

ASIAN DEVELOPMENT BANK

PPA: INO 22185

PROGRAM PERFORMANCE AUDIT REPORT

ON THE

**FOOD CROP SECTOR PROGRAM
(Loan No. 1014-INO AND 1015-INO[SF])**

IN

INDONESIA

December 1997

CURRENCY EQUIVALENTS

Currency Unit - Rupiah (Rp)

		At Appraisal	At Program Completion	At Postevaluation
Rp1.00	=	\$0.00056	\$0.00046	\$0.00041
\$1.00	=	Rp1,775	Rp2,170	Rp2,445

ABBREVIATIONS

AARD	-	Agency for Agricultural Research and Development
ARM	-	Agricultural Research Management (Project)
BAPPEDA	-	Badan Perencanaan Pembangunan Daerah (Provincial Planning Agency)
BAPPENAS	-	Badan Perencanaan Pembangunan Nasional (National Development Planning Agency)
BULOG	-	Badan Urusan Logistik (Agency for National Logistics Administration)
CBS	-	Central Bureau of Statistics
cif	-	Cost, Insurance and Freight
DISPENDA	-	Dinas Pendapatan Daerah (Regional Revenue Office)
DPL	-	Development Policy Letter
DGWRD	-	Directorate General of Water Resources Development
EA	-	Executing Agency
EOM	-	Efficient Operation and Maintenance
FAO	-	Food and Agriculture Organization
fob	-	Free On Board
GDP	-	Gross Domestic Product
ISF	-	Irrigation Service Fee
MIS	-	Management Information System
MOA	-	Ministry of Agriculture
NTB	-	National Tariff Barrier
O&M	-	Operation and Maintenance
PBB	-	Pajak Bumi dan Bangunan (Land and Building Tax)
PCR	-	Program Completion Report
PEM	-	Postevaluation Mission
PPAR	-	Program Performance Audit Report
PRAS	-	Provincial Agricultural Services
PRIS	-	Provincial Irrigation Services
REPELITA	-	Rencana Pembangunan Lima Tahun (Five-Year Development Plan)
RRP	-	Report and Recommendation of the President
TA	-	Technical Assistance
UNDP	-	United Nations Development Programme
USAID	-	United States Agency for International Development
WUA	-	Water Users' Association

NOTES

- (i) The fiscal year of the Government ends on 31 March.
- (ii) In this Report, "\$" refers to US dollars.

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BASIC PROGRAM DATA
FOOD CROP SECTOR PROGRAM - Loan Nos. 1014-INO AND 1015-INO(SF)

PROJECT PREPARATION				Person-Amount	Approval Date
TA No.	TA Project Name	Type	months		
1275-INO	Study on Policies for Development of Agribusiness	A&O	9	\$400,000	13 Mar 1990
1276-INO	Monitoring the Impact of Policy Changes on Food Crop Production, Employment, Income, and Poverty Alleviation	A&O	12	\$600,000	13 Mar 1990

KEY PROGRAM DATA (\$)	As per Bank Loan Documents	Actual
Bank Loan Amount/Utilization		
1014-INO	\$150 million	150.00
1015-INO(SF)	SDR 75,438 million	103.17
Bank Loan Amount/Cancellation		nil

KEY DATES	Expected	Actual
Fact-finding		7-17 Sep 1988
Appraisal		21 Nov-7 Dec 1989
Loan Negotiations		8-9 Feb 1990
Board Approval		13 Mar 1990
Loan Agreements		13 Mar 1990
Loan Effectiveness	11 Jun 1990	20 Mar 1990
Program Completion	31 Mar 1994	31 Mar 1994
Loan Closing	31 Mar 1992	31 Mar 1992

BORROWER: Government of Indonesia

EXECUTING AGENCY: Bank Indonesia

MISSION DATA

Type of Mission	No. of Missions	Person-days
Reconnaissance	1	9
Fact-finding	1	44
Follow-up Fact-finding	5	100
Appraisal	1	101
Program Administration		
- Review	4	38
- Loan Disbursement	1	9
- Program Completion	1	38
Postevaluation	1	23

EXECUTIVE SUMMARY

The Bank approved the Program Loan on 13 March 1990. The Program was based on the five-year development plan (Repelita V: 1989/90-1993/94) and consisted of policy reforms, institutional measures, and investment activities, with the overall objective of enhancing resource efficiency and productivity and bringing about renewed growth momentum to the food crop sector with reduced budget resources.

Two loans, one from ordinary capital resources for \$150 million, the other from the Asian Development Fund for \$100 million equivalent, were provided. The drawdown period was two years, while the Program period was four years. The loans were disbursed in two tranches in accordance with the policy implementation schedule, release of the second tranche being approved following a Review Mission in October 1990. This Program Performance Audit Report (PPAR) concurs that second tranche conditions were met, but notes that, other than the fertilizer price increase, the second tranche conditions were relatively modest.

Two technical assistance grants were provided to (i) formulate recommendations for the development of a policy environment conducive to agribusiness, and (ii) develop institutional capacity to monitor the impact of the Program on Indonesia's economy. The first was converted to a project preparatory technical assistance for a horticulture project, which is now being further developed for a possible 1998 loan. The second helped develop analytical modelling skills which were used in preparing Repelita VI, but these skills were not maintained and no sustained monitoring system was created.

The main reforms to strengthen the food crop sector have been implemented, although some elements of fertilizer subsidy remain. Progress on improving irrigation operation and maintenance is ongoing, and continued Bank involvement in policy dialogue during further project processing in this sector will help this process. Institutional and budgetary reforms in agricultural research and extension have generally been implemented. Little progress, however, has been made during and after the Program period in deregulating the sector and increasing private sector participation in marketing and processing. While tariffs have been reduced across a broad range of goods, major commodities remain under the control of Badan Urusan Logistik (BULOG), the Agency for National Logistics Administration.

Bank Indonesia was the executing agency; it was responsible for withdrawing Loan proceeds, but had no responsibility or authority for implementing the reform measures other than for credit. The Ministry of Finance; Badan Perencanaan Pembangunan Nasional (BAPPENAS); the National Development Planning Agency; and the Ministry of Agriculture were responsible for implementing most of the Program. The Ministry of Agriculture, however, had little authority over the reforms, some of which were the responsibility of the Ministry of Trade and BULOG, and others of agencies associated with irrigation (Ministry of Home Affairs, Ministry of Public Works). BAPPENAS provided the coordinating agency: it did a competent job in project formulation, but it is unclear whether any significant coordination or monitoring was conducted thereafter other than during Bank missions.

The Bank's performance in monitoring the reforms and sustaining the policy dialogue was weak after the October 1990 second tranche review mission. The Bank was

meant to assess the impact of trend variables over the medium term. This was not done in a systematic manner, although some of the specific items were reviewed in the preparation and implementation of other projects in the sector, notably irrigation projects.

The overall impact of the Program Loan is not clear. Formulation of the Loan did not include the identification of specific performance indicators against which the Loan's impact as a whole should be assessed. However, it was based on Repelita V which had the broad objective of providing new growth in the food crop sector, while simultaneously emphasizing the development of the sector as a means of poverty alleviation and improvement of regional and distributional equity. The annual production of major food crops was marginally higher at the end of the Loan period than at the beginning, and has since increased further. There has also been a resource reallocation as envisaged, with production increasing in areas off Java. There has been a decline in poverty in Indonesia and some improvements in the distribution of wealth to rural areas off Java. However, poverty has declined faster in urban areas than in rural areas, and distribution of income is more uneven than before. It is not possible to determine how much of this is directly attributable to the reforms under the Program Loan.

It is difficult to separate the impact of reforms under this Program from those of other reforms taking place at the same time, and to disentangle their effects. Many of the policy changes had already been set in motion by other economic forces, and the extent to which the Program had an impact on these may be questioned. The Bank, however, had been involved in policy discussions with the Government for three years prior to Loan approval, and the policy reform agenda was based on a sound and comprehensive plan for the sector. The Loan was provided partly in recognition of progress in policy reform, and partly in the expectation of further reforms (second tranche). The approval of the Loan, with its endorsement of the reform program, almost certainly contributed to the forces encouraging change. In view of this impact on the reform process, and the fact that most of the reforms were carried out as agreed, although with uncertain impact, the Loan is rated partly successful.

The principal lesson learned is the importance of preparing a detailed and sound analysis of the sector as a basis for formulating policy reforms. But institutional requirements also need careful assessment. A major weakness was the lack of performance indicators against which the impact of the reform program as a whole should be assessed.

Experience with this Loan suggests that implementation of program reforms can be better monitored and evaluated in the context of project lending or alternatively the sector lending approach, combining program lending with investment components.

Some concerns have been expressed about the loan size and whether it was commensurate with the reforms. The evaluation suggests that while the cost of reforms should be a key element in determining the loan size, it is important that the loan size is also commensurate with the scale of the country program so that it can influence the implementation of intended policy and institutional reforms.

I. BACKGROUND

1. In 1988, at the time of planning for Repelita V¹ (1989/90-1993/94), the agriculture sector accounted for almost a quarter of gross domestic product (GDP), more than half of employment and about a half of nonoil exports. About two thirds of the rural population depended on the sector for their livelihood. The Government viewed Repelita V as the take-off phase for rapid economic growth to follow in the next five-year plan (Repelita VI), however, because the growth rate of food crop production had declined by 1988, incremental capital-output ratios had risen sharply (reflecting limits on high-yielding varieties and expansion of irrigated land). Therefore, increased rice production could not provide the impetus to growth as before, and further sector growth would thus be more difficult to achieve.

2. The Indonesian economy was directed by a central planning system for the three decades leading to the end of the fourth five-year plan (Repelita IV). Strong agricultural growth had been founded on considerable public sector involvement, input subsidies, price controls, marketing and credit interventions, protective and directional controls, targeted emphasis on rice and other strategic crops, adaptive research, and infrastructure investments. Buoyant oil revenues had been the mainstay of the budget, but mounting budgetary expenditures could no longer be accommodated in view of declining oil and other commodity prices and rising external debt burden. The Government thus sought policies and programs that could both generate a compensatory growth momentum in subsectors other than rice and that could be sustained with a lower level of financial assistance from Government.

3. The Bank, the United Nations Development Programme/Food and Agriculture Organization (UNDP/FAO), the United States Agency for International Development (USAID), and the World Bank all provided assistance to the Government in sector analysis and in formulation of prospective policies. The World Bank, together with a resident advisory team from the Harvard Institute of International Development was the main provider of such advice until 1986/87, when the Bank provided assistance² in analyzing the food crop and irrigation sectors. This was followed in 1988³ with direct assistance to Badan Perencanaan Pembangunan Nasional (BAPPENAS), the National Development Planning Agency, in sector policy formulation. UNDP/FAO financed a study entitled *Indonesia's Agriculture Policy Options for Repelita V*, which was largely an analytical synthesis of studies prepared by various agencies. The study provided the basis for a workshop in Jakarta in January 1989, participated in by the Government and donor agencies, including the Bank. This independent analysis helped generate healthy discussions in Indonesia on future agriculture policies.

4. In developing policies for Repelita V, the Government took into account three main issues: (i) the need to increase the nonoil share of exports and net foreign earnings; (ii) the need to generate adequate employment; and (iii) the severe constraints facing the development and recurrent budgets. For the agriculture sector, this translated into themes of deregulation, diversification of production, and expansion of agribusiness.

¹ Repelita-Rencana Pembangunan Lima Tahun (Five-Year Development Plan).

² RETA No. 5160: *Study of Food Demand and Supply and Related Strategies for DMCs*, Phase II, for \$500,000, approved on 23 October 1984. TA No. 673-INO: *Study of Irrigation Management*, for \$350,000, approved on 27 March 1985. Two other TAs reviewed fisheries and livestock sectors.

³ TA No. 956-INO: *Agriculture Sector Policy Formulation (BAPPENAS)*, for \$75,000, approved on 24 February 1988.

A. Rationale

5. As a result of budgetary pressures caused by the sharp decline in oil export earnings in the 1980s, particularly 1986, and the growing external debt-service burden, the Government undertook a program of major reforms. Following the 1987 and 1988 Inter-Government Group meetings on Indonesia that supported the provision of quick-disbursing assistance to support the balance of payments and the Government budget, the Bank approved two program loans in December 1987¹ and December 1988,² totaling \$350 million. The loans supported policy reforms in the nonoil exports and financial sectors together with promotional measures for expanding and diversifying the economy. The first loan focused on trade liberalization measures and the second on transforming and deepening the financial sector. These reforms had limited impact on the agriculture sector and, with the need for quick-disbursing assistance remaining important, a program loan was developed to support policy reforms to help deregulate and diversify the agriculture sector.

6. The Report and Recommendation of the President (RRP) notes that the main justification for Bank assistance was the need for rationalization of public expenditure, the importance of food crop security and stability, and the advantages of diversification and enhanced efficiency in the sector. By providing assistance the Bank would be supporting the program of food crop sector reforms that the Bank had assisted in formulating, and providing foreign exchange to help meet the higher import demands expected to arise from the increased emphasis on investment in the food crop sector and the deregulation of trade and investment.

B. Program Formulation

7. Following the Bank technical assistance (TA) to BAPPENAS in 1988 for formulating the agriculture sector development program for Repelita V, and further special studies on agricultural policies and trade deregulation in 1989, specific policy discussions were held between the Bank and the Government in August 1989 on major sector policy issues. A draft development policy letter (DPL) reflecting these discussions was received by the Bank in September 1989, and an appraisal mission was fielded from 21 November to 7 December 1989. A follow-up policy dialogue mission was fielded in January 1990, and a revised DPL, including a policy reform agenda, was received from the Government in February 1990 (Appendix 1). The Bank approved the Loan on 13 March 1990.

C. Program Objectives and Scope

8. The Program was based on the five-year development plan for the food crop sector formulated under Repelita V (FY1989/90-FY1993/94) and consisted of policy reforms,³

¹ Loan Nos. 876-INO and 877-INO(SF): *Non-Oil Export Promotion Program*, for \$150 million, approved on 17 December 1987.

² Loan Nos. 938-INO and 939-INO(SF): *Financial Sector Program*, for \$200 million, approved on 20 December 1988.

³ The first paragraph of the Report and Recommendation of the President (RRP) program and loan summary simply states that the objective was to bring about improved productivity and resource efficiency in the food crop sector through the implementation of suitable policy reforms. The RRP text, however, emphasizes the need for bringing about renewed growth momentum in the sector, but with reduced budget

institutional measures and investment activities. The plan aimed at strengthening growth of the food crop sector with reduced budget resources, increased efficiency of resource utilization, and more private sector participation; ensuring basic food security and stability while diversifying the food crop production base; increasing the sectoral value added by promoting agroprocessing; and augmenting sectoral foreign exchange earnings. At the same time, major emphasis was given to the social objectives of food crop sector development alleviating rural poverty and improving regional and distributional equity.

9. The specific policy reforms envisaged under the Program aimed at (i) phasing out input subsidies (e.g., fertilizers) and improving operation and maintenance of irrigation infrastructure with the objective of increasing the efficiency of public expenditures and directing available (budget) resources from subsidies to productive investments; (ii) abolishing concessional credit and streamlining the rural credit delivery system; (iii) optimizing the economic efficiency of food security and stability policies by improving the management of rice buffer stock and marketing operations; (iv) further deregulating trade and investment in the food crop sector to promote the role of the private sector; and (v) based on comparative advantage, increasing emphasis on land use planning to encourage improved land resource utilization and regional specialization. In support of the policy reforms, the Program included measures to strengthen the institutions dealing with food crop production (notably research and extension) and a substantially increased public investment program of \$4.5 billion in the food crop sector under Repelita V.

10. Two TAs related to the food crop sector were provided along with the Loan. The objective of the first TA¹ was to formulate recommendations for the development of a policy environment conducive to agribusiness. The executing agencies (EAs) for the TA were BAPPENAS and the Indonesian Chamber of Commerce and Industry. However, due to similar work conducted by the World Bank (para. 37), the TA was redesigned to produce a feasibility study that could lead to a bankable horticultural development project.

11. The objective of the other TA² was to monitor the impact of the Program on Indonesia's economy, including future policy, institutional, and investment developments, and other changes likely to have an impact on the sector. The EA for the TA was BAPPENAS.

D. Financing Arrangements

12. The Bank provided two loans in various currencies equivalent to \$250 million, comprising \$150 million from the Bank's ordinary capital resources and SDR75.4 million, equivalent to \$100 million, from the Special Funds resources. The loan agreements became effective on 20 March 1990; the drawdown period was two years (i.e., until March 1992) while the Program period was four years (i.e., until the end of Repelita V). The proceeds of the loans were made available for withdrawal toward reimbursement of the foreign exchange cost of

resources and better allocation of such resources, while the Development Policy Letter also emphasizes diversification and increased exports. This PPAR thus focuses on this slightly broader objective, in line with the objectives detailed in the RRP text.

¹ TA No. 1275-INO: *Study on Policies for Development of Agribusiness*, for \$400,000, approved on 13 March 1990.

² TA No. 1276-INO: *Monitoring the Impact of Policy Changes on Food Crop Production, Employment, Income and Poverty Alleviation*, for \$600,000, approved on 13 March 1990.

eligible import items for the agriculture sector. Bank Indonesia was responsible for withdrawal of the loans. The Ministry of Finance, BAPPENAS, and the Ministry of Agriculture (MOA) were responsible for implementing the Program.

E. Program Completion Report

13. The Program Completion Report (PCR) was completed in December 1994 following the end of the Program period. The PCR provides information on the status of policy implementation and an analysis of issues arising during implementation. The PCR concluded that over the Program period, substantial progress was made in reducing credit and fertilizer subsidies in the food crop sector, although complete phasing out of fertilizer subsidies was not achieved in the Program period and the PCR recommended that the Government should be encouraged to eliminate the remaining subsidies as soon as possible. Rural credit schemes had been reduced and cooperative's streamlined to ensure a more efficient credit delivery system in rural areas. There had also been a tangible improvement in rice stock management of the Badan Urusan Logistik (BULOG), Agency for National Logistics Administration. The institutional reform agenda was also largely successful, with a marked increase in budget allocation to food crop research and improvements in research management. Irrigation service fee coverage, however, was less successful, and the phasing out of sugar production from irrigated areas in Java was not successful.

14. Overall, the PCR was frank, thorough, and well prepared. However, it did not evaluate the impact of the Program as a whole. The loan documents did not provide performance indicators¹ against which Program impact could be assessed, although it did refer to the Repelita Plan objectives it was designed to assist. The PCR did note, however, that within the overall deregulation policy of the Government, food commodities were the largest single category for which interventions remained in 1994. The June 1994 deregulation package (after the Program period) introduced some measures addressing the sector. The PCR also notes that many of the policy changes (such as rationalization of the credit system, import liberalization) had already been or would have been set in motion by other economic forces, and thus it may be questionable whether the Program had any impact on these changes. Nevertheless, it concludes that while full credit for changes could not be claimed, the Loan added its weight to the forces causing such policy changes. The PCR points out some weaknesses in Program formulation: (i) targets for reform were not sharply focused in some covenants, such as promotion of private sector involvement; (ii) prompt action was proposed in some sensitive areas where it was unrealistic to expect full compliance in the Program period (e.g., fertilizer subsidies, irrigation fees, and trade policy); and (iii) no identification of beneficiaries was attempted and thus no basis was provided for measuring impact on beneficiaries. Under follow-up actions, it notes that monitoring of progress of policy changes under the Loan is best done with constant policy dialogue through subsequent project processing and administration of ongoing loans, and that a mechanism be put in place to allow this.

¹ The logical framework approach to Program loans, with the inclusion of specific monitorable targets, was not a Bank requirement in 1990.

F. Postevaluation

15. This Program Performance Audit Report (PPAR) presents the findings of a postevaluation mission (PEM) which visited Indonesia 6-18 July 1997. It focuses on pertinent aspects of the Program and presents an assessment of the effectiveness of the Program in terms of achieving the implicit sector and macroeconomic objectives of the Program as well as the individual specific reform components. It is based on the PEM, a review of the PCR and RRP, material in Bank files, and discussions with Bank staff and officials of the EAs and other agencies of the Borrower.

II. IMPLEMENTATION PERFORMANCE

A. Policy Reform Measures

16. As set out in para. 9, the policy reforms envisaged under the Program aimed at several distinct but related areas, with the overall objective of providing new growth momentum to the food crop sector, with improved productivity and greater efficiency and at least cost to the Government. An overall assessment of the impact of the reforms is presented in Chapter IV, while this chapter reports on performance of the individual reform measures (Appendixes 2 and 3). It should be recognized, however, that the reforms are interrelated, and it is difficult to separate the impact of each reform.

1. Efficiency of Public Expenditure

17. Efficiency of public expenditure was to improve under the Program by reducing input subsidies and increasing cost recovery. Over the Program period, fertilizer subsidies would be phased out, interest rate subsidies on concessional credit abolished, and subsidies for irrigation operation and maintenance (O&M) reduced through improved cost recovery, and returns on irrigation investment improved by efficient O&M and transfer of small irrigation schemes to farmers.

a. Fertilizer Subsidies

18. At the time the Food crop Sector Loan was made in 1990, farmers received large subsidies on several fertilizers: urea, triple superphosphate, ammonium sulphate, and potassium chloride. They were paying prices below domestic market prices for these inputs, and the difference was a debit to the Government budget. The cost to the Government in 1990/91 was Rp265 billion. Over the Program period, the prices of all four fertilizers increased: urea and ammonium sulphate by 24 percent, triple superphosphate by 31 percent, and potassium chloride by 42 percent. The subsidy cost naturally depends on how international prices move, and prices for urea fell precipitously. During the last two years of the Program loan, 1992/93 and 1993/94, the fertilizer subsidy cost was approximately halved to Rp175 billion. The subsidy rose significantly in 1994/95 due to international price changes, but the costs in 1995/96 and 1996/97 fell back to levels realized at the end of the Loan period. There is scope at present to reduce the remaining subsidy which is unlikely to have an adverse impact on food crop production; continuation of the fertilizer subsidies impairs efficient resource utilization by distorting input prices to the sector (Appendix 2A).

b. Concessional Credit/Rural Credit Schemes

19. The Program aimed to abolish concessional credit to agriculture and streamline the credit delivery system. Interest rates to farmers under five different schemes (Appendix 2B) averaged 12 percent in 1989, compared with market rates of 16-22 percent. Reforms were introduced in January 1990 designed to encourage banks to participate more actively in the supply of rural credit. Market-oriented interest rates were introduced, criteria for the granting of Bank Indonesia liquidity credits were clarified, with Bank Indonesia credits being reduced/eliminated for some schemes, and requirements for banks to set aside 20 per cent of their loans for small enterprises were introduced. Further measures in May 1993 eased the small enterprise requirement and simplified capital adequacy requirements. These measures were successful in increasing credit flows from the banking system, as indicated in Appendix 2B.

c. O&M of Irrigation Schemes

20. The 1987 Policy Statement on Irrigation O&M and Cost Recovery envisaged that O&M of the entire irrigation system would attain adequate levels within 15 years, with O&M costs directly recovered from beneficiaries. The O&M policies were implemented through four programs; (i) efficient operation and maintenance (EOM); (ii) collection of irrigation service fees (ISFs); (iii) turnover of small schemes to the water users' associations (WUAs); and (iv) application of the Land and Building Tax (PBB) to enhance land tax coverage and revenue generation. The Program aimed at accelerating the implementation of the Policy Statement by stipulating targets to be achieved by the end of the Program period.

21. The EOM program extended over an area of 1.63 million hectares (ha) by the end of the Program period, a shortfall of 26 percent, while the collection of ISF was 4 percent below the target (Appendix 2C). The exact coverage of the ISF program is difficult to determine as payments fell short of amounts collected, and this worsened with successive collections. Official transfer of small-scale irrigation schemes to WUAs also fell below targets. Reasons for the shortfall vary by program, but overall implementation of the 1987 Policy Statement was affected by unfamiliarity of concerned agencies with the new requirements, inadequacies in O&M systems and procedures, lack of trained human resources to generate and manage the irrigation systems, and lack of trained human resources in the ISF collection agencies in the field. In addition, the targets were overly optimistic given the legal and administrative steps that needed to be implemented without being understood. Discussions during processing of a subsequent loan¹ led to the adoption of a revised action plan (Irrigation Operation and Maintenance Statement) with more realistic targets (Appendix 3). The Government is presently reviewing the achievements and targets set out in the action plan under the Bank's ongoing TA² with a view to defining a medium-term irrigation strategy. Further progress is being made during discussions in the Appraisal of the proposed Northern Sumatra Irrigated Agriculture Sector Project.

¹ Loan No. 1296-INO: *Second Integrated Irrigation Sector Project*, for \$100 million, approved on 20 January 1994.

² TA No. 2679-INO: *Assessment of Options for Sustainable Irrigation Development* for \$1,120,000, approved on 5 November 1996.

2. Efficiency of Food Security and Stability of Prices

22. The Government's rice price policy aimed at providing production incentives for farmers and at stabilizing prices within a range set to provide food security for consumers, with BULOG intervening in the market by buying and selling. This policy had helped Indonesia achieve self sufficiency in rice by the early 1980s, while also keeping domestic prices broadly in line with international prices. The objective of the Program was to optimize efficiency by improving management of the rice buffer stock and market operations. Rice stocks would be capped at about 1 million tons to reduce BULOG's operating costs, and this would be achieved without reducing BULOG's ability to stabilize domestic prices by permitting international trade when fluctuations in rice output were sufficiently large. As indicated in Appendix 2D, stocks averaged 1.2 million tons over the Program period, although they have risen significantly since then. It is difficult to reduce interseason price variability using storage operations as rice only has a storage life of approximately one year. But as illustrated in Appendix 2D, storage operations have reduced within-year rice price variability. While BULOG has imported and exported rice, trade in rice remains restricted. Greater year-to-year price variability occurred in the domestic market than internationally during the Loan period as a result, but the difference is smaller now. Thus, during the Program period, BULOG was able to achieve the reduced stock target while maintaining food security and price stability. The rice stock and market operations have a cost, however, and the ability to recover stock costs from consumer prices is constrained by the price stabilization policy. A conflict therefore exists between the aims of the Loan to reduce the impact of the rice stocks on the budget and the policy to stabilize domestic consumer prices. During the Loan period the value of rice stocks alone averaged over Rp730 billion, the opportunity cost of this (at an interest rate of 14 percent) averaging over Rp100 billion. This cost has increased with the recent increases in rice stocks. As shown in Appendix 2D, BULOG's rice operations run at a net deficit, estimated at Rp309 million in 1993/94 (but falling since then). It was estimated to be Rp197 million in 1996/97. The combined operations of BULOG, however (i.e., including sugar, soybean, etc.), are more positive with sugar operations making a net surplus.

3. Deregulation and Enhancement of the Private Sector

23. Nontariff barriers (NTBs) have been very prevalent in Indonesia. Foodgrain dealers, traders, and agroprocessors were required to obtain operating licenses from Government, import licensing was restrictive, and BULOG and cooperatives (KUDs) had monopoly rights on import and distribution of varied commodities. Under the Program, the Government was expected to further deregulate imports by placing additional food crop commodities on open general license.

24. Over the period of the loan, the barriers to international trade in the food sector have been gradually reduced. Most tariffs were reduced in a sequence of almost annual deregulation packages. In May 1990, coffee exporting and marketing groups, and restrictive controls on nutmeg and cassava, were abolished. In June 1991, most tariffs were reduced, and soybean meal was taken off the restricted list. In July 1992, NTBs were lifted on maslin wheat, maize flour, rye, barley, oats, sorghum, millet, canary seed, and other cereals. There were only minor changes to the trade restrictions on food crop commodities in 1993 and 1994. Despite this trade deregulation, however, there were only minor changes to the trade restrictions on the main commodities that are under BULOG control (rice, sugar, soybean).

Since the loan period, there have been further reductions in many tariffs across a range of commodities. The most significant deregulation in the food crop sector occurred in July 1997, when sugar refineries were allowed to import raw sugar, but BULOG still maintains the right to collect and distribute refined sugar.

25. While there have been across-the-board reductions in the tariff rates on most commodities, the NTBs on the main food crops remain, and BULOG continues to control their prices and distribution, with the exception of raw sugar that can now be imported directly by sugar mills. In addition, there are other less transparent barriers to trade. These include restrictions on importation of ships, forcing carriers to use more costly small ships; recent bans on large retail outlets in nonprovincial cities, and the recent reversal of the preshipment customs clearance checks to post-shipment checks on arrival. Investigation of the margins between the international and domestic prices for rice, soybeans, and sugar show there are large potential distortions to private participation in these markets, the distortions varying over time. Studies of the wider economic effects of these could greatly assist policy-makers in setting priorities for future reforms. Food crops are important inputs to food processing, a growing sector with considerable export potential. Refined sugar and wheat flour are significant inputs to this sector, and the NTBs that apply to them can at times impose considerable taxes on end users. As a consequence, output in the food processing sector is reduced, as are export earnings. Overall, the Loan appears to have had little success in increasing private sector participation in the food crop sector. As a member of the Asia Pacific Economic Cooperation (APEC), the Government is committed to reducing tariffs to 5 percent or less by 2003 (except on a group of exempted commodities). The implications of this reduction on private sector participation could usefully be examined further.

4. Optimization of Land Resource Allocation

26. In the past, sugar cane production was subject to area and production targets imposed on farmers. The result was inefficient land use, particularly in Java, where land is more suited to rice production. A commitment existed under the Program to phase out the production of sugar cane in Java. Throughout the period of the Loan, sugar cane production rose on average 12 percent in Java, and in the outer islands by 30 percent. Since that time, however, production on Java fell on average 12 percent and rose on average by 9 percent outside Java. In principle, following a 1994 Ministerial decree providing farmers a free choice of crops, there are now restrictions on producing sugar cane in Java. Some farmers continue to do so, however, partly due to local decrees and pressure from local cooperatives, and partly because it takes time to shift to other crops.

27. Over the Loan period, and in the three subsequent years, wetland and dryland paddy production increased throughout the country despite reductions in output in 1994. The 9 percent increase in wetland paddy on Java accompanies the 6 percent reduction in sugar cane production for the entire period. The fall in sugar cane production, the increase in wetland rice production, and the increase in wetland area harvested as paddy all provide evidence that there has been a switch away from the production of sugar cane to wetland paddy rice on Java. Greater efficiency in resource allocation has thus been achieved with the shift in sugar cane production away from Java to the outer islands, although most of this has been achieved after the Program period. It is not clear, however, whether the small reduction in area of sugarcane cultivation in Java was a result of the reforms, or simply coincidental.

5. Institutional Reforms

28. The Program included measures to strengthen institutions dealing with food crop production, in support of the envisaged policy reforms. The main focus was on research and extension, and on rural credit schemes (para. 19). Priority areas for food crop research were to shift to the development of crop varieties for secondary food crops, and for improved cultivation in the outer islands, and also to integrated pest management, farming systems, and postharvest technology. The number of extension workers on outer islands was to be increased. The Government was largely successful in this, with the development budget of the Agency for Agricultural Research and Development (AARD) increasing fivefold, and the amount allocated to food crop development fourfold. Agricultural extension services were decentralized in 1991 and the roles of district governments in managing extension activities expanded. Implementation of the World Bank-financed Agriculture Research Management (ARM) project improved the research management mechanisms of AARD and are well established at national level. The number of extension workers in the outer islands increased by nearly 50 percent, including an increase in specialists. Agricultural extension services have been further strengthened with the approval in 1996 of operational guidelines to functionally link the Assessments Institutes for Agricultural Technology to the newly established District Extension Centers. The centers were established to consolidate various agricultural extension services that used to be managed by the local subsector extension services.

6. Investment Program

29. The Program also envisaged expanded public and private investment in the food crop sector, including public irrigation schemes. As indicated in Appendix 2, public development expenditure in the food crop sector increased by over 80 percent to around Rp1,733 billion in 1993/94. Total expenditure during the Program period was Rp6.6 billion, with major investments in irrigation infrastructure. Private sector investment is harder to track, but domestic investment was estimated to have risen by a third while foreign investment tripled.

B. Procurement and Disbursements

30. The loans were disbursed in two tranches in accordance with the policy implementation schedule. The first tranche of \$123.989 million was advanced to the Government in March 1990, and the full amount was liquidated by the Government in September 1990. The second tranche of \$129.183 million was disbursed in December 1990, against a withdrawal application from the Bank Indonesia. The Bank (ADB) approved release of the second tranche following a Review Mission in October 1990, which concluded that the Government had complied with the specific undertakings conditional to the release. The PEM endorses this decision, but as noted in para. 38 below, the second tranche conditions were relatively modest other than the fertilizer price increase. The second tranche release was based on a review of progress from March to November; this gave insufficient time for much progress in the O&M costs of irrigation schemes, and it was thus too early to have realized shortfalls and overoptimistic targets (paras. 20 and 21). The Review Mission noted that pilot schemes had been started, sufficient budget allocations had been made in the 1990/91 budget, and expenditure to date had been in line with this.

31. Procurement under the loans was carried out in accordance with procedures stipulated in the loan agreements and applied against a broad range of eligible imports directly or indirectly related to the food crop sector, other than those specified in negative lists. The major items procured were (i) farm equipment and machinery, including parts (35 percent); (ii) textile raw materials such as cotton, yarn, acrylic fibers (16 percent); (iii) polypropylene materials (15 percent); (iv) phosphates and other chemicals (14 percent); (v) animal and vegetable products, including foodstuffs (11 percent); and (vi) vehicles and transport equipment (6 percent). It thus appears that the definition of indirect relationship to the food crop sector was rather loosely applied, with textile raw material procurement being accepted by the Bank.

C. Organization and Management

32. The External Funds Unit of the Bank Indonesia was formally the EA and was responsible for withdrawing Loan proceeds. This they did competently, but they had no responsibility or authority for implementing any of the policy reform measures of the Loan other than the credit policy reforms noted above. The Ministry of Finance, BAPPENAS, and MOA were responsible for implementing most of the Program. Overall, their performance was good, but it should be noted that MOA had little responsibility over any of the reforms, some of which were the responsibility of the Ministry of Trade and BULOG, and others of varied agencies associated with irrigation (Ministries of Home Affairs and Public Works). BAPPENAS provided the coordinating agency and, given the multiplicity of agencies involved, did an acceptable job in formulating the Program and coordinating its implementation. This coordination role began from the time of the policy studies referred to in paras. 1-3, through initial implementation to the October 1990 second tranche review mission. The Program period ran through to the end of Repelita V (March 1994), but it is unclear whether any significant coordination or monitoring was conducted other than at the time of the two subsequent Bank review missions in November 1991 and November 1992, and of the PCR mission in July 1994. As noted in paras. 33 and 40, the lack of performance targets to assess Program impact and lack of a formal review process hindered this, although TA No. 1276 was designed to develop a capacity within BAPPENAS to monitor the impact of the Program on Indonesia's economy, including future policy, institutional, and investment development (paras. 34-36).

33. The Bank's performance in monitoring the implementation of specific policy measures and sustaining the policy dialogue was weak after the October 1990 second tranche review mission. The Bank was meant to assess the impact of trend variables over the medium term, including many details of the fertilizer sector and its usage, of crop production and farm incomes, credit, interest rates, irrigation fees, etc. (para. 112 of the RRP). This has not been done in a systematic and analytical manner. Many of the specific items were reviewed in the preparation and implementation of other projects in the sector, notably irrigation projects. One major omission, however, was the lack of analysis of the impact of reducing fertilizer subsidies and removing the remaining subsidy. The PCR notes that part of the problem was that targets for reforms were not sharply focused in some covenants. This was particularly true for the actions meant to promote private sector involvement in the marketing and processing of nonrice crops. The time frame for the introduction of ISF on the scale envisaged was unrealistic, and did not take into account the difficulties in introducing the administrative and legislative requirements needed to effectively implement ISF. In addition, some policy actions were in sensitive areas, notably those affecting trade and BULOG. Finally, as discussed in

para. 40, the Program did not provide the basis for measuring its impact on the economy, nor did it explicitly identify beneficiaries.

D. Effectiveness of Technical Assistance

34. The primary objective of TA No. 1276-INO was to strengthen the analytical capacity of BAPPENAS for policy analysis to enable BAPPENAS to monitor the impact of the Program Loan on the economy, including future policy, institutional, and investment developments. This was to be achieved by developing hardware, databases, and analytical models, and by undertaking on-the-job and formal training of counterparts. Other agencies responsible for agriculture (MOA and Central Bureau of Statistics [CBS]) would also benefit. The TA formally began in November 1990, after the second tranche review mission, and was completed on schedule in October 1992 (with a small extension being approved by the Bank utilizing unused funds).

35. Under the TA, a valuable computerized database was established, with a well documented and validated set of food crop data for Indonesia. BAPPENAS developed an analytical capacity at the time that provided them with an independent capability to analyze and evaluate policy options, thus enabling them to hold more meaningful discussions with the Bank, the World Bank, USAID, and others on policy options. While this analytical skill was applied in planning, it seems no specific monitoring or evaluation exercise was applied by BAPPENAS to the reforms included in the Loan, and no special report was produced. On the contrary, the analysis had a more general and perhaps more important role in helping formulate plans and policies for Repelita VI. The database proved valuable to other analysts also, and was used by the World Bank in preparing their biannual agriculture sector report on Indonesia and by USAID in reviewing fertilizer price policy. The analytical modeling data and capability had additional value in that they were applied by other researchers to other sectors (livestock, tree crops, etc.), also as inputs to Repelita VI.

36. Since 1993, however, the data and models have had little use. This was partly due to reorganization and changes of staff in BAPPENAS, with staff no longer having budgets and mandates for this purpose. The database was transferred to both MOA and CBS. The information in the food crop database has been maintained and updated by CBS, but within its own system (and using FoxPro rather than the original D'Base). However, due to budget constraints updating has not been consistent since 1995, with coverage of only Java in 1996. In 1997, only horticultural crops will be covered, but rice and secondary crops may be covered in 1998. The data is accessible for use by BAPPENAS and other authorized agencies. The PEM was unable to locate staff in MOA knowledgeable of the TA and database. MOA's statistics unit (PusData) have their own database, and draw on CBS data, but it seems that the TA database was neither maintained nor used in MOA. Despite its initial value in providing inputs to the formulation of Repelita VI, the TA is rated only partly successful due to its unsustained impact.

37. The primary objective of TA No. 1275-INO¹ was to formulate recommendations for the development of a policy environment conducive to agribusiness. During loan

¹ TA No. 1275-INO: *Study on Policies for Development of Agribusiness*, for \$400,000, approved on 13 March 1990.

negotiations the Bank had drawn the Government's attention to the possible overlap with studies of the agroindustry subsector to be undertaken by the World Bank under its Industrial Restructuring Loan. At the time, however, BAPPENAS informed the ADB that the World Bank Loan seemed unlikely to go ahead and they wanted these areas covered by the ADB. As it happened, the World Bank's loan went ahead and the ADB agreed to defer its study until the completion of the World Bank study (October 1990) when areas in the agroindustry subsector identified for further study would be undertaken. However, the Ministry of Industry subsequently requested that the proposed study areas for the TA be kept within its purview, and funded through savings under the World Bank loan. As a result, the Bank and BAPPENAS redesigned the TA to produce a feasibility study that could lead to a bankable horticultural development project, with emphasis on poverty alleviation. The final outcome of the study was only marginally sufficient to serve as an adequate base for the design of such a project. In addition, market conditions changed, with substantial price falls in bananas for example. As such, the TA has been unsuccessful. In 1996 the Bank decided to provide a follow-up TA¹ intended to design a horticulture and agriculture business project for a possible loan in 1998.

E. Compliance with Loan Covenants

38. The DPL included some specific and some general policy actions that were to take place prior to release of the second tranche (targeted for December 1990) and before the end of the Program period (March 1994). The conditions for second tranche release included some specific conditions on increasing fertilizer prices. Other conditions included strengthening of agricultural research and extension services, expansion of coverage of efficient O&M, and transfer of small irrigation schemes to water users' associations; expansion of the PBB in irrigated areas; and provision of adequate budgeting support for the Program investment requirements. These conditions were met by October 1990, and the second tranche was released on schedule in December 1990. However, it should be noted that the period between Loan approval and second tranche release was only nine months, while that between Loan effectivity and second tranche review mission was only seven months. The actual increase in fertilizer prices was substantial (18 percent compared with the 10 percent increase required under the Program), but the other targets were relatively modest, signaling more a continued commitment of direction rather than major change.

39. The end of Program period conditions included specific conditions on fertilizer subsidies, credit subsidies, irrigation O&M, and other general conditions on institutional reform, budget allocations, and agricultural commodity deregulation. As noted in Section A, credit and fertilizer subsidies were reduced by the end of the Program period, but not completely eliminated. The irrigation targets were not met, but as noted above were too optimistic and took insufficient account of institutional issues. A revised policy (Appendix 3) with more realistic targets is now being followed. The institutional and budgetary conditions have generally been met, but little progress has been made in deregulating the sector and increasing private sector participation in marketing and processing. Because this latter condition was itself nonspecific, it is impossible to specify the details of noncompliance.

¹ TA No. 2709-INO: *Horticulture and Agribusiness Development*, for \$600,000, approved on 13 December 1996.

F. Monitoring

40. The Program included specific Bank review missions for the second tranche release and end of Program period, which the Bank and the Government both fulfilled adequately. However, while these review missions focused on the specific policy reform measures included in the DPL, no performance indicators had been identified to assess the impact of the Program as a whole, and thus this was not effectively examined. The Bank was meant to engage in policy dialogue on a continuing basis on sector development issues and policy incentives, which it did in the context of project missions, but it was also meant to assess the impact of the Program on appropriate trend variables in the medium term. The end of Program review mission addressed some of these, but the Bank did not specifically analyze these apart from within the context of new project processing.

41. On the Government's part, TA No. 1276-INO was designed to improve BAPPENAS's capability to monitor the impact of the Program Loan. As noted in paras. 35-36, however, no specific monitoring or evaluation exercise was applied to the reforms included in the Program, although the sector was analyzed in the context of preparations for Repelita VI.

G. Use of Counterpart Funds

42. The counterpart funds were to be used to finance the local currency cost of high priority development projects directly or indirectly related to agriculture, but no specific allocations for projects or activities were made. As noted in para. 29, public investment in the sector did increase, but it is not clear whether this was a result of the Loan or whether it would have happened anyway. PEM discussions with senior officials currently in MOA revealed that they were not cognizant of the details of the Loan and were unaware of the provision concerning allocation of counterpart funds for agricultural investment; indeed, they were initially reluctant to meet the PEM as they had not viewed the Loan as one of theirs. This is largely due to the fact that BAPPENAS had coordinated activities with the Bank, and MOA had only been involved in the policy discussions up to 1992, with no subsequent activities.

IV. PROGRAM RESULTS

43. As noted in para. 14, no performance indicators were identified against which the Program impact as a whole should be assessed. However, the plan on which the Loan was based included broad objectives to provide new growth momentum in the food crop sector, but at least cost or greater efficiency, particularly with respect to budget resources, while at the same time emphasizing food crop sector development as a means of alleviating poverty and improving regional and distributional equity. Section A below assesses the impact of the Program and reforms on growth, structure, and efficiency of the agriculture sector and agricultural commodities, while section B looks at its socioeconomic impact.

A. Agriculture Sector Performance and Commodity Prices

44. Table 1 summarizes production in the food crop sector, and total agricultural production, as a proportion of GDP during the 1990-1996 period. It also shows the percentage growth in food crop production and GDP at constant prices for the same period.

Table 1: Food crop and Agricultural Production as a Proportion of GDP at Constant Prices (%)

	1990	1991	1992	1993 ^a	1994	1995 ^b	1996 ^b
Farm Food crops	11.7	10.9	11.1	10.3	8.8	8.6	8.0
Agriculture, Livestock, Forestry, and Fisheries	19.4	18.4	18.5	17.6	16.7	16.1	15.2
Increase in Food crop Output at Constant Prices (%)	0.5	-0.6	7.7	-1.2	-2.1	4.6	0.3
Increase in GDP at Constant Prices (%)	7.2	6.9	6.5	6.5	7.5	8.2	7.8

^a Base revised in 1993.

^b Preliminary figures.

Source: The World Bank Indonesia Country Economic Report No. 16433-IND.

45. Over the Loan period, farm food crop production averaged around 11 percent of GDP. Since then it has declined to just above 8 percent. This trend is also evident in total agricultural production as a share of GDP. In 1992 food crop production rose by 7.7 percent, while it fell by around 1 percent in each of the other three years of the Loan period. Most of the strong growth in GDP has come from nonoil and gas manufacturing output.

46. It is not unusual for growth in food crop output, and agricultural output generally, to fluctuate and be negative in some years. This is largely due to weather changes that impact extensively across rural regions. Similarly, it is not inconsistent with development and improved efficiency in resource use for GDP to exhibit strong growth, together with declines in the share of agricultural output.

47. Disaggregated measures of the production of major food crops are summarized in Appendix 4. The annual production of rice, maize, and soybean were marginally higher at the end of the Loan period (1994) than they were at the beginning, rice production increasing from 45.2 to 46.6 million tons, corn from 6.7 to 6.9 million tons, and soybeans from 1.5 to 1.6 million tons. Annual cassava production declined slightly from 15.8 to 15.7 million tons for the same period. Production of all four crops was higher in 1997 than it was at the beginning of the Loan period, rice production increasing to over 50 million tons, corn to over 9 million tons, and cassava to over 16 million tons. Soybean production increased only marginally. Many explanations are possible for these changes in production, but the table indicates a general increase in food production by the end of the Loan period, and this trend has continued to the present. This is significant in that much land has gone out of production, particularly on Java, for housing, industry and other uses.

48. Appendix 4 summarizes food crop annual production at the beginning and end of the Loan period for Java and other areas to provide some indication of the distribution of these production gains. The levels of rice, maize, and soybean production declined in Java in the two periods, whereas their production rose in other areas. This indicates that there has been both resource reallocation and growth in the food crop sector, as was envisaged under

the overall Loan objectives. However, it is not possible to determine how much of this is directly attributable to the reforms under the Loan.

49. Part II is a review of the specific reform measures, with Section 1 focusing on the improved efficiency of budget expenditures through reduced fertilizer and credit subsidies and improved irrigation O&M. Sections 2 and 3 review the efficiency of food security and price stability activities of BULOG, and the impact of other NTBs. Overall, there has been a reduction in tariffs from 19.7 to 12 percent over the 1993-1997 period. Deregulation, however, has excluded the main BULOG commodities of rice, sugar, soybean, and wheat. These interventions have not been without cost to the efficiency of the sector as a whole, however, and distortions have been created. Para. 20 discusses the costs of BULOG stock and market operations but concludes that it succeeded in reducing the price variability of rice with the year, although it has not reduced the interseason price variability compared with movements of international market prices. In this specific context, a conflict exists between the Program objectives of reducing the impact of rice stocks on the budget and the need to stabilize prices. More significantly, these interventions have created price distortions. Controls on trade raised domestic prices above international prices of 16 percent for rice over the Program period, and this has since increased to 20 percent (Appendix 2).¹ Soybean prices were more than 60 percent higher, although by 1996 the difference had fallen to 30 percent, while sugar prices are more than 50 percent higher, and consumer prices even higher. These distortions represent implicit taxes on domestic consumers and subsidies to domestic producers (rice growers, sugarcane refiners). The restrictions on sugar trade, together with those on wheat, have a negative impact on the food processing industry, but determining the extent of this requires a detailed study beyond the scope of this PPAR.

B. Socioeconomic Impact

50. Over the Program period, poverty has declined, although at a faster rate in urban areas than in rural areas. Appendix 4 shows that since 1990 the number and the proportion of population categorized as below the poverty line has decreased. However, about 22.5 million (11.3 percent of the population) remain in this category more than 60 percent, of whom live in rural areas.

51. Appendix 4 also provides the distribution of income across the entire population for three years—1990, 1993, and 1996—and the percentage shares of expenditure of population groups. This shows how a greater proportion of the population has moved into higher income brackets in each successive year, and provides evidence of an overall reduction in poverty. Per capita monthly expenditure on food has decreased from 60.4 percent in 1990

¹ Since finalization of the PPAR, the Government announced a package of deregulation measures as part of a wider, the International Monetary Fund (IMF)-negotiated economic restructuring program (November 1997). One of the most significant measures was the partial ending of BULOG's food import monopoly. From 1998, general importers will be allowed to import wheat, garlic, and soybeans. However, there will be a transitional period of 3-5 years in the distribution of these commodities, during which BULOG will continue to play a dominant role. The Government also announced that import tariffs of 10 percent on wheat and 20 percent on garlic and soybeans (from zero tariff previously) will be imposed to protect domestic farmers. The tariffs will be reduced to 5 percent by 2003. Sugar and rice, however, will remain under BULOG's full control. The reforms have reportedly been welcomed by food processing companies, but their full impact, and particularly that of wheat, have yet to be assessed.

to 55.3 percent in 1996, with expenditure on nonfood items increasing, suggesting an increase in wealth. The Gini Coefficient,¹ however, has increased from 0.321 in 1990 to 0.335 in 1993 and 0.356 in 1996, indicating a tendency toward more uneven distribution of income.

52. There is also some evidence that these gains have spread to rural areas. Appendix 4 also includes a chart plotting constant wages paid to rural workers for planting in four rural regions. The differences in wages across these regions decreased throughout the entire period, whereas they rose in West Java, East Java, and W.N. Tengarra to the levels paid in West Sumatra. Some of the largest increases occurred during the period of the Loan. In 1994, planting wages grew by 19 percent in West Java, 13 percent in East Java, 9 percent in West Sumatra, and 17 percent in W.N. Tengarra.

53. The shift in production away from Java to other areas provides evidence of improvements in the distribution of wealth, while reductions in the share of household expenditure on food over the Loan period also indicate improvements in welfare. As noted above, however, it is not possible to determine how much of this is directly attributable to the Loan.

C. Institutional Development

54. The institutional reform agenda of the Loan included improvements in the research management mechanisms of AARD, increases in the number of extension workers in the outer islands, and increases in the development budget allocated to food crop research. As indicated above, the World Bank-financed ARM Project helped achieve the first objective. Budgets and staff levels, as well as qualifications and skills, have been increased for outer island extension, and more is being spent on food crop research. It is unclear, however, whether the Loan itself influenced this.

55. The Program also included a TA for strengthening BAPPENAS's analytical and monitoring skills. As noted in paras. 34-36, the TA was initially successful in improving skills in BAPPENAS, but this capability was not sustained and no monitoring systems as envisaged under the Loan were put in place.

D. Women in Development

56. There were no specific activities under the Program targeted at women.

E. Environmental Impact and Control

57. The Program did not include any specific measures on environment. The 1986 Environment Impact Assessment procedures make it mandatory for all major projects to conduct assessments of environmental impact to ensure that negative impacts are eliminated

¹ A measure of the inequality of income distribution, derived using a curve (Lorenz curve). As incomes become more equal, the curve moves closer to a 45-degree line. The smaller the value of the Gini Coefficient, the more equal are incomes.

or minimized through adoption of remedial measures while the Bank contributed to appropriate land use planning through a Land Resource Evaluation and Planning project.¹

F. Gestation and Sustainability

58. The broad reforms to strengthen the food crop sector with reduced financial resources by eliminating subsidies have been implemented, although some elements of subsidy remain, and are unlikely to be reversed in view of continued budget constraints. Progress on improving irrigation O&M is ongoing, and continued Bank involvement in policy dialogue during further project processing in this sector will help this process. While tariffs have been reduced across a broad range of goods, major commodities remain under the control of BULOG. Domestic prices for rice, sugar, and soybean remain higher than international prices, and this seems likely to remain to meet the Government requirement of food security. These restrictions and higher prices inhibit private sector development, particularly the development and export of processed foods.

V. KEY ISSUES FOR THE FUTURE

59. The Program loans were timely in providing support to the Government in maintaining economic reforms, and beginning the deregulation of the agriculture sector. It helped create a more efficient environment for further sector growth and achieved increased production of food crops other than rice. Elements of subsidy remain in fertilizers and credit; more detailed crop and farm production analysis is needed to determine what effect the complete removal of these would have. There is still a considerable way to go in achieving the irrigation O&M targets, and this is best addressed by the Bank in the context of project and sector lending, as indeed the Bank is doing, rather than via policy lending.

60. While there have been across-the-board reductions in the tariff rates on most commodities, the nontariff barriers on the main food crops remain, and BULOG continues to control their price and distribution, with the exception of raw sugar which can now be imported directly by mills. As a consequence, success has been limited in raising private participation in the food crop sector. As a member of APEC, the Government has made commitments to reduce tariffs to 5 percent or less by 2000 (except on some exempted commodities). The Bank could assist the Government in reviewing the impact of such cuts, along with the removal of NTBs. This could be done as part of Bank sector work prior to processing a loan in the sector.

61. As noted in paras. 35-36, TA No. 1276-INO helped create a database on the agriculture sector that is now retained by CBS. CBS is unable to finance the complete and regular updating of this database, but it could prove valuable for further analysis and assistance by the Bank and other donor agencies. Consideration could be given to ensuring that key parts of the database are updated as part of future project processing. BAPPENAS should be encouraged to revive its earlier capabilities in using the data and analyzing the sector as a key planning tool for the Government.

¹ Loan No. 730-INO: *Land Resource Evaluation and Planning Project*, for \$23.4 million, approved on 17 January 1985.

VI. CONCLUSIONS

A. Overall Assessment

62. Over the Program period, substantial progress was made in implementing the reforms envisaged, and further progress has been made since then, notably in the irrigation sector, although reverses or limited progress have been experienced in other areas such as trade deregulation. Overall, the Government implemented most of the Program as agreed. The major crops of rice, sugar, and soybean, however, are still controlled by BULOG, and only minor progress has been achieved in opening up these commodities to the private sector (para. 49 above and its footnote). That the Loan did not address these commodities is a design weakness, although it may have been impractical to do so at the time the Loan was formulated.

63. It is difficult to assess the impact and effectiveness of the various reforms and thus determine the real impact of the Program. The Loan documents did not provide performance indicators against which Program impact could be assessed,¹ thus making impact assessment difficult. In addition, it is difficult to separate the impact of reforms under this Program from those of other policy reforms taking place at the same time, and to disentangle the effects of the various reforms. Furthermore, many of the policy changes (such as rationalization of the credit system, making it more market-oriented, and trade deregulation and liberalization of imports) had already been set in motion by other economic forces, and it may be questioned as to what extent the Program had an impact on such changes. However, the approval of the Loan itself, with its implied endorsement and support of the reform program and its conditionality, almost certainly contributed to the forces encouraging change, particularly in view of the large size of the Loan.²

64. Program lending should perhaps be assessed as a process whose impact extends beyond the Loan period itself, rather than as a sum total of the impact of its components. The Bank provided technical assistance for policy analysis and was involved in policy discussions with the Government for the three years prior to Loan approval, following the technical assistance provided in 1987 for policy analysis in food crops. The policy reform agenda was based on a sound and comprehensive plan for the sector. The Loan was provided partly in recognition of the sustained progress in policy reform in the period immediately prior to Loan appraisal, and in the expectation of further reforms. The Loan was provided in two tranches in recognition of this. In view of this impact on policy formulation and the reform process in the sector, and the fact that the main reforms were carried out largely as agreed, although with uncertain impact and little progress in deregulation, it is concluded that the Loan should be rated as partly successful.

¹ As noted in para. 14, the *Logical Framework Approach to Program Loans*, with the inclusion of specific monitorable targets, was not a Bank requirement in 1990.

² The Minutes of the Bank Board Meeting which considered and approved the Loan state that its size was determined in the context of the size of the two previous program loans to Indonesia, and the size of the overall country program to Indonesia.

B. Lessons Learned

65. The principal lesson learned is the importance of obtaining detailed and sound analyses of the sector as a basis for formulating policy reforms, and that this process must not be overly hurried. The Bank's involvement in such policy formulation and dialogue extended over a period of nearly three years prior to Loan approval. At the same time, however, due attention needs to be paid to the appropriateness and timing of targets established in meeting the policy objectives.

66. In this Loan, insufficient attention was given to the institutional requirements for implementing the irrigation O&M targets. Lack of familiarity with the new procedures in provincial and field offices themselves made the targets overly optimistic. In addition, the formulators of the targets seemingly had insufficient knowledge of the legal and administrative steps that had to be taken at each level of Government before some of the new measures could be implemented. In addition, greater beneficiary participation and commitment to O&M and cost recovery could have been obtained with (i) greater attention being given to strengthening local water resources staff capacity, and (ii) better integration of agriculture and irrigation services.

67. A major weakness of the Loan documentation was the lack of performance indicators against which the impact of the reform program as a whole should be assessed. In addition, some of the individual reform measures were specific, and as such their implementation could be monitored, while others were not specific. Specific performance indicators, however, were identified for neither. This weakness is now being addressed under new project processing with the identification of performance indicators at feasibility stage. Use of the logical framework will greatly facilitate this.

68. The Government should have been required to implement a monitoring and evaluation system. A TA was provided to help create the capacity to do this, but it seems the only occasion on which the Government assessed the Program impact was at the time of the Bank's review mission for the second tranche release. Government involvement in later Bank mission reviews, including the December 1992 end of Loan review and the 1994 PCR mission, appears to have been minimal. It would seem that more involvement occurred during subsequent separate project processing missions where new loan possibilities were discussed, suggesting these are a more effective mechanism for ongoing review and evaluation.

69. Some criticism was made during consideration of the Loan by the Bank's Board concerning the Loan size and whether it was commensurate with the scale of the reforms. The revised Program lending policy, although introducing the concept of relating the size of the Loan to the cost of implementing the reforms, remains unclear as to what proportion of the cost is appropriate for the Bank to finance, leaving it largely to the initiative of the mission leader. This Loan followed two large Program loans already provided to Indonesia and these, and the size of the country program to Indonesia, seem to have influenced the size of the Loan, rather than the possible costs of the reforms. This PPAR, while suggesting that the cost of reforms should be a key element in determining the size of a program loan, concludes that in the country context a degree of influence or leverage can only be achieved if the size of the Loan is also commensurate with the scale of the country program. More consideration of this issue is appropriate for the Bank.

C. Follow-up Actions

1. For the Government

70. In general, few specific actions need following up of related project processing or implementation. There is scope for further budget saving by eliminating the remaining fertilizer subsidies and the Government should be encouraged to conduct more detailed crop and farm production analyses to determine the impact of the complete removal, or reduction, of such subsidies would have. This should have been done by the Government and Bank during the Program period. Such analysis should extend to other inputs, including agricultural mechanization and seed production and distribution, with a view to developing a further program to help develop the food crop sector. The Bank could assist if it plans further projects in the sector. The outstanding irrigation O&M program is being followed up in the context of new project processing and ongoing implementation. It would be useful to update the CBS database initiated as part of the TA, but keeping this up to date should be a normal recurrent cost expenditure item of the Government.

71. In the context of deregulation, the outstanding tariff and nontariff barriers need reviewing with a view to encouraging increased reliance on the private sector in supply, marketing, and processing, with BULOG in particular increasing its reliance on the private sector in marketing rice, soybeans, and sugar. In view of the sensitivity of some of these issues, however, it may be inappropriate for the Bank to do this in isolation of involvement in a related project or program loan.

2. For the Bank

72. Experience with this Loan suggests that implementation of sector reforms can be better monitored and evaluated in the context of project lending, or alternatively the new sector lending policy approach, combining policy-based program lending with investment components.

APPENDIXES

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COORDINATING MINISTER FOR ECONOMY, FINANCE,
INDUSTRY AND DEVELOPMENT SUPERVISION
REPUBLIC OF INDONESIA

Jakarta, 12 February 1990

The President
Asian Development Bank
P.O. Box 789
Manila, Philippines

Dear Mr. President:

Development Policy Letter

1. The Government of Indonesia wishes to request a loan from the Asian Development Bank in support of its efforts to diversify and improve productivity, efficiency and exports of the food-crop sector. This letter expands on this request by describing the current situation, reviewing the actions already taken by the Government to restructure the sector, and outlining the intended direction of future actions.

2. The agricultural sector accounts for 24 per cent of GDP and for about 54 per cent of national employment. The food-crop sector has been a key determinant of the standard of living of the population, particularly in the rural areas, because food crops comprise 61 per cent of the agriculture sector's value added and also because food accounts for the bulk of household consumption expenditures. Given the importance of the food-crop sector in the economy, it is generally recognized that the Government's overall economic recovery program can be sustained only if appropriate policies are implemented in the food-crop sector.

Current Economic Adjustment

3. In response to a worsened external economic environment faced by Indonesia since the early 1980s, the Government has embarked on a major structural adjustment program. The combination of sharply lower oil prices and, more recently, the impact of adverse currency realignments severely constrained the balance of payments and the budgetary resource positions. The external debt servicing capacity also came under severe strain. Initial steps taken as corrective measures to this challenge encompassed decisive actions to restrain domestic demand including fiscal austerity and a conservative monetary stance.

4. In April 1985, customs procedures, ports and shipping operations were reorganized to speed up the flows of goods and to reduce costs. In May 1986 measures were introduced for promoting non-oil exports and the Rupiah was devalued by 31 per cent in September 1986. To reinforce the impact of the changed incentive structure, the Government announced a series of trade and industrial policy measures in October 1986, January and December 1987, followed by another set of measures in November 1988.

These measures reflected the Government's strong commitment to improve the environment for private investment while promoting efficiency in the economy and non-oil exports in particular. Further, in October and December 1988, the Government introduced packages of financial sector and capital market reforms to promote increased savings, improved efficiency of the banking system and a more dynamic equity market. The far-reaching scope of these reforms was aimed at enhancing resource mobilization in support of the investment financing required for accelerated non-oil growth.

5. The policy measures, and the speed with which they were implemented, have created the flexibility and incentives for the private sector to rapidly expand investment and production within the non-oil sector and, in particular, to expand non-oil exports. The more supportive financial sector not only served to increase domestic resource mobilization, but also to finance the higher investment levels required. As a consequence, the economy has gradually recovered from the near-recessionary conditions of 1985 and 1986 thanks to the strong performance of non-oil exports. The balance of payments position has been stabilized and various external debt indicators have begun to show encouraging signs of improvement. Notwithstanding this progress -- given the uncertain outlook for world oil prices and for currency alignments, as well as Indonesia's continued external debt burden -- the country's medium-term prospects will continue to be influenced by the success in improving further the balance of payments and in containing external debt-service. Moreover, a continuation of the renewed growth impetus is vital for the generation of the new jobs necessary to absorb the rapid labor force growth projected during Repelita V (1989/90-1993/94).

6. In the past few years, the Government's adjustment efforts have been significantly reinforced by the availability of special assistance from donor agencies through fast-disbursing program loans and local cost financing. The Government acknowledges the Bank's continuing support at successive IGGI meetings for the Government's program of policy action; this has helped create a climate conducive to economic confidence within the country. The Government expresses its appreciation for the Bank's Non-Oil Export Promotion Program Loans totalling \$150 million, which were approved in December 1987 and Financial Sector Program Loans totalling \$200 million in December 1988. It now wishes to focus on adjustment in the agriculture sector, and requests the Bank to support its Food Crop Sector Program with loans of \$250 million, including an ADF component of \$100 million.

Reforms and Policy Direction in Agriculture

7. During Repelita V, agricultural production will be increased through an integrated program of diversification, intensification, extensification and rehabilitation. Programs to increase production have been devised for food crops, estate crops, fisheries, livestock and forestry subsectors. Priority will be accorded to rice, corn and soybeans. Growth in the agricultural sector during Repelita V is expected

to reach an annual average of 3.6 per cent. Production of paddy is targeted to increase at an annual average of 3.2 per cent. This production growth target represents the lowest-cost and lowest-risk rice strategy and is compatible with objectives of food security, price stability and equitable income distribution and employment generation in rural areas. The annual production growth figure is based on a projected rice consumption growth above 2 per cent per annum through the year 2000 and requirements for replenishment of stock level. New policy directions to achieve the goals of the agriculture sector under Repelita V are (i) improving agriculture production, processing and marketing efficiency; (ii) exporting processed products rather than raw materials; (iii) increasing private sector involvement; (iv) sustaining the natural resource base for farming systems; and (v) relating agricultural production and development to environmental concern and resource suitability, particularly in regard to regional development.

8. Starting with Repelita IV, a number of policy improvements and reforms have been undertaken in the agriculture sector. These changes have contributed to increased agricultural efficiency and productivity by removing the various policy and technical constraints faced by the rural sector. These are also in line with comparative advantage and in accord with our objectives of alleviating rural poverty and improving regional and distributional equity. Continuing this process is crucial for further progress in the overall economic adjustment drive. Some of the important actions taken by our Government in recent years are described below.

9. Abolition of Pesticide Subsidy: During Repelita IV the subsidy on pesticides was gradually reduced. At the beginning of 1989 the subsidy was completely abolished, as it became clear that its abolition would not impair the farmer's incentive to use appropriate levels of pesticide. This measure will also contribute to protection of the environment.

10. Import Deregulation: As a part of the continuing reform in import trade, in November 1988, a further 295 items were removed from import licensing schemes. The items included important products of agriculture and agricultural processing industries, such as palm and coconut oil, tobacco, rubber, processed fruit and meat, and cigarettes. Corn and fish meal were also deregulated in 1989. As of now the number of agricultural items on the regulated list is relatively small. Further measures will be considered in the context of, and in line with, overall trade policy reform.

11. Investment Deregulation: In May 1989, the Government undertook a complete overhaul of the investment regulations. A short negative list has replaced a long positive list, thus making the regulations simpler and more transparent and at the same time opening up more investment opportunities for both domestic and foreign investors. With this measure, many agriculture-related activities previously closed are now open for domestic as well as foreign investments. As a result investments in these areas will be further stimulated in the coming years.

12. Reduction in Fertilizer Subsidy: The subsidy on urea, TSP, AS and KCL has been gradually reduced over the years. The Government increased the price of urea by 23 per cent and that of TSP by 26 per cent in 1989. In October 1989, the Government announced that effective 1 January 1990 urea and AS prices would be increased by 12 per cent while prices of TSP and KCL would be increased by 24 per cent and by 27 per cent respectively. Government policy is to continue to phase out fertilizer budgetary subsidies over Repelita V. To this effect, the Government will continue its policy of undertaking an annual review and assessment of fertilizer prices well before the planting season based on which a decision will be taken regarding the magnitude and timing of price increases. The Government will also take steps to improve the efficiency of the distribution, marketing and storage of fertilizer. Fertilizer trials will be continued to determine efficient levels of fertilizer use for different crops, soils, and regions by type of fertilizer. After a careful review of the results, the recommendations will then be extended to farmers for adoption of economic levels of fertilizer use under the different agro-climatic conditions in the different regions of the country.

13. Food Security and Stability: One of the remarkable achievements of the country is the more than doubling of rice production over the last two decades which has brought the country to the self-sufficiency threshold in rice. However, rice production is still dependent to a large extent on weather conditions and is particularly vulnerable to drought. We maintain buffer stocks of rice to stabilize prices for both producers and consumers. In this context our national logistic agency, BULOG has played a very effective role. Appropriate stock policy is now being developed so as to minimize the expenditure on large rice stocks, and to improve the operations of BULOG from financial and economic points of view. These arrangements will ensure the maintenance of our national food security and stability.

14. Irrigation Service Fees: The Government has adopted the policy of direct cost recovery to finance the operation and maintenance (O&M) cost of the irrigation systems. We are fully aware that O&M expenditures have to be increased, and it would be difficult in the future to finance them from the budget on a regular basis. We believe that our farmers would be willing to pay at least the cost of O&M of irrigation systems commensurate with the gains accruing from the irrigation facility. The pilot program for irrigation service fees has been started. Consultants have been recruited and efforts are being made to overcome the time lost and to start the collection of irrigation service fees on a pilot basis in the smaller schemes. Meanwhile the policy of meeting O&M cost through collection of the land and building tax (PBB) will continue.

15. Further action to be undertaken by the Government in this connection includes expediting conversion of the land tax system (IPEDA) to the new PBB system through reclassification and reassessment of irrigated properties to improve revenue performance; implementing the transfer of O&M of the selected small system to water users' associations;

and recruiting and training of additional irrigation service staff in the provinces for O&M duties.

16. Sugarcane Production: Returns to farmers and to the economy from the production of sugarcane in irrigated areas in East and Central Java are lower than those of paddy. The Government has therefore adopted a policy to transfer sugarcane production to the uplands and the Outer Islands. A decision has been made to discourage the construction of new sugar mills and the renovation of existing ones by the public sector in East and Central Java where the growing areas involve irrigated lands that could be used for paddy production. In keeping with this Government policy the lands under sugarcane in East and Central Java will be phased out gradually and the farmers will be allowed crop choice.

17. Agricultural Credit: The Government in a major policy announcement, has indicated that effective 1 February 1990 liquidity credits would be phased out. Liquidity credits from Bank Indonesia have been extended at subsidized interest rates to priority sectors including food-crops. However, in view of their monetary impact and the need to ensure more efficient use of resources, liquidity credits will henceforth be eliminated for most purposes and sharply curtailed for the remaining uses. While credits for food-crop farmers and other small credit through cooperatives will be continued, the interest rate to end users will be raised to 16 per cent, the current prime lending rate, and the issuance of such credit will become much more selective. The interest rate on any remaining liquidity credits from Bank Indonesia will be set at either the prime rate or the discount rate on money market instruments. At the same time banks will be required to extend at least 20 per cent of their loans to small scale enterprises. To meet this requirement major banks can cooperate with small or rural banks. These reforms are expected to have a significant positive impact on the efficiency of the resources employed in the food-crop sector.

Institutional Reforms and Investment Program

18. In support of the envisaged policy reforms, measures will be taken to strengthen institutions dealing with food-crop production. Here, we will mainly focus on agricultural extension, research, market information, land and water resources planning and the rural credit system.

19. My Government is committed to implement the investment program in the food-crop sector identified under Repelita V. The food crop sector performance is strongly determined by investments in irrigation infrastructure and the various programs undertaken by the Ministry of Agriculture and these investment needs amount to approximately \$5.0 billion. The investment requirements for irrigation infrastructure during Repelita V are estimated at \$3.4 billion and the food-crop development budget for Repelita V amounts to \$1.6 billion which is a substantial increase over the actual development budget expenditures under Repelita IV.

20. Finally, I would like to assure you that my Government will continue to provide a general macroeconomic environment conducive to achieving our sector-specific development program. Let me also reaffirm that my Government will continue an active policy dialogue with the Asian Development Bank on these matters.

21. Our discussions with a series of Bank Missions have been productive and useful. We fully appreciate the efforts of the Bank in assisting the Government of Indonesia to help improve the efficiency and productivity of the agriculture sector.

Sincerely yours,

A handwritten signature in dark ink, appearing to read 'Radius Prawiro', with a long horizontal stroke extending to the left.

Radius Prawiro
Coordinating Minister for the Economy
Finance and Industry

POLICY MATRIX

Agenda of Policy Reforms in the Food Crop Sector

Objective	Policy Actions	Target Dates			Remarks
		Prior to Loan ¹ Negotiations	Prior to Release of Second Disbursement	Before the End of the Program Period (March 1994)	
I. Policy Reform					
A. Efficiency of Public Expenditure					
Improve the efficiency of public expenditure by reduction of subsidies and increasing post recovery and productive investment.					
1. Fertilizer Subsidies					
Phase out fertilizer subsidies by increasing fertilizer prices.	1. Increase fertilizer prices by January 1990 as follows: urea and AS prices by 12 percent; TSP prices by 24 percent and KCL by 27 percent, thereby reducing the budgetary subsidy to fertilizer by 20 percent from \$480 million in 1989 to about \$380 million in 1990.	January 1990			Complied with.
	2. Undertake an annual review of fertilizer prices before the planting season (around October each year) to decide the magnitude and timing of price increases. Such increases will be made provided that the production incentives can be maintained at appropriate levels.		October 1990	October 1991 October 1992 October 1993	Complied with.
	3. Announce fertilizer price increases of at least 10 percent over the January 1990 level, thereby further reducing the budgetary subsidy.		December 1990		Complied with.
	4. Phase out the financial subsidies to fertilizer.			January 1994	Still not fully complied with (Dec. 1997).

¹ Actions prior to loan negotiations were taken in the framework of the policy dialogue between the Government and the Bank on food crop sector policy reforms.

Objective	Policy Actions	Prior to Loan ¹ Negotiations	Target Dates		Remarks
			Prior to Release of Second Disbursement	Before the End of the Program Period (March 1994)	
2. Credit Subsidies					
Eliminate credit subsidies by restricting the availability of concessional credit and by bringing interest rates on food crop-related credit schemes to market rates.	5. Increase interest rates of credit schemes to cooperatives and food crop farmers and credit to BULOG from 12 to 16 percent, the current prime rate.	February 1990			Complied with.
	6. Reduce the amount of BI's liquidity credit by 50 percent and raise interest rates charged by BI on this credit to the level of discount rates of money market instruments.	February 1990			Complied with
	Reduce BI's liquidity credit further and base lending rates of rural credit schemes on market rates.			March 1994	Partially complied with, but nonspecific condition.
3. Irrigation O&M - Cost Recovery					
Accelerate the implementation of the 1987 Policy Statement on Irrigation O&M and Cost Recovery aiming at introduction of efficient O&M, collection of irrigation service fees in all public irrigation schemes; and handing over all schemes smaller than 500 ha to the farmers (in accordance with the implementation schedule).	7. Expand efficient O&M from 800,000 ha to 1 million ha of public irrigation and drainage schemes.		December 1990		Partially ² complied with.
	Increase the area of efficient O&M by another 1 million ha to 2 million ha.			March 1994	Partially ² complied with.
	8. Based on the results of ongoing pilot schemes in an area of about 19,000 ha gradually extend collection of irrigation service fees in irrigation schemes where efficient O&M has been introduced.			April 1992	Partially ² complied with.
	Collect irrigation service fees over 1 million ha (about 20 percent of the total public irrigated areas).			March 1994	Partially ² complied with.
	9. Transfer about 15,000 ha of irrigation systems smaller than 500 ha to water users' associations.		December 1990		Partially ³ complied with.

² New targets prepared, and now being followed (see Appendix 3).

³ New targets prepared, and now being followed (see Appendix 3).

Objective	Policy Actions	Target Dates		Remarks
		Prior to Loan ¹ Negotiations	Prior to Release of Second Disbursement	
	Extend the transfer of irrigation systems of less than 500 ha to water users' associations to about 150,000 ha			March 1994 Partially ² complied with.
	10. Extend the land and building tax (PBB) system over 500,000 ha of public irrigation schemes.		December 1990	Partially ² complied with.
	Extend the PBB system further to 1.5 million ha.			March 1994 Partially ² complied with.
B. Efficiency of Food Security and Stability Policies				
Reduce the cost of rice reserve stocks and market stabilization operations.	11. Reduce the rice reserve stock level that averaged 1.7 million mt during REPELITA IV to a target reserve stock of about 1 million mt and use the international rice trade to ensure food security and market price stability.	February 1990		Complied with during Program period, but increased since then.
C. Deregulation of Imports and Investments in the Food Crop Sector				
Increase the efficiency of domestic production; enhance the role of the private sector in production, marketing, and processing of food crops; and open up more investment opportunities for agriculture and agro-industrial enterprises for both domestic and foreign investors.	12. Deregulate imports by placing additional food crop commodities on open general license.			March 1994 Partial compliance.
	13. Replace the long positive list governing investment regulations by a short negative list.	May 1989		Complied with.
	14. Promote private sector participation in the marketing and processing of selected non-rice food crops.			March 1994 Little progress, nonspecific condition.
D. Optimization of Land Resource Utilization				
Utilize agricultural lands in accordance with agronomic and economic production potential and regional comparative production advantage	15. Discourage construction of new sugar mills and renovation of existing ones by the private sector in East Java and Central Java, where the cultivate areas involve irrigated lands that could be used for rice production.	February 1990		Complied with, but nonspecific condition.

Objective	Policy Actions	Target Dates			Remarks
		Prior to Loan ¹ Negotiations	Prior to Release of Second Disbursement	Before the End of the Program Period (March 1994)	
	16. Give farmers a choice with regard to crop cultivation in irrigated areas in East Java and Central Java currently planted with sugarcane.	February 1990			Partially complied with.
	17. Gradually phase out sugarcane production in irrigation areas of Java.			March 1994	Partially complied with.
II. Institutional Reforms					
A. Research					
Upgrade food crop research and give more emphasis to secondary food crops. Strengthen research capabilities by improved utilization of existing facilities and research management and organization. Strengthen linkages with extension services.	18. Expand research on secondary food crops; socioeconomic research; post-harvest technology; farming system research; and integrated pest management; and increase allocations for food crop research by 15 percent for the 1990/91 budget.		December 1990		Complied with.
	19. Improve the research management and organization of the Agency for Agricultural Research and Development by implementation of the Agricultural Research Management Project.			March 1994	Complied with.
B. Extension					
Strengthen extension services for non price crops and bring extension services closer to grassroot needs; expand extension services in the Outer Island.	20. Increase the ratio of field extension workers to farmers by about 15 percent.	February 1990			Complied with.
	21. Increase the number of field extension workers in the Outer Islands by 1,000.			December 1990	Complied with.
C. Rural Credit Institutions					
Improve the availability and allocation of credit to the food crop sector; improve loan repayment; reduce arrears; and accelerate rural savings mobilization.	22. Simplify the delivery of agricultural credit by abolishing redundant and inefficient schemes; i.e., the small investment credit schemes and the plantation credit schemes.	February 1990			Complied with, but, nonspecific condition.
	23. Base lending decisions on financial viability of investment and past repayment records.	February 1990			Complied with, but, nonspecific condition.

Objective	Policy Actions	Target Dates			Remarks
		Prior to Loan ¹ Negotiations	Prior to Release of Second Disbursement	Before the End of the Program Period (March 1994)	
III. The Investment Program					
Increase investment in the food crop sector and make budget allocations for the food crop sector in accordance with the Program's investment needs.	24. Support the public irrigation development program of which the investment requirements during REPELITA V are estimated at \$3.0 billion.			March 1994	Complied with, but nonspecific condition.
	25. Support the REPELITA V food crop development budget which amount to \$1.5 billion.			March 1994	Complied with, but nonspecific condition.
	26. Review the implementation of the budgetary allocations in 1990/91 and the proposed allocations for 1991/92 to ensure that the budgetary performance will be in accordance with the Program investment needs.		December 1990		Complied with, but nonspecific condition.

¹ Actions prior to loan negotiations were taken in the framework of the policy dialogue between the Government and the Bank on food crop sector policy reforms.

POLICY REFORM MEASURES

A. Fertilizer Subsidies

1. At the time the Food Crop Sector Loan was made in 1990 farmers received large subsidies on the fertilizers urea, triple superphosphate, ammonium sulphate, and potassium chloride. They were paying prices below domestic market prices for these inputs, and the difference was a direct cost to the Government budget. Table 1 summarizes the total cost of the subsidies.

Table 1: Budget Cost of Fertilizer Subsidies
(Rp billion)

1990/91	1991/92	1992/93	1993/94	1994/95 ^a	1995/96	1996/97	1997/98 ^b
265	300	175	175	815	143	186	137

^a This amount is almost twice the figure reported by the World Bank in the Indonesia Country Economic Report No. 16433-IND. and is perhaps an error.

^b Estimate.

Source: Ministry of Finance.

2. After peaking in 1994/95, the subsidy cost has since declined to levels experienced in 1992/93 and 1993/94. The estimate for 1996/97 was originally 137m, but the actual cost was 186m.

3. Selling prices of fertilizers sold by village cooperatives are summarized in Table 2.

Table 2: Selling Price of Fertilizer at Village Cooperative Level
(Rp/kg) ^a

Year ^a	Urea	(%-fob)	TSP	(%-cif)	AS	(%-fob)	KCI	(%-cif)
1989/90	210	(82)	260	(32)	210	(82)	260	(32)
1990/91	210	(70)	270	(27)	210	(70)	270	(27)
1991/92	240	(38)	310	(12)	240	(38)	350	(12)
1992/93	240	(7)	310	(12)	240	(7)	350	(12)
1993/94	260	(18)	340	(9)	260	(18)	370	(9)
% Change	24		31		24		42	

fob = free on board; TSP = triple superphosphate; cif = cost, insurance and freight;
AS = ammonium sulphate; KCI = potassium chloride.

^a Prices are announced in October.

Source: Statistik Indonesia 1995, USAID, and ADB.

4. Over the Loan period all four fertilizer prices increased. Urea and ammonium sulphate (AS) increased 24 percent, while triple superphosphate (TSP) rose by 31 percent and potassium chloride by 42 percent. However, the size of the subsidy depends on the amount that these domestic prices are below their international counterparts. International prices fell, especially for urea, and this reduced the cost of the subsidy during the last two years of the Loan period. Estimates of the percentage excess of international over domestic prices are also included in Table 1. They show how the rate of subsidy has declined over the Loan period.

B. Concessional Credit and Rural Credit Schemes

5. Various subsidized credit schemes for farmers and small enterprises have been in existence since 1973 when a Selective Credit Policy was introduced. The loans were characterized by low interest rates and simple procedures, with Bank Indonesia providing the liquidity to the banking system. Some deregulation measures were introduced in 1983 and 1988, but rural coverage remained limited. Rapid growth of liquidity credits increased the dependency of banks on these credits and fueled inflation. At the commencement of the Program period, five major credit schemes catered to farmers, cooperatives, estates, Badan Urusan Logistik (BULOG, Agency for National Logistics Administration), and small enterprises.

6. Reforms were introduced in January 1990 that led to withdrawal of Bank Indonesia (BI) liquidity credits to a number of schemes. A market-oriented credit policy was introduced in the sense that interest rates would be varied with market conditions, but a subsidy element remained. Interest rates were based on prime rates, which were below market rates (6 percent at the commencement of the Program period, 3 percent by 1994). The reforms were designed to encourage banks to participate more actively in the supply of rural credit, introduce market-oriented interest rates, clarify criteria for the granting of liquidity credits, and include requirements for banks to set aside 20 percent of their loans for small enterprises. Further measures in May 1993 eased the small enterprise requirement, and simplified capital adequacy requirements. From April 1997, commercial banks have to increase credit available for small enterprises to 22.5 percent.

7. By the end of the Program period, four major schemes for farmers were being funded from Bank Indonesia's liquidity credit program (Figure 1), but tied to market interest rates, as shown in Table 3: (i) general and special credit for small farmers to increase production of rice and food crops, with loans to village cooperatives being on-lent to farmer members; (ii) credit for village cooperatives, providing working capital for purchasing paddy, fertilizers, etc.; (iii) credit to primary cooperatives to be on-lent to members to finance investment and/or working capital for small scale enterprises; (iv) credit to BULOG for food and sugar procurement. At present, Bank Indonesia provides 100 percent refinancing support of the small farmer credit and BULOG schemes, 65 percent refinancing of the village cooperative scheme (75 percent prior to October 1997), and 65 percent refinancing of the primary cooperative scheme (75 percent prior to 1995). In addition BI provided 10 percent refinancing liquidity credits for investment credit for larger farmers and estates, which are lent at market rates.

LIQUIDITY CREDIT

**Figure 1: Lending Rates of Credit Schemes
Supported by Bank Indonesia Liquidity Credit (KL)**

Effectivity Date	Intensification Credit for Paddy and Secondary	Credit for Cooperative	Primary Cooperative Credit Extended Its Member	Credit to BULOG for Food and Sugar Procurement	Investment Credit
	BI (KL 100%) ^a	BI (KL 75%)	BI (KL 100%)	BI (KL 100%)	BI (KL 10%)
29.01.90	3.0	12.0	8.0	14.0	4.0
01.04.91	3.5	13.0	8.5	17.0	17.0
01.06.92	3.0	12.0	6.5	16.0	16.0
01.03.93	3.0	11.0	5.0	14.0	14.0
01.04.94	3.0	8.0	4.0	10.0	10.0
	BANK	BANK	BANK	BANK	BANK
29.01.90	9.0		13.0		
01.04.91	11.0		15.0		
01.06.92	10.0		14.0		
01.03.93	9.0		12.0		
01.12.93	9.0		11.0		
01.04.94	9.0		11.0		
	RURAL COOPERATIVE (KUD)		PRIMARY COOPERATIVE		
29.01.90	16.0	16.0	16.0	16.0	Market
01.04.91	17.0	19.0	19.0	19.0	Market
01.06.92	16.0	18.0	18.0	18.0	Market
01.03.93	14.0	16.0	16.0	16.0	Market
01.12.93	14.0	14.0	14.0	12.0	Market
01.04.94	14.0	14.0	14.0	12.0	Market
	FARMERS	RURAL COOPERATIVE (KUDP)	MEMBERS	BULOG	CUSTOMERS

^a Proportion of refinancing supported by liquidity credit.
Source: Bank Indonesia

Table 3: Market Interest Rates

		1993	1994	1995	1996	1996										1997					
						Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
A. Bank Indonesia Certificate ^a																					
7 days	8.05	11.48	13.00	11.75	12.87	12.75	12.76	12.75	12.75	12.75	12.75	12.75	12.75	12.27	11.75	9.94	8.25	7.50	7.50	7.50	7.29
1 month	8.82	12.44	13.99	12.00	13.99	13.99	13.99	13.99	13.92	13.96	13.96	13.96	13.93	13.40	12.00	12.00	11.75	11.00	10.63	10.63	10.50
Money Market Securities ^b																					
7 days	11.00	14.50	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.25	15.25	14.75	14.75	14.75	14.75
1 month	12.00	15.25	15.25	15.57	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.57	16.00	16.00	15.50	15.50	15.50	15.50
Discount Facility	15.0	12.99	14.19	23.00	22.00	22.00	23.83	23.00	16.75	24.00	24.50	25.00	25.00	23.75	23.00	25.00	24.00	25.75	27.00	25.00	25.50
Interbank Call Money																					
(1-3 days)																					
1 day	6.78	11.90	13.97	12.91	12.11	14.93	14.73	13.64	13.28	15.39	15.13	15.06	15.06	12.70	12.91	12.85	12.84	10.88	13.60	13.48	13.67
7 days	15.44	16.04	16.00	12.96	-	14.90	14.64	13.82	14.30	13.97	14.27	14.54	14.54	13.23	12.96	12.32	12.02	9.62	13.10	12.92	12.43
JIBOR																					
1 day	-	-	15.19	7.22	11.88	14.13	14.63	12.25	13.43	13.14	13.36	9.11	9.11	16.00	7.22	11.92	7.35	16.65	12.10	6.11	13.78
7 days	-	-	11.48	13.74	13.74	14.94	14.64	15.36	14.26	15.22	14.51	14.51	14.51	14.49	11.48	12.53	7.35	16.14	12.58	10.16	13.85
B. Time Deposit																					
Nominal																					
1 month	13.37	12.42	16.72	15.43	17.15	17.10	17.09	16.94	16.85	16.90	16.77	16.88	16.88	16.90	16.77	15.43	16.29	16.17	15.92	15.51	-
3 months	14.53	12.64	16.80	17.03	17.29	17.38	17.38	17.35	17.35	17.26	17.25	17.18	17.18	17.18	17.03	16.85	16.66	16.47	16.25	16.06	-
6 months	15.06	12.39	15.83	16.78	16.88	16.89	16.91	16.90	16.95	16.94	16.93	16.92	16.89	16.78	16.68	16.68	16.51	16.37	16.17	15.99	-
12 months	16.25	12.99	15.04	16.70	16.68	16.76	16.77	16.42	16.45	16.84	16.85	16.84	16.84	16.86	16.70	16.60	16.49	16.39	16.36	16.28	-
24 months	18.27	15.03	14.48	15.14	15.39	15.47	15.54	15.78	15.86	15.85	15.87	15.90	15.90	15.96	15.14	16.01	16.10	15.95	15.96	15.07	-
Rill ^a																					
1 month	3.19	2.78	7.74	8.80	7.95	8.88	9.33	9.43	9.37	9.47	9.90	10.17	10.17	9.88	8.80	10.84	11.39	10.63	10.53	10.32	-
3 months	4.35	3.00	7.82	10.40	8.09	9.16	9.62	9.84	9.87	9.93	10.27	10.45	10.45	10.29	10.40	11.40	11.88	11.18	11.19	10.87	-
6 months	4.88	2.75	6.85	10.15	10.40	8.67	9.15	9.39	9.47	9.51	9.95	10.19	10.19	10.00	10.15	11.23	11.73	11.08	11.11	10.80	-
12 months	6.07	3.35	6.06	10.07	10.15	8.54	9.01	8.91	8.97	9.41	9.87	10.11	10.11	9.97	10.07	11.15	11.71	11.10	11.30	11.09	-
24 months	8.09	5.39	5.50	8.51	10.07	7.25	7.78	8.27	8.38	8.42	8.89	9.17	9.17	9.07	8.51	10.56	11.32	10.66	10.90	9.88	-
C. Credit																					
Working Capital																					
Nominal	17.95	17.00	19.27	19.04	19.30	19.28	19.27	19.18	19.14	19.13	19.21	19.21	19.21	19.22	19.04	19.05	19.00	18.88	18.82	18.79	-
Rill	7.77	7.36	10.29	12.41	10.10	11.06	11.51	11.67	11.66	11.70	12.23	12.48	12.48	12.33	12.41	13.60	14.22	13.59	13.76	13.60	-
Investment																					
Nominal	15.95	14.97	16.12	16.36	16.39	16.48	16.50	16.40	16.48	16.46	16.52	16.48	16.48	16.45	16.36	16.36	16.41	16.37	16.38	16.26	-
Rill	5.77	5.33	7.14	9.73	7.19	8.26	8.74	8.89	9.00	9.03	9.54	9.75	9.75	9.56	9.73	10.91	11.63	11.08	11.32	11.07	-

^a Weight average.^b After reducing inflation rate

8. As a result of these changes, the proportion of BI liquidity credit to overall bank credit declined from 13.9 percent in December 1990 to 7.3 percent by December 1993. It continued to decline, reaching 6.2 percent in December 1996, as shown in the Table below. BI have continued to recover loans extended under the previous subsidized schemes as shown in Tables 4-7.

Table 4: Proportion of Bank Indonesia Liquidity Credit to Bank Credit

Item	Dec 1990	Dec 1991	Dec 1992	Dec 1993	Dec 1995	Dec 1996
BI Liquidity Credit (Rp billion)	14,386	14,879	14,582	12,979	17,162	20,625
Bank Credit (Rp billion)	103,507	121,388	134,104	177,663	267,804	331,291
Proportion (%)	13.9	12.3	10.9	7.3	6.4	6.2

Source: Bank Indonesia

**Table 5: Status of Credit Outstanding from Previous Schemes
(Rp billion)**

Type of Scheme	Dec 1991	Dec 1992	Dec 1993	Dec 1995	Dec 1996
KIK/KMKP	1,962	1,086	645	291	279
KI/KMK	924	723	582	289	170
Total	2,887	1,791	1,227	580	449

Source: Bank Indonesia

These measures were successful in increasing credit flows as indicated in the two tables below.

Table 6: Commercial Bank's Outstanding Credits: Rupiah and Foreign Exchange
(Rp billion)

	1992			1993			1994			1995			1996		
	Investment	Working Capital	Total	Investment	Working Capital	Total	Investment	Working Capital	Total	Investment	Working Capital	Total	Investment	Working Capital	Total
Agriculture	7,050	3,231	10,281	8,730	3,327	12,057	9,865	3,995	13,860	10,564	4,961	15,525	11,737	5,893	17,630
Mining	459	303	762	310	467	777	196	603	799	256	657	913	405	1,288	1,693
Manufacturing	15,416	21,873	37,289	17,371	34,061	51,432	19,516	40,695	60,211	23,159	48,929	72,088	24,248	54,602	78,850
Trade	4,099	28,845	32,944	7,192	30,602	37,794	6,154	38,218	44,372	8,468	45,756	54,224	11,891	58,695	70,586
Services	7,150	18,720	25,870	9,110	26,714	35,824	11,405	39,401	50,806	16,827	49,757	66,584	22,162	69,493	91,655
Others	1,049	14,723	15,772	-	12,387	12,387	-	18,832	18,832	-	25,277	25,277	-	32,507	32,507
Total	35,223	87,695	122,918	42,713	107,558	150,271	47,136	141,744	188,880	59,274	175,337	234,611	70,443	222,478	292,921

- = not available.

**Table 7: Commercial Bank's Outstanding Small-Scale Business Credits
Rupiah and Foreign Exchange
(Rp billion)**

	1991	1992	1993	1994	1995
Agriculture	1,671	1,796	1,825	2,168	2,983
Mining	41	33	43	54	55
Manufacturing	2,216	2,327	2,759	3,089	3,202
Trade	10,832	10,364	11,362	12,468	13,608
Services	3,653	3,758	5,310	6,290	7,192
Others	4,449	4,343	6,479	10,095	13,886
Total	22,862	22,621	27,778	34,164	40,926

Source: Bank Indonesia.

C. Irrigation Operation and Maintenance

9. During the Program period there were shortfalls in achieving some of the objectives for the operation and maintenance (O&M) of irrigation infrastructure. After an action plan was agreed in 1993, the process restarted, and there has since been greater cost recovery and better use of irrigation resources. Table 8 summarizes the achievements made by March 1995. It also summarizes the new targets set for 1997.

Table 8: Achievements Under 1987 O&M Policy Statement

Policy Area	Target (ha)	March 1995		March 1997		March 1999	2002
		Achievement		Achievement		Target	Target
		(ha)	(%)	(ha)	(%)	(ha)	(ha)
EOM	2,200,000	1,630,000	74	1,800,000	60	3,000,000	3,800,000
ISF	700,000	670,000	96	800,120	50	1,600,000	3,800,000
Turnover	200,000	212,000	106	279,570	70	400,000	1,000,000

O&M = Operation and Maintenance; EOM = Efficient Operation and Maintenance; ISF = Irrigation Service Fee; Turnover = Turnover to Water Users' Associations.

Sources: Directorate General of Public Administration and Regional Autonomy (DGPARA); Directorate General of Water Resources Development (DGWRD), and ADB staff.

10. Greater turnover of resources to Water User Associations was achieved than targeted, and 96 percent of targeted revenue was collected through irrigation fees. Greater progress has been made on the efficient operation and management of irrigation maintenance and infrastructure since the goals were reviewed and revised in 1993. There has also been increased collection of revenue through irrigation fees.

D. Efficiency of Food Security and Stability of Prices

11. The Program aimed to optimize the economic efficiency of food crop security and stabilization policies by improving the management of the rice buffer stock and market operations. It was intended that the rice stocks held by BULOG would be capped at approximately 1 million tons. This would be achieved without reducing BULOG's ability to stabilize domestic rice prices by permitting international trade when fluctuations in rice output are sufficiently large. Table 9 summarizes the rice stocks over the last seven seasons.

**Table 9: BULOG Rice Operations, 1990/91- 1996/97
(tons)**

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Opening Stocks	1,522,684	1,001,890	1,085,403	1,850,754	757,955	649,523	2,369,560
Procurements	1,378,078	2,288,329	2,664,477	1,756,282	2,763,541	4,101,955	2,088,466
	2,900,762	3,290,219	3,749,880	3,607,036	3,521,496	4,751,478	4,458,026
Disbursements	1,898,872	2,204,816	1,899,126	2,849,081	2,871,973	2,381,918	2,636,637
Closing Stocks	1,001,890	1,085,403	1,850,754	757,955	649,523	2,369,560	1,821,389
Change in Stocks (%)	-34	8	71	-59	-14	265	-23
Imports	29,839	548,378	264,345	0	1,800,699	3,028,814	88,466
Exports	0	0	130,999	616,482	52,616	0	0

Source: Badan Urusan Logistik.

12. Over the period of the Loan, rice stocks averaged 1.2 million tons. In the three subsequent years, 1994/95, 1995/96, and 1996/97, rice stocks rose significantly to an average value of 1.6 million tons. Following bad growing conditions when the stocks fell in 1993/94 and 1994/95, BULOG replenished them by importing 1.8 million tons of rice in 1994/95, and a further 3 million tons in 1995/96.

13. BULOG holds stocks of a range of other commodities, the most significant being sugar, soybean, and wheat. Table 10 summarizes the average stocks, stock variability, and average market value of the stocks held for the four main commodities: rice, sugar, soybeans, and wheat.

14. During the Loan period, sugar stocks were higher on average than they were for the entire period, while soybean and wheat stocks were lower on average over the Loan period. With the exception of soybeans, stocks varied less in the Loan period. The higher variability in rice stocks is in large part a result of the price stabilization role that BULOG performs.

Table 10: Average Stocks, Stock Variability, and Average Stock Values

	Rice	Sugar	Soybean	Wheat
Standard Deviations (tons)				
Loan Period ^a	542,517	95,645	33,006	49,866
Entire Period ^b	625,303	229,541	33,787	154,339
Averages (tons)				
Loan Period	1,174,001	718,978	107,847	290,804
Entire Period	1,154,721	610,660	118,580	384,183
Coefficient of Variation				
Loan Period	0.46	0.13	0.31	0.17
Entire Period	0.54	0.38	0.28	0.40
Value of Average Stocks (Rp million)				
Loan Period	731,801	556,437	102,170	n.a.
Entire Period	953,512	469,826	115,721	n.a.

n.a. = not available.

^a The loan period is 1990/91- 1993/94.^b The entire period is 1990/91-1995/96.

Source: Badan Urusan Logistik and Vademekum Pemasaran, 1986-1996, Department of Horticulture, Indonesia.

15. There are considerable costs from holding these stocks. They include the costs of the physical infrastructure needed to store the commodity, transportation costs, interest costs on funds used for procurement, and operating costs. The last two rows of Table 10 average market values of the stocks held by BULOG over the Loan and entire periods. They are the funds that were tied up on average, and have an opportunity cost determined by the market rate of interest on Government bonds. Table 11 provides estimates of this interest cost for rice, sugar, and soybean stocks when the interest rate is 14 percent per annum.

**Table 11: Estimates of the Average Cost of Funds
Held in Three of the Major BULOG Stocks
(Rp million)**

	Rice	Sugar	Soybean	Total
Loan period ^a	102,452	77,901	14,304	194,657
Entire period ^b	133,492	65,776	16,201	215,469

^a The loan period is 1990/91-1993/94.

^b The entire period is 1990/91-1995/96.

Source: Badan Urusan Logistik and Vademekum Pemasaran 1986-1996, Department of Horticulture, Indonesia.

16. Rice operations had the largest interest cost for both periods because more funds were held on average in rice stocks. For the entire period the interest cost for the three commodities was Rp215.5 billion (102.6 million), while it was Rp194.7 billion (\$92.7 million).

17. BULOG recovers some costs from consumers by raising consumer prices above grower prices. However, the extent to which this can be done, particularly for rice, is constrained by the prices that may be set under the stabilization policy. When the price differences are not large enough, then BULOG costs reduce budget resources. Scope therefore exists for a conflict between the aims of the Loan to reduce the impact of the rice stocks on budget resources, and the need to stabilize domestic prices. Net revenues generated by rice, sugar, and the combined operations of BULOG are summarized in Table 12.

**Table 12: Net Surplus (Deficit) from BULOG Operations
(Rp million)**

	1993/94	1994/95	1995/96 ^a	1996/97 ^a
Rice	(309)	45	(128)	(197)
Sugar	112	20	226	106
Total	(115)	133	82	(116)

^a Estimate.

Source: Badan Urusan Logistik.

18. We were not able to obtain these data for the entire period of the Loan, but there was a deficit of Rp309 million from the rice operations in 1993/94 when 616,000 tons of rice were exported. In contrast, sugar generated net revenue of Rp112 million. Since the Loan period expired, deficits from rice operations in 1995/96 and 1996/97 are expected, while sugar is expected to provide net revenue. An important objective of the storage scheme run by BULOG is to maintain rice price stability for the benefit of both Indonesian producers and consumers. Table 13 provides information on the variability in rice prices over the last seven seasons.

**Table 13: Variability in Rice Prices
(Rp/kg)**

Season	Jakarta — Beras IR-1			Thai — Jenis 25%		
	Annual Average	Standard Deviation	Coefficient of Variation	Annual Average	Standard Deviation	Coefficient of Variation
1990/91	521.8	46.8	0.09	468.1	40.5	0.09
1991/92	596.4	33.5	0.06	476.0	25.1	0.05
1992/93	628.0	35.2	0.06	481.9	8.5	0.02
1993/94	610.2	20.3	0.03	450.2	72.5	0.16
Loan Period	589.1	46.7	0.08	469.0	13.8	0.03
1994/95	684.4	48.5	0.07	581.3	92.3	0.16
1995/96	940.5	49.8	0.05	691.3	102.1	0.15
1996/97	988.3	7.9	0.01	778.0	29.1	0.04
Entire Period	710.0	180.9	0.25	561.0	128.4	0.23

Source: Vademekum Pemasaran, 1986-1996, Department of Horticulture, Indonesia.
See Table 27.

19. There was a reduction in the within-year price variability for rice sold in Jakarta during the period of the Loan with a fall in coefficient of variation from 9 to 3 percent, an average variability of 6 percent. This was lower than the variability in the price of Thai 25% broken rice, which started at 9 percent and rose to 16 percent over the same period, an average variability of 10 percent. However, in two of the four years (1991/92 and 1992/93) Jakarta prices were slightly more variable than Thai prices. Since the Loan period, however, Jakarta prices have been considerably less variable within each year. In 1996/97 the coefficient of variation fell to 1 percent when the Thai price varied by 4 percent.

20. Price variability from year to year was higher for Jakarta rice than Thai rice over the period of the Loan and over the entire period reported in Table 13. Through the loan period the coefficient of variation was 8 percent for Jakarta rice and 3 percent for Thai rice. The difference was smaller over the entire period. These data make two points about the rice operations:

- (i) storage operations have reduced within-year rice price variability; and
- (ii) restrictions on international rice trade do not appear to have reduced the inter-season price variability below what it is in other international markets.

21. It is difficult to reduce interseason price variability using the storage operations because rice only has a storage life of approximately 12 months.

22. Other domestically produced commodities like soybeans and sugar are held in stock by BULOG, along with controls on trade (both international and domestic) to promote domestic production. Price stability is not an important objective for these commodities. Nevertheless, any resulting changes in price variability from BULOG operations in these commodities can impact on consumers and growers. Table 14 compares domestic and international price data for soybeans.

**Table 14: Variability in Soybean Prices
(Rp/kg)**

Season	Jakarta (Producer) Kedele Kuning			USA Kedele Kuning No. 2		
	Annual Average	Standard Deviation	Coefficient of Variation	Annual Average	Standard Deviation	Coefficient of Variation
1990/91	846	59.6	0.07	422	13.0	0.03
1991/92	915	29.4	0.03	432	10.8	0.03
1992/93	822	69.2	0.08	447	13.7	0.03
1993/94	981	79.6	0.08	490	34.2	0.07
Loan Period	988	47.2	0.05	448	30.3	0.07
1994/95	1132	46.5	0.04	553	30.0	0.05
1995/96	1012	96.9	0.10	543	52.5	0.10
1996/97	1104	130.5	0.12	691	28.8	0.04
Entire Period	973	120.0	0.12	511	94.8	0.19

Source: Vademekum Pemasaran 1986-1996, Department of Horticulture, Indonesia.

23. Prices varied more in Jakarta than they did internationally in three years of the Loan period, and by the same amount in 1991/92. Year-to-year price variability was lower in Jakarta at 5 percent than internationally at 7 percent. The situation has changed little since the Loan period, except that prices varied more on average in Jakarta. Over the entire period, year-to-year price variability in Jakarta at 12 percent was less than it was internationally at 19 percent.

24. Table 15 summarizes the price data for refined sugar. It shows the prices received by the sugar refineries and paid by consumers in the domestic market in the years 1989 to 1993. It also provides the FOB prices in each year from the London market. Consumer prices were less variable within each year domestically than they were internationally, however, they were more variable from year-to-year over the entire period at 14 percent than they were internationally at 11 percent. BULOG set the producer prices and they were changed irregularly. In fact, a producer price of 792 Rp/kg. prevailed through most of the period 1991-1993. Thus, BULOG operations reduced the variability of refined sugar prices for consumers and producers within each year.

**Table 15 : Variability in Refined Sugar Prices—Gula Pasir
(Rp/kg)**

Season	Producer Price	Consumer Price		International Price f.o.b. London - \$/lb	
		Monthly Average	Coefficient of Variation	Monthly Average	Coefficient of Variation
1989	650	886	0.07	5.63	0.13
1990	708	1038	0.03	5.72	0.13
1991	792	1128	0.04	4.51	0.09
1992	792	1230	0.03	4.72	0.09
1993	792	1285	0.00	5.43	0.09
Loan Period	771	1170	0.09	5.09	0.11
Entire Period	747	1113	0.14	5.20	0.11

fob = free on board.

Source: Statistical Estate Crops of Indonesia, 1995-1996, Direktorat Jenderal Perkebunan, Jakarta, 1996; and Statistik BULOG-Tahun 1983-1993; Badan Urusan Logistik, Jakarta 1994.

25. **Performance.** The rice stock was reduced to one million tons on average through the Loan period, but has since almost doubled. Rice operations reduced budget resources on average, while sugar operations raised revenue. With respect to price stability, rice prices were less variable within each year of the Loan period on average than were international prices. The same was true in subsequent years. Year-to-year price variability was higher domestically than it was internationally during the Loan period (but the difference in variability has been smaller since that time). Soybean and sugar operations had different effects on domestic prices. Soybean prices were more variable on average domestically within each year than they were internationally. The reverse is true for refined sugar prices.

E. Deregulation and Enhancement of the Private Sector

26. The Program aimed to further deregulate trade and investment in the food crop sector and promote the role of the private sector. Over the period of the Loan there has been a gradual reduction in the barriers to international trade in the food sector. Most tariffs were reduced in a sequence of almost annual deregulation packages. In May 1990 coffee exporting and marketing groups, and restrictive controls on nutmeg and *cassia vera* were abolished. In June 1991 most tariffs were reduced, and soybean meal was taken off the restricted list. In July 1992 national tariff barriers (NTBs) were lifted on maslin wheat, maize flour, rye, barley,

oats, sorghum, millet, canary seed, and other cereals. There were only minor changes to the trade restrictions on food crop commodities in 1993 and 1994. Despite this trade deregulation, however, there were only minor changes to the trade restrictions on the main commodities under BULOG control.

27. Since the Loan period there have been further reductions in many tariffs across a range of commodities. The most significant deregulation in the food crop sector occurred in July 1977 to allow sugar refineries to import raw sugar, but BULOG still maintains the right to collect and distribute refined sugar. Table 16 summarizes the tariff changes in the 1997 deregulation package.

Table 16: July 1997 Deregulation Package
Changes in the Number of Items Subject to Each Tariff Rate

Tariff Rate (%)	Number of Items Before July 1997	% Change	Number of Items After July 1997	Change (%)
0	1,399	19	1,419	20
5	2,066	29	2,275	31
10	610	8	844	12
15	816	11	455	6
20	834	12	1,156	16
25	1,025	14	975	13
30	429	6	55	1
>30	82	1	82	1
Total	7,261	100	7,261	100

Source: Kebijaksanaan Pemerintah, Ministry of Industry and Trade, 7 July 1997.

28. The average (unweighted) tariff rate has reduced from 19.7 percent in 1993 to 12 percent in 1997. The sequence of changes in the average tariff rate is summarized in Table 17.

Table 17: Average (Unweighted) Tariff plus Surcharge (%)

1993	1994	May 95 Tariff Reductions	Aug 95 Abolition of Steel Surcharge	Dec 95 Consolidation of Tariff Code	Jan 96 Tariff Reductions	June 96 Tariff Reductions	July 97 Tariff Reductions
19.7	19.5	15.1	15.0	14.6	14.2	13.1	12.0

Source: Ministry of Industry.

29. As a member of Asia Pacific Economic Cooperation, the Government has made commitments to reduce tariff rates to 5 percent by the year 2003. A group of commodities will be excluded from these reductions; these include motor vehicles and chemical products. The schedule of tariff rate changes is summarized in Table 18.

Table 18: Schedule of Changes to Tariff Rates

<1995	1995	1996	1997	1998	1999	2000	2001	2002	2003
5	T	T	T	T	T	<=5	-	-	-
10	5	T	T	T	T	<=5	-	-	-
15	10	T	5	T	T	<=5	-	-	-
20	15	T	10	T	5	<=5	-	-	-
25	20	15	T	10	T	T	T	T	<=10
30	25	20	T	15	T	10	T	T	<=10
35	30	25	T	20	T	15	T	10	<=10
40	30	25	T	20	T	15	T	10	<=10

--- = not applicable.

Source: Kebijaksanaan Pemerintah; Ministry of Industry and Trade, 7 July 1997.

30. Only the food crop commodities under the control of BULOG are now subject to NTBs. Three of them, however, are significant crops, and they include sugar cane, soybeans, and rice. BULOG distributes them and sets their farmgate, wholesale, and retail prices. Refined sugar and wheat flour are two other important processed commodities controlled by BULOG, together with less significant commodities including, garlic, charlottes, onions, and cloves.

31. Price distortions resulting from these restrictions on trade exist, and they can vary from month to month, depending on the changes in international prices and domestic demand and supply conditions. When domestic prices deviate from international prices by more than trading costs, there are potential losses in welfare to Indonesian consumers and/or producers. To determine the extent of these price deviations, Tables 19-21 summarize the differences in domestic and international prices for three major commodities, rice, soybeans, and refined sugar.

32. Table 19 summarizes the price data for rice. It compares the price of Jakarta IR-1 to the price of Thai 25 percent broken. Controls on international trade raised domestic prices above international prices by 16 percent through the period of the Loan. Since that period the premium in the domestic price has increased. It is reasonable to expect that the two prices will differ, because there are trading costs and differences in quality, but the magnitude of the difference indicates there is implicit taxation under current arrangements. The largest difference occurred in 1993 and 1995 when domestic prices were 36 percent higher. Over the Loan period the domestic price has been 16 percent higher, and over the entire period it has been 20 percent higher, where this indicates recent increases in domestic rice prices under BULOG operations. The Jakarta price is a consumer price, so the excess of the international prices over the domestic producer prices was even larger.

**Table 19: Rice Price Comparisons
(Rp/kg)**

Year	Jakarta — Beras IR-1	Thai (fob) ^a - Jenis 25%	Difference (%)
1990	522	468	-12
1991	596	476	25
1992	628	482	30
1993	610	450	36
1994	684	581	18
Loan Period	507	410	16
1995	941	691	36
1996	988	778	27
Entire Period	621	491	20

^a The fob price is measured at the gulf port.

Source: Vademekum Pemasaran 1986-1996 Department of Horticulture, Indonesia.

33. In Table 20, the domestic producer and consumer prices for soybeans are compared, with international free on board (fob) and cost, insurance, and freight (cif) prices in the US market.

**Table 20: Soybean Price Comparisons
(Rp/kg)**

Year	International		Domestic			
	fob	cif	Producer	Producer —cif (%)	Consumer	Consumer —cif (%)
1991	432	540	915	69	974	80
1992	447	559	822	47	973	74
1993	490	613	981	60	1,056	72
1994	553	691	1132	64	1,109	61
Loan Period	481	601	963	60	1,028	73
1995	543	678	1,012	49	1,151	70
1996	691	864	1,104	28	1,129	31
Entire Period	526	658	994	51	1,065	62

Source: Vademekum Pemasaran 1986-1996, Department of Horticulture, Indonesia.

34. Over the Loan period producer prices exceeded cif prices by 60 percent on average, while consumer prices exceeded the c.i.f. prices by 73 percent. In 1991 the producer price was 69 percent higher and the consumer price was 80 percent higher. By 1996 the differences had fallen to 28 percent for the producer price and 31 percent for the consumer price. These price differences provide an estimate of the implicit nominal rate of protection received by domestic producers due to the trade restrictions administered by BULOG.

35. Domestic and international prices of refined sugar are compared in Table 21. The producer prices are meant to reflect cif prices, but they are fixed for long periods of time so are likely to deviate. If anything, they are higher than international cif prices. The fob prices are taken from international markets, so are the most reliable measure of an international price. Over the Program period producer prices exceeded fob prices by 51 percent on average, while consumer prices exceeded producer prices by 52 percent. As a percentage of the fob price, consumer prices were 129 percent higher on average over the period. This provides evidence of significant implicit taxation on domestic sugar consumers, and a potential subsidy to domestic sugar refineries. The price differences are much larger than trading and refining cost margins one would expect to find from international comparisons in competitive market situations.

**Table 21: Refined Sugar Price Comparisons — Gula Pasir
(Rp/kg)**

Season	International Price (fob) Average Monthly	Producer Price (cif) Ave. Monthly	Prod/ fob (%)	Consumer Price Average monthly	Cons/cif (%)
1990	572	708	24	1,038	47
1991	451	792	76	1,128	42
1992	472	792	68	1,230	55
1993	543	792	46	1,285	62
Period	510	771	51	1,170	52

Source: Statistical Estate Crops of Indonesia 1995-1996, Direktorat Jenderal Perkebunan Jakarta, 1996, and Statistik BULOG-Tahun 1983-1993, Badan Urusan Logistik, Jakarta 1994.

36. It would appear from investigating the margins between the international and domestic prices for rice, soybeans, and sugar that there are large potential distortions to private participation in these markets; distortions which vary through time. It would be useful to undertake a detailed examination of the economic effects of the markets directly impacted by BULOG operations. For example, BULOG operations have reduced the variability in rice prices, but as a consequence domestic prices exceed international prices, where domestic consumers are taxed and domestic producers subsidized. The resulting costs to resource allocation should be compared to the benefits from the reduction in price variability. Studies of this kind would greatly assist policy-makers in setting priorities for future reforms.

37. Food crops are important inputs to food processing; it is a growing sector with considerable export potential. Refined sugar and wheat flour are significant inputs to this

sector, and the NTBs that apply to them can at times impose considerable taxes on end users. As a consequence, output in the food-processing sector is reduced, as are export earnings. For example, wheat flour constitutes approximately 50 percent of the value of inputs to noodles and 24 percent of the inputs to bread. Sugar constitutes approximately 9 percent of the value of inputs to milk products, 7 percent of bread, 14 percent of chocolate, confectionery and syrup, and 18 percent of nonalcoholic beverages. The size of the (implicit) taxes on refined sugar and wheat flour will rise when international prices rise and/or BULOG raises their domestic price.

38. There are a number of other less transparent barriers to trade.

- (i) Restrictions on the importation of used ships, forcing carriers to use smaller ships. This increases product wastage because shipments are broken into smaller lots with a greater surface area of the goods being exposed to handling damage.
- (ii) Recent bans on large retail outlets in nonprovincial cities and towns will raise the cost of commodities as selling margins rise in the absence of economies of scale.
- (iii) Customs clearance on imported commodities was changed from pre-shipment checks in foreign ports, to post-shipment checks on domestic arrival. This has dramatically slowed the receipt of imported commodities.

39. **Performance.** While there have been across-the-board reductions in the tariff rates on most commodities, the non-tariff barriers on the main food crops remain, and BULOG continues to control their prices and distribution, with the exception of raw sugar that can now be imported directly by sugar mills. Thus, there has been limited success in raising private sector participation in the food crop sector. The Government has committed to reducing tariffs to 5 percent or less by 2003 (except on a group of exempted commodities).

F. Optimization of Land Resource Allocation

40. **Sugar Cane Production.** In the past, sugar cane production was subject to area and production targets imposed on farmers. Inefficient land use resulted, particularly in Java, where land was more suited to the production of rice. There was a commitment under the Program to phase out the production of sugar cane in Java. Table 22 shows the changes in production over the last eight years.

Table 22: Sugar Cane Production
(t '000)

	1990	1991	1992	1993	1994	1995	1996	1997	Increase 1990-1997 (%)
Java	1,694	1,804	1,873	1,940	1,901	1,794	1,519	1,584	-6
Outer Islands	426	448	433	390	553	560	557	610	43
Total	2,120	2,252	2,306	2,330	2,454	2,354	2,076	2,194	3

Source: Statistik Pertanian 1995.

41. Throughout the period of the Loan sugar cane production rose on average by 12 percent on Java, and on the outer islands by 30 percent. Since that time, however, production on Java fell by an average of 12 percent and rose by an average of 9 percent outside Java. In principle, farmers in Java are no longer required to produce sugar cane. They may continue to do so, in part, because they face pressure from local cooperatives, and because it takes time to shift into other crops.

42. Production data for wetland and dryland paddy is summarized in Table 23 for the same period of time.

Table 23: Production of Paddy On and Off Java
(000's ton)

	1991	1992	1993	1994	1995	1996 ^a	1997 ^a	% Change 1991/1997
Wetland								
Java	25,555	27,278	27,408	25,659	27,249	28,136	27,874	9
Off Java	16,776	18,136	18,151	18,300	19,557	19,552	19,370	16
Total	42,331	45,414	45,559	43,959	46,806	47,688	47,244	12
Dryland								
Java	838	996	889	887	906	982	962	15
Off Java	1,520	1,830	1,733	1,795	2,032	1905	1866	23
Total	2,357	2,826	2,622	2,682	2,938	2,887	2,828	20
Total	44,688	48,240	48,181	46,641	49,744	50,575	50,072	12

^a Estimates—MOA.

Source: Statistik Indonesia 1995.

43. Over the Loan period, and in the three subsequent years, wetland and dryland paddy production increased on and off Java, despite reductions in output in 1994. The 9 percent increase in wetland paddy on Java accompanies the 6 percent reduction in sugar cane production for the entire period.

44. Areas of paddy harvested during the 1991-1995 period are reported in Table 24. The area harvested as wetland paddy on Java decreased by less than 1 percent over the Loan period, but in subsequent years increased by 6 percent. There were larger increases in the areas harvested as dryland paddy on and off Java in both the Loan period and the entire period.

Table 24: Harvested Area of Paddy on and off Java
(ha '000)

	1991	1992	1993	1994	1995	1996 ^a	1997 ^a	Change 1991-1997 (%)
Wetland								
Java	4,848	5,159	5,167	4,831	5,128	5,206	5,130	6
Off Java	4,320	4,640	4,640	4,663	4,953	5,002	4,928	14
Total	9,168	9,799	9,807	9,494	10,081	10,208	10,058	10
Dryland:								
Java	336	393	348	346	351	381	371	10
Off Java	777	911	858	894	1,007	931	907	17
Total	1,113	1,304	1,206	1,240	1,358	1,312	1,278	15
Total	10,281	11,103	11,013	10,734	11,439	11,520	11,334	10

^a Estimates—MOA.

Source: Statistik Indonesia 1995.

45. The fall in sugar cane production, the increase in wetland rice production, and the increase in wetland area harvested as paddy, all provide evidence that a switch away from the production of sugar cane to wetland paddy rice has occurred on Java.

46. **Performance.** Greater efficiency in resource allocation has been achieved after the Loan period with the shift in sugar cane production away from Java to the outer islands.

47. [ADD PARA. HERE TO INTRODUCE TABLES 25-29.]

G. Investment Program**Table 25: Food Crop Sector Investment, 1989/90-1993/94
(Rp billion)**

Item	Year					Total
	1989/90	1990/91	1991/92	1992/93	1993/94	
Public Sector (Development Budget) (Rp billion)						
A. Infrastructure Development						
1. New irrigation development	351.50	309.71	475.34	557.47	649.05	2,343.07
2. Swamp area development	55.38	55.17	68.02	87.07	65.49	331.13
3. Rehabilitation of irrigation schemes	193.68	159.11	232.69	375.32	299.15	1,259.95
Subtotal	600.56	523.99	776.05	1,019.86	1,013.69	3,934.15
B. Food Crop Production						
1. Food crop production improvement (include. land development)	72.95	162.51	225.49	231.02	213.26	905.24
2. Food crop diversification and nutrition	0.70	0.74	4.80	8.49	9.69	24.42
Subtotal	73.66	163.25	230.29	239.51	222.95	929.66
C. Environmental Program	255.51	259.00	289.96	346.80	475.42	1,626.69
D. Extension and Training	5.94	9.06	11.64	14	14.45	55.09
E. Research ^a	0.84	1.6	4.78	5.49	6.77	19.48
Total Public Sector Investment	936.51	956.90	1,312.72	1,625.66	1,733.28	6,565.07
Private Sector (Investment in Food Crops Only)						
Domestic Investment (Rp billion)	385.60	327.36	651.06	529.56	n.a.	1,893.57
Foreign Investment (\$'000)	9,020	43,017	33,690	26,700	n.a.	112,427

n.a. = not available.

^a Relating directly to food crop development only.

Sources: BAPPENAS, Ministry of Agriculture, REPELITA VI Pertanian.

**Table 26: BULOG Stocks of Sugar, Soybean, and Wheat, 1990/91-1995/96
(tons)**

BULOG Sugar (Gula Pasir) Operations

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
Opening Stock	808,702	618,748	761,553	831,241	664,369	335,375
Procurements	2,188,375	2,521,792	2,509,151	2,511,032	2,620,675	2,984,288
	2,997,077	3,140,540	3,270,704	3,342,273	3,285,044	3,319,663
Disbursements	2,378,329	2,378,987	2,439,463	2,677,904	2,949,669	3,065,032
Closing Stock	618,748	761,553	831,241	664,369	335,375	254,631
Change in Stock (%)	-23	23	9	-20	-50	-24

BULOG Soybean (Kedele) Operations

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
Opening Stock	108,884	120,351	141,904	63,734	105,399	116,247
Procurements	551,193	491,029	492,027	687,071	636,138	550,836
	660,077	611,380	633,931	750,805	741,537	667,083
Disbursements	539,726	469,476	570,197	645,406	625,290	493,539
Closing Stock	120,351	141,904	63,734	105,399	116,247	173,544
% Change in Stock	11	18	-55	65	10	49

BULOG Wheat (Gandum) Operations

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
Opening Stock	348,499	254,084	289,860	257,667	361,603	500,503
Procurements	1,692,358	2,317,669	2,332,166	2,781,965	3,423,438	3,669,639
	2,040,857	2,571,753	2,622,026	3,039,632	3,785,041	4,170,142
Disbursements	1,786,773	2,281,893	2,364,359	2,678,029	3,284,538	3,493,077
Closing Stock	254,084	289,860	257,667	361,603	500,503	677,065
% Change in Stock	-27	14	-11	40	38	35

Table 27: Price Data for Rice, Sugar, and Soybeans**Rice:****Consumer Rice Prices in Jakarta Beras IR 1 (Rp/kg)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.	S.D.	C.V.
1989	520	514	503	500	510	516	506	448	480	516	533	539	507.1	24.1	0.05
1990	546	550	550	440	451	467	519	516	524	540	569	590	521.8	46.8	0.09
1991	600	607	610	609	578	520	564	571	601	624	640	633	596.4	33.5	0.06
1992	653	682	697	628	578	595	601	610	604	623	630	635	628.0	35.2	0.06
1993	626	630	624	598	595	593	583	590	594	616	627	646	610.2	20.3	0.03
1994	650	650	650	640	640	636	662	721	726	723	745	770	684.4	48.5	0.07
1995	818	867	949	958	941	940	949	950	963	971	990	990	940.5	49.8	0.05
1996	993	995	990	977	970	982	990	990	990	993	995	995	988.3	7.9	0.01

Source: Table 1.2.3., p. 58 in Vademekum Pemasaran.

**Thailand Rice Prices Thai 25%
(\$/ton fob)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.	S.D.	C.V.
1989	258	257	265	271	297	309	340	337	325	313	294	292	296.5	29.4	0.10
1990	294	287	277	277	267	256	242	238	238	222	227	225	254.2	25.5	0.10
1991	248	272	273	242	233	235	239	245	247	236	238	222	244.2	15.0	0.06
1992	236	238	238	239	240	241	243	245	234	234	230	231	237.4	4.6	0.02
1993	232	233	224	208	192	182	182	182	183	219	271	280	215.7	34.3	0.16
1994	332	338	317	304	287	248	217	217	238	245	250	225	268.2	45.0	0.17
1995	260	264	262	265	266	297	318	325	325	358	362	350	304.3	40.2	0.13
1996	352	355	351	329	325	330	334	324	320	320	320	320	331.7	13.5	0.04

Source: Table 1.3.1., p. 90 in Vademekum Pemasaran (BULOG).

Exchange Rate:**Exchange Rate, Rp/\$**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave	S.D.	C.V.
1989	1736	1742	1751	1756	1766	1772	1774	1780	1787	1788	1794	1796	1770	20.2	0.01
1990	1805	1810	1820	1826	1831	1841	1847	1855	1861	1866	1876	1890	1844	26.6	0.01
1991	1908	1914	1927	1934	1943	1951	1957	1961	1966	1974	1981	1989	1950	25.9	0.01
1992	1998	2006	2015	2019	2024	2031	2034	2034	2038	2045	2054	2060	2030	18.5	0.01
1993	2065	2067	2069	2071	2077	2084	2093	2097	2105	2108	2102	2108	2087	16.9	0.01
1994	2126	2134	2161	2170	2173	2169	2181	2178	2186	2186	2186	2196	2171	21.2	0.01
1995	2219	2225	2230	2238	2247	2256	2273	2284	2294	2303	2313	2325	2267	36.5	0.02
1996	2305	2342	2346	2346	2345	2345	2360	2355	2351	2337	2348	2371	2346	15.7	0.01

Source: Table 9.4, p. 187 in Vademekum Pemasaran (BULOG).

Table 28: Soybeans:**Consumer Soybean Prices in Jakarta (Kedele Kuning) - Rp/kg**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.	S.D.	C.V.
1989	716	796	752	773	700	732	738	793	773	772	807	836	766	39.7	0.05
1990	864	903	966	1058	1027	975	935	899	900	912	948	992	948	57.7	0.06
1991	970	974	1011	1024	979	959	959	947	933	890	972	1072	974	46.2	0.05
1992	1077	1038	1055	1000	1046	946	981	913	907	927	905	882	973	68.5	0.07
1993	914	986	1065	1067	1183	1152	1095	1041	1035	1053	1049	1037	1056	69.6	0.07
1994	1044	1054	1055	1037	1034	1108	1153	1174	1198	1173	1160	1117	1109	61.7	0.06
1995	1142	1162	1153	1146	1153	1159	1163	1172	1168	1158	1114	1121	1151	17.8	0.02
1996	1123	1124	1137	1125	1122	1118	1135	1136	1125	1124	1147	1130	1129	8.3	0.01

Source: Table 1.2.1c, p. 21 in Vademekum Pemasaran.

Producer Soybean Prices in Grobogan (Kedele Kuning) - Rp/kg

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.	S.D.	C.V.
1989	598	610	704	731	745	721	728	726	728	722	713	758	707	50.1	0.07
1990	846	880	881	991	847	769	772	816	843	855	790	859	846	59.6	0.07
1991	897	947	953	938	927	941	862	917	—	884	910	889	915	29.4	0.03
1992	843	903	918	923	771	737	773	790	796	—	769	—	822	69.2	0.08
1993		840	925	1009	948	903	995	986	1069	1031	1128	962	981	79.6	0.08
1994	1054	1185	1169	1125	1195	1054	1131	1107	1148	1100	1167	1150	1132	46.5	0.04
1995	1030	852	1050	1157	1144	1031	903	924	1035	958	1113	950	1012	96.9	0.10
1996	853	902	974	1125	1229	1210	1127	1238	1228	1133	1162	1068	1104	131	0.12

— = not available

Source: Table 1.2.2c, p. 3 in Vademekum Pemasaran.

USA Soybean Prices - Kedele Kuning No.2- \$/t fob

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave	S.D.	C.V.
1989	297	289	295	279	279	277	269	233	227	219	227	229	260	30.3	0.12
1990	222	221	225	230	235	228	233	235	236	232	224	224	229	5.4	0.02
1991	221	223	225	227	224	221	208	224	230	219	218	216	221	5.7	0.03
1992	219	222	227	222	229	234	221	215	214	208	214	220	220	7.2	0.03
1993	223	221	223	226	230	229	265	254	247	235	—	—	235	15.0	0.06
1994	269	263	261	265	256	251	258	259	—	—	218	—	256	15.0	0.06
1995	223	225	219	222	223	230	241	238	250	254	265	279	239	19.3	0.08
1996	287	284	281	302	306	291	298	306	312	282	—	—	295	11.3	0.04

— = not available.

Source: Table 1.3 2, p. 91 I Vademekum Pemasaran (BULOG).

Table 29: Sugar:

**Consumer Prices for Refined Sugar (Gula Pasir SHS 1)
(Rp/kg)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.	S.D.	C.V.
1989	810	815	821	848	858	863	870	920	948	961	978	939	886	60	0.07
1990	982	995	996	1020	1046	1055	1058	1062	1065	1060	1060	1059	1038	31	0.03
1991	1059	1060	1066	1089	1114	1142	1166	1172	1166	1166	1167	1168	1128	47	0.04
1992	1169	1173	1193	1197	1218	1232	1253	1266	1266	1264	1262	1263	1230	38	0.03
1993	1274	1289	1290	1288	1288	1287	1285	1284	1284	1285	1282	1281	1285	4	0.00

Source: Statistik BULOG Tahun (1983-1993).

**International Prices for Refined Sugar (Gula Pasir)
(\$/t fob)**

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Ave.	S.D.	C.V.
1989	250	269	290	306	301	309	348	347	342	351	375	327	318	37.1	0.12
1990	334	357	373	363	356	318	302	275	279	257	260	251	310	45.4	0.15
1991	224	219	220	217	199	236	278	255	237	235	222	231	231	20.2	0.09
1992	216	202	210	239	242	252	267	260	232	226	224	221	233	19.9	0.09
1993	213	221	268	283	300	273	260	250	251	265	263	270	260	24.2	0.09

Source: Statistik BULOG Tahun, 1983-1993.

**TIME-BOUND ACTION PLAN TO ACCELERATE
THE IMPLEMENTATION OF THE
1987 IRRIGATION OPERATION AND MAINTENANCE POLICY STATEMENT**

A. Implementation Strategy

1. In devising means to accelerate implementation of the Irrigation Operation and Maintenance Policy Statement of October 1987, program-specific strategies are threefold.

- (i) **EOM.** The delinking of the introduction of efficient operation and maintenance (EOM) from the need for a special maintenance/prior rehabilitation, and thus a specified physical condition of an irrigation system to reduce costly and time-consuming civil works construction activities, thereby reducing the lead time needed for EOM introduction and placing the program within the financial capacity of the Government. The EOM preparation should therefore begin on any scheme whether or not it is under rehabilitation and upgrading.
- (ii) **Turnover of Small Public Systems to WUAs.** The field experience to date indicates that the success of the turnover process relies heavily on farmer participation, starting from scheme inventory to construction. Accordingly, enhancing the legal status of the Water Users' Associations (WUAs) (to borrow money, levy charges and undertaken construction on contract) is viewed as an important step in allowing greater participation of the farmers; increased equity contribution of farmers has been shown to enhance the sustainability of the turned-over schemes because farmers have greater incentive to operate and maintain facilities in which they have a direct financial interest.
- (iii) **ISF.** The legal basis for widespread introduction of irrigation service fees ISFs has now been formalized; what remains is to enact the relevant provincial and district level decrees. The sustainability of the program will be enhanced once ISF is perceived as a legal obligation for services received and, as such, is not voluntary. Similarly, farmers' commitment to ISF rests on the conviction that ISF collections will be recycled through the maintenance of their irrigation system. The ISF preparation process should begin on any scheme irrespective of whether or not it is under EOM; this has not previously been the case.

B. Proposed Time-Bound Actions

2. The actions and time frame presented below comprise a plan to improve the implementation of the major initiatives under the Policy Statement. These actions have been identified through a critical analysis of the experience to date on implementation of the major policy programs as being important to accelerating their implementation.

**TIME-BOUND ACTION PLAN TO ACCELERATE
IMPLEMENTATION OF THE 1987 IRRIGATION O&M POLICY STATEMENT**

Policy Objective	Time-Bound Target	Proposed Action
1. EOM of irrigation facilities through institutional strengthening and improvement of physical infrastructure	<p>(a) Issuance of a circular from the office of the Director General of the Directorate General of Water Resources Development to the Provincial Irrigation Services (PRIS) of various provinces, providing for introduction of EOM in an irrigation system without the requirement of prior completion of civil works for rehabilitation and upgrading of that system, i.e., annulment of the present requirement/condition that EOM can only be introduced once an irrigation system has achieved a specific physical condition.</p> <p>(b) Implement EOM over 2.2 million ha by March 1995 and to 3.0 million ha by end March 1999.</p>	<p>(a) Review and accordingly amend guidelines for the preparation of Special Maintenance (SM)/rehabilitation design, taking into account the operational requirements of the systems identified for EOM operations.</p> <p>(b) Define precise responsibilities of various agencies and officials involved with EOM at the district and subdistrict levels, including those of the Provincial Irrigation Services (PRIS), Provincial Agricultural Services (PRAS), Regional Revenue Office—Dinas Pendapatan Daerah (DISPENDA), and others.</p> <p>(c) Assess technical capability of O&M staff and identify the additional training needs of such staff and develop training modules including those for water balance analysis and water management under different cropping patterns.</p> <p>(d) Taking into account the possible introduction of needs-based budgets and medium-term (five-year) O&M plans, review and accordingly modify guidelines for preparation of scheme-specific O&M plans.</p>

Policy Objective	Time-Bound Target	Proposed Action
2. Turnover small schemes (less than 500 ha) to WUAs to give them maximum responsibilities for O&M and reduce financial burden on the Government for O&M of such schemes.	<p>(a) Issuance of a circular pursuant to Minister of Public Works' Ordinance No. 42/PRT/1989, by Director General DGWRD, specifying that the farmers/WUAs must make a contribution either in cash or in kind, towards the cost of improving irrigation facilities prior to turnover.</p> <p>(b) Complete turnover of schemes totaling 200,000 ha by end March 1995 and, on accumulative basis, increase to 400,000 ha by end March 1999.</p>	<p>(e) Assess the effectiveness of existing management information system (MIS), where available, in the provinces and identify the improvements required to make it more effective and efficient.</p> <p>(a) Prepare a detailed inventory and sociotechnical profiles of small schemes (i.e., less than 500 ha and more than 150 ha) and list WUAs/farmers served by the schemes so as to identify potential schemes for turnover.</p> <p>(b) Motivate farmers to participate actively in the planning and design of improvement works required in the scheme prior to turnover and ensure significant contribution from the WUAs/farmers for the costs of such works.</p> <p>(c) Review and modify, the construction procedures and arrangement for civil works so as to: (i) ensure improvement in construction quality; and (ii) to actively encourage WUAs to participate in the construction of civil works by allowing them to directly contract the same or participate in the construction process.</p> <p>(d) Review and modify as needed existing procedures and operational</p>

Policy Objective	Time-Bound Target	Proposed Action
3. Progressing recovery of O&M costs through levy of an Irrigation Service Fee (ISF) so that at the end of a 10-year period full recovery of O&M costs is achieved.	(a) Issuance of the requisite provincial ordinances (Surat Keputusan or SK), and regulations (Peraturan Daerah or Perda I) by the concerned provincial authorities, to enable introduction of the ISF, in line with Decree No. 6 issued by the Ministry of Home Affairs in June 1992. Issuance of the ordinance will be a condition precedent to disbursements of the Loan. The ordinances and the regulations will in particular provide for:	responsibilities of WUAs in system O&M (particularly of headworks) to incorporate river basin planning and management practices.
	(i) Introduction and collection of ISF upon issuance of the SK or Perda I.	(e) Develop and implement a comprehensive monitoring and evaluation system for small schemes transferred to farmers/WUAs so as to ensure their sustained operations.
	(ii) Institutionalization of a budgetary mechanism to ensure the use of the ISF collected in particular scheme only for the O&M of irrigation facilities in the same schemes.	(a) In the light of experience gained during the operation of ISF pilot areas, develop effective guidelines for field implementation of ISF, which among others, stipulate the initiation of ISF procedures in specific schemes even prior to completion of rehabilitation and upgrading works, or introduction of EOM therein. (b) Define precisely the respective roles and responsibilities of various officials of PRIS, PRAS, DISPENDA, and other agencies involved in systems O&M and ISF collection, and make an assessment of their capability to effectively undertake the role assigned to them so as to identify the areas in which institutional strengthening is required. (c) Based on the above, develop attaining program for the above officials including appropriate training in water

Policy Objective	Time-Bound Target	Proposed Action
4. Enhance the legal status of Water Users' Associations (WUAs) to enable them to play an effective role as regards EOM, direct operation of small schemes, and collection of ISF.	(iii) the delinking of ISF procedures from EOM.	management (crop water requirements, measurement of irrigation water discharge, rotational irrigation, etc.) and a simple record keeping.
	(iv) taking the necessary steps to collect ISF from WUAs to fail to pay.	
	(b) Implementation of ISF procedures over 700,000 ha of irrigated land by March 1995; expand area under ISF to 1.6 million ha by March 1999.	(d) Institutionalize, through appropriate legal and executive action, the role of subdistrict and village administration in the levy, collection and use of ISF for O&M of the schemes from which such fees are collected.
		(e) Design and implement a simplified MIS system for Provincial Development Planning Agency (BAPPEDA) I and II to enable these agencies to monitor effectively the implementation of the ISF program.
	Issuance of requisite ordinances/regulations (SK Bupati and Perda II) by the concerned district authorities throughout the country, conferring legal status on WUAs enabling them to, among others, play an effective role in EOM, direct operation of small schemes and collection of ISF. The regulations will stipulate that a WUA will only be registered if the proposed constitution and by-laws (AD/ART) incorporate provisions for taking action in case a member fails to pay the ISF. Issuance of the ordinance is a condition precedent to disbursements of the Loan.	(a) In line with the provisions of MHA Decree No. 12(1992) define, through appropriate subordinate legislation or administrative instructions, the precise role of WUAs in collection of ISF and a lay down procedures allowing WUAs to appropriate the amounts, so collected for meeting the costs of O&M, and specify other uses for which WUAs may spend such amounts.
		(b) Based on experience gained in the operation of the ISF pilot areas, develop and implement a suitable training program for officers

Policy Objective	Time-Bound Target	Proposed Action
		and members of the WUAs, to enhance their capability for effective collection of ISF, maintenance of simple accounting records, processing of minor civil works contracts, and monitoring progress of works.
		(c) Familiarize WUAs with the detailed procedures in acquiring formal legal status and explain to them the obligations of officers and members of WUAs on acquisition of such legal status.

AGRICULTURE SECTOR IMPACT AND SOCIOECONOMIC IMPACT OF PROGRAM

A. Agriculture Sector Impact

1. Disaggregated measures of the production of major food crops are summarized in Table 1. Section (1) of the table provides aggregate measures of production for 4 main crops at the beginning of the loan period, at the end of the loan period, and in 1997. The annual production of rice, corn and soybean were higher at the end of the loan period than they were when at the beginning. Annual cassava production declined slightly for the same comparison. Production for all four crops was higher in 1997 than it was at the beginning of the loan period. Clearly, there can be many explanations for these changes in production, but there was a general increase in food production at the end of the loan period, which has continued to the present time.

**Table 1: Food Crop Production
(t million)**

(1)		1990	1994	1997
Rice		45.18	46.64	50.07
Corn		6.73	6.87	9.33
Cassava		15.83	15.72	16.49
Soybean		1.49	1.56	1.59

(2)		1990	%	1994	%
Rice:	Java	27.18	60	26.55	57
	Other Areas	18.03	40	20.09	43
Corn:	Java	4.49	67	4.29	63
	Other Areas	2.24	33	2.59	37
Soybean:	Java	0.87	59	0.84	53
	Other Areas	0.61	41	0.73	47

Source: Ministry of Agriculture.

2. Section (2) of the table summarizes annual production at the beginning and end of the Loan period for Java and other areas to provide some indication of the distribution of these production gains. The levels of rice, corn and soybean production declined in Java in the two periods, whereas their production rose in other areas. This indicates that there has

been both resource reallocation, and growth in the food crop sector, as was envisaged under the overall Program loan objectives.

B. Socioeconomic Impact

3. The distribution of income across the entire population is summarized in Table 2 for the three years 1990, 1993, and 1996.

Table 2: Population Distribution by Income Class

\$ /cap per year [Upper Limit]	Population (million people - urban plus rural)					
	1990		1993		1996	
\$77	27.33	15.46%	6.23	3.34%	0.27	0.14%
\$102	36.94	20.89%	18.87	10.12%	2.50	1.28%
\$154	53.43	30.22%	52.72	28.26%	20.86	10.67%
\$205	26.44	14.95%	38.64	20.71%	35.26	18.03%
\$307	20.09	11.36%	37.23	19.96%	57.67	29.49%
\$409	6.43	3.64%	15.56	8.34%	31.15	15.93%
\$512	2.68	1.52%	7.28	3.91%	16.83	8.61%
\$768	2.38	1.35%	6.41	3.44%	18.37	9.39%
\$1,023	1.06	0.60%	3.60	1.93%	12.62	6.45%
\$1,535						
> \$1535	176.79	100.0%	186.54	100.00%	195.52	100.00%

Source: Susenas 96 — Buku I, p.36.

4. Tables 3 and 4 shows how a greater proportion of the population has moved into higher income brackets in each successive year, and Table 5 provides evidence of an overall reduction in poverty.

**Table 3: Trends in Poverty Incidence
(1990-1996)**

Year	Urban		Rural		Urban and Rural	
	No. ('000)	Percent Share	No. ('000)	Percent Share	No. ('0000)	Percent Share
1990	9,350.4	16.7	17,781.4	14.3	27,131.8	15.1
1993	8,807.1	13.4	17,003.4	13.8	25,810.5	13.7
1996	7,150.7	9.7	15,343.1	12.3	22,493.8	11.3

Source: Welfare Indicators 1996, BPS Biro Pusat Statistik, Jakarta, Indonesia.

**Table 4: Percentage Share of Expenditures of
Several Population Groups and Coefficient Gini
(1990-1996)**

Year	Lowest	Middle	Highest	Coefficient Gini
1990	21.3	36.7	41.9	0.321
1993	20.3	36.9	42.8	0.335
1996	20.2	35.1	44.7	0.356

Source: Welfare Indicators 1996, BPS Biro Pusat Statistik, Jakarta, Indonesia.

**Table 5: Per Capita Monthly Expenditure
By Food and Nonfood Group
(1987-1996)**

Year	Food		Nonfood		Total Amount (Rp)	Annual Incremental Rate (%)
	Amount (Rp)	Share (%)	Amount (Rp)	Share (%)		
1987	13,559	61.3	8,566	38.7	22,125	—
1990	18,272	60.4	11,999	39.6	30,271	11.0
1993	24,772	56.9	18,793	43.1	43,565	12.9
1996	38,723	55.3	31,339	44.7	70,062	17.1

— = not applicable.

5. Figure 1 plots constant wages paid to rural workers for planting in four rural regions.

6. The differences in wages across these regions were reduced through the entire period, where they rose in West Java, East Java and W.N. Tengarra to the levels paid in West Sumatra. Some of the largest increases occurred during the period of the loan. In 1994, planting wages grew by 19 percent in West Java, 13 percent in East Java, 9 percent in West Sumatra, and 17 percent in W.N. Tengarra.

