, April 23, 1970.

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IV

The ultimate demise of the government's rice campaign in 1970 can be attributed to the same factors which engendered the downfall of the pre 1968 program: the persistent attempt to dispense an homogeneous and uniform service in a regulated and predictable manner to an atomized and heterogenous clientele, whose initiatives and responses, were distinguished by non-uniformity, irregularity and unpredictability. The basic tenets of this strategy simply failed to accord with the empirical and objective realities of rice production in Indonesia, and therefore, the gap between the intentions of government plans and actual administrative achievements remain irreconciled.

These contradictions were dramatically displayed in the aerial spraying program. Aerial spraying was applied at different intervals over large areas of land in which the peasants exhibited great variability in their periods of planting. As a consequence, the spray was frequently applied at the wrong time and had a negligible impact upon pest control. In early December 1969, the Minister of Agriculture confirmed reports that several districts in West Java, the province most exposed to aerial spraying, were suffering from some serious pest control problems.¹² In addition, the ecological dangers involved in a widespread program of aerial spraying were coming to the attention of government authorities.

12. Kompas, December 2, 1969. In late September 1969, the provincial Department of Agriculture in West Java released a report indicating that over 1/3 of the area receiving aerial spray was still subject to pest attacks. Pikiran Rakjat, September 25, 1969.

On September 10, 1969, the Ministry of Agriculture announced that it had initiated an investigation in response to complaints that fish in the inland ponds were being poisoned by aerial pesticides.¹³

Similar deficiencies in the government's production strategy were also highlighted in the distribution of IR5 and IR8, the miracle rice seeds developed in the Philippines. It soon became apparent that IR8 was quite vulnerable to certain pests in Indonesia. In addition, the rice produced from these seeds did not rate high in preferred consumer tastes, and limited consumer demand lowered its price below the market values of non-IR rice. Many peasants began shifting back to the use of conventional seeds, the cultivation of which requires a lower dosage of fertilizer.¹⁴ As a consequence, large amounts of under-priced fertilizer began to appear on local markets, as peasants began to sell the surplus fertilizer acquired in the government's program. This had the effect of further

13. Reports concerning the harmful effects of aerial spraying upon fish and livestock as well as on human beings, prompted a call from several sources for greater government control and regulation in the use of pesticides.

In an address given at the University of Gadjah Mada, Professor, Dr. Ir. Otto Sumarwoto indicated that the advanced nations had already taken measures to ban certain dangerous pesticides and now the chemical firms were trying to market these products in the less developed nations. He claimed that these particular pesticides might have a similar or perhaps more lethal effect in tropical countries, and that experts and instruments would have to be developed to discern their impact upon human beings and the environment. Lembaran Minggu, January 25, 1970.

Finally, in February 1970, at a seminar sponsored by the National Biology Institute and the Indonesian Biological Association, a resolution was passed urging the government to use pesticides only in cases of emergency when no other alternative was available. Kompas, February 25, 1970.

14. For an informative account of peasant behavior in this area and the problems encountered in the adaptation of the new miracle rice seeds see Problems of the Rice Intensification Schemes in West Java by Faisal Kasryno, William Collier and Irian Soejono, published in Bogor, 1969.

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undermining the government's campaign as many peasants now preferred to purchase fertilizer from these market sources rather than having to pay a higher price for the fertilizer contained in the government packet.

Thus, it was becoming increasingly more difficult for the bureaucracy to mobilize its peasant clientele in a manner consistent with government directives. These shortcomings were inevitably reflected on the output side, and in the government's effort to balance its ledgers. The Minister of Agriculture consistently supported the position that the campaign's annual production targets would be achieved. Nevertheless, when measured by the rate of credit repayment, i.e., the 1/6 return on actual crop yields, the program had to be judged an abysmal failure. By August 1969, one year after the introduction of the 1/6 repayment formula, official statistics indicated that rice repayments were falling from 35% to 90% below the projected rate of collection.

Several factors can be identified which account for the peasant's failure to return a rice repayment in accordance with government projections. First, it appeared that many peasants were submitting inaccurate reports to the government; deflating the estimates on actual yields and thereby reducing the amount of repayment to the government. Second, there were indications that many peasants were not achieving the projected increase in productivity, and therefore the 1/6 repayment was naturally smaller in absolute terms than what was originally anticipated.¹⁵ Nevertheless, since official channels of reporting were defective, the

15. For an excellent survey account of the problems associated with the 1/6 repayment formula in Central and West Java see the two reports prepared in August 1969, by a team of agronomists from the University of Padjadjaran, entitled Bimas Gotong Rojang Ciba di Djawa Barat: Suatu Laporan Evaluasi and Bimas Gotong Rojang Ciba dan Coopa di Djawa Barat dan Djawa Tengah: Laporan Evaluasi II.

government was never in a position to measure these factors and determine to what extent poor collection rates reflected false estimates by the peasantry or failures in the achievement of higher production.¹⁶ The government was also encountering some serious problems in the logistics of collecting the rice payment. The agencies responsible for this task lacked the skilled manpower and organizational structures necessary to effectively organize village check points for collection, maintain quality control on the rice collected, and finally transport it to larger staging areas outside the village.

In response to this poor repayment rate, and in an effort to restore the program's fiscal integrity, the government undertook some immediate actions to modify the repayment formula in a manner more favorable to its own interests. In September 1969, the government announced it was abandoning the 1/6 formula and henceforth the repayment would be a fixed amount of rice or its monetary equivalent. The invariable amount was calculated to equal 1/6 of a predetermined yield. In effect, the peasant now lost his opportunity to calculate the repayment according to his own assessment of his yield.

In retrospect, it can now be discerned that it was the adoption of the fixed repayment rate, which decisively hastened the disintegration of the government's rice campaign. From that point on, a groundswell of resistance began to mount, as peasants became more resolute in their rejection of this repayment formula. The sudden and unforeseen announcement

16. Major deficiencies in the gathering of accurate production statistics constituted one of the most critical problems in the entire campaign. Up until its termination in May 1970, the government was never able to discern with precision, the effect of its program on increasing production. The absence of accurate statistics reflects the fact that government agencies had yet to develop reliable reporting systems.

of a shift to a fixed repayment plan, convinced many peasants that they had been victimized by a perfidious and whimsical bureaucracy. In their view, the government's erratic and mercurial policies only served to demonstrate the risks of engaging in any long-term cost-benefit projections. The environment was too unstable for one to indulge in such a luxury.

Accompanying this perception of being at the mercy of a capricious and irresolute bureaucracy, was a more acute and salient protest against the substantive aspects of the repayment change. Prior to 1969, the peasant could, with some degree of flexibility, shape the government's program to accord with his own interests, even though the initial services provided were not consistent with his needs. Thus, for example, if a peasant received a packet containing fertilizers and pesticides which did not satisfy his requirements, he could compensate by reducing the $1/6$ amount of his repayment. The same arrangement applied when the peasant fell victim to poor administrative services. If fertilizer or pesticides were delivered late or in improper amounts, the peasant could deduct the cost of this inefficiency from his credit repayment. Thus, the $1/6$ formula enabled him to enforce a quid-pro-quo relationship with the government and to adjust his repayment according to the benefits and costs derived from the program. As this practice evolved however, it was subject to abuse which was compounded by inefficient administrative services. The government soon found itself in a one sided relationship, with the peasantry appearing to reap the benefits and the government the costs. The introduction of the fixed repayment was intended to restore some balance and equity in the contractual relationship between the peasant and the government and thereby reduce the peasant's opportunity to exercise exclusive discretion over these issues.

With the advent of the fixed repayment plan, peasants became much more antagonistic in their reception of the government's packet program, and a power struggle emerged, with the peasantry, as prospective program participants seeking to expand the opportunities to exercise their options, and government agencies, responding to their own bureaucratic imperatives, seeking to circumscribe the boundaries of peasant discretion. On the one side, if the peasant was to profit under the fixed repayment plan, high yields would have to be achieved and therefore he demanded more flexible and efficient government services. On the other side however, although government administrators were prepared to improve their performance and introduce some variations in the packet contents, any significant move in this direction would have subjected governmental organizational structures to an inordinate amount of strain.

While the bureaucracy was constrained from undertaking any major modifications to satisfy peasant needs, and administrators frequently exercised negative and coercive sanctions to secure peasant compliance, there were still some marginal opportunities for the peasant to informally tailor the program to his own needs.¹⁷ Thus, the "blackmarket" on fertilizer still prevailed in some areas. However, by early 1970, many peasants were becoming quite steadfast in their opposition to the government's campaign. This frequently occurred in areas where members of the rural civil service balked at the rigid enforcement of an unpopular program.

17. The use of coercion to compel peasant compliance with government directives did not escape the attention of the survey team from the University of Padjadjaran. They expressed concern in their reports that the government's program, particularly in Central Java, where village administration is somewhat more entrenched than in West Java, represented a return to the Dutch Culture System ("Cultuur Stetsel") with the officialdom authoritatively compelling the peasant to comply with government instructions.

The increased opposition of local parliaments, political parties and the press, encouraged these officials to take a more critical stance vis-a-vis higher authorities, and with increasing frequency, village heads and sub-district officers refused to fully support the government's program.

It was within this context of growing opposition that the central government moved to drastically alter its agricultural policies. By early 1970, it was apparent that rice yields were still less than expected, and, as a consequence, many peasants persisted in their refusal to pay in full the fixed repayment demanded by the government. In some areas peasant indebtedness to the government was growing at an alarming rate and this constituted a source of great concern to many rural officials. In addition, the collection of the loans, whether in rice or money, continued to constitute a formidable logistics and management problem and corruption and waste continued to take a heavy toll in this area. In short, despite the best of government efforts, the program remained a losing proposition both from a fiscal and political point of view.¹⁸ More alarming was the fact that an even higher level of underachievement could be anticipated in the near future. A massive amount of resources from internal as well as external sources had been expended in the rice production program and the full weight of the government bureaucracy had been brought to bear in its executive implementation. Nevertheless, the return simply did not equal this input, and, short of some major policy change, there was little the government could do to improve the record

18. By early 1970, estimates from reliable sources indicated that the government had absorbed a loss of perhaps 10 billion rupiah in its post 1968 rice campaign. See Pikiran Rakjat, February 25, 1970, and Berita Yudha, February 28, 1970.

of performance. Thus, on May 20, 1970, an official announcement was made that President Suharto had decided to abandon the program and terminate the government's relationship with the foreign firms.¹⁹ This decision ended another phase in Indonesia's ill-fated attempt to achieve a rapid increase in rice production.

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With the sudden abandonment of this program the government was compelled to devise a new approach towards the agricultural sector. The attributes of a successor policy began to emerge in the summer of 1970, and a new program was well underway several months later. In many respects, the lessons learned from the past decade appear to have been integrated into the process of policy-making for the 1970's. In particular, many officials are now convinced that the packet formula suffered from a serious shortcoming in that its contents, whether measured in quantity or quality, frequently did not satisfy the needs of the peasant. Thus, the packet approach has been replaced by a more flexible system which permits the peasant to select, within a maximum and minimum range, the quantity of fertilizer and type of seeds he desires.

Accompanying this change, some significant modifications have been undertaken in the distribution of seeds and pesticides. First, the

19. This announcement occurred directly after a cabinet meeting, when the Minister of Agriculture made a terse statement to the press, conveying the President's decision. The minister cast the event in a positive light, indicating that after intensive study, the government had decided to undertake its own program independent of external assistance. In his words, sufficient fiscal resources were available to finance the program and domestic institutions were now capable of functioning at a level consistent with plan targets. See Kompas, May 21, 1970.

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government wisely abandoned the efforts to distribute pesticides from the air and the peasant has regained full control over the allocation of this input through the use of hand-sprayers. Second, while many peasants resisted the use of IR5 and IR8 seeds, starting in 1970, the government began to make available its own miracle seeds. These strains were developed for use in Indonesia, and therefore promise to be more adaptable to the peculiar needs and conditions of agricultural production on Java as well as to consumer tastes.

The advent of this new agricultural program represents the end of an era in public policy-making in Indonesia. During the 1960's, the role of the non-market mechanism reigned pre-eminent in attempts to increase rice production, and the government's campaign embodied, in pristine form, this approach toward rural modernization. Thus, complete initiative for the adoption of new technologies in rice production was appropriated by the government and the peasant was expected to modify his behavior in accordance with directives emanating from an impersonal bureaucracy. The new post 1970 policy, however, constitutes at least a half-swing of the pendulum, for instead of being under the custody of an administrative hierarchy, the peasant is now accredited the role of a decision-maker. The incorporation of greater flexibility into the packet approach represents a partial restoration of the market mechanism, and subsumes the assumption that the peasant can effectively calculate a productive combination of inputs. The entire approach is implicitly predicated on the fact that, given the presence of certain economic incentives, the peasant will voluntarily take the initiative to increase his yields.

The government's new orientation towards rural modernization is also reflected in its current efforts at institutional reform. In this respect, the approach towards organizational change in Indonesia has gone full circle. In the early 1960's, indigenous institutions bore the full brunt of achieving higher production targets. The policy changes in 1968 shifted some of this responsibility to the foreign companies, but the recent program modifications in 1970, constitute a return to the earlier dependence upon domestic institutions, and signifies a renewed confidence in their capacity to attain the plan targets. This optimism is associated with some recent changes in institutional practices, the direction of which reflects government efforts to employ market and economic incentives to stimulate peasant productivity.²⁰ Finally, the government has undertaken a massive effort to make its credit facilities more accessible to the rural areas. For example, village banks have been rapidly established throughout Java, in order to conveniently dispense credit to peasants. It is intended that each of these units will be complemented by the presence in the village of a fertilizer retailer and a village warehouse, where peasants can deposit their rice during the peak of the harvest season, and secure credit from the village bank for current living expenses. In the long run, it is envisaged that this matrix of institutions will eventually become a vital and integral part of village life, enjoying peasant support and participation.

20. These institutional developments are most evident in the government's efforts to improve the competitive marketing of fertilizer and the efforts to manipulate market rice prices in a manner consistent with peasant needs.

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In summary, the medium of technological transfer has been shifting from coercive institutional intervention, in which the peasant was reduced to a passive and dependent object of government aid, to a climate in which government policy reflects a more indirect and subtle attempt to foster peasant initiative in the process of economic growth. This new emphasis on the proverbial carrot rather than the stick will not allay the persistent administrative anxiety over the capacity to achieve the plan target of self-sufficiency in rice by 1973. In fact, the new strategy may be more exacting of the officialdom's competency to cautiously orchestrate a complex set of policies. For example, the new strategy in rice production rests on the assumption that the government's price support policy will have the effect of making it profitable for the peasant to increase production. The area of price controls on rice was sorely neglected in the 1960's and, therefore, government officials will be forced to rapidly acquire the skills and confidence necessary to undertake such a program in the 1970's. Apprehension about the future course of events is further heightened by the intrinsic nature of the low profile required of this more sophisticated approach to agricultural modernization. In the old program, officials could take some solace in their own self-initiated actions and even though these frequently stifled peasant initiative, the process did provide a false sense of security that something was being accomplished. These same officials must now hope that the presumed rewards of advanced technology will stir the peasant to cast his lot with the Green Revolution.

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EPISODES IN RURAL MODERNIZATION:
PROBLEMS IN THE BIMAS PROGRAM

Gary Hansen

Many governments in developing countries have designed programs to increase food production but not all plans have proved successful in their execution. To some extent the problem may relate to the process of planning itself. Government plans define a set of programs which it is believed will stimulate economic growth in the rural sector. Such plans obviously include options thought conducive to increased crop yields. Indeed, it may be the explicit intention of the planners to restrain the peasant from certain options that are considered unproductive and to redirect him towards new and more "productive" patterns of behavior. The government administrator in the field must explain the plan and convince the peasant to act within its limits. The peasant's response may not be entirely positive, he may feel more confident and secure in following traditional agricultural practices. This sets the stage for a conflict between the administrator--who wants to implement plans which establish definite limits upon action--and the peasant--who attempts to preserve his autonomy and thereby his capacity to follow his own self-defined pattern of choices.

The dogged resistance of the peasantry, impoverished and conservative in outlook, can easily sap the patience if not subvert the economic plans of a government bent upon introducing modern methods of agricultural production. Under pressure to achieve production targets, officials frequently resort to more subtle tactics of bureaucratic intimidation to quell peasant opposition. The very fact that such bureaucratic methods can and are frequently employed is indicative of a structural imbalance, characteristic of many new nations, by which a dynamic urban-centered bureaucracy holds sway over an unorganized and languid rural populace. More importantly, however, this imbalance can be reflected in the very process of economic and social planning itself. Urban technocrats often base plans on the most modern technology without much forethought about how such innovations can be adapted to existing rural conditions. Even if technical and administrative policies are carefully designed to take into account rural conditions, the interests of the urban-dominated economy may still prevent any attempt to provide the economic incentives necessary for a positive peasant response.

One must acknowledge that peasant opposition to participation in government programs may have some basis in political, technological and economic issues and cannot be set aside as another instance of "irrational" commitment to the immutable laws of village existence. This is not to dismiss entirely the impact of village traditions and cultural factors or their role in inhibiting the adoption of more effective methods of agricultural production. The current critical contest and dispute between peasant and administrator in Indonesia resulted from plans being implemented in the rural sector which were formulated in an urban-dominated society.

In the post-colonial era, Indonesian political leaders have frequently set self-sufficiency in rice production as a national goal, and several government programs have been undertaken to achieve this objective. This was particularly true in the 1960's as increasingly large quantities of foreign currency were expended to purchase rice on the world market because domestic production was insufficient. Indonesian leaders have been quite aware of the potentially disastrous consequences both economically and politically should they ignore consumption needs, particularly in urban areas, for a basic commodity like rice. Nevertheless, the goal of attaining self-sufficiency has continued to elude government administrators.

Under the five year plan of 1969 (Repelita), central attention in plans for modernizing the rural economy was focussed on rice production. President Suharto has been unbending in the commitment that, by 1973, Indonesia will be self-sufficient in rice. The current program to achieve this goal is named Bimas and is the most discussed and controversial aspect of contemporary public policy in Indonesia.¹ Press coverage on this program alone has far exceeded that given to the entire five year plan. The program, by virtue of its size, requires the participation of millions of peasant farmers, particularly on Java.² The government has saturated the more fertile areas of Java with credits in the form of fertilizers, pesticides, seeds and other items needed to increase rice production. Several foreign firms from Germany, Switzerland and Japan have contracted with the Indonesian government to supply these items, and, in some cases, they have participated in the administration of the program itself. The process of implementing the Bimas program has highlighted some serious and pervasive problems in government administration. Few administrative reforms were undertaken to prepare government organizations to carry out the Bimas program. As a result departments continue to lack the personnel and skills required by such

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1. Bimas as used in this discussion refers specifically to the Bimas Gotong Rojong Program, the national economic development program in rice production, the goals for which were developed in 1968 and are spelled out in the five year plan.

The guidelines for the Bimas program were first formulated by the Institut Pertanian Bogor (Institute of Agriculture in Bogor) and tested by students from that Institute in a pilot project in 1963-64 in the district of Krawang, West Java. The initial name given to the project was Demas (Demonstrasi Massal or Mass Demonstration). In 1964-65, the project was financed and sponsored by the Ministry of Agriculture and the size of the program expanded. In 1965, when the government adopted the project as the primary program in rice production, the name was changed to Bimas (Bimbingan Massal or Mass Guidance) and was referred to as Bimas Nasional or National Bimas. In 1968, when foreign firms assumed some responsibility for the program, a new name was given to this program: Bimas Gotong Rojong. Bimas Gotong Rojong is now considered a program separate and distinct from Bimas Nasional. For the past two years, efforts at increasing rice production have been centered in the Bimas Gotong Rojong program rather than the Bimas Nasional program.

2. The Bimas program has been expanded to include parts of Sumatra and Sulawesi, but its emphasis continues to be upon increasing rice production in Java.

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a massive agricultural development program. These problems soon became apparent as the Bimas Gotong Rojong program began operations, in the wet season of 1968-69, and then expanded, during the 1969 dry season and again in the 1969-70 wet season. For example, poor communications and a weak government bureaucracy contributed to the tardy delivery of the Bimas fertilizer and pesticides to the villages. A shortage of extension workers made it impossible to instruct and supervise the peasant adequately in the use of fertilizer and pesticides. As a result, the peasant frequently did not attain the promised increase in rice yields, and, moreover, he was now saddled with the repayment of the credit that the government extended to him. Many peasants have been unwilling or unable to repay the Bimas credits.³ For many reasons, then, peasant dissatisfaction with the Bimas program has increased. Some of this stems from deficiencies intrinsic to the program. From the peasant's point of view, the government has been too inflexible. Based on years of experience in his particular area, the peasant has his own ideas about what he needs to increase rice yields and also how much should be used. The government, however, insists upon giving the same standard package for all areas allowing only limited variations in its contents. From the administrative point of view, standardization is necessary because the government does not have the capacity to tailor specific programs to meet individual peasant needs. Frequently the peasant does not get either the kind or amount of assistance which he believes he needs.

If the peasant was so dissatisfied with the program, why then did a substantial portion of the peasantry participate in Bimas? The press in Java has been quick to raise this question and has charged that force was used to override peasant opposition to the Bimas program. Press reports describing actual incidents in which force was used are corroborated by other sources. Obviously, government administrators and peasants have disagreed sharply about the policy and tactics of rural modernization.

Members of the civil service, particularly the *pamong pradja* have admitted privately that they frequently had to coerce farmers to participate in the Bimas program, though they rarely used overt force. The intonation used in a verbal command, or the general style of communication between the official and the peasant is enough to indicate that the government will not tolerate any public opposition. In the early stages of the program, therefore, the peasantry accepted Bimas. Such resignation is perhaps consistent with village tradition, but it was reinforced by the general feeling of insecurity and fear that followed the abortive communist coup of 1965. In the face of repeated disappointment with the results of the Bimas program, however, inhibitions against open dissent began to give way. The role of the press in this process should not be underestimated. It made public what many were thinking in private. Press criticism of the program, in turn, encouraged the political parties and the peasantry to become more aggressive.

The undercurrent of frustration with the Bimas program grew throughout 1969, and became quite visible and potent at the beginning

3. It is important to mention that peasants frequently did not repay the credit even when yields were superior.

of the 1970 dry season. Peasant resistance caused the government to try harder to increase communication with the countryside. In official circles, there was a growing awareness that more resources would have to be allocated to explain the program to the farmer and persuade him to accept it.

While conducting research on the administration of the Bimas program in West Java, the author was able to participate in and observe the activities of Bimas officials as they tried to mobilize peasant support for the program. A team of government officials, representing the various agencies involved in Bimas at the *kabupaten* (district) level, were instructed to visit several *ketjamatan* (sub-districts) and meet with their officials and peasants. The team was supposed to explain Bimas and then enlist the peasants' participation. Frequently, the *kabupaten* officials had already enrolled these *ketjamatan* in the Bimas program prior to the team's visit, and the arrival of the *kabupaten* team often represented the first effort to solicit peasant support. The *kabupaten* officials usually visited one *ketjamatan* a day, arriving in the early morning and returning home in the late afternoon. Five or six officials would comprise a team: one or two officials from the bupati's staff, one or two from the agriculture department, one from PN Pertani (the government agency responsible for trucking the Bimas supplies to the village) and one from Bulog (Biro Urusan Logistik, the government agency responsible for the rice price support program and for collection of credit repayments).

Most of the visits occurred in the months of March and April 1970. It is important to contact the peasants during these months so that Bimas deliveries can be made before dry season planting begins, in May and June. The peasants who attended the meetings, ideally, had been elected by the villagers. But in fact they were frequently appointed by the village chiefs (*lurah*) to represent their village in negotiations with Bimas officials. Those selected were called "unit leaders," and they were responsible for administering the Bimas project set for their village. This included making a list of participants, finding out from the various agencies when the Bimas materials would be delivered and then distributing these to the individual peasants. The unit leader performed a vital role; his position constituted the critical link between the impersonal bureaucracy, with its chain of command from Djakarta to the sub-district, and the peasant in the village, a communal entity often not fully incorporated into the state administrative structure.

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4. This departure from official instructions occurred for several reasons. Frequently the *lurah* wanted to select one of his confidants, either as a favor or to avoid the inconvenience of assembling the farmers for an election. There were also instances where the farmers would elect a unit leader, but for some reason he failed to meet the qualifications required by the *lurah* or the agriculture department. A replacement would then be selected by the *lurah*. As the Bimas program became less popular, farmers became less willing to serve as unit leaders. This obliged the *lurah* to select candidates from some of his more compliant constituents.

The following is a report of what occurred in one kabupaten when the teams visited the ketjamatan. The particular kabupaten is located in the Priangan, the southern mountainous area of West Java. In these less accessible areas, villagers have been able, historically, to preserve a greater degree of autonomy from government control. The reports illuminate quite well certain problems with the Bimas program, the approach which government officials take in implementing the program and the reaction of the peasantry to such government assistance. These formal encounters between middle level, urban officials and the subsistence level rural populace provide an insight into the frustrations that arise when a government, intent upon altering time-honored patterns of land use, confronts a recalcitrant and tradition-bound peasantry.

II

Early in the morning I drove to the ketjamatan where I was to meet with the agricultural extension worker. Along with him and the tjamat, I went to the meeting hall next to the tjamat's office; here the special team from the kabupaten would explain the Bimas program for the current dry season. The meeting hall, like most buildings in the area, was a simple wooden structure with a peaked tile roof and a few glass panes for lighting. It consisted of one large room, approximately forty feet square. On the plank floor were five or six wooden benches upon which sat about fifteen to twenty farmers. The farmers were all very lean and a little bent, appearing emaciated in their well-worn and drab-looking clothes. Some were young but most appeared over thirty-five. A few uniformed soldiers were sitting together on one of the benches. All were facing a large table at the front. Around this table sat the visiting team of officials and the members of the ketjamatan Muspida,⁵ in this instance, the tjamat, the local police chief and the local military commander. The meeting was opened by the tjamat, a striking and articulate man in his late thirties, a drop-out from the law faculty in Bandung. He had already served for ten years as tjamat and he introduced the kabupaten team with confidence and poise. Next he made a few remarks about Bimas. He stressed that only those villages with a good water supply could participate in Bimas during the dry season planting. Barring any dispute (*sengketa*) over water rights, the participating villages had already been chosen. He reminded the farmers that the fertilizer and other materials were not a gift from the government and that each individual peasant was responsible for the repayment of this credit. He underscored the fact that in deciding whether or not to accept Bimas aid, personal (*pribadi*) interests should not take

5. Muspida (Musjawarah Pimpinan Daerah or Regional Leadership Council) is a formal organizational device designed to coordinate the activities of civil, police and military authorities at the regional level. The specific function of each member remains unclear and this vagueness has left the door open for individual council members to define their own role. Not infrequently, as a result, a regional police or military commander gains the upper hand in the administration of civil affairs. Civil officials, obviously, are irritated by such encroachment upon their domain and Muspida continues to be a controversial aspect of regional government in Indonesia.

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priority. "Do not just express your personal opinions on the Bimas matter, but open your minds to the condition of peasants in general. Our peasants are in a very weak economic position. Bimas should therefore be considered a responsibility (*tugas*) of village cooperation (*gotong-rojong*). The peasant should feel obliged to accept Bimas. The government is trying to assist us and so we should try to assist the government."

The tjamat then introduced the kabupaten representative of the Department of Agriculture. This official, an older man, stood and read from the bupati's letter of instruction (*surat keputusan*) which described in some detail the conditions of the Bimas program for the next dry season. The most important part was a description of the amount and kinds of materials (specifically, fertilizer, seeds and pesticides) to be provided, their cost and the terms of repayment to the government.⁶ After some fifteen minutes, he stopped reading. He said that the contents of the Bimas package could not be varied too much because of the problems this would create in the administration of the program. He also stressed that the village unit could not be smaller than fifty hectares.⁷

The agricultural official then invited another member of the team to address the assembled peasants. This was a prominent farmer (*tokoh tani*), well known for his use of modern techniques in rice cultivation.⁸ Well dressed and meticulously groomed, his urbane appearance contrasted sharply with that of the typical Indonesian peasant. (I learned later that, besides his farm, he also owned a home in Bandung, and that several of his children were living there while attending the University of Padjadjaran.) He started by saying,

6. The usual pattern in these meetings was for one official to read the formal letter of instruction from the bupati. Though a dull and tedious task, it had definite and important advantages. First, it emphasized that the instructions emanated from an important and authoritative source, i.e., the bupati. Second, by reading the instructions, the local official conveyed the impression that he was compelled to follow the commands and that, therefore, the peasant should not hold him accountable for the program. Third, since there were no copies of the instructions for distribution, this verbal communication was often the only detailed information which the peasant received.
7. Trying to profit from economies-of-scale, the government established fifty hectares of contiguous plots as the minimum area to qualify for Bimas. Identified as the "block system," this stipulation was a bone of contention between farmer and administrator. Some farmers felt that the regulation was a form of pressure, compelling those who opposed Bimas to accept it anyway in order not to deny their neighbors the program's benefits.
8. Prominent peasants were invited to accompany the teams. This was in response to pressure by local parliamentary bodies demanding more opportunity for peasant participation in the implementation of the program. Bimas officials favored the idea, hoping it would enhance the program in the eyes of the peasants. The legislative bodies, however, wanted more peasant participation in order to curb bureaucratic excesses.

"Bimas really means social guidance (*bimbingan masyarakat*) because the problem of rice production is really a social problem. If all the peasants could just work together the problem could be overcome." He felt that the marketing of rice needed to be improved, and he implied the government should assist more in this regard. He also suggested that the floor price in the new government rice subsidy should be raised to a level more compatible with peasant economic needs. Finally he was disturbed at reports that many peasants were not repaying the credit they had received through the Bimas program. He said he did not know what to make of these reports and did not yet know if the peasant was responsible for this failure or if perhaps other parties were involved. In spite of these problems, he asserted that the peasants should implement the government programs. He asked rhetorically, "Why would a peasant want to reject the Bimas program?" He himself had participated in the program and had had some very high yields. "We, like the officials (*petugan*), are responsible for the implementation of Bimas. We want the government to succeed."

The third member of the bupati's team to address the peasant assemblage was a man in his late twenties who represented PN Pertani, the government firm responsible for transporting the Bimas materials to the village. He said a few words of recognition to the Mispida and then launched into his talk by saying that PN Pertani was encountering many complications (*simpang siur*). He said that in one village in the ketjamatan, when PN Pertani delivered the fertilizer, no one knew who was the leader and who were the members of the unit. "It was not clear who was responsible for the unit. In general, PN Pertani is not getting any advance information on road conditions or village storage facilities or even a complete list of participating peasants." He stressed that the unit leaders must provide this information. "Up until now the unit leaders have been too passive. They should come directly to the local PN Pertani warehouse to request the Bimas materials. Sometimes the unit leader did not come and sometimes a person came that we did not know. We could only trust that he was submitting an honest list of applicants. Frequently the form indicating that the village had received the materials was signed by the wrong person. Then we were forced to return to see if the delivery had been made. Sometimes the unit leader doesn't inform the lurah that the material has arrived. Then an irate lurah shows up at our office asking why the delivery has not been made. Moreover, there are times when the unit leaders come to our office to request deliveries too late. Obviously we cannot be blamed for this." The tone of his voice and the manner of his speech clearly showed his annoyance with these problems. At several intervals he looked in the direction of the Mispida members and asked their forbearance for his discussion of such delicate matters. At one point he awkwardly turned to the tjamat and apologized for bringing the whole thing up at this meeting. He concluded by saying that "it was improper (*tidak tepat*) to mention these things but in this instance past experience could serve as a good teacher."

Next, the official from the Department of Agriculture completed reading the formal letter of instruction from the bupati. He then invited questions from the peasants. Three peasants raised their hands. The official first took their names down and then let them ask their questions. The first to stand was a little old man who

probably weighed no more than a hundred pounds. It seemed as if only his *pitji* hat and his tattered but well-kept white shirt kept his sometimes tremulous frame from being engulfed by spotless but oversized baggy trousers. His stooped and anemic appearance was deceptive, for as soon as he spoke, one realized that he possessed a steadfast and iron-willed spirit. With exceptionally few utterances of deference, by Indonesian standards, to the team and ketjamatan leaders, he politely came directly to his point. His eyes were intently fixed upon the tokoh tani, who a few minutes before had asked why peasants would want to reject the Bimas program. The old man, as his talk evolved, was obviously ruffled by this remark and its implication that peasants were being less than rational if they rejected Bimas. He started by saying that he had participated in Bimas and that his yields had been low. "I then had to divide this between my tenants and also repay the government for the Bimas credits. This left me very little for my own needs." He invited the tokoh tani to come to his farm and see for himself. The tokoh tani laughed anxiously, as did everyone else; his silent but incredulous facial expression seemed to ask why the old peasant was putting him on like this. Why should the old man have taken his remark so seriously? The old fellow, now gazing at the entire team, went on to say that Bimas was too burdensome (*terlalu berat*). "The yields are not sufficient to pay back the credit and leave me a satisfactory profit. I only want a portion of the Bimas package. I do not want the pesticides. The last time I used the Bimas pesticide, it killed the fish in the neighboring ponds."⁹ He finished by saying that before one could expect a substantial increase in yields more attention would have to be given to improving the local irrigation system.¹⁰

The agricultural official gave a direct and brief rejoinder to these questions. He said there was little he could do about the price of the package contents. "These decisions are made higher up in the administrative hierarchy." Likewise, he could not change the regulation that the peasant must receive the full package.

A second peasant stood and asked some questions. He said that he would like to know on what basis the parliament (Dewan Perwakilan Rakyat) determined the price of the package. He felt it was too theoretical. The peasant only needs fertilizer. He said that his area was free of pests. He requested that the pesticides be left out. He also felt that the technical assistance fee should not be paid by the peasant.¹¹ He reiterated that the package price was too high and

9. The killing of fish in local ponds by Bimas pesticides frequently occurred in West Java. Some of the pesticides were highly toxic and, without proper precautionary measures, leakage from the treated areas entered fish ponds.
10. The new high yield seeds supplied in the Bimas package are more dependent than are conventional seeds upon a well-managed water supply. In many areas of West Java, Bimas projects were introduced before restoration of irrigation systems which had fallen into disrepair. This reduced the yield of the new seeds.
11. Included in the price of the package was a fee assessed for technical assistance. This was primarily used to pay salaries of technical advisers employed by foreign firms to plan and implement the Bimas program. The peasants found these fees objectionable because

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did not accord with the actual income of the peasant. He then went on to ask what he was supposed to do for his village. "At the beginning of the last wet season (1969-1970), the Bimas materials were delivered, but only 50 percent of the peasants used them. The others did not want to participate in the program and now the village still has a large quantity of unused fertilizer and pesticides on hand. I do not know what to do with this."¹²

The agricultural representative, now more diffident, responded by insisting that pesticides were not meant for use only when a rice field was attacked by pests. He stressed that pesticides should be used as a preventive measure before the pests appeared and therefore were an essential part of the package. He then went to the chalk board where the tjamat a few minutes before had listed the cost of the individual items. He said that the technical assistance fee was used to pay the salaries of the Japanese agricultural experts who were providing technical advice for the Bimas projects. It was also used for Indonesian university students who worked with the farmers and to finance the demonstration plots in the project areas.¹³ The agricultural official then asked in disbelief if it was really true that the peasants had only used 50 percent of the Bimas material for the past wet season. The peasant simply replied that this was indeed the case. The official, annoyed and dismayed, reminded the peasant that several weeks of wet season planting time still remained and he urged that the village use the remaining material.

At this point the tjamat interrupted and asked that he be allowed to say a few words. He was obviously disturbed and piqued at the expressions of dissatisfaction coming from his constituents; now the revelation that one of his villages had been woefully negligent in its use of Bimas materials stirred him to speak. He immediately launched into an impassioned and demonstrative speech, admonishing the peasants for their shortsighted and irresponsible behavior and exhorting them to push on with the program. He insisted that land had a social function. "It is not a personal possession that can be used at will by the owner." He urged them to discharge their obligations as landowners because it was up to them to produce sufficient food for the population at large. He went on to ask the peasants about the total number of inhabitants in the ketjamatan in 1940 and the total hectares of cultivated rice. He fired off an answer himself, giving the statistics and then asking for the situation in 1970. One of the peasants responded with data which

they did not receive any direct and visible assistance from these advisers. It only served to arouse their suspicion that perhaps the payment of the fee was not being used for its avowed purpose.

12. In the wet season of 1969-70, in many villages in West Java Bimas materials lay neglected in village warehouses because peasants failed to take their allotment. These peasants refused to participate even though local government authorities had already enrolled the village.
13. Students from the agricultural faculties at several universities in West Java were assigned to work with the peasants during the 1970 dry season. Part of the technical assistance fee was used to pay their expenses while they lived in the villages.

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indicated an enormous increase in population but, because of urbanization, a substantial decrease in hectareage. The difference over the thirty-year period was so large it provoked laughter at the absurdity of the current condition as measured by the past.

Undaunted, the tjamat pleaded, "We desperately need to improve rice production. The government wants more responsibility (*keadilan*) on the part of the peasant and less concern with personal rights (*hak-hak*). When the targets for rice production are achieved, then the peasant can worry about the pursuit of his rights. If your yield is four tons, try to increase it. Last week there were twenty births and only five deaths. The peasants are increasing the population and thus it is their responsibility to increase production." He asked them if the *pantja usaha* had been fully implemented and they answered that it had not. He lamented that it was natural to choose the easy road (*djalan jang enteng*). "If we had followed this pattern we would have never had a revolution or won our nationhood. It is natural to want few responsibilities and many rights. The experts say we can achieve four tons, but as human beings we say we can only reach two. If the doctor prescribes three pills a day it is natural for us to take only two."

He went on to say that the peasants were still following a free-for-all competitive system (*niatim balap*) in planting their rice. "Everyone plants according to his own interests and thus there is no regulation in the use of irrigation water. Because of this, villages more conveniently located near the irrigation system get more water and therefore more crops per year than other villages. Yet everyone has to pay the same tax. We must have better organization and leadership among the peasants in order to surmount this problem." He told of one village that had built a dam cutting water off from an adjacent village and exclaimed that this had to be stopped.

The tjamat berated the peasants for coming late to PN Pertani to get materials. He said that he was disappointed with the reports he was receiving from the farmers. He wanted accurate reports. "We need honest farmers as well as honest administrators." Fertilizer on the local market was less expensive than that provided in the Bimas package, because some farmers falsified their reports, saying they had one hectare of land when they only had one-half, and then sold the surplus to local vendors.

He pondered aloud why peasants were more disciplined in their repayment of debts to local money-lenders than of the Bimas credits. Again he mentioned the burgeoning population and growing unemployment and appealed to the peasants to work harder in order to make the program a success. He concluded by announcing the number of hectares

14. Pantja Usaha, the Five-Fold Way, is a well-known and frequently-voiced slogan that refers to the five ways to increase rice production: (1) use of high yielding seeds; (2) proper fertilizer application; (3) adoption of improved cultivation practices; (4) control of pests and diseases; and (5) efficient use of irrigation water.

15. Many peasants who received Bimas materials sold a portion on the open market.

that would be included in the local Bimas program. He said the quota was larger than last time and that the peasant would have to work harder to achieve this goal.

Undeterred, the old peasant who had raised the first question calmly requested that he be heard again. The visiting agriculture official said that he did not have much time but that the man could say a few words. In a very contrite manner, the old fellow asked that his request be reviewed (*tindjau kembali*). He still felt that the program was too much of a burden upon the peasant.

The meeting was about to be adjourned but the local agricultural extension worker asked to say a few words. This official, a bright young man, had a reputation for being a competent and dynamic civil servant. He stood and urged the peasants not to reject the Bimas program. He emphasized that Bimas represented an effort in mutual self-help (*gotong rojong*). He felt everything had been clarified by the letter of decision from the bupati and seemed annoyed that the attending peasants did not know about its contents, as if this somehow reflected upon his performance as an extension worker. One peasant remarked that they had not yet seen the letter. The extension worker retorted, "I cannot do all the footwork; it is up to the peasants to take more initiative in informing themselves about the program. The peasant should shoulder more responsibility for the administrative work."

At this point the meeting was adjourned. The old peasant went directly to the *tokoh tani* and, with reticence and deference, apologized for his remarks. They engaged in the traditional gesture of respect, the *tokoh tani* retaining his hold of the peasant's hand, gently drawing him near and then putting his arm around his shoulder. A warm exchange of words ensued.

The peasants had made their exit by now, but several of the visiting team members and the *tjamat* remained seated at the front table. The *tjamat* lamented that because his *ketjamatan* had become so urbanized he had little time to spend supervising the Bimas program. The *tokoh tani* remarked that the government floor price on rice was too low. The others agreed that it needed to be raised in order to provide an incentive to the peasant to increase his production. The *tjamat* said that although the government was more interested than before in improving the lot of the peasant, the Bimas program had yet to accomplish this goal. "There are a lot of problems with the program and it is not popular with the peasants." He feared that their discontent with the program would be directed at conscientious men like himself who represented the civil bureaucracy. Then in a more pensive mood, but without obvious forethought, he observed that this could contribute to the return of the BTI.¹⁶

16. BTI or Barisan Tani Indonesia (Indonesian Peasant Organization) mobilized peasant support for the communist movement. It was destroyed along with other communist groups in the aftermath of the abortive 1965 coup.

III

On the second visit, the team members were different from those I had accompanied on the first visit. Together we crowded into a small jeep and for the next hour travelled along a winding road before finally arriving at the tjamat's office. We were led into the public meeting hall next to the office. It was a small structure still under construction with dirt floors and wooden benches. At one end of the room, behind a waist-high partition, the team was seated along with the ketjamatan Muspida. On the other side of the partition thirty to forty farmers sat on rows of wooden benches. Like the other farmers, their gaunt and unexpressive faces betrayed their hard existence. Several among them were obvious because of their well-groomed appearance. Two were lurah from the two villages that were prospective recipients of the Bimas program. Two others were also conspicuous by virtue of their more polished appearance. These two soon proved the most active participants in the meeting, and I discovered later that they were young university trained teachers from the local school system.

The tjamat stood and opened the meeting with the announcement that the lurah should come to his office next week to receive instructions about levying the land tax. The tjamat, his voice barely audible, seemed noticeably insecure in his position of authority. He was under the age of thirty and had recently graduated from the tjamat school in Bandung. It was his second year as a member of the civil service. He provided a sharp contrast with the more mature and self-confident posture of the army and police representatives of the local Muspida, who sat next to him. The tjamat introduced the members of the team. The first member to speak was an official from the bupati's office. He was also a young man, a recent graduate of the tjamat school in Bandung, who, until transferred to the bupati's office, had served two years as a tjamat. He calmly explained that, "It is very important for the peasant to understand the goal of the Bimas program. The population is increasing and food is needed to support it. The government must increase rice production." He concluded with the statement that, "The government is trying transmigration and birth control, but this is not sufficient to overcome the population problem. The Bimas program constitutes a critical part of the effort."

At this point, one of the young school teachers asked for an agenda of the meeting. The kabupaten official obligingly listed a five-point agenda on the chalk board. The school teacher persisted, asking for a clarification on point five of the agenda. Point five was listed as "general survey" (*pandangan umum*). The teacher stressed that he wanted to make sure that the peasants had a chance to ask questions, and he requested that point five be changed to "questions and answers" (*tanja-djawab*). The official eagerly complied, and then reassured the teacher that the peasants would have a chance to inquire about the program. He stressed that the meeting would be conducted in a democratic manner and apologized for the partition separating the team from the peasants.

Another kabupaten official rose and gave a lengthy explanation of the Bimas program. He read from the bupati's letter of instruction and diagrammed the Bimas organizational structure on the chalk board, defining the role of each participating agency. He concluded

by stressing the need for the perfection of the pantja usaha as a means of improving farming techniques. At this point several peasants abruptly interposed questions. One said that in the past the lurah had announced that the village would receive Bimas and thus many peasants felt compelled to accept the program. He wanted to know if this would be repeated. The kabupaten official assured him that compulsion would not be used. Apparently not content with this response, one of the school teachers inquired about the issue of coercion and metaphorically compared the peasant to a patient who needed an injection. He asserted that, "The patient would voluntarily submit himself for treatment and that the same should apply to the Bimas program." The official agreed and said that he welcomed criticism concerning the program. Another peasant said he was afraid that if they rejected Bimas it would be interpreted as an attack on the five year plan. He said his lurah had been the one who submitted the request for Bimas, and he implied that this did not reflect the desires of the peasants.

The team member from the agriculture department then rose to address the peasants. He stressed that the decision to have Bimas was not just the choice of a lurah or a tjamat. "Bimas is a national effort. The government intends to achieve a balance between population growth and food production." He then launched into a lengthy technical explanation of the pantja usaha and its application to rice farming. He was followed by an official from PN Pertani who gave a brief explanation of the role of his agency in the delivery of Bimas materials.

The meeting had now reached point five of the agenda, the question and answer period. One of the school teachers quickly rose and opened a folder of newspaper clippings. For the next twenty minutes he quoted excerpts from President Suharto's speeches concerning the Bimas program. He was quite emotional; his aggressive and vehement manner contrasted sharply with the usually subdued way of speaking in Sundanese society. The excerpts he quoted were related to two themes. One, that the peasant needed an incentive in the form of an effective price support policy, and two, that force should not be used in the implementation of the program. There should be a dialogue between the peasant and the government so that the program could be executed in a democratic manner. After reading the excerpts, he spoke directly with the team. "The team has only mentioned the positive aspects of the Bimas program. Everything you said was just great, but it was in direct contradiction with what has actually happened in our ketjamatan. We have already participated in the Bimas program but at no time have we received any assistance from the agricultural extension service." He then opened his file again and read a detailed definition of the pantja usaha, after explaining that he had gotten this from the Agriculture Institute in Bogor. He reminded the team that all five elements of the pantja usaha must be included in the program. As if to assuage his own anxiety about this bluntness, he reiterated that the meeting could only be productive if he continued to speak frankly (*blak-blakan*).

He then read a report, which he said came from the local land department, which analyzed the soil composition of his ketjamatan. The report indicated that the soil was deficient in phosphate. But so far, the Bimas program had not included this in the package, though it would have to do so if rice production were to be increased. He concluded by requesting that a team of civil servants be sent as

observers in order to reduce the chances for corruption in local Bimas administration. He then returned to his original point that the agricultural extension service needed vast improvement. "The Bimas program could be improved through field demonstrations. This would help overcome peasant dissatisfaction."

The other school teacher now stood and began to talk about his own past experiences with Bimas. In his observations of the program, he had never seen any extension service given to the peasant. "The officials are only concerned that we accept Bimas; they give no assistance on how to use the fertilizer, seed, etc. In some cases peasants are even intimidated into participation. Some instructions are given to the officials and unit leaders on how to use the materials but this information is never conveyed to most peasants." He concluded by saying that in order to organize the Bimas program properly in this ketjamatan, it would be necessary to cancel Bimas for the upcoming dry season and concentrate instead on adequately instructing the peasant for the following year.

Again the agricultural official on the team rose to defend the program. He said it was difficult to provide such instruction because there were only one or two extension workers per ketjamatan. "According to the records, this ketjamatan had the best potential for increased production [the implication being that the peasants should therefore not be so dependent upon outside assistance]. Last year the extension service did not have the funds to conduct courses for the farmers, but this year money will be provided. Nevertheless, several times villages were notified in advance that an extension worker was coming, but when he arrived, he found no one had assembled the peasants." He called on those present to organize a meeting and ask for an extension worker. He himself would come if invited.

Finally, the school teacher who had read Suharto's speeches stood and made a few concluding remarks. "Until now we have not received any information (*penjuluhan*) about the proper use of the Bimas package. As a result, the yields have not been good and now the peasants are in debt to the government. They find it difficult to repay the credit and at the same time earn enough to meet their basic needs." He reminded the team members that Bimas stands for *bimbingan massal*, that is, guidance.

At this point, the meeting adjourned. After a brief lunch, we drove back to the kabupaten office. On the way, the team members talked about the meeting. One said, "The peasants know about modern farming techniques but only from books. They do not know how to apply this knowledge in their daily work. They want guidance." Another member remarked that the *kaum intelektual* (intellectual group), meaning the two school teachers, was certainly active in the meeting. Another said that Bimas was becoming a political issue; "One of the lurah who attended the meeting wanted a team sent to his village in order to convince the peasants to accept Bimas. The village was not on the bupati's list to receive Bimas for this dry season. The lurah thought that absence from the list meant that the bupati was dissatisfied with his past performance. Eager to correct this image, the lurah thought that a visiting team could persuade the peasants to continue with Bimas." They all chuckled because the lurah had looked rather bewildered and distressed after the meeting, because his constituents obviously did not back his request.

The official added that the bupati was not in fact disappointed with the lurah. The village had not been included because the farmers were still in debt from past Bimas programs.¹⁷

IV

The civil servants on the third trip differed from those on the first two trips. We drove to the ketjamatan and assembled in the meeting hall next to the tjamat's office. I had visited this ketjamatan eight months before in September 1969. Most of the villages here had participated at one time or another in the Bimas program and I had gone there to study the results. There are seven villages in the ketjamatan, and it is considered one of the most progressive and prosperous areas in the kabupaten. For the dry season of 1969, only one village had decided to participate in the Bimas program. The rest did not want to continue because they had found that Bimas participation did not bring a significant rise in production. They saw several reasons for this. The Bimas materials frequently arrived late or they were unsuitable for local conditions. In addition, the program was beset with administrative confusion because of problems encountered in credit repayment.¹⁸ Thus, except for this one village, the ketjamatan's peasants chose to remain outside the program.

In September 1969, I had visited the participating village. I was astonished by what I saw. The entire rice area of the village, over 100 hectares, had been cultivated using Bimas materials. Planting was done in May and June, so that when I arrived in September the rice plants were well above the ground though they had not achieved their full growth. Yet the stalks were not green, they were prematurely brown because of a lack of water. The entire crop was a total disaster because of draught. It was a strange sensation to drive along the road gazing at these fields where several months before peasants were painstakingly planting the seedlings row-by-row in the muddy *sawah*, which at that time was submerged in several inches of water. Now the critical ingredient, water, had vanished, exposing the parched cracked soil of the *sawah* floor. The peasants had also vanished from the scene. Their work in vain, they abandoned this crop to its predetermined fate. Now they would wait for the next planting cycle several months ahead.

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17. Some bupati decided not to continue with Bimas if villages were in debt from former Bimas programs. They feared that continuation would make the debt so large that the government would never be repaid.
 18. Adequate records had not been kept and there was much corruption or leakage of payments as they were channeled from the peasant up the bureaucratic hierarchy. It frequently occurred that the government had no way of knowing if the peasant had defaulted on the payments or if portions of the payments had been embezzled by the officials. Many peasants were resentful that government commissions had been inquiring to see if they had repaid the credit. They felt that the officials had not been consistent in recording their payments.

I went to the lurah's home and we discussed the Bimas program and its failure in his village. He explained, "We accepted Bimas on the understanding that we would receive a pump. There is a river about 500 yards from the village and the pump would feed water into the rice fields. We had always had a problem getting enough water in the dry season, and it would have been risky to accept Bimas without a pump. The promise of the pump gave us an added incentive to accept Bimas, namely the pump would be a permanent possession; also it would give some reasonable assurance that the Bimas project would succeed. However, when it came time to start the program, the Bimas materials came minus the pump. The pump never did come, and, because of draught, the crop will not be harvested." The lurah felt there would be no redress since the promise of the pump had not been written into the contract between the village and the government.¹⁹ I asked what the villagers would do without the income from the dry season crop. He said that many of the men would probably go to the city nearby and look for temporary employment. Many would work as *betjak* (pedicab) drivers.

This had been the scene in September 1969. At that time, peasants in the non-Bimas villages feared that persistent refusal to accept the program would not be tolerated and that in the near future they would be forced to participate. Now it was April, and I was visiting this same *ketjamatan*. Apparently some of the peasants had become more favorable to Bimas. I was alerted to this change of heart in March when I met with the extension worker from this area. He said that some wanted Bimas because he had been able to arrange a Bimas package which included a special pesticide highly valued by the peasants. In accompanying the *kabupaten* team I would have a chance to see whether in fact the peasants genuinely desired to try Bimas again.

The meeting hall had the standard features of such buildings and, at first glance, the twenty-five peasants seated inside lacked any distinctive characteristics that might have set them apart from other peasant groups in this mountainous region. The team joined the *Muspida* members seated in the front. The *tjamat* was absent on business in the city nearby. One of the visiting team members, a recent graduate of the *tjamat* school in Bandung and now an administrative assistant to the *bupati*, introduced his companions. Then another team member, an older man, who also worked in the *buapti*'s office and had already served for many years as a *tjamat*, explained the objective of the Bimas program. He read for about fifteen minutes from the *bupati*'s letter of instruction concerning the organizational and financial features of the Bimas program. Upon completing this statement, he talked about the problem of peasants not repaying the credit. "The debt is running into the millions of rupiahs and the governor wants to get this money back. A special committee has been set up to find out why the peasants are not paying. The investigation will look into the affairs of both peasants and officials." He reassured them that legal action would be taken against officials involved in corruption (*panjелеwangan*).

19. There were numerous reports in 1969-1970 that villages had been promised pumps as part of their acceptance of Bimas but that the pumps had never arrived.

Then the agricultural official rose to speak. He emphasized that the peasant is responsible for improving his life and fulfilling the requirements of the pantja usaha. He stressed that measures should be taken to protect the rice plants before pests attack. Improved methods of planting and irrigation were explained and advice given on using fertilizer at the proper times and in the proper amount. He also urged the peasants to use the best seeds. The PN Portani official gave a few brief remarks indicating that the peasants must improve the way in which they request Bimas help. Many of the applications had been submitted late. He was followed by the tokoh tani, who said that the government needed to increase production and this was the reason behind the Bimas program. At the same time, however, he intimated that the government had better introduce a more effective price support policy if it expected rice production to increase.

Then the question and answer period began. It lasted for about an hour. The first peasant to speak was exceptionally well dressed and well groomed. In the pocket of his new white shirt there was a gleaming ball point pen, the only one in evidence among the peasants. The forceful personality of this young man dominated the questioning. He spoke with ease about the finer technical points of farming, and one of the team members, obviously impressed, remarked in an aside to a companion that this was indeed a rare thing to witness. The young peasant proceeded to decry the fact that, even though the peasants received Bimas assistance, there still was little incentive to increase production. He firmly asserted several times that an increase in production was inextricably linked with a more favorable price support system. "Unless the government undertakes more effective action in this area, Bimas will not fare well. We, the peasants in this ketjamatan, must organize to fight for this goal."

A second peasant stood and asked that the amount of pesticide be decreased and the fertilizer allowance increased. The well-dressed peasant spoke up in support of this. He said the peasants were accustomed to using more fertilizer than they got through the Bimas program. He also requested that some aid be given to the villages to help meet the administrative costs of implementing Bimas.²⁰ "In the past, Bimas fertilizer was delivered at a point far from the village because the trucks could not traverse the village roads. It was difficult to find the financial resources to transport it to the village. In addition, the delivered fertilizer was frequently less than was promised. There was some leakage along the way. The lurah was supposed to record the loss so a claim could be submitted, but frequently he did not."²¹

20. The government expected the peasants to pay these expenses; whereas the peasants demanded that the government share in the costs. The costs usually involved transport expenses, rental fees for a warehouse and a token salary for the unit leader and his assistants.
21. There were numerous reports about fertilizer deliveries which were less than those prescribed for the program. Even after the fertilizer did arrive, some people took portions of it as a payment for services rendered in administering the program. The individual peasant frequently did not receive his full allotment.

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The agricultural official responded that there was nothing he could do to alter the package in line with local preferences. He regretted to say that there were no funds available to defray village level administrative costs. He urged them to collect funds by rebuilding the farmer cooperative movement.²²

The well-dressed peasant, now openly perturbed over the lack of peasant organization, seemed to be directing his remarks more to the assembled peasants than to the team. He said that there was a definite need for some kind of peasant organization and it was about time something was done about it. "I do not identify with any particular political party, and I would like to see the peasants build an organization independent of the parties." Another peasant, an old shoeless fellow, wearing black pants and shirt, said that his village used to have a cooperative but it fell apart when the government devalued the currency in 1965. He went on to say that he was not particularly interested in receiving the Bimas credits because the contents of the package did not accord with his wishes. He asked that he might be made exempt from having to participate. One of the kabupaten officials sympathetically said that this request would be granted.

At this point, the meeting adjourned and for a brief period I talked with the well-dressed and outspoken peasant. He said that up until five years ago he had been an urban businessman. But then he decided to try his hand at commercial farming. He found it difficult to succeed given the lack of a favorable rice subsidy. He did emphasize, however, that in general the peasants in his area and those at this meeting wanted to try Bimas again. They liked the pesticides they were now receiving through Bimas. He said that the area's peasants were well educated and they felt they could make a profit with Bimas this dry season. He stressed, however, that they would not want to have Bimas in the wet season because the price of rice tends to decline during that period.

V

These three episodes provide some corrective to national level views of the peasants' response to Bimas. Some peasants did believe the program was helpful, but for the majority, it was an unwelcomed intrusion into their village economy. While the government bureaucracy was able to cow most of these peasants into accepting Bimas, this same bureaucracy was not sufficiently staffed to instruct and supervise them in the application of the new technology. As a consequence, yields continued to remain below the predicted targets and only a small portion of the credit extended by the government was being repaid.

The increasing unpopularity of Bimas, the disappointing yields and the losses incurred by the government treasury--all culminated in an incognito visit to the rice fields by Suharto in April 1970. This unprecedented action was an effort by Suharto to find the reality that ambiguous bureaucratic reports had shrouded in confusion

22. A government sponsored cooperative movement was started in Java in 1961. By 1968, for political and economic reasons, the cooperative movement was ineffective in most villages.

and misunderstanding. Disguised in the modest garb of an urban dweller, the President, along with several of his aides, visited villages in West and Central Java, talking informally about Bimas with individual peasants. It was soon apparent that the peasants harbored serious grievances towards Bimas. In the following month, Suharto made the crucial decision to abandon the current Bimas program. The official press statement justified the decision on grounds that the government was now financially capable of operating its own program without the participation of foreign companies. Yet, few informed observers would deny that the decision really represented Suharto's loss of confidence in the merits of the Bimas program. This must have been a difficult decision for the President, who has taken a personal interest in Bimas. His government had extolled the virtues of the program. Many officials seemed confident that the massive infusion of fertilizer and other materials plus the assistance of the foreign companies would turn the tide in rice production in Indonesia. But only a year later, these hopes were dashed.

The significant issue now concerns reform of the program and devising new policies to boost rice production. In June and July, higher level government officials were busily engaged in preparing a new Bimas program for the oncoming wet season, which began in September and October 1970. The urgency of this deadline and the awesome task of achieving the 1973 self-sufficiency goal loomed large in the minds of these men. Such pressures did not exactly provide the most desirable environment for carefully reviewing and formulating new programs. The new program that did emerge contained some definite improvements. Most importantly, instead of relying exclusively on central planning and the public bureaucracy, the government was now willing to leave some initiative to the peasant and to allocate the Bimas materials through the open market.²³ This represents an important concession and expands the opportunity for the peasant to adapt the services of the new Bimas program to his own particular needs. Nevertheless, the size of the Bimas program remains massive and government agencies have yet to demonstrate their capacity to implement it. One cannot predict the outcome with any confidence. The issue still hangs in doubt as to whether the Indonesian government can break with its past record of ill-starred performance and achieve self-sufficiency by 1973.

23. One still outstanding issue concerns the price support policy for rice production, an issue of great concern to the peasants. In the spring of 1970, the government was introducing policies to establish the basic framework for a subsidy program, but the administrative problems involved in this program are formidable and it remains to be seen if these policies will provide a greater incentive for increasing rice production.

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