# SECTOR SYNTHESIS OF POSTEVALUATION FINDINGS

# IN THE

# INDUSTRIAL CROPS AND AGRO-INDUSTRY SECTOR

**November 1996**

## ABBREVIATIONS

| | | |
|---|---|---|
| AOTA | - | Advisory and Operational Technical Assistance |
| DMCs | - | Developing Member Countries |
| EA | - | Executing Agency |
| EIRR | - | Economic Internal Rate of Return |
| FIRR | - | Financial Internal Rate of Return |
| PCR | - | Project Completion Report |
| PEM | - | Postevaluation Mission |
| PPAR | - | Project Performance Audit Report |
| PPTA | - | Project Preparatory Technical Assistance |
| SSPF | - | Sector Synthesis of Postevaluation Findings |
| TA | - | Technical Assistance |

## NOTES

In this Report, "$" refers to U.S. dollars.

**SS:ICA-1**

## I. INTRODUCTION

1. This Sector Synthesis of Postevaluation Findings (SSPF) provides an analysis and synthesis of postevaluation experience, and identifies the important issues and lessons learned which can be used in improving the formulation, implementation and performance of future development projects in a sector. The Report presents a synthesis of postevaluation findings in the Industrial Crops and Agro-Industry Sector and is based on a review of the findings of postevaluation reports prepared by the Post-Evaluation Office (PEO), including Project Performance Audit Reports (PPARs), Impact Evaluation Studies, and Country Syntheses of Postevaluation Findings. It also takes into account the information and data stored in the PEO's Postevaluation Information System.

## II. BANK OPERATIONS IN THE SECTOR

2. The Bank's activities in the industrial crops and agro-industry sector have dealt with the processing and, when involving plantations, the cultivation in the public sector of a wide range of crops such as rice, sugarcane, tea, oil palm, jute, cotton, rubber, and copra. The sector is a major contributor to the agricultural economy of many of the Bank's developing member countries (DMCs). Over the years, the main rationale for the Bank's assistance to the sector has been to improve the trade balance of concerned DMCs by expanding production and more efficient processing of crops, thereby increasing exports or reducing imports. Common development objectives under Bank-assisted projects included (i) promoting diversification of cropping patterns, (ii) achieving self-sufficiency in food, (iii) increasing the participation of small farmers in production and income expansion, (iv) providing employment for the rural workforce, (v) optimizing land use and protection of the environment, (vi) strengthening intersectoral linkages and institutional capacity, and (vii) reducing poverty.

3. Bank lending to the sector started in 1968 with a loan of $2.0 million to Sri Lanka for the First Modernization of Tea Factories Project. As of 31 July 1996, the Bank had approved 51 loans for 47 projects in the sector amounting to $1,216.8 million (Appendix 1). This represented two percent of total Bank lending and nine percent of the Bank's lending to the agriculture sector. Of the total lending to the industrial crops and agro-industry sector, 52 percent went to Group A countries and 48 percent to Group B countries. Only one loan in the sector, representing less than one percent, was received by a Group C country, namely, Malaysia. Indonesia accounted for 85 percent of the share of Group B countries. The People's Republic of China and Sri Lanka each received about 25 percent of the share of Group A countries.

4. Trends in loan approvals show a marked increase in lending to the sector. Bank financing rose from an average loan size of $6.6 million per annum during 1968-1976 to $20.6 million during 1977-1985, and to $49.5 million for the decade ending 1995 (see Table 1). In the early years, Bank operations in the sector consisted of small-scale projects for rehabilitation and expansion of agro-industrial factories and mills, for increasing production, and improving the quality of cultivated crops. Later projects in the sector had broader scope, and included, as well, larger-scale import-substitution schemes.

5. Country-specific technical assistance (TA) approvals in the sector amounted to

$24.5 million as of 31 July 1996 (Appendix 2), of which $14.8 million, or 61 percent, was for project preparatory technical assistance (PPTA) and $9.6 million (39 percent) was for

**Table 1: Loan Approvals in the Sector**
(in $'000)

| Country Group | 1968-1976 | | 1977-1985 | | 1986-1995 | | Total | |
|---|---|---|---|---|---|---|---|---|
| | No. | Amount | No. | Amount | No. | Amount | No. | Amount |
| A | 10 | 57,300 | 14 | 220,100 | 8 | 355,590 | 32 | 632,990 |
| B | 6 | 51,830 | 6 | 191,200 | 6 | 337,960 | 18 | 580,990 |
| C | 1 | 2,800 | - | - | - | - | 1 | 2,800 |
| Total | 17 | 111,930 | 20 | 411,300 | 14 | 693,550 | 51 | 1,216,780 |

advisory and operational technical assistance (AOTA). Group A countries received 49 percent of PPTAs by value and 80 percent of AOTAs, or an overall share of 61 percent. Group C countries had less than one percent share of overall TA funding, representing one AOTA. Indonesia received the largest individual country share of TAs, representing 27 percent of the total funding for TA approvals.

## III. IMPLEMENTATION EXPERIENCE AND PERFORMANCE RESULTS

6. This section discusses the efficiency of implementation arrangements as well as the overall performance results, and the major factors affecting implementation and performance of projects. A list of Postevaluation Reports prepared for the sector and a summary of postevaluation results are provided in Appendixes 3 and 4.

### A. Postevaluation Coverage

7. Of the 47 Bank-financed industrial crops and agro-industry projects, 35 have been completed and 21 have been postevaluated. The 21 postevaluated projects, involving a total final investment of $655.7 million, with Bank financing of $258.4 million, were approved between 1968 and 1984. The postevaluated projects comprise 12 projects in Group A countries (six in Sri Lanka, two in Myanmar, and one each in Bangladesh, Nepal, Pakistan, and Western Samoa), 8 projects in Group B countries (five in Indonesia, two in the Philippines, and one in Papua New Guinea), and one project (Malaysia) in Group C countries. About two-thirds of the postevaluated projects were completed during the 1980s.

### B. Objectives and Scope of Postevaluated Projects

8. The postevaluated projects in the industrial crops and agro-industry sector generally aimed to (i) increase production and improve the quality of output, (ii) assist the modernization and expansion of processing industries, and (iii) enhance living conditions and farm incomes. These objectives were to be achieved through the rehabilitation and development of industrial crop plantations and processing facilities. Project components generally included: (i) field development comprising infilling, replanting, underplanting and intercropping, estate; (ii) smallholder development; (iii) strengthening of research and extension, and (iv) the establishment, modernization, rehabilitation and/or expansion of mills, factories and refineries. Emphasis was also given to reducing post-harvest and end-product waste, making more efficient use of by-products, and improving packing and storage facilities.

## C. Implementation Experience

### 1. Project Design

9. While good project design was a major factor enhancing project performance, conversely, deficiencies in project design also affected the performance of projects. Projects were not always appraised with the benefit of adequate preparatory studies, detailed engineering designs and specifications for facilities and equipment, which contributed to their lesser performance. For some projects it was found that project targets were set without taking into consideration the institutional capabilities of the executing agencies (EAs), the shortage of qualified staff and skilled labor, and policy constraints. As a result, project designs were often too ambitious and optimistic to be fully implemented.

10. Another factor affecting the lesser performance of some projects was the introduction of unproven technologies for which the facilities and equipment proved unsuitable for local conditions. Other design shortcomings stemmed from a lack of understanding and assessment of the beneficiaries' needs, particularly in the earlier projects which did not include social evaluation of project beneficiaries, and pointed to the importance of including provisions for beneficiary participation or feedback during project implementation. Experience also emphasized that there was need to take sufficient account of the country's sociopolitical realities in situations where new schemes inevitably affected traditions, and to avoid rigid and prescriptive approaches taken from models which were not suited to local conditions.

### 2. Changes in Project Scope

11. While the major components were substantially implemented as planned in about half of the postevaluated projects, changes in project scope also took place, ranging from minor modifications to drastic reductions and deletions of components. Several factors, both internal and external, accounted for the revisions, but most of the changes reflected inadequate project preparation, weaknesses in design, and the unrealistic assessment of the EAs' implementation capability.

### 3. Implementation Delays

12. All but one postevaluated project experienced implementation delays. The average implementation period was 6.6 years compared to 4.3 years estimated at appraisal (see Appendix 5). Significant causes for time overruns were procurement problems, slow recruitment of consultants, shortage of local currency funds, inexperience of executing agencies, changes in project design and scope, delays in major civil works, and lack of qualified staff. External factors such as changes in government policies, depressed state of industries, natural calamities and security problems also contributed. The average delay in Group A countries was 3.2 years, compared to 1.2 years in Group B countries and 0.8 years in the Group C country. While reasons for implementation delays are common to all countries, Group A countries were particularly affected by procurement difficulties, ineffective executing agencies, lack of qualified staff and changes in project design and scope. Experience also indicated that projects with significant research components require a longer time frame to allow for the dissemination of results to farmers and the adoption of new technology.

13. The procurement of goods and services, under most projects, experienced difficulties due to a number of factors, including (i) procedural requirements of both the Government and the Bank, (ii) unfamiliarity of EAs with the Bank's procedures, (iii) incomplete procurement arrangements at appraisal, (iv) inappropriate choice of equipment procured, and (v) inadequate capabilities of suppliers to meet large orders for equipment. Special factors were evident in the implementation of certain projects. With the Jute Mill and the Rice Processing Industries projects in Myanmar, procurement problems were encountered as a result of government's strong reservations about hiring expatriate consultants, which led to wrong decisions on machinery and equipment to be procured, and because of a lack of technical experience on the part of the Bank, which limited the Bank's ability to advise the executing agency properly on the selection of equipment. In other instances, the unsynchronized procurement of goods limited their use for the intended purposes, and also deterred project implementation.

14. Notwithstanding the problems experienced with procurement, in a few projects, such as the Gohor Lama and the Palm Oil Processing projects in Indonesia and the Coconut Development Project in Sri Lanka, the efficacy of the approach adopted to procurement contributed significantly to implementation efficiency. These projects demonstrated the appropriateness of the advance action procedure, the advantages of executing agencies' familiarity with the Bank's procedures and guidelines, and the practicality and expediency of the requirements stipulated by the Bank for procuring goods and services.

### 4. Cost Variations

15. Ten of the 21 postevaluated projects incurred cost overruns which averaged 56 percent (see Appendix 6). These projects, which were mostly implemented in the early seventies, were adversely affected by the worldwide inflation resulting from the 1973 oil crisis. Other factors contributing to the cost overruns were delays in project completion due to the need for changes in project scope, exchange rate movements, and underestimation of costs at appraisal. Concerned projects in both Group B and Group C countries had an average cost overrun of 61 percent, slightly over Group A countries' 53 percent. Eleven projects, on the other hand, experienced cost underruns which averaged about 31 percent. The underruns were brought about mainly by reductions in project scope, overestimation of the allowance for contingencies, and devaluation of the local currency.

### 5. Organization and Management

16. Management of many postevaluated projects was found to be inefficient and hampering project execution. A number of projects suffered from a high turnover of key staff, frequent changes of project director/coordinator, and transfer of EAs to new ministries. Other problems were the lack of adequate and timely counterpart funding, little autonomy and accountability of management, lack of discipline, and political interference. Coordination arrangements for projects that involved more than one implementing agency were often inadequate, which led to coordination problems.

### 6. Bank Supervision

17. The Bank's assistance to the sector was, on occasions, for projects new to the Bank, or more frequently, dealt with the introduction of technologies that were new to the EAs. Moreover, some of the EAs had little or no experience in implementing such projects. While these circumstances called for special attention by the Bank to project supervision, it was a common finding that implementation was constrained by (i) the infrequent and short review missions, (ii) the inadequate technical competence and knowledge of staff, particularly in projects approved in the early years, and (iii) a lack of staff continuity and ineffective follow-up.

## D. Performance Results

### 1. Physical Achievements

18. The construction and installation of project facilities were considered generally satisfactory, and the workmanship in civil works construction to be of acceptable standard. Facilities under some components were not constructed, or were delayed, as a result of a shortage of local currency funds, design problems, and difficulties in land acquisition. The choice of machinery and equipment was generally appropriate. The related infrastructure such as improved and new roads, irrigation network, offices, workshops, and storage and housing facilities generally followed the design specified at appraisal.

### 2. Operational Performance

19. Best achievements were noted with agronomic improvements and estate cultivation, rehabilitation and replanting. A number of projects made useful contributions to achieving self-sufficiency in food, increased productivity, improved technical efficiency, enhanced incomes and standards of living for the poor and, to a certain extent, reduced wastage. Although exogenous to project design, significant steps toward privatization enhanced the outputs of some projects, notably the tea plantations/private estates in Sri Lanka.[1]

[1] Third Tea Development Project (Loan No. 472-SRI(SF)) and Plantation Sector Project (Loan No. 712-SRI(SF)).

20. National crop production targets were, however, generally not met, reflecting a less than expected catalytic impact from projects. The modernization of tea factories in Sri Lanka, for example, improved operating efficiencies but did not lead to a significant expansion in national production. Inadequate support services for credit, extension, agro-chemicals and seed were also constraints. Planting of low-yielding seedlings which continued to predominate in some projects, unsuitable timing of planting, pest infestations, droughts and political unrest variously depressed production. Unattractive pricing policies limited the incentive for growers to increase production. Inappropriate regulations and fiscal policies undermined the sustainability of improvements already achieved. Thus, while many of the Bank-financed projects improved technologies and cultivation practices, these improvements could not be sustained after project completion.

21. The performance of mills and factories on many projects was constrained by technical deficiencies, lack of qualified personnel and skilled workers, management shortcomings, inadequate funding for maintenance, and shortages of spare parts. Accordingly, time efficiencies of factory use were generally low which was often exacerbated by the lack of agricultural raw materials for processing. As a result, while the mills and factories constructed under postevaluated projects were generally capable of producing at rated capacities, many were found to be working below capacity.

### 3. Institutional Development

22. Postevaluation experience revealed that the major constraints to institutional development were (i) weak EA administrative structure, (ii) inadequate accounting and financial management and deficient monitoring, (iii) a lack of competent counterpart staff, and (iv) an inadequate compensation and reward system. While nearly all projects experienced these constraints, they were more evident in the projects in Group A countries where the lack of an efficient organizational structure and weak interagency relationships resulted in overlapping functions and coordination problems.

23. The highly centralized administrative structure found in many projects in Group A countries imposed a rigidity which impeded the achievement of institutional objectives. In the Jute Seed Project in Bangladesh, for example, weak policy planning at the central level contributed to a lack of flexibility and overcentralization of decision making and constrained research output. Similarly, the tea sector in Sri Lanka operated in a complex centralized institutional environment aimed at standardizing and consolidating management of the sector which ultimately did not improve the operation and financial returns of the industry.

24. A major area of concern in a number of projects in the sector has been the management difficulties experienced by the government corporation sector. In the Plantation Sector Project in Sri Lanka, the long-term transfer of management and operations of the estates to the private sector was seen to ensure long-term sustainability of the project structures and benefits. The ongoing privatization of the corporation sector in Sri Lanka was also perceived to resolve difficulties which were believed to have created some of the underachievements of the Sevanagala Sugar Development Project. Government policies toward privatization were strongly supported by the Bank. However, the privatization process has been slow and has not always had the beneficial financial impact expected. Under the Sevanagala Sugar Project, it was thought that unburdening management from bureaucratic procedures would revitalize the sector. However, project experience reveals that privatization should have been accompanied by liberalization policies to

promote competition. The PPAR on the Agro-Processing Project in the Philippines highlighted the difficulty of finding farmers' cooperatives which have the sufficient financial resources and managerial capabilities to operate the facilities. It was stressed that factors which influence the long-term implications of privatization on the redistribution of benefits and social services should be carefully considered by government and adequate measures taken accordingly.

25. Most projects included provisions for both overseas and local training and fellowships for technical and operating staff. Training was conducted in such areas as operation and maintenance of factories and machinery, financial management, and agricultural extension, as well as various specialized fields. The training programs were considered to have resulted in marked improvements in the skills and competence of the participants. Examples included the improved contact with farmers, dissemination of technical information and technology transfer on the part of agricultural extension personnel and the improved accounting and record keeping skills of clerical staff. On the other hand, it was also considered that the scope of the various training programs was rather narrow and that training should have been implemented on a larger scale. In some projects, technical staff did not benefit substantially from training as it was not fully carried out as envisaged nor timely implemented. This appeared to have affected the operation of the project mills and plants. Another constraint affecting project continuity was the reported rapid turnover among technical staff in some projects who leave after training for more favorable employment.

### 4. Financial Performance

26. Financial reevaluation for most of the postevaluated projects was hindered by difficulties in isolating the financial performance data pertaining to individual project components. For about one-half of the projects it was not possible to recalculate the financial internal rates of return. The re-estimated FIRRs for the Jute Development Project in Nepal, the Gal Oya Sugar Industry Project in Sri Lanka, the Coconut Oil Mill Project in Western Samoa, and the reevaluated Gohor Lama Palm Oil Processing Project in Indonesia, while positive, were below appraisal estimates due to various factors, including higher operating costs and capacity underutilization, increased investment costs, lower than expected output prices and escalating production costs. Negative or marginal rates of return were obtained for the Rice Milling Project in Pakistan, the Agro-Processing and Marketing Project in the Philippines, the Third Tea Development, the Plantation Sector, and the Sevanagala Sugar Development projects in Sri Lanka, and the Nucleus Estate and Smallholder Cotton Project in Indonesia. The main factors contributing to the considerable losses incurred by these projects were the higher than expected production and operating costs, lower yields, higher procurement prices, lower rate of capacity utilization, and delayed project completion, compared with appraisal expectations.

27. The PPARs drew attention to the likely adverse impact on the future financial viability of the projects. Common likely adverse impacts in the absence of reform included inflexible pricing structures imposed by government and institutional constraints on the availability of inputs for processing. Postevaluation also drew attention to the need for closely monitoring project entities' operating expenses and liquidity positions.

### 5. Economic Results

28. The projects were generally expected to produce benefits through increased production of industrial crops and through increased output from agro-processing industries. In a

number of projects, lack of reliable data arising from poor project monitoring constrained the undertaking of detailed EIRR calculations. Of the 16 postevaluated projects for which EIRRs were recalculated, half had EIRRs ranging from negative to 7 percent. The significant drop in EIRR from levels expected at appraisal was commonly attributed to increases in economic investment costs, much lower than anticipated yields, significantly higher production costs, reduced market prices, and delays in project completion. Three postevaluated projects exceeded the anticipated EIRRs at appraisal. These projects, which related to mainly oil and coconut mill projects, showed higher than expected prices and yields.

29. PPAR findings highlighted the need for more thorough scrutiny and analysis of the economic justification for projects. The reliability of comparative advantage analysis in the production and manufacture of industrial crops as a tool for indicating economic potential was questioned in view of the poor performance of the projects. Institutional and legal constraints in the sector were considered to have decreased returns and benefits to the economy.

### 6. Socioeconomic Impact

30. Most of the projects were seen to have created employment opportunities, increased farmers' incomes, improved the quality of social services through provision of better access to education, health, sanitation and potable water, and to have helped raise the living conditions of the farmers and settlers. Smallholder development was seen to have been successful at providing productive employment to the landless poor, and estate cultivation projects were seen to have enhanced the socioeconomic life of the settlers and to have had a favorable demonstration effect on the neighboring communities. The Impact Evaluation Study of Bank assistance to the sector in Sri Lanka indicated that in terms of socioeconomic development, the Bank-financed projects facilitated the transfer of subsistence smallholders and landless persons into market-oriented production.

31. The design of projects placed considerable emphasis on social welfare, such as provision of water supply, day care centers, health care centers, hospitals and dispensary facilities and recreational centers, which generally benefitted children and women. Better working conditions, including housing, assisted women who accounted substantially for the work force of plantation estates, performing such jobs as picking of leaves, tapping rubber trees and weeding.

32. However, while there were clear indications that projects had generally improved the quality of life of beneficiaries through increased incomes, it was found that increases in farmer incomes were occasionally relatively small and/or that only a few farmers had benefitted. In some projects which were intended to essentially benefit smallholders, only very few authentic smallholders actually benefitted, since most of those selected farmed relatively large areas. In other cases, procedures to obtain subsidy or credit were long and complicated and those responsible for administering the subsidy schemes were regarded to have favored larger owners. Eight projects which were formulated in the earlier years when the role of the Bank in socioeconomic aspects was still uncertain, did not specifically address issues on the relief of poverty. These accounted for some 38 percent of the projects postevaluated to date.

33. Project experience showed that it would be desirable to evaluate the comparative effectiveness of existing settlement programs, e.g., estate cultivation and smallholder schemes - their roles, needs and interdependence, to provide policy guidance to the country, as well as for the Bank's operations in the sector. It also highlighted that inclusion of poverty alleviation, a focus on

smallholders, and identification and dissemination of appropriate technology as explicit objectives, would have enhanced developmental impacts and secured higher socioeconomic benefits.

### 7. Women in Development

34. Most of the Bank-assisted projects in the early 1980s did not provide special focus on women either as beneficiaries or participants in implementation. However, since the family is the primary economic unit, especially for smallholder areas, the projects thus indirectly provided jobs for women. In a few projects the PEMs observed increasing involvement of women in such tasks as weed control, fertilizer application, harvesting and post-harvest activities. It was noted that the growing involvement of women in coconut operations could possibly require the recruitment of female extension officers. Other activities engaging women included rubber tapping, food crop cultivation, marketing and fruit and vegetable trading. In some estates and factories women workers were engaged in gender-differentiated tasks. In these cases opportunities for gainful activities were provided which in turn augmented family incomes. In the mills and factories elsewhere, however, employment of female workers was limited.

### 8. Environmental Impact

35. Since virtually all the projects postevaluated were appraised prior to the time that the Bank instituted strict environmental screening and reporting procedures, information on which to base environmental impacts is, for the most part, not available. Beneficial impacts were noted in some projects, including the prevention of soil erosion, the introduction of new cultivation practices and retention of soil micro-flora and moisture through preservation of cane trash. Environmental concerns were observed in the Gohor Lama Palm Oil Processing Project and the Sevanagala Sugar Development Project. The Gohor Lama PPAR reported that the untreated effluent discharged from the palm oil mill polluted a nearby river, making the water unsuitable for bathing and drinking. This situation has since been brought under control with the installation of an effluent treatment plant in 1985. In the Sevanagala project, concerns were expressed regarding the possible contamination of soils and ground water from discharge of acidic distillery wash to storage ponds leading to the Walawe river.[1] Environmental authorities were also bothered about the burning of large quantities of boiler fuel and firewood due to inefficient cane crushing operations. Other concerns raised at appraisal covering the use of agrochemicals did not arise or were seen to be under control.

## E. Overall Achievements and Results

36. Overall, eight (or 38 percent) of the 21 postevaluated projects were considered generally successful, eight (38 percent) were rated partly successful, and five (24 percent) were unsuccessful (see Appendix 7). One project in Malaysia, representing Group C countries, was rated generally successful. In terms of investment costs, the generally successful projects comprised 44 percent, partly successful projects 27 percent, and unsuccessful projects 29 percent. By amounts of loans disbursed, generally successful projects made up 32 percent, partly

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[1] It was noted that the worldwide practice of neutralization and field spreading would eventually be adopted.

successful projects 32 percent, and unsuccessful projects 37 percent.

37. Bank assistance to the sector generally helped improve land use, generate employment opportunities, and modernize and rationalize agro-processing industries by installing essential machinery and equipment and thereby providing opportunities for increased productivity. Most projects made significant contributions to the social development of the countries by improving the living conditions of farmers and settlers and providing better access to education, health and sanitation. New technologies embodied in the modern machinery enhanced labor productivity, while scientific standards of research were raised through the provision of physical facilities and overseas training.

38. In overall terms, however, physical targets set at appraisal under most projects were not achieved. Increases in production or improvement in quality of industrial and food crops were often below anticipated levels due to the substantially lower productivity in terms of yield. In the research-oriented projects, the objective of developing high performing varieties was only partly achieved. Moreover, the sustainability of projects was often marked by uncertainty as to the extent to which facilities, infrastructure, personnel and supporting services could be maintained in the future.

## IV. ISSUES AND LESSONS LEARNED

39. This section summarizes the critical sectoral issues and major lessons learned from postevaluation experience.

### A. Key Issues for the Future

40. Based on the findings and results of postevaluation studies undertaken in the sector, the key issues for the future include: policy framework, strengthening of research and extension services, and privatization.

#### 1. Policy Framework

41. Changes in the macroeconomic environment had significant impact on project performance. In the more successful projects, government efforts to maintain macroeconomic stability in the economy through effective monetary and fiscal policy measures helped maintain the projects' economic viability despite cost increases and low capacity utilization. On the other hand, unpredictable changes in government policies tended to foster an atmosphere of uncertainty that had detrimental effects on the levels of production inputs. The financial performance of the less than successful projects reflected, among other factors, the effects of unfavorable pricing mechanisms. Distortions in the incentive framework were inherent in policies relating to export restrictions, compulsory domestic sales, price controls, export taxes, antiquated taxation system, and dependence on subsidies continued to penalize efficiency. Since long-term sustainability of the projects depends to a large extent on pricing mechanisms, due consideration should be given to pricing and marketing aspects during project formulation.

42. Project experience also pointed to the need to develop long-term strategies for

restructuring existing policy measures related to production, processing and distribution of industrial crops and agro-industrial products. Stronger efforts should be made to reduce production and processing costs, contain wage levels and improve productivity. Flexible policy approaches, including more favorable pricing policies and private sector participation, should be adopted to motivate producers to improve productivity and quality, and to encourage private agro-industries to modernize and rationalize inefficient facilities.

### 2. Strengthening of Research and Extension Services

43. While some progress was achieved in upgrading research capabilities, the state of research in the sector generally lacked direction and coordination due to the limited receptiveness of some EA staff to new ideas, lack of cooperation among them, isolation from external scientific developments, and the absence of a problem-oriented approach to research. These hampered organized efforts to develop high performance varieties. The emphasis given to improving production rather than on education deprived staff of the opportunity to acquire the depth of knowledge required for greater research output. Research objectives were also somewhat unrealistic as they were formulated without due consideration to the scarcity of technically qualified people. Current efforts at effectively disseminating the findings of research at the farm level and establishing appropriate linkages with extension services were considered inadequate, as well as the development of linkages with institutions abroad and exchange of scientific experience, research skills and scientific literature. On the part of the Bank, the low priority accorded by the DMCs for strengthening research and extension services, in terms of adequate budget and trained manpower, has made it difficult to assist the DMCs in improving these support services.

44. Research should focus on reducing production costs, input requirements and efficiency in different production systems. Future efforts should be directed towards improving the quality of processed products, cost reduction and development of new products. Project experience indicated that the development of applied research suited to local conditions is a prerequisite for establishing an effective technical framework on which to develop extension activities.

45. The lower than expected crop yields achieved under most of the postevaluated projects warrants closer analysis of field operation strategies. Project experience suggests that success of the extension services in contributing to higher yields has been limited. Major constraints faced by the extension services include (i) the number of staff not keeping pace with the number of new farmers settling on the estates and as smallholders, (ii) the low ratio of extension workers to farmers, and (iii) a heavy administrative work load leaving little time for actual extension work. Postevaluation findings indicate that extension services would be more effective if they were integrated with other support activities such as credit supply, inputs delivery and marketing.

### 3. Privatization

46. Most governments have recognized the inefficiency of their public enterprises and the need for privatization. Most have in place legislation and a development plan to facilitate the privatization process. However, progress toward privatization has generally been much slower than anticipated, reflecting a reluctance on the part of governments to divest of ownership rights, accept realistic values, and allow foreign participation. The presence of legal and bureaucratic obstacles has also been a factor. Importantly, experiences also show that

private sector investment is not readily forthcoming unless pricing mechanisms are free of government controls and the marketing and distribution systems for inputs and outputs have been deregulated. There is a need in the design of future programs/projects toward privatization for the agro-industry sector, to ensure the macroeconomic framework controlling pricing, marketing, and distribution is consistent with the environmental mechanisms needed. In the tea sector in Sri Lanka, observation of the sector's performance over two decades revealed that the private sector more than compensated for the decline in the public estate sector's production so that the country retained its market share.

## B. Major Lessons Learned

47. In summary, the major factors which enhanced project performance were (i) the appropriateness of project design, (ii) macroeconomic conditions and appropriateness of the Government's policy framework, (iii) the experience and capability of the executing agency, (iv) the efficacy of procurement arrangements, where there was familiarity with the Bank's procedures and guidelines.

48. The major factors contributing to lesser performance were (i) inappropriate justification criteria, (ii) inadequate project preparation and insufficient technical inputs, (iii) institutional constraints which affected the availability of local funds and which were dependent on special coordination arrangements, political approvals continuity of management, effective research and extension, (iv) inflexible procurement arrangements, and insufficient Bank supervision/reviews, and (v) the lack of attention given to ensuring extension services were adequately funded and directed.

49. Project performance was also strongly influenced by exogenous factors, particularly the conduciveness of the policy environment and unfavorable developments in the international market affecting output prices, exchange rates, and the price of imported inputs.

50. A checklist and further qualification and discussion of the issues and major lessons learned is given in Appendix 8.

## APPENDIXES