ASIAN DEVELOPMENT BANK

IMPACT EVALUATION STUDY

OF

BANK ASSISTANCE TO THE INDUSTRIAL CROPS AND AGRO-INDUSTRY SECTOR

IN

SRI LANKA

July 1996
CURRENCY EQUIVALENTS

Currency Unit - Sri Lanka Rupees (SLRs)
SLRs1.00 = $0.0203
$1.00 = SLRs49.33

ABBREVIATIONS

CTC - Cut-tear and curl
IEM - Impact Evaluation Mission
JEDB - Janatha Estates Development Board
MTIP - Medium Term Investment Program
NSA - Net Sales Average
RPC - Regional Plantation Corporation
SLSPC - Sri Lanka Sugar Plantation Company

WEIGHTS AND MEASURES

ha - hectare
kg - kilogram
km - kilometer
t - ton (metric)

NOTES

(i) The fiscal year (FY) of the Government ends on 31 December. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY1995 ends on 31 December 1995.

(ii) In this Report, "$" refers to US dollars.

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I. INTRODUCTION

1. The industrial crops and agro-industry sector in Sri Lanka covers the production and processing of (i) products from tree crops such as tea, rubber, and coconuts; (ii) perennial crops such as peppers, spices, beverage crops (coffee and cocoa), fruit and nut crops (banana, passion fruit, mango, and cashew nuts), and (iii) sugar cane.

2. The Bank has been the major source of external assistance to the sector from 1968 to 1995. As of 31 December 1995, the Bank had approved 10 loans for projects in the sector amounting to $214.3 million. Complementing this assistance, three program loans amounting to $169.0 million and technical assistance (TAs) amounting to $3.1 million were approved. Other sources of external assistance were the World Bank, and the Governments of the Netherlands, Norway, Sweden, and the United Kingdom (see Appendix 1).

3. As of 31 December 1995, 9 of 13 Bank-funded projects/programs had been completed and of these, 6 projects and 1 program had been postevaluated. Three of the projects were assessed to have been generally successful, two partly successful, and one unsuccessful. The program loan was assessed as partly successful. The objectives and scope of all projects and programs funded by the Bank and the achievements of those that have been completed are summarized in Appendix 2.

4. The lessons learned from postevaluated projects and programs in the sector reflect the difficulties experienced in a state-controlled environment. The lessons point to the need for (i) a more market-oriented approach and in-depth project preparation; (ii) for more attention to reducing the processing costs; and (iii) an analysis of the institutional framework, policy environment, and ecological implications of the Bank's activities. The Bank's assistance program from 1986 addressed necessary structural reforms to improve the operating performance and international competitiveness of the sector.

II. OBJECTIVES AND SCOPE OF THE BANK'S OPERATIONS

A. Purpose of Impact Evaluation, Scope, and Approach

5. The major purpose of this study is to assess the impact and overall effectiveness of Bank assistance to Sri Lanka's industrial crops and agro-industry sector in meeting development objectives. The study focuses on the major impacts of the Bank's completed projects and attempts to assess their contribution and overall effectiveness in promoting modernization and development of the sector. Because the data base for most projects is
incomplete, no attempt is made to quantify the aggregate development impact of the projects and programs. Instead, the study reviews the overall operational strategy for the development of the sector and compares the objectives of projects with achievements. Thus, the general development strategies for projects are identified and their impact assessed in terms of their implementation success and the extent to which concepts introduced have been sustained and spread throughout the sector. At the same time, the study reviews the current thrust toward development of the sector, as related to on-going and new projects, and recommends follow-up actions for the Bank and the Government.

6. While rubber is the major export crop of Sri Lanka, external assistance for this commodity has been mainly provided by the World Bank. The Bank's operations have, by tacit agreement with the World Bank, been primarily concentrated on the tea, coconut and sugar industries. The scope of the Study is therefore limited to evaluating the impacts of the completed projects on these industries.

7. The study is based on the findings of an Impact Evaluation Mission (IEM) that visited Sri Lanka during October 1995 and a review of the Bank's previous postevaluation findings, material in the Bank's files, separate reviews of the agriculture sector undertaken by the World Bank, technical reviews, and discussions with Bank staff and senior officials from agencies of the Government, private investors, and managers of banks and factories. The IEM also visited estates, smallholder farms, and factories and conducted surveys. The IEM's surveys were designed to update the performance data on the Bank-financed projects and programs to assess their socioeconomic impact (see Appendix 3).

B. The Bank's Operational Strategy

8. The Government's commitment to macroeconomic reforms underscores the Bank's current operational strategy to support the development of a market-oriented economy and an internationally competitive private sector. The major thrust of the Bank's assistance to the agriculture sector is to continue to enhance the policy and institutional reforms begun under the first and second agriculture program loans, including (i) rationalizing pricing, subsidies, and market distribution systems; (ii) commercializing and privatizing public sector enterprises; (iii) streamlining the Government agencies providing support services to farmers; and (iv) reducing the incidence of unemployment and poverty.

C. Bank Sectoral Assistance

9. The Bank-financed projects commonly aimed at increasing production and productivity by supporting improvements in factory processing and cultivation practices and providing assistance to technical services, and extension services. The assistance was directed mainly to the established tea, sugar, and coconut industries. Of the 10 Bank-financed projects, four specifically provided assistance to the tea industry, two to sugar, and one each for coconut
and other perennial crops. Of the two nonspecific crop projects, the Plantation Sector Project\(^1\) provided assistance to two public sector corporations, Janatha Estates Development Board (JEDB) and Sri Lanka State Plantation Corporation (SLSPC), and covered tea, coconuts, and rubber. The Plantation Reform Project\(^2\) is directed mainly to the restructuring of the plantation estates, including improving the social infrastructure for estate workers.

10. The Bank’s first project loan was for the modernization of tea factories\(^3\) and the second loan in 1973 was for the same purpose (see Appendix 2).\(^4\) In 1980, a third tea project was approved that emphasized expanding production by improving the plantations and constructing three tea factories.\(^5\) A fourth tea project was approved in 1988 that was designed to promote smallholder tea production through field development, factory rehabilitation, improved extension and institutional strengthening.\(^6\) In 1973\(^7\) and 1978,\(^8\) the Bank approved assistance to the sugar industry that focused on increasing production through the development of plantations, improving processing efficiencies, and expanding factory capacity. In 1981, the Bank provided assistance for smallholder coconut production and processing.\(^9\) In 1983, the Government's review of the sector focused attention on reforming the 532 Government-managed plantation estates under JEDB and SLSPC. In 1988, crop diversification was supported by improving support services for a wide range of perennial crops.\(^10\)

11. In addition to loans for projects, the Bank has used its program lending facility to support reforms affecting the industrial crops and agro-industries. The Agricultural Inputs Program\(^11\) and the Agriculture Program loan\(^12\) addressed important sector policies covering fertilizer and other inputs, crop production incentives, taxation, extension, operating performance and development constraints. The Second Agriculture Program loan\(^13\) supported the implementation of major policy reforms that included (i) reducing in phases the export duties and ad valorem taxes on tea, rubber, coconut and other crops; (ii) restructuring the JEDB and SLSPC plantation estate companies; (iii) rationalizing the fertilizer system by privatizing three fertilizer companies in the public sector; (iv) rationalizing domestic sugar prices; and (v) rationalizing extension services.

12. Technical assistance from the Bank to the sector involved a total of 16 projects consisting of 10 project preparatory TAs and 6 advisory TAs.\(^14\) Except for the First and Second Modernization of Tea Factories Projects and the Plantation Sector Project, all of the Bank-financed projects were preceded by project preparatory TAs. The Agricultural Inputs Program was

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\(^{1}\) Loan No. 712-SRI(SF): Plantation Sector, for $45.0 million, approved on 27 September 1984.
\(^{2}\) Loan No. 1402-SRI(SF): Plantation Reform, for $60 million approved on 9 November 1995.
\(^{3}\) Loan No. 3-SRI: First Modernization of Tea Factories, for $2.0 million, approved on 2 July 1968.
\(^{4}\) Loan No. 39-SRI: Second Modernization of Tea Factories, for $3.5 million, approved on 29 October 1970.
\(^{5}\) Loan No. 472-SRI(SF): Third Tea Development, for $12.8 million approved on 7 October 1980.
\(^{7}\) Loan No. 123-SRI(SF): Gal Oya Sugar Industry, for $2.8 million, approved on 24 September 1981.
\(^{8}\) Loan No. 369-SRI(SF): Sevanagala Sugar Development, for $33.9 million approved on 29 November 1979.
\(^{9}\) Loan No. 526-SRI(SF): Coconut Development, for $12 million, approved on 24 September 1981.
\(^{10}\) Loan No. 899-SRI(SF): Perennial Crops Development, for $17.3 million, approved on 30 August 1988.
\(^{11}\) Loan No. 820-SRI(SF): Agricultural Inputs Program, for $29.0 million, approved on 16 December 1986.
\(^{12}\) Loan No. 994-SRI(SF): Agriculture Program Loan, for $80 million, approved on 28 November 1989.
\(^{13}\) Loan No. 1127-SRI(SF): Second Agriculture Program, for $60 million, approved on 26 November 1991.
\(^{14}\) This does not include TA 2352-SRI, Impact Evaluation Study of Bank Assistance to the Industrial Crops and Agro-Industry Sector, for $100,000, which was approved on 30 June 1995 to assist in this study.
also formulated by a project preparatory TA. The advisory TAs included studies on crop protection incentives, rationalization of the sugar sector, rationalization of fertilizer marketing and the development of privatization strategies.

13. As of 31 December 1995, actual disbursements by the Bank for the sector amounted to $121.8 million or 57 percent of the total loans approved by the Bank for the projects.\(^1\) About $38.3 million was for the tea industry, $33.4 million for the sugar industry, $13.0 million for the rubber industry, $3.6 million for the coconut industry, $6.5 million for other perennial crops and the balance of $27.0 million for housing improvements, vehicles, and institutional strengthening of the state-owned plantation estates.

III. SECTOR DEVELOPMENT

A. Government Programs and Policies

14. Tea, rubber, copra, desiccated coconut, and coconut oil have been the major export earners for Sri Lanka for more than 100 years. Under the British, their cultivation and manufacture was encouraged and essential infrastructure such as railways and port facilities was constructed. The immigration of labor from southern India was promoted and Government regulations were introduced that ensured schools and minimum housing and sanitation were provided. Since independence, the sector has continued to be of prime importance to the Government in its goal of achieving national prosperity. The Government's Ten-Year Plan, (1959-1968), included programs for replanting and rehabilitating tea, rubber, and coconut plantations and for modernizing factory processing.\(^2\) Provision was also made to enhance the yields on the plantations through subsidies on fertilizer use, extension, and training. Another objective was to achieve self-sufficiency in sugar production. The 1972-1976 Five-Year Plan had similar goals, but it also focused on the need to replant high yielding varieties of tea and for diversification from uneconomic growing areas. Provision was made to increase sugar production from 8,000 tons (t) to 50,000 t through expanding the production capacities of two existing factories and establishing a new sugar growing area and factory. Subsequent five-year plans reflected the need for extending earlier plans to other areas, and to compensate for delays in implementing past programs. The Government's more recent plans differentiated between development for estates and for smallholders. The Medium-Term Investment Program (1984) was prepared specifically to rehabilitate the plantation estates in the public sector. The current Five-Year Plan (1995-1999) provides for restructuring of the state-owned plantations including the sale of a 51 percent equity share to management companies in the private sector. The privatization of the fertilizer import and distribution systems has been completed and subsidies have been increased to encourage field development. Special subsidies on "cut-tear and curl" (CTC) tea machinery have been put into effect and the cess\(^3\) rate on coconuts has been increased.

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1 Actual disbursements on completed projects as a proportion of total Project costs was 66 percent.
2 The Plan remained in effect until 1971, when five-year plans were introduced.
3 The cess is a Government levy imposed on the exports of tea and coconut to finance technical research, marketing, and
15. Nationalization and other Government interventions on labor, taxes, prices and distribution, and the civil unrest, which affected the availability of field labor for harvests and the development of plantations, had an impact on the overall development of the tea, sugar, and coconut industries. The fear of the impending nationalization in the 1960's caused investment in the tea and coconut industries to be deferred indefinitely. After nationalization, investment was further discouraged by (i) the ad valorem taxes and export duties, which for tea, at their peak in 1979, amounted to 32 percent of the revenue from the tea auctions; (ii) the labor regulations introduced in 1984, which guaranteed workers pay for 6 days a week and protection from transfer to other estates; and (iii) mandatory increases in the wage rate.

16. While there are no direct subsidies on the selling price of tea, sugar, and coconut; the selling price of sugar is based on local costs of production and the price is protected from competition from imports by tariffs. No subsidies currently apply on material inputs. However, special subsidies are available for reinvestment in replanting, infilling, and new factory machinery in the tea and coconut industries.

17. The minimum agricultural wage for workers in the tea and coconut industries are set by Government and are the same for the two industries. Between 1968 and 1994, wages increased by a multiple of 28 or by an average of 13.6 percent a year, which is significantly more than the increase in the wages for hired labor in commerce and manufacturing. In June 1995, the Government announced it would cease mandating labor wages and benefits in the plantation sector. At present, both male and female laborers receive SLRs83.07 per day. In the sugar industry, workers are paid SLRs90 per day.

18. The structure of wages for labor is linked to historical factors associated with bringing Tamil laborers from India to work as indentured labor in the tea industry. Current labor regulations prevent management from laying-off surplus labor or transferring excess labor to deficient areas. Also, the laborers on estates do not have the same freedom and mobility to sell their labor as wage earners do.

B. Tea Industry

19. At the end of the 1960s, the tea industry included about 900 factories processing tea produced on about 243,000 hectares. Ninety-four percent of the tea bushes under cultivation were seedlings and about two-thirds were over 50 years old with low and declining yields. The factories, which had been mainly built before 1940, were up to four stories high and mechanized by steam from wood-fuel furnaces. About 650 factories remain in operation and about half of these have been modernized with electricity and with improved withering, cutting, drying, and promotional activities as well as industry related fiscal and regulatory programs.

1  External influences have also caused volatile movements in commodity prices.
2  Nationalization, was implemented between 1971 and 1975 and involved the Government taking over ownership and management of all plantations over 20 ha. In June 1992, the plantation estates were placed under the management of 22 private companies under a profit-sharing arrangement. The number of private companies was expanded to 23 in 1994.
3  Fertilizer subsidies were discontinued in January 1990.
4  Under the Plantation Reform Project the redeployment of surplus labor in some estates will be allowed.
separating systems. Some factories have introduced machinery to produce CTC teas. Although the same manufacturing processes are used in other major producing countries such as the People’s Republic of China, India, and East Africa, the processing of tea remains technically inefficient. The recommended cultivation practices have not changed since the 1960s.

20. The total annual production of tea increased by 14 percent from 212,000 t in 1970 to about 242,000 t in 1995, while the total area under tea cultivation decreased by 54,000 ha or by 22 percent. By comparison, the average tea yields improved by more than 45 percent from 876 kilogram/hectare (see Appendix 4). Within the tea industry, there was a significant change in the production trends for tea grown at the high, medium, and low altitudes. The production levels fell for tea grown at the high and medium altitude, while the production of tea grown at low altitude nearly doubled from 60,000 t to 118,000 t. The area under cultivation by tea smallholders, which is generally low altitude tea, increased from 49,000 ha to 87,000 ha, and currently accounts for about 58 percent of the total production of tea compared with about 25 percent in 1970. The estate plantations grow tea mostly in the high and mid-country areas.

21. Almost all the tea produced in Sri Lanka is sold through the Colombo auction as required by law, but the amount was recently reduced from 90 percent to 50 percent. The auction sales are transacted in rupees and more than 90 percent of production is exported. About 1 percent of tea production, mainly the rarer tea types, is offered for sale on the London auction. Between 1970 and 1994, the average auction prices for tea increased from SLRs3.73/kg to SLRs65.12/kg or by 13 percent a year which was better than inflation, which increased by an average of 10 percent a year.¹ The grower’s prices for green leaf tea are fixed by formula at about 68 percent of the net sales average (NSA) price received at the Colombo auctions.²

C. Sugar Industry

22. In 1970, sugar imports were 244,000 t, and local production from two, nine year old, state-owned factories was 9,000 t, or about 4 percent of domestic consumption. By the end of 1994, imports were 491,000 t, and local production was 72,275 t, or 13 percent of domestic consumption. The expansion of local production was achieved through the construction of factories at Palawate and Sevanagala, and increasing the production capacity at Hingurana. The four existing sugar factories are mechanically similar to the factories in the major sugar producing countries, but their size is insufficient to generate the economies of scale necessary to be price competitive with imports. Although efforts have been made to improve cane yields through improved husbandry, yields overall have remained relatively static and below potential levels (see para. 31).

23. Sugar marketing, once a Government responsibility, has been privatized. All the sugar produced is consumed domestically. Sugar cane growers sell their cane to the factory, by weight and at a price set by the factory. Adjustments are made for mud and rubbish, but no payment is made for sugar content and quality of cane. The Government has established a

¹ Between 1984 and 1986, the average auction price fell by over 50 percent and did not recover until 1990.
² The net sales average (NSA) price is the average auction price received by the factory for processed tea less Government levies and brokerage and industry charges.
floating tariff to keep the price of imported sugar delivered to the warehouse close to the theoretical cost of production of local sugar. Presently, the tariff is about $510 per ton on raw (brown) sugar and the imported price of refined (white) sugar is around $250 per ton. From 1970 to 1994, the average imported price of sugar, before tariffs increased by an average of 5 percent a year and after tariffs, by an average of 15 percent a year. Notwithstanding the diseconomies of factory size - present deficiencies in maintenance, and in the quality and the delivery of cane to the mills are preventing all four factories from achieving their design capacities and optimum operating efficiencies.

D. Coconut Industry

24. In contrast to the tea and sugar industries, the majority of the coconut production and processing industry has always been in the private sector. Eighty-six percent of coconut holdings average 0.3 ha. Since 1970, urban expansion has caused the total area under coconut cultivation to decline from 445,000 ha to about 416,000 ha. Although coconut production has remained almost constant at about 2.3 million nuts annually, the added-value coconut industries have expanded strongly. World-class desiccated coconut processing facilities have been developed, solvent oil extraction equipment introduced, and new markets found for coconut fibre dust, coir products, and charcoal. With the importation of fresh coconuts being prohibited for plant quarantine reasons, manufacturers are concerned that a shortage of coconuts is developing. Although recommended cultivation practices have not changed since the 1960s, higher yielding varieties have been developed and superior husbandry techniques have been tested and used.

25. The marketing of coconut products such as fresh nuts, kernel products, fibre and shell products, and coco lumber is conducted through private sales. Auctions are used by the larger producers and buyers for the disposal and acquisition of fresh coconuts and the prices obtained are used as a reference for negotiating and contracting most sales. Since 1970, coconut prices have increased by about 11 percent a year.

IV. IMPACT OF THE BANK’S OPERATIONS

A. Macroeconomic Impact

26. Over the period under review, 1968 to 1995, the assistance from the Bank actually utilized by the tea and coconut industries was relatively small (see para. 10). However, the demonstration effects of the Bank’s investments encouraged smallholder operations to become more commercially based, when the operating performance of the Government-managed plantation estates was in decline.\footnote{Based on feedback received by the IEM from agencies of the Government, managers of smallholder factories, independent researchers and the results of the IEM's socioeconomic survey.} The Bank-financed tea projects reinforced the structural
adjustments having made and, except for the Plantation Sector Project, they mainly provided assistance to smallholder tea producers in low country areas. In contrast, the Bank’s investment in the sugar industry was large relative to the size of the domestic industry, but the expansion in domestic production has been small relative to the growing import requirements for sugar and overall development of the economy.¹

27. The IEM’s survey data confirmed the differences in cultivation yields between different altitudes (tea), allottees and outgrowers (sugar), Government and smallholder operations, and the performance of factories that received assistance from the Bank and those that did not. However, the surveys were unable to identify any significant differences between the cultivation performances of operations that received assistance from the Bank and those that did not. In part this situation reflects the diffusion over time of the new practices and extension advice. In part, it also reflects the permanent nature of the improvements in factory processing.

1. Factory Processing

28. Technology improvements for the rehabilitation of tea factories under the Bank-financed tea projects included extending the national electricity supply to factories, which enabled them to replace the steam-driven belt machinery. The Bank also introduced trough witherers, rotavanes, CTC machines, and fluid bed driers for tea processing, all of which helped improve the quality of tea produced and the prices received by factories, estates, and smallholders. The Bank’s Project Performance Audit Report for the First Modernization of Tea Factories estimated that modernization reduced production costs by 1-3 percent and that the gross average sales price received for tea by participants in the project from the low country areas improved by about 10 percent.² Under the Third Tea Development Project, the average NSA price of tea received by newly constructed and modernized factories was 13 to 17 percent higher than the average NSA price received by unimproved factories, and the increase in returns to growers of green leaf was about 30 percent. The prices at the rehabilitated factories in the Galle District under the Tea Smallholder Development Project are consistently 10 to 15 percent higher than the prices at nonrehabilitated factories. However, the differences are also attributable to better management and to the higher quality of the procured green leaf.

29. The improvements in the quality and in the prices of tea under the Bank-financed first and second modernization projects is estimated to have increased the overall value of tea production in Sri Lanka by about 1 percent. There was little or no improvement in the aggregate output from the factories assisted, even though the modernization and rehabilitation covered about one-third of the factories in existence, because, while the individual production capacities of the rehabilitated factories were improved, the production of green leaf from the field was insufficient and the processing capacity of factories was underutilized. The construction of three new factories under the Third Tea Development Project in the Galle District had a more significant impact. These three factories increased processing capacity by 3 million kg of tea a year, when

¹ The Sevanagala Sugar Development Project which accounted for 92 percent of the Bank’s assistance to the sugar industry established a new sugar growing area and produced 26 percent of local production, which accounted for only 3.3 percent of total consumption in 1994.
² However, there was no significant improvement in the sales price received for tea by project participants from the medium and high country areas.
the processing capacity in the area was limiting the production of high quality tea from smallholders. The existing local processing capacity before the project was about 500,000 kg of tea a year and the annual production of tea in Sri Lanka was about 230 million kg.

30. In the sugar industry, the improvements in technology at Hingurana (previously named Gal Oya) involved expanding the existing crushing capacity of the mill and replacing worn out processing items, which helped extend the life of the factory. However, the Project was not successful in increasing the planned operating capacity because of persistent mill stoppages. The new factory at Sevanagala expanded the country's production capacity and resource base of technicians, and created an industrial capacity in production engineering for foundry castings and machinery fabrication. Although, occasionally the Sevanagala factory has operated at close to its installed crushing capacity of 1,450 t of cane a day, persistent mill stoppages also caused a high proportion of crushing hours (34 percent from 1987 to 1994) to be lost. Under the Coconut Development Project, provision was made to modernize coconut processing, but the component was not implemented because the private millers did not consider it would be profitable.

2. Field Improvements

31. The provision of assistance to improve cultivation practices was aimed at increasing national yields. The improvements in cultivation practices included replanting, infilling, developing seedlings and nurseries, underplanting coconuts, diversifying crops, and improving extension programs. Replanting under both the Third Tea Development Project and the Smallholder Tea Development Project, increased tea yields by more than 100 percent. Where the overaged seedling tea was replanted with high yielding clonal tea, yields typically increased from 1,000 kg/ha to 2,500 kg/ha, but the cultivated area was less than 10 percent. Because many factors affect production (such as drought, soil conditions, soil erosion, weeds, pests, and cultivation practices), it is impossible to measure the overall impact of the Bank-financed projects on the aggregate national tea production. However, the improvements in fertilizer practices associated with the Third Tea Development Project, were estimated to have increased tea yields by about 14 percent.

32. There was little improvement in the industry average for sugar cane yields. At Hingurana, the Gal Oya Sugar Industry Project introduced a program to improve field practices for land preparation, planting, fertilizing, scientific harvest scheduling, mechanical loading and control of cane ripening. The aim was to achieve an average yield of 69 t/ha by 1980. However, the actual cane yields ranged from 32 t/ha to 61 t/ha and are about the same now. There is not a single major cause for the low cane yields, instead a combination of suboptimal agronomic practices, drainage and irrigation problems, civil disturbances, labor shortages, and factory stoppages are responsible. The yields under the Sevanagala Sugar Development Project were also less than projected at appraisal and averaged 28kg/ha for rainfed cane and 69 kg/ha for

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1 The target production of 19,884 t of sugar a year for the project by 1980 compares with the actual amount that year of 12,764 t and 14,058 t in 1994.

2 There was a significant shortfall in the area replanted, and although the proposed infilling program was substantially completed, it was affected by soil conditions that caused many of the plants to die.

irrigated cane in 1994. The suboptimum agronomic practices continue because of grower uncertainties, irregular cane collections, lack of price incentives, civil disturbances, and damage caused by wildlife.

33. Under the Coconut Development Project, the Bank financed a foliar analysis laboratory for the Coconut Research Institute, which enabled coconut growers to determine the most cost-effective fertilizer recommendations for their land. One important result was the switch to the use of dolomite, which is a natural limestone in Sri Lanka. The combined use of fertilizer and dolomite improved coconut yields by about 10 percent. Under the project, where underplanting and replanting were undertaken, the average increase in coconut yields was 60 percent and 100 percent, respectively according to the IEM's survey.

34. The import of 535,000 t of fertilizer financed by foreign exchange provided by the Bank under the loans for the Agricultural Inputs Program and Agriculture Program, enabled production levels in the sector to be sustained. The purchased fertilizer was equivalent to 64 percent of the total fertilizer used for tea and coconut cultivation over the five years, 1987 to 1991.
B. Socioeconomic Impact

1. Economic Development

35. The summary findings from the IEM socioeconomic survey (See Appendix 3) indicate that in all three industries the Bank-financed projects were perceived to have had a positive impact toward helping rural households move from subsistence-based production activities to market-orientated production. The social conditions for wage labor were also improved. Under the Third Tea Development Project and the Smallholder Tea Development Project, tea smallholders with 0.4 ha to 3 ha, benefited from the replanting, fertilizer, and extension services provided and these improvements enabled them to attain a sustainable income and to integrate into the market economy. The factory modernization subprojects under the Third Tea Development Project enabled all smallholders in the area covered by the project to receive prompt payment in cash instead of in kind. The concept introduced under this Project of rewarding smallholders for the quality of green leaf supplied also spread to other tea growing areas.

36. In the sugar industry, the operating performance of the two types of smallholder systems, allottees and outgrowers, was compared. Allottees are given a unit of land, typically 1 ha, on a 30 year lease from the Government for the purpose of cultivating sugar cane and are compelled to grow only sugarcane. Industry representatives reported that sugar outgrowers, who have free choice over the utilization of their private land holdings, generally performed better than allottees in terms of productivity and profitability. The IEM's survey was too small to distinguish any statistical difference between the yields for sugar allottees and outgrowers.

37. The Coconut Development Project succeeded in introducing improved agronomic practices to coconut smallholders. However, while production and productivity increased significantly, once the inputs such as fertilizer subsidies and credit for investment in underplanting and replantings ended, sustainable progress toward commercialism virtually ceased. In addition, the poorest households with less than 0.25 ha of land and no reliable source of secondary income, resisted using commercial fertilizer and making cultivation improvements -pointing to the need for more specialized packages to facilitate agricultural development.

2. Social Improvements

38. Improvements in social conditions for estate workers were a focus of the Third Tea Development Project, the Plantation Sector Project, and the Sevanagala Sugar Development Project. Except for those who have benefited from the Bank-financed projects, the majority of laborers on the tea plantation estates live in line rooms with few amenities. In the sugar industry, all workers have housing and access to medical facilities provided by management. In June 1995, the Government announced it will continue to fund the social services on estates managed by the private sector.
39. Improvements under the Bank-financed projects benefited entire communities on the estates by providing modern housing, water, electricity, medical facilities including maternity units, ambulances, dispensaries, day-care facilities and schools. In particular, women benefited from the potable water, sanitation facilities, and improvements in housing, and the establishment or rehabilitation of medical facilities, and creches. Under the Plantation Sector Project, following the provision of better housing and social facilities, between 1985 and 1990, the infant mortality rate per 1000 was reduced from 49.5 to 37.5, and for newborn children from 36.5 to 24.5. The managements of those estates with improved housing and social facilities confirmed to the IEM that labor relations had improved. However, it is noticeable that while the benefits of improved social infrastructure are also acknowledged by adjacent estates, they have not duplicated them. In part, because investment funds are not available, but also, because the social services cannot be financially justified within the operating margins available to the industry. It is also of significance to note that housing provided under the Third Tea Development Project at the Bank-assisted factories, was not fully utilized as workers preferred to continue living in their communities nearby (see also para. 54).

C. Institutional Impact

1. Infrastructure, Training, and Extension

40. The Bank's early projects were not concerned about institutional development. The Coconut Development Project, approved in 1981, mainly emphasized improvements in cultivation practices, but also included a training center, smallholder training courses, additional oil storage facilities, and quality control laboratories. The Plantation Sector Project, approved in 1984, was the first Bank-financed project that recognized the need to improve the institutional capacity of SLSPC and JEDB. While the emphasis of the Project was on achieving a better operating performance through improvements in cultivation practices and rehabilitation of factories, the Project also created institutional development units with planning, training, and monitoring capability. It was reported these units were effective in providing training to staff and workers.

41. The Perennial Crops Development Project, approved in 1988, and still under implementation, represented a change in emphasis by strengthening extension services, increasing the availability of credit, and strengthening project management capabilities. The ongoing Smallholder Tea Development Project, approved in 1989, provided extension training for both factory and field staff. The head of the extension training unit is now working for a private company. Two field officers who received the training considered that this component had been very successful. The Bank-financed agriculture program loans provided assistance to address institutional policy reforms (see paras. 48 to 50).

2. Financial Performance

42. Although the Bank's assistance did not focus on strengthening the financial
performance of the public enterprises that implemented the projects, it was expected that the measures proposed for improving cultivation practices and modernizing processes would increase yields and efficiencies and thereby raise revenues and reduce operating costs. Under the Third Tea Development Project, for example, a component was included for the field rehabilitation of 19 estates in the Badulla District. At appraisal in 1980, it was forecast the field improvements would enhance the financial performance of JEDB and generate a gross profit of SLRs 67.5 million in 1988. The actual result was a loss of SLRs 586.4 million. Similarly, the Plantation Sector Project, that covered the rehabilitation of factory and fields and improvements in the transportation systems on the estates, forecast at appraisal (1984) an improvement in the financial performance of JEDB and SLSPC, and that the combined profit (after taxation) would be SLRs4,384 million in 1990. The actual position was a loss of SLRs2,400 million.

43. The long-term deterioration in the financial position of JEDB and SLSPC is shown in Table 1. JEDB made a loss every year after 1984 and SLSPC in every year, but two (see Appendix 4). Both companies became increasingly insolvent and their weak financial status forced a major injection of capital in 1990. Both corporations had relied heavily on external borrowings and loans from Government-owned banks to sustain operations. Their weakening financial position is attributed mainly to inappropriate Government fiscal policies, exacerbated by an unpredictable 42 percent fall in world prices in 1985, but also by the rise in the unit costs of production associated with a decline in yields and the increase in the wage bill. The general underperformance of the Bank-financed projects for the plantation estates in the public sector, was directly attributable to JEDB and SLSPC budget constraints which prevented the managements of the plantation estates from sustaining the practices introduced, under the Project once had been exhausted.

<table>
<thead>
<tr>
<th>Table 1: Financial Performance of Public Enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tea and Coconuts a</strong></td>
</tr>
<tr>
<td>Operating Surplus (SLRs million)</td>
</tr>
<tr>
<td>Percent of Turnover</td>
</tr>
<tr>
<td>Percent of Net Assets &gt;100</td>
</tr>
<tr>
<td>Percent of Total Assets</td>
</tr>
<tr>
<td><strong>Sugar b</strong></td>
</tr>
<tr>
<td>Operating Surplus (SLRs million)</td>
</tr>
<tr>
<td>Percent of Turnover</td>
</tr>
</tbody>
</table>

a Estimated for industry based on production, factory selling price and factory cost of production.
b Aggregate results for JEDB and SLSPC, 1977 to 1991. The results for 1994 are represented by the first three public plantation estates to be privatized, and which have operated under private management since 1992.

44. While the deteriorating position of the national estates is readily apparent, the financial viability of smallholder operations appears to have strengthened slightly. The national statistics for tea and coconut smallholders consistently show their costs of production were lower and on average, the NSA prices were higher than those for the estates. Sugar outgrowers also
obtained better yields than the allottees and sugar plantation estates (see para. 36). The overall better position of the smallholders is attributed to more management autonomy, higher yields, and relative freedom from labor constraints. Even so, the cultivation practices for replanting tea, coconut and sugar, introduced under the Bank-financed projects, were generally not sustained at the levels envisaged. The tea and coconut growers were reluctant to follow replanting programs even though they knew that in the long-term, the yields would be better and production would be higher. Sugar growers did not follow the recommended cultivation practice of replanting after 2 ratoons, instead they chose to replant after 4 or even 6 ratoons, and in so doing implicitly accepted lower yields. ¹

D. Environmental Impact

45. Although the Bank-financed projects and programs did not specifically aim to improve environmental conditions, the impact of the various components under the projects was generally beneficial and/or minimized adverse impacts on the environment. The electrification of tea factories reduced the need to burn timber, and the introduction of more efficient driers reduced power requirements. The Bank-financed foliar analysis laboratory helped reduce undesirable soil acidification for coconut plantations.

46. Some environmental problems occurred that were not considered at appraisal. At the sugar mills at Hingurana and Sevanagala, the disposal of waste effluent has caused a deterioration in the surrounding agricultural land.² The long practice of tea monoculture (over 100 years), often on steep slopes using substandard husbandry/soil management practices and suboptimal fertilizer applications has reduced the productive capacity of the soil. There is extensive evidence of a reduction in yields, an increase in erosion, and an increase in infertile abandoned tea lands, particularly at the mid and high elevations.

47. The activities under the Bank-assisted Smallholder Tea Development Project and the Plantation Sector Project were specifically designed to protect the soil and to minimize erosion. Currently the growers apply types and amounts of fertilizers that have no significant adverse impact on soil and water quality.³ Similarly, the Bank-financed Program loans, had a list of pesticides not eligible for Bank financing ⁴, and helped minimize the potential negative impact on the environmental impact from agrochemical imports.

E. Privatization

48. The Bank's program loans have assisted the Government in implementing policy

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¹ By choosing to replant later rather than sooner the grower defers the costs of land preparation and loss of income (while the land remains fallow). Other factors include labor shortages, uncertainties over whether the factory will purchase cane, and civil unrest.
² The application of the worldwide practice of neutralization and field spreading is being studied by the United Nations Development Programme (UNDP) for eventual adoption.
³ With the possible exception of the acidification of some coconut soils caused by the use of sulphate of ammonia. Extension recommendations are to use urea.
⁴ Pesticides classified "extremely hazardous" or "highly hazardous" by the World Health Organization.
reforms covering export duties and ad valorem taxes; the restructuring of JEDB and SLSPC; and the rationalization of the fertilizer distribution system, sugar pricing, and extension services. In June 1992, 449 of the 532 estates controlled by JEDB and SLSPC were incorporated into 22 state-owned regional plantation corporations (RPCs). The management of these corporations was contracted to 22 independent private firms under a profit-sharing arrangement, as an interim to full divestiture. The plantation estates were made available on a 99 year lease from the Government. In December 1992, export duties and ad valorem taxes were abolished. In 1994, another plantation estate company was placed under private management, and privatization plans for the sale of a 51 percent equity to the management companies also became effective.

49. The abolition of ad valorem taxes and export duties and the restructuring of JEDB and SLSPC removed some of the impediments and the inefficiencies that have stifled reinvestment in the sector for a long time. The abolition of ad valorem taxes and export duties enabled the tea industry to retain about $70 to $120 million a year.¹

50. Although the overall performance of the RPCs, under private management, showed signs of improving during the first 18 months, only two RPCs made an annual profit. The major problems impeding improvements in operational efficiency were (i) the high labor costs, which amounted to about 68 percent of production costs and were subject to mandated increases; and (ii) the lack of vested interest in ownership and property rights, which was undermining the confidence of the management companies to reinvest and lenders to provide loans. With these constraints, the private management companies only carried out essential maintenance.

51. In 1995, the Government announced additional plans for the privatization of the RPCs. Instead of 99 years, the private management companies are being offered 55 year leases on the plantation estates, with the Government retaining ownership of the land. Privatization is to be implemented through the sale and allocation of shares in the RPCs, with 51 percent of the shares to the management companies, 20 percent to the public, 10 percent to the workforce and the Government holding the remaining 19 percent, including one Golden Share.² Ten of the RPCs were scheduled to be privatized by end of February 1996 and the remainder by 30 June 1997. Simultaneously, the Government has implemented privatization programs for State-owned enterprises in the other sectors. Arrangements for the privatization of the sugar and fertilizer companies were completed in 1995.³

V. ISSUES

52. A number of issues have been raised in the Bank's postevaluation reports on completed projects and programs. However, the issues raised have generally been specific and related to the design, technical, and operating performance of the projects and programs. The

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¹ This estimate is based on current production and export levels, and on using the ad valorem tax and export duty rates previously in force. Less significant savings apply to the coconut industry.

² The Golden Share is issued to the Secretary to the Treasury and carries veto rights over the use of lands leased from the Government and the amendments to the Articles of Association of the RPC.

³ The award of the Sevanagala Sugar Industries Ltd to a foreign operator was the cause for objections from one of the local bidders, the outcome of which remains uncertain.
most important issues relate to the Government's involvement in the sector and the steps it is
taking to redress the past interventionist measures that have arrested development. The following
issues reflect considerations developed from previous postevaluation reviews and from the IEM's
observations of the constraints affecting the development objectives of the ongoing projects.

A. Social Development

53. The Bank-financed projects, in providing assistance to improve social
infrastructure, unintentionally reinforced the indentured labor system. Plantation workers cannot
own a house or land in the vicinity of the plantation estates, raising livestock is severely restricted,
and the workers do not have the same freedom and mobility to sell their labor that other wage
earners have. In this context, the Government should consider the possibility of providing
plantation workers and their families with separate land areas where they can live and organize
themselves as an independent community.

54. Where the Bank-financed projects and programs assisted the transfer of landless
and unemployed persons into productive activities, economic development has taken place on a
generally sustainable basis. But in the case of sugar, the long-term viability of the processing
industry would appear to be threatened by the more competitive price of imported sugar. Given
the limited alternative employment opportunities available for workers in the sugar industry for the
allottees, and for the fringe businesses that were created, there is a need for the Government to
consider alternative measures to sustain the communities and businesses created.

B. Constraints on Privatization

55. The IEM observed several constraints that could slow the implementation of the
Government's privatization program (see Appendix 5). Perhaps the most important constraint is
the difficulty of trying to induce the public to purchase shares in 23 RPCs, essentially engaged in
the same business. Second, purely on investment criteria, the initial floating of the shares for the
first three RPCs was made when the local interest rates were 22.5 percent, the historical
performance of the corporations was weak, and the future prospects of the companies involved
considerable risk and uncertainty.

56. A third general constraint relates to the capacity of the commercial banking system
to fund the Government's privatization program. The total capital required to privatize the 23 RPCs
and smallholder tea factories is about $165 million, compared with newly increased lending
capacity of the commercial banks of about $800 million a year.¹ The Government's privatization
program, which extends beyond the sector, requires funding in the form of equity or credit to
purchase shares and company debentures, to retire debt to the state banks and to use for

¹ The increased lending capacity need to fund requirements for additional trade credits, overdrafts, commercial loans, and obligatory
purchases of treasury bills and Government securities. Commercial banking includes the state banks, which accounted for 62 percent of
the total liabilities of commercial banks in 1994.
reinvestment. Taking into consideration, the level of interest rates, the available money supply, collateral constraints, labor rigidities, and the long-term returns on reinvestment - there is likely to be a significant shortfall in medium- and long-term investment capital available.

57. Of concern to the commercial banks is that more than 80 percent of the assets of the RPCs are tied to the value of the leasehold rights to the land and to finance leases on immovable estate assets. Obtaining control of these leaseholds and finance leases in the event of default, is difficult legally. Other assets include vehicles, plant and machinery stock, debtors, and cash holdings, but these do not cover creditors dues, or the liabilities on existing loans and

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1 The allocation of $18.6 million for privatization under the Bank's Plantation Reform Project provides some relief, but the conditions attached to the funds depend on the privatization process having already made substantial progress. At the time of the IEM, no other external funding support had been pledged for the Government's privatization program.
accrued employee pension savings. Another concern is the loan servicing capacity of the RPCs. Labor costs currently amount to about 68 percent of the costs of production and are subject to award adjustments in line with inflation.\(^1\) Another 8 percent of the costs of production will be taken up by future lease costs and adjusted annually by the Government’s gross domestic product deflator. Also, present regulations preclude the transfer of surplus labor and/or retrenchment from the estates. Thus, unless there is a significant improvement in the prices of tree crops,\(^2\) or a substantial improvement in productivity on which there are practical limits, the capacity of the RPCs to service new lending is limited. It is also risky for commercial lenders.

58. Taking into account these constraints, the Government’s privatization program for the sector appears to be overly ambitious. There is a need for the Government to reconsider the effects of the program on the economy and to promulgate policy reforms and special assistance measures that will facilitate the program.

C. Policy Reforms

59. An overriding constraint on development of the sector is the macroeconomic management of the economy. There is a need for the Government to focus on policies that further enhance the mobilization of capital, reduce inflation, minimize interest costs, and ensure more responsive exchange rate adjustments. The choice for all the industries in the sector between maintaining old machinery and buying new and improved machinery, needs to be made on a basis that is consistent with improving efficiencies and operating returns. Consequently, tax reforms are necessary to create the right incentives. A closer look at the advantages of using incentives in the form of subsidies versus special depreciation rates for investments in replanting and machinery, and of cess payments versus tax deductions is warranted.

60. The success of policy reforms implemented under the Bank-financed Program loans is in part attributable to the parallel efforts of the World Bank and other international agencies. The Bank should review the effectiveness of its policy advice and participation in policy reform process with a view to being more active.

D. The Colombo Auction

61. An important impact on the financial operating performance of the tea industry is the Colombo auction system. The large disparity between the Colombo auction prices and the ‘free-on-board’ rupee prices has been noted and the monopsony dictates by a few large buyers, making purchases through 12 export brokerage houses has also been reported. There is also a difference between the overseas auction prices and the Colombo auction prices in US dollar equivalents, which cannot be adequately explained. In 1975, prior to nationalization, when ad valorem taxes and export duties were applied, the Colombo auction price was about 70 percent of

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\(^1\) In June 1995, the Government announced its intention not to mandate labor wages and benefits in the plantation sector.

\(^2\) The average Colombo Auction Price fell from SLRs71/kg in 1990 to SLRs 58/kg in 1991, but it increased to SLRs69/kg in 1993 before falling to SLRs65/kg in 1994.
the average London auction price. Between 1976 and 1981, the ratio fell to as low as 36 percent, reflecting the impact of increasing and varying the incidence of taxes and export duties. With the reductions in the overall incidence and finally the abolishment of ad valorem taxes and export duties in December 1992, the ratio improved to 77 percent, but it has returned to about 70 percent (see Table 2). The average difference of 30 percent translates into a cost to the industry of about $88 million a year, not all of which can be explained by industry charges, transportation costs, and quality differentials. In a developing country where the exchange rate adjustments tend to move against the local currency, the prices are strongly influenced by overseas market forces, and the producer price expectations are predominantly based on previous domestic levels, it may be an advantage to tea producers if the prices at the Colombo auction prices were based on an international currency.

Table 2: International Tea Auction Prices ($ equivalents/kg)

<table>
<thead>
<tr>
<th>Year</th>
<th>Sri Lanka</th>
<th>London</th>
<th>Calcutta</th>
<th>Ratio of Sri Lanka/London Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>1.00</td>
<td>1.40</td>
<td>1.26</td>
<td>71%</td>
</tr>
<tr>
<td>1975</td>
<td>0.97</td>
<td>1.39</td>
<td>1.36</td>
<td>70%</td>
</tr>
<tr>
<td>1978</td>
<td>0.90</td>
<td>2.18</td>
<td>1.71</td>
<td>41%</td>
</tr>
<tr>
<td>1979</td>
<td>0.78</td>
<td>2.17</td>
<td>1.81</td>
<td>36%</td>
</tr>
<tr>
<td>1980</td>
<td>1.19</td>
<td>2.24</td>
<td>1.92</td>
<td>53%</td>
</tr>
<tr>
<td>1991</td>
<td>1.41</td>
<td>2.03</td>
<td>2.12</td>
<td>69%</td>
</tr>
<tr>
<td>1992</td>
<td>1.41</td>
<td>1.86</td>
<td>1.69</td>
<td>76%</td>
</tr>
<tr>
<td>1993</td>
<td>1.43</td>
<td>1.86</td>
<td>1.80</td>
<td>77%</td>
</tr>
<tr>
<td>1994</td>
<td>1.32</td>
<td>1.83</td>
<td>1.57</td>
<td>72%</td>
</tr>
</tbody>
</table>

VI. CONCLUSIONS AND RECOMMENDATIONS

A. Overall Assessment

62. During the past 27 years, the Bank has provided assistance to the sector, but the development of industries within the sector has been suppressed by inappropriate regulations and fiscal policies. Under this operating environment, the record of success of postevaluated projects relative to targets at appraisal for these projects has varied and the operating performance of the sector has lost its competitive advantage and generally remained unsatisfactory.

63. The Bank’s assistance for projects emphasized raising productivity by improving factory processing and cultivation practices, and in effect attacked symptoms rather than the cause. The modernization of tea factories improved operating efficiencies and maintained operating margins, but it did not lead to a significant expansion in national production. Only in the
case of sugar, did significant new development follow, but the country now has a sugar industry that is viable operating on its present scale, only with about a 200 percent tariff and has a major social problem on what to do with the growers and supporting businesses in any phase-out consideration. Needless to say, there remains considerable scope for improving management and production efficiencies at the present scale of operations.

64. The cultivation practices introduced provided for large gains in production from the field, but were not fully implemented or continued because the Government's fiscal policies critically reduced the capacity of operators to reinvest and sustain improvements. This was particularly evident of the plantation estates where the public sector lacked the financial or administrative capacity to replicate the improvements. Thus, while many of the Bank-financed projects improved technologies and cultivation practices, these improvements could not be sustained after completion of the projects, and the concepts introduced were not sustainable once the funds for projects had been utilized. For similar reasons, the factory modernization processes were not replicated or extended. Overall, the Bank-financed projects did not have the catalytic impact they should have.

65. In terms of socioeconomic development, the Bank-financed projects appear to have been of particular assistance in facilitating the transfer of subsistence smallholders and landless persons into market-oriented production. The Bank's support for better housing and social amenities for workers and their families also led to substantial improvements in work attitudes, but unintentionally reinforced the indentured labor system and made it difficult for workers on estates and their families to develop an independence from their employer. From an operating perspective, the cost burden of sustaining housing improvements, other amenities, and the welfare of workers was not commercially viable. In the interests of privatizing operations the Government subsequently assumed responsibility for these social activities.

66. The Bank-financed program loans, which are more recent, and the Plantation Reform Project addressed fundamental issues that have constrained the performance of the sector. Important reforms leading to the abolition of ad valorem taxes and export duties (tea and coconut) and to the development of plans for privatizing the plantation estates are expected to be more significant for the development of the sector and national economy, than all the Bank-financed assistance for projects so far. However, for the present and not withstanding the expected labor freedoms under the Plantation Reform Project, other constraints continue to prevail in respect of labor, lease adjustments, land ownership and the cost and direction of institutional support services - so that the sustainability of moves toward privatization is not yet assured. An overriding need for development of the sector is to improve the macroeconomic management of the economy by reducing inflation and interest costs, by increasing the availability of long-term capital; and by providing appropriate fiscal incentives for sector interests to reinvest in cultivation and factory processing.

B. Follow-Up Actions

67. The Government should (i) continue to focus on macroeconomic management policies that reduce inflation, lower interest costs, and induce reinvestment, (ii) undertake an immediate review of the constraints affecting its privatization program with a view to announcing
measures that will facilitate its implementation, (iii) undertake a close study of the barriers preventing the smallholder subsistence economy from developing and consider introducing special assistance schemes (see para. 37), (iv) consider removing the indenture elements of labor and providing enclave settlements with their own settlement areas and services (see para. 53), and (v) undertake a study to review the merits of operating the Colombo auction system using an international currency (see para. 61).

68. The Bank should (i) continue to give emphasis on providing assistance for making reforms that ensure industry adjustments are market driven and enable the sector to become internationally competitive on a long-term sustainable basis; (ii) assess the effectiveness of its past program loans in achieving policy reforms with a view to strengthening the Bank's participation; and (iii) monitor closely the implementation progress of the Plantation Reform Project in the light of the constraints on privatization.