ASIAN DEVELOPMENT BANK

PPA: SRI 18070

# PROJECT PERFORMANCE AUDIT REPORT

# ON THE

# SECOND HEALTH AND POPULATION PROJECT
# (Loan 1189-SRI[SF])

# IN

# SRI LANKA

September 2003

## CURRENCY EQUIVALENTS

Currency Unit – Sri Lanka rupee/s (SLRe/SLRs)

| | | At Appraisal (Aug 1990) | At Project Completion (Nov 1998) | At Operations Evaluation (Mar 2003) |
|---|---|---|---|---|
| SLRe1.00 | = | $0.0182 | $0.0167 | $0.0103 |
| $1.00 | = | SLRs55.00 | SLRs60.00 | SLRs97.07 |

## ABBREVIATIONS

| | | |
|---|---|---|
| ADB | – | Asian Development Bank |
| FHB | – | Family Health Bureau |
| HRD | – | human resource development |
| MCH | – | Mother and Child Health |
| MIS | – | management information system |
| MOHNW | – | Ministry of Health, Nutrition, and Welfare |
| NIHS | – | National Institute of Health Sciences |
| OEM | – | Operations Evaluation Mission |
| PCR | – | project completion report |
| PHC | – | primary health care |
| PIU | – | project implementation unit |
| PMO | – | project management office |
| PPAR | – | project performance audit report |
| PRS | – | Poverty Reduction Strategy |
| RTC | – | regional training center |
| TA | – | technical assistance |

## NOTES

(i) The fiscal year (FY) of the Government ends on 30 June.
(ii) In this report, "$" refers to US dollars.

**Operations Evaluation Department, PE-626**

**CONTENTS**

APPENDIXES

## BASIC DATA
## Loan 1189-SRI(SF): Second Health and Population Project

**PROJECT PREPARATION/INSTITUTION BUILDING**

| TA No. | TA Name | Type | Person-Months | Amount[a] ($) | Approval Date |
|---|---|---|---|---|---|
| 1291 | Second Health and Population | PPTA | 5.0 | 100,000 | 18 Apr 1990 |
| 1786 | Management Information Systems and Health Insurance Study | ADTA | 60.0 | 425,000 | 17 Nov 1992 |

| **KEY PROJECT DATA** ($ million) | As per ADB Loan Documents | Actual |
|---|---|---|
| Total Project Cost | 33.26 | 27.94 |
| Foreign Exchange Cost | 18.94 | 17.87 |
| Local Currency Cost | 14.32 | 10.07 |
| ADB Loan Amount/Utilization | 26.10[b] | 22.05 |
| ADB Loan Amount/Cancellation | | 3.09 |

| **KEY DATES** | Expected | Actual |
|---|---|---|
| Fact-Finding | | 5–16 Jun 1990 |
| Appraisal | Aug 1990 | 16–28 Aug 1990 |
| Reappraisal | | 28 Oct–15 Nov 1991 |
| Appraisal Follow-Up | | 13–18 Jul 1992 |
| Loan Negotiations | Sep 1992 | 19–21 Oct 1992 |
| Board Approval | Sep 1992 | 17 Nov 1992 |
| Loan Agreement | | 17 Dec 1992 |
| Loan Effectiveness | 17 Mar 1993 | 18 Mar 1993 |
| First Disbursement | | 20 Aug 1993 |
| Project Completion | 31 Dec 1997 | 31 Aug 1998 |
| Loan Closing | 30 Jun 1998 | 27 Dec 1999 |
| Months (effectiveness to completion) | 57.5 | 65.5 |

**BORROWER** Democratic Socialist Republic of Sri Lanka

**EXECUTING AGENCY** Ministry of Health, Nutrition, and Welfare

**MISSION DATA**

| Type of Mission | No. of Missions | No. of Person-Days |
|---|---|---|
| Fact-Finding | 1 | 24 |
| Appraisal | 3 | 142 |
| Project Administration | | |
| Inception | 1 | 14 |
| Review | 8 | 61 |
| Project Completion | 1 | 36 |
| Operations Evaluation[c] | 1 | 57 |

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ADB = Asian Development Bank, ADTA = advisory technical assistance, PPTA = project preparatory technical assistance, TA = technical assistance.

[a] Represents the approved amount of TA.

[b] The original loan amount of SDR18.088 million ($26.10 million) was equivalent to $25.14 million as at loan closing.

[c] Comprising K. Hardjanti (Evaluation Specialist/Mission Leader), S. Abeyratne (Staff Consultant/Economist), and A. Sanderatne (Local Researcher).

## EXECUTIVE SUMMARY

The Asian Development Bank approved the Second Health and Population Project (the Project) in 1992 based on the request of the Government of Sri Lanka (the Government) in 1990, the recommendations of a small-scale project preparatory technical assistance (TA), and findings of the fact-finding and appraisal missions. A new national health policy was adopted in 1992, and assistance to support the implementation of this policy was needed. The key issues identified for the Asian Development Bank's support were focused on the following areas: (i) human resource development and training; (ii) strengthening the referral system; and (iii) institutional development and policy implementation, which were reflected in the project components.

The Project was designed to provide assistance to the Government in improving its health care delivery services, particularly to the poor in rural areas. It had three components: (i) in-service training and human resource development to alleviate shortages and upgrade the skills of primary health care (PHC) personnel at national and provincial levels; (ii) strengthening the referral system by upgrading selected small and medium-sized PHC hospitals in three districts, and supplying essential hospital inputs; and (iii) institutional development and implementation of policy reforms. The institutional development component is aimed at strengthening the planning and management capability of the Ministry of Health, Nutrition, and Welfare (MOHNW), and assisting the Government in implementing the National Health Policy, as well as suggesting alternative measures related to health sector financing in the effort to reduce the burden of health sector expenditure. A TA was attached to the Project with the intention of developing a computer-based management information system (MIS) that would monitor the service delivery and utilization of PHC facilities, and of undertaking a study to establish a health insurance program.

The Project was completed in August 1998, and the project completion report, which rated the Project successful, was circulated in August 2000. The Operations Evaluation Mission visited Sri Lanka in March–April 2003 and conducted a survey, interviews, and focus group discussions in Anuradhapura, Colombo, Kalutara, Kandy, Kurunegala, and Nuwara Eliya to prepare this project performance audit report (PPAR). The PPAR also incorporates information gathered from discussions with officials in central and provincial MOHNW, the National Institute of Health Sciences, regional training centers (RTCs), small- and medium-sized PHC hospitals, the Family Health Bureau, the Post Graduate Institute of Medicine, and other aid agencies and stakeholders. Both primary and secondary data were used in preparing the PPAR.

Targets set at appraisal under the three components were mostly achieved. Expectations for staff development for both in-service training and international fellowships were surpassed. The domestic training had a marked impact, particularly the teacher training and training of trainer programs conducted at the National Institute of Health Sciences. The in-service training for hospital and PHC staff, such as midwives and paramedics, was introduced by the Project for the first time, and the trainees considered it very useful in upgrading their skills to provide better quality services. However, only 57% of the target set for regional medical officer (doctors) training was achieved, mainly due to the difficulties prospective participants had in leaving their practices. Five training institutions and 35 PHC hospitals (rural PHC hospitals, peripheral units, and district PHC hospitals) were upgraded in terms of human resources, teaching materials, physical infrastructure, equipment, vehicles, and furniture. In general, beneficiaries expressed satisfaction with the upgrading supported by the Project, except for the computers, which were of substandard quality. Some construction design flaws were noted in Anuradhapura, which have caused difficulties in maintenance. The provision of staff quarters in

small hospitals in isolated areas helped ensure continuance of service. Beneficiaries appreciated the civil works and provision of improved facilities in the hospitals, including the availability of dental services, mini-laboratories, and emergency referral services. Overall, the Project enhanced the quality of human resources and strengthened the referral system. In addition, senior medical staff trained under the Project are now playing key roles in planning, project and program design, and policy implementation, which has made a positive impact on the institutional and policy development.

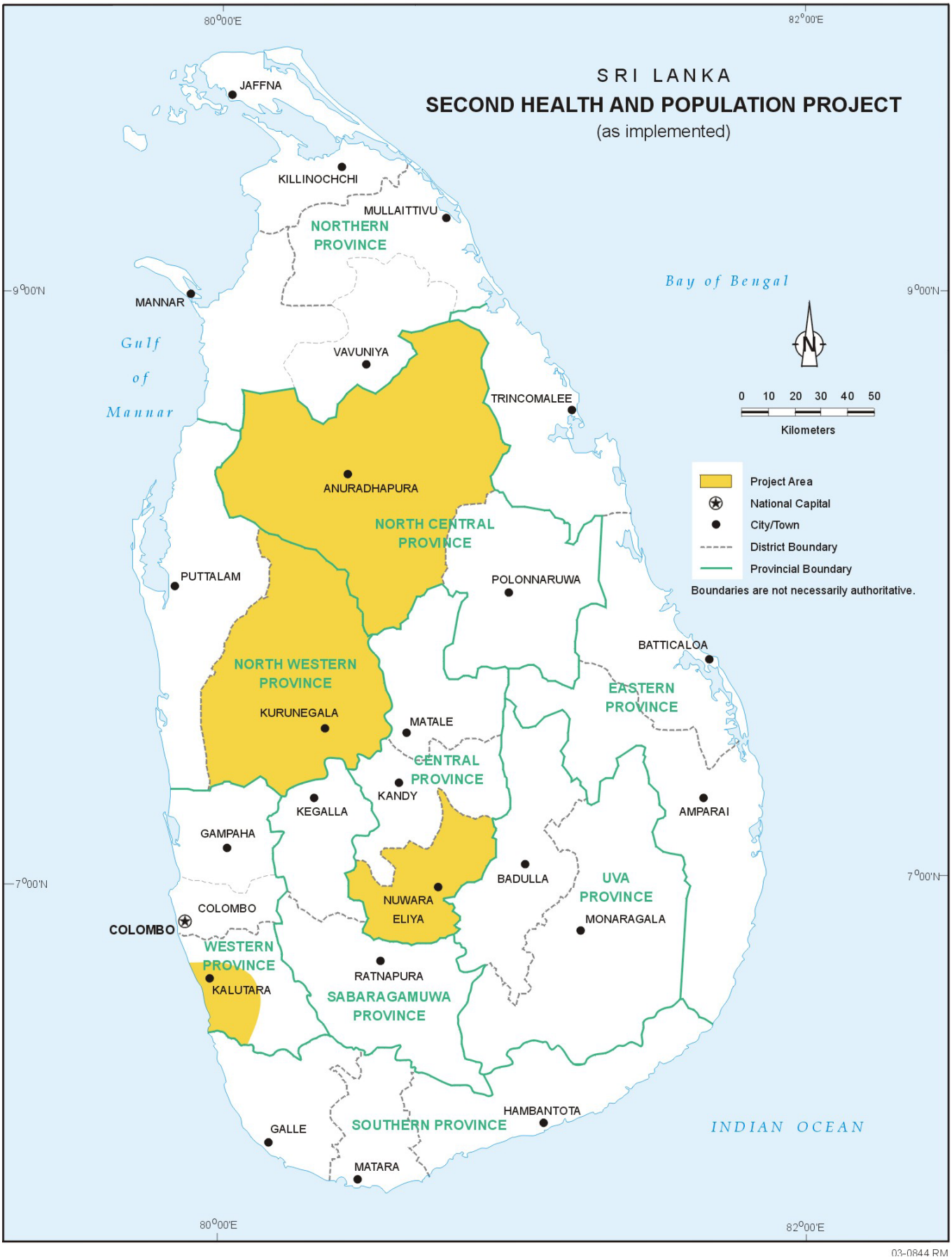
The survey rated the Project's impact on strengthening child and maternity care, PHC services, training, and attitudes toward hospital clients as very good, while its possible sustainability, and impact on health and population policies, referral system, and condition of hospital facilities were rated as good. Results of the survey for institutional development ranged from somewhat good to very good. On average, the survey indicated that the Project is successful. The health expenditure impact assessment of the Project concluded that it has realized significant efficacy and efficiency gains, and there have been significant benefits to patients. The overall assessment of the Project shows that it is relevant, efficacious, efficient, likely sustainable, and has had a significant institutional development impact. Therefore, the Project is rated successful.

The TA attached to the Project supported a study on health insurance and another on MIS. The health insurance study provided a number of recommendations, of which only a few were feasible for adoption and implementation at that time, such as the establishment of around-the-clock health providers' on-call services in small hospitals, and emergency referral services. Recommendations on alternative funding for health are currently being explored. The support for MIS has not been satisfactory. This was partly due to the substandard quality of computers procured, which did not include maintenance and training, and the lack of government funds in automating data entry at the PHC level. Hence, the TA is rated partly successful. However, Sri Lanka's new health sector policy initiatives encourage the adoption of health insurance and improvement of MIS at the PHC level.

As identified in this report, key issues faced by the health and population sector include the fact that the provision of continuing education programs in some RTCs is done in an ad hoc manner due to inadequate funding. Also, the Project had to abort its attempt to provide efficient database management on a pilot basis in relation to maternal and child health, and family planning at the PHC level. The database is essential for planning and management, and their consolidated version needs to be continued in line with the new health sector policy initiatives to modernize the health MIS at PHC facilities. In addition, there is a need to continue increasing the quality of general practitioners in rural areas and sharing arrangements of the most needed specialists with bigger hospitals to prevent patients from bypassing small- and medium-sized hospitals.

Follow-up actions that need to be accomplished by the Government to address these issues are to (i) ensure that all RTCs offer continuing education programs for health providers by supporting adequate funding for training to key institutions; (ii) continue promoting the skills of general practitioners and support staff in rural or remote areas, and enable the most needed specialists to make regular visits to smaller hospitals in areas where it is feasible by sharing arrangements with bigger hospitals; and (iii) introduce a pilot project for automating database MIS in PHC facilities and MOHNW offices in a selected district, to improve planning and management capabilities of PHC and training institutions.

Some lessons learned from the Project include the importance of designing a good and fully-funded monitoring and evaluation plan at the time of project preparation, which is critical for smooth implementation and useful for impact evaluation. The evaluation plan needs to consider establishing control groups for comparing the incremental impacts of project intervention. In-service training targeted on health providers involved in day-to-day services, in addition to the training provided to the health administrative personnel, proved to be effective. Improving the skills of health staff, upgrading PHC facilities, and increasing the availability of health providers in rural and remote areas where poor communities did not have adequate access to such services, had a significant impact on improving the referral system. Finally, it appears that the civil works to upgrade PHC hospitals and training centers could have achieved better success had there been greater involvement and participation of the stakeholders at the provincial and district levels in planning and decision making, especially in the construction design, thus creating a strong sense of ownership at these levels.


SRI LANKA
SECOND HEALTH AND POPULATION PROJECT
(as implemented)
80°00'E
82°00'E
9°00'N
7°00'N
JAFFNA
KILLINOCHCHI
MULLAITTIVU
NORTHERN PROVINCE
MANNAR
Gulf of Mannar
Bay of Bengal
VAVUNIYA
TRINCOMALEE
ANURADHAPURA
NORTH CENTRAL PROVINCE
PUTTALAM
POLONNARUWA
NORTH WESTERN PROVINCE
KURUNEGALA
BATTICALOA
EASTERN PROVINCE
MATALE
CENTRAL PROVINCE
KANDY
KEGALLA
AMPARAI
GAMPAHA
BADULLA
UVA PROVINCE
NUWARA ELIYA
COLOMBO
COLOMBO
MONARAGALA
WESTERN PROVINCE
KALUTARA
RATNAPURA
SABARAGAMUWA PROVINCE
HAMBANTOTA
GALLE
SOUTHERN PROVINCE
INDIAN OCEAN
MATARA
N
0 10 20 30 40 50
Kilometers
Project Area
National Capital
City/Town
District Boundary
Provincial Boundary
Boundaries are not necessarily authoritative.
03-0844 RM

# I. BACKGROUND

## A. Rationale

1. The Government of Sri Lanka (the Government) has traditionally made substantial investments in human resource development, including health care and family planning services. This was reflected in Sri Lanka's 2000 indicators, which were better than those of its neighboring countries in South Asia.[1] In 1980, the Government signed the Charter for Health Development and endorsed the global strategy of *Health for All* by year 2000. The charter promoted the utilization of primary health care (PHC) as the main health delivery system. This initiative became the basis for the first involvement of the Asian Development Bank (ADB) in the health and population sector in Sri Lanka through the provision of a loan[2] in 1982. The resulting Project, which aimed at strengthening the PHC delivery system, was satisfactorily implemented and achieved its objectives. It was closed in August 1990, and the project performance audit report (PPAR) that was circulated in August 1993 rated the Project generally successful.

2. In view of the strategic emphasis of the new National Health Policy adopted in 1992, key issues that required assistance in its implementation were in the areas of (i) PHC services that needed strengthening in terms of equipment, communication, and transport facilities, and upgrading of physical infrastructure to enable functioning and delivering of quality services; (ii) support for human resource development (HRD) and training; (iii) modern hospital management methods to improve the efficiency and cost effectiveness of hospital services; (iv) strengthening the referral system between small hospitals in rural areas with larger, better equipped hospitals; (v) maintaining the high acceptance of family planning methods that experienced setback due to the civil unrest, meeting the demand for clinical contraceptives, and training the providers of these services; (vi) setting up a computerized management information system (MIS) to monitor the decentralized health care delivery system, particularly at the PHC level; and (vii) preparing a proposal for promoting health insurance.

3. ADB's follow-up to the first health and population loan supported the Government in implementing its National Health Policy, as reflected in the components of the Second Health and Population Project.[3] It was also in line with ADB's focus in the health and population sector at that time, which was to upgrade existing assets and improve efficiency through human resource and institutional development. The Project aimed to directly benefit the rural population, particularly the poor, elderly women, and children.

## B. Formulation

4. At the request of the Government, in 1990, ADB processed a second project in the health and population sector under a small-scale project preparatory technical assistance (TA).[4] The study was undertaken from April to June 1990 and a project proposal was designed. In February 1992, a presidential task force was appointed to prepare a new health policy for Sri

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[1] ADB. 2002. *Key Indicators of Developing Asian and Pacific Countries*. Manila. Compared to the 2000 average indicators in South Asia, Sri Lanka's life expectancy was 75 years for females and 68 years for males, as compared to 61 years and 60 years, respectively; infant mortality rate was 17 per 1,000 live births, as compared to 75 per 1,000 live births; total fertility rate was 2.1 births per woman, as compared to 4.6 births per woman; and population growth rate was 1.4%, as compared to 2.1%.

[2] ADB. 1982. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to Sri Lanka for the Health and Population Project*. Manila.

[3] ADB. 1992. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to Sri Lanka for the Second Health and Population Project*. Manila.

[4] ADB. 1990. *Technical Assistance to Sri Lanka for Second Health and Population*. Manila.

Lanka. The draft of this new health policy, findings of the TA study and discussions, and findings of the fact-finding and appraisal missions became the basis for the final design of the Project. The Project was classified under social concerns, with human development as the primary classification and women in development as secondary classification. The Executing Agency was the Ministry of Health, Nutrition, and Welfare (MOHNW).[5] A simplified organizational chart of the health sector in Sri Lanka, which includes MOHNW, the Provincial Health Department, and relevant agencies to the Project, is shown in Appendix 1. A project coordinating committee, comprising representatives of the main government agencies and provincial health officers, directed the implementation of the Project.

## C. Purpose and Outputs

5. The main objective of the Project was to improve the health care delivery system in rural areas. The Project aimed to provide better training for health personnel and to upgrade small- and medium-sized PHC hospitals in Anuradhapura (North Central Province), Kurunegala (North Western Province), and Nuwara Eliya (Central Province). While these three districts were selected for upgrading of PHC hospitals, the strengthening of family planning and equipment support covered the whole of Sri Lanka.

6. The Project had three components: (i) Part A—in-service training and HRD to alleviate shortages and upgrade the skills of PHC personnel at national and provincial levels; (ii) Part B—strengthening the referral system by upgrading 35 selected small- and medium-sized hospitals in three districts, and supplying essential hospital inputs; and (iii) Part C—institutional development and implementation of policy reforms. The institutional development component is aimed at strengthening the planning and management capability of MOHNW and assisting the Government in implementing the newly adopted National Health Policy, as well as suggesting alternative measures related to health sector financing toward reducing the burden of health sector expenditure on the Government.

7. A TA[6] was attached to the Project. Its objectives were to (i) develop a computer-based information system that will monitor the service delivery and utilization of PHC facilities; and (ii) undertake study of issues related to establishing a health insurance program.

## D. Cost, Financing, and Executing Arrangements

8. Total project cost amounted to $27.94 million compared with $33.26 million estimated at appraisal. Appendix 2 shows the appraisal and actual project costs. ADB financed $22.05 million of the total project cost. There was an increase of $1.0 million of the total project cost for civil works, which was caused by additional costs for utilities, particularly for water supply to Anuradhapura, and increased building costs for remote hospitals. However, in general, the Project did not have a cost overrun. The balance of $3.09 million was cancelled on 27 December 1999 due to the lower costs of equipment and furniture than anticipated at appraisal, the unused unallocated category, and the devaluation of the Sri Lanka rupee.

9. The Executing Agency for the Project was MOHNW. Guidance, coordination, and monitoring major activities, as well as resolving major implementation issues and interministerial

[5] At the time of loan processing, it was called Ministry of Health and Women's Affairs. In 1994, it was renamed Ministry of Health, Highways, and Social Services; in 1997, the Ministry of Health and Indigenous Medicine; and in 2002, it became the Ministry of Health, Nutrition, and Welfare.

[6] ADB. 1992. *Technical Assistance to Sri Lanka for Management Information Systems and Health Insurance Study*. Manila.

problems, were provided by the project coordinating committee chaired by the secretary of MOHNW. For day-to-day project management, a project management office (PMO) was established at MOHNW, and project implementation units (PIUs) were established in the provincial departments of Anuradhapura, Kurunegala, and Nuwara Eliya. Project funds for civil works, furniture, and equipment were channeled to PIUs through the PMO, and important decisions were made centrally at MOHNW to be implemented by PIUs. The training program was coordinated by a training advisory committee that maintained close links with the project coordinating committee.

## E. Completion and Self-Evaluation

10. The Project was completed in August 1998, compared with the expected completion date at appraisal of December 1997. The expected closing date was 30 June 1998, but actual closing was made on 27 December 1999. The project completion report (PCR) was circulated to the Board on 4 August 2000. The PCR rated the Project successful in achieving its objectives as envisaged at appraisal; it noted that immediate project benefits were seen at the completion of activities, and the Project's design was considered relevant to ADB's development priorities, particularly poverty reduction. The project components were focused on critical issues related to strengthening PHC delivery services, and the training programs were satisfactorily implemented. PHC training programs were coordinated effectively for the provision of services to poor women and children in rural areas. Training facilities at the National Institute of Health Sciences (NIHS) and the selected training institutions were successfully upgraded and equipped.

11. The PCR reported that the referral system was being better used, with a decline in the trend of patients bypassing small- and medium-sized rural hospitals in favor of larger hospitals in urban areas. Bypassing was a problem due to lack of adequate facilities and trained medical personnel prior to project intervention. The rural hospitals provided affordable and good quality care for the surrounding poor communities, and the provision of staff accommodation in peripheral units and rural hospitals in remote areas has ensured continued staff presence. However, the problem of maintenance and repair of medical equipment remained, and adequate information was still not available for effective hospital management.

12. The Project's sustainability was judged in the PCR to depend on the successful operation of NIHS and the selected training institutions, and adequate funds to maintain the small- and medium-scale PHC hospitals (rural, peripheral, and district hospitals).[7] The Government started cost sharing through a small-scale social health insurance scheme for civil servants.

## F. Operations Evaluation

13. This PPAR assesses the Project's relevance, efficacy, efficiency, sustainability, and institutional and other development impacts. It also identifies lessons and follow-up actions for ADB's ongoing and future operations in the health and population sector. The PPAR presents the findings of the Operations Evaluation Mission (OEM) that visited Sri Lanka in March and April 2003. The OEM checked the findings of the PCR and its activities included a survey,

[7] Rural hospital is the smallest hospital, followed by peripheral unit; district; and teaching, base, and general hospitals. Rural hospitals, peripheral units, and district hospitals are PHC institutions and report to the provincial directors of health services. In general, specialists are only available in the teaching, base, and general hospitals. A back-referral system operates in some areas, whereby certain specialists, such as pediatricians and gynecologists/obstetricians, make periodic visits to the PHC institutions.

interviews, and focus group discussions carried out in Anuradhapura, Colombo, Kalutara, Kandy (Kadugannawa), and Kurunegala. The report on the survey is provided in Appendix 3. The PPAR incorporates information gathered from discussions with officials in central and provincial ministries of health, NIHS, regional training institutes, small- and medium-sized hospitals, the Family Health Bureau (FHB), the Post Graduate Institute of Medicine, World Bank, and the World Health Organization. Copies of the draft PPAR were provided to the Government, MOHNW, and ADB staff concerned for review and comments, which were taken into account in finalizing this report.

## II. PLANNING AND IMPLEMENTATION PERFORMANCE

### A. Project Concept and Design

14. The Project was designed to upgrade the quality of PHC services, including family planning through improving the operations of the existing service units in rural areas. It was targeted at activities related to service delivery and training, and included support for equipment with maintenance facilities, hospital supplies, and communications in selected provinces. The Project also provided nationwide support for institutional development, implementation of the health policy, critical hospital equipment, and family planning program needs. Anuradhapura, Kurunegala, and Nuwara Eliya were selected for upgrading of small- and medium-sized (PHC) hospitals. The selection was based on the following criteria: (i) predominantly rural, (ii) have not received significant resources for PHC hospitals, and (iii) the districts are close to each other and less affected by civil unrest. These districts were also chosen because Anuradhapura is the largest district in Sri Lanka with low population density and widespread communities, making the delivery of health care relatively more difficult. Kurunegala is a relatively large district and has a regional training center (RTC) that the Project intended to upgrade to provide in-service training for hospital staff at the regional level. Nuwara Eliya has the poorest health indicators in the country. In addition, a few small hospitals in Kandy and Kalutara districts were also upgraded.

15. The OEM considers the design and subsequent implementation of the Project highly relevant to the Government's objectives in health and population, and relevant to ADB's operational strategy for Sri Lanka at that time. This strategy included assistance for social infrastructure development with a view to satisfying basic needs in the areas of education, health, and population.

### B. Achievement of Outputs

16. The achievement of outputs is reported following the Project's three main components.

#### 1. Training and Human Resource Development

17. The Project surpassed expectations for staff development for both in-service training and international fellowships. Compared with the target of 1,180 health workers, 1,566 workers underwent short-term training, with focus on paramedical staff, including public health inspectors, midwives, nurses, laboratory technicians, and pharmacists. Only 51 regional medical officers (doctors) underwent in-service training, compared with a target of 90, mainly because of the difficulty they had in leaving their practices to attend training sessions. The in-service training for hospital and PHC staff, such as midwives and paramedics, was introduced by the Project for the first time, and the trainees considered it to be very useful in upgrading their skills to provide better quality services. However, some participants indicated that the public health

inspector diploma course program at Kadugannawa RTC, while useful, should have less theory and more practical content.

18. Sixty-three medical officers, medical administrators, and paramedics received international fellowships, as against a target of 38. The majority of them acquired new skills that are being applied in their day-to-day work, particularly for those who are involved in training and PHC institutions. The international training component has, therefore, helped strengthen the training institutions as well as the PHC delivery system. At NIHS, medical personnel receiving teacher training and educational technology training overseas are conducting training-of-trainer programs using new techniques such as lesson plans, which they did not possess prior to their training. The training programs have been expanded and include computer training for NIHS staff.

19. The five training institutions that were upgraded (in terms of physical infrastructure, equipment, training materials, and furniture) comprised NIHS, an apex training body located in Kalutara, RTCs at Kurunegala and Kadugannawa, and nursing training schools at Kurunegala and Anuradhapura. The physical infrastructure provided to these facilities consisted of new buildings, such as lecture rooms, hostels, libraries, and staff quarters. In addition, provision was also made for laboratory equipment, furniture, and vehicles.

20. There were some changes in the design of the RTC at Kurunegala where more hostel rooms were constructed and only the hostel was built, without the office complex and the auditorium. Thus, the old center is still being used for training, and the dining room of the new hostel is also serving as a lecture room. The Kurunegala Department of Health Services considered that more hostel rooms were urgently needed, and expected MOHNW to finance the completion of this RTC. The auditorium at the nurse training school in Anuradhapura, though spacious, has a serious design flaw. The height of the ceiling is around 50 feet, making it quite impossible to reach for changing light bulbs, cleaning cobwebs, etc. Consequently, the auditorium, though relatively new and effectively functioning, is not properly maintained. The buildings erected at NIHS in Kalutara include a polyclinic (which also houses the MOHNW office), a training facility, a hostel, and five staff quarters. While the design and construction work on the whole is satisfactory, some fixtures and fittings appear to be substandard.

21. Some training institutions are not satisfied with the computers, microscopes, and sphygmanometers[8] provided by the Project as they were of substandard quality. This problem could have been caused by the Project purchasing these goods from the lowest instead of the most competitive bidders. The institutions, however, are satisfied with the vehicles allocated under the Project (cars, jeeps, and ambulances), and other equipment, particularly the 76 laparoscopes[9] provided to FHB and the teaching, base, and general hospitals throughout the country to support the demand for good quality permanent contraceptive methods, such as sterilization. The training of health personnel in laparoscopic sterilization was undertaken mainly by FHB. During the field visit, the OEM found out that the laparoscopes provided by the Project were the only ones available in FHB, and were very useful and well maintained.

[8] Instrument for measuring blood pressure.
[9] Fiber-optic instrument inserted through the abdominal wall to view the organs in the abdomen or to permit small-scale surgery.

### 2. Strengthening of the Referral System

22. Strengthening the referral system and improving the quality of health care provided by small hospitals and MOHNW clinics comprised the second major component of the Project. In addition to the five training institutions, 35 selected PHC hospitals in Anuradhapura, Nuwara Eliya, and Kurunegala districts were also upgraded. This number includes the three small hospitals linked to NIHS in Kalutara and located in Beruwela, Dharga town, and Aluthgama.

23. The renovation and upgrading on the whole was satisfactory, even though implementation fell behind schedule in some areas and some hospitals experienced problems with wiring and fittings. In addition to new buildings and facilities, such as outpatient department clinics, the hospitals also received medical equipment, furniture, supplies, and vehicles that were satisfactory, except for the computers and some dental chairs. The upgrading of the rural PHC hospitals, peripheral units, and district PHC hospitals included training of medical and paramedical staff, which was done at NIHS and RTCs. Some of the staff (such as public health inspectors and midwives) also received short-term training overseas. On the whole, the staff considered the training both highly relevant as well as efficacious, particularly the courses conducted at NIHS, which have been elevated to the status of RTC by the World Health Organization.

24. Overall, the Project has been successful in strengthening the referral system in Anuradhapura, Kurunegala, and Nuwara Eliya. The general opinion of medical staff in these areas is that the referral system is better now than in the early 1990s and that the Project has significantly reduced the problem of bypassing in the system. The survey (Appendix 3) and the health expenditure impact assessment (Appendix 4) support this opinion.

### 3. Institutional Development and Policy Implementation

25. Senior medical staff trained under the Project are playing key roles in planning, project and program design, and policy implementation. They provided technical support to the 1997 Presidential Task Force on Health, which reviewed key issues facing the health sector and recommended a wide range of health sector reforms. These reforms were implemented gradually between 1998 and 2001, and will be continued during the next 3-year period. The five priority areas identified for health sector reforms include the following: (i) expanding access to curative health care services at the district level to make these services more accessible in poor, rural areas; (ii) expanding health care services to meet the needs of specific groups, such as the elderly, and victims of conflict, and promoting specific areas of health care, such as occupational health problems, mental health care, and estate health services; (iii) development of health promotional programs, with special emphasis on outreach through the schools; (iv) reforming health care funding, including a better effort to mobilize and manage resources in both public and private sectors; and (v) rationalizing the development of human resources. The Government has established a health sector reform implementation unit to lead the implementation of these reforms.

## C. Technical Assistance

26. The attached TA (footnote 6) financed the services of a team of consultants to conduct an MIS study and a health insurance study. The latter, which was implemented from 3 January 1995 to 31 March 1996, provided 6 person-months of international and 22 person-months of domestic consulting services. The former, over the period April 1994 to March 1996, supported

8 person-months of international and 24 person-months of domestic consultancy services. The main objective of the MIS portion of the TA was to guide future health programs and strategies in implementing the 1992 health policy in the PHC system, while that of the health insurance portion was to comprehensively evaluate the policy proposals of setting up a health insurance system in the country as a major form of health care financing.

27. The TA achieved the following outputs: (i) it developed the HEALTHBASE software in disc operating system (DOS) version with a view to establishing a computer-based PHC-oriented information system, and (ii) it examined the feasibility of establishing a health insurance program in the country and provided recommendations. The computerized management information component (HEALTHBASE) was limited to the Pubic Health Midwife's Monthly Return, the Quarterly Mother and Child Health (MCH) Clinic Return, and their consolidated version, which mainly covered the performance of MCH and family planning related activities. The HEALTHBASE was pilot tested in selected administrative divisions (Beruwela, Kalutara, Walapane, Wariyapola, and Kekirawa).[10] The Public Health Midwife's monthly return provides input to the Quarterly MCH Clinic Return, which is further consolidated into annual MCH clinic returns. These returns are not published, but the raw data are available at FHB as the central agency responsible for planning, monitoring, evaluation, and coordination of MCH and family planning programs in Sri Lanka. Based on the above, FHB provides data and information on MCH and family planning issues published in the Annual Health Bulletin, Department of Health Services, MOHNW. Thus, the idea was to collect data from the field and channel it to the MOHNW office, where the data would be analyzed and used. A major outcome of the MIS study was that manual forms were replaced by electronic data entry forms, which were used to prepare the final consolidated summary reports in the pilot project areas. This transition took place in the latter half of 1997.

28. No progress, however, has been made since that time, and the MIS pilot project has been partly abandoned. There has been no serious attempt made to build on the foundation laid by the MIS study to automate the PHC information system in Sri Lanka. Fifty locally assembled personal computers were purchased in 1998 through international shopping, at a cost equivalent to $117,000, of which 10 were kept for use at the center and the balance distributed to selected MOHNW offices in the divisions of Kurunegala, Anuradhapura, and Nuwara Eliya for developing and expanding the MIS system in the periphery. It appears that most of the personal computers have broken down and could not be repaired as the contract did not include maintenance or training, and the supplier went out of business a relatively short time afterward. The available evidence suggests that the sales contract went to a company that proved to be unreliable. There were no service agreements, warranties, source codes, or operating manuals.

29. Currently the public health system in Sri Lanka does not charge user fees and there are no public sector insurance schemes. The TA's health insurance study was comprehensive and identified several options for establishing a health insurance system in Sri Lanka. These options were to (i) introduce user fees in non-emergency tertiary care services (for outpatient department, clinic visits, and inpatient care); (ii) develop private voluntary health insurance schemes to cover utilization of semiprivate services (such as private wards); (iii) equip peripheral units and district PHC hospitals with mini laboratories, ambulance services, and establish an around-the-clock on-call health service; (iv) introduce user charges for medical investigations done at primary and secondary care hospitals; (v) introduce a voluntary health insurance run by regional health authorities in selected areas; (vi) explore the possibility of incorporating a compulsory health insurance into the Employees Trust Fund; (vii) introduce

[10] Administrative divisions or the subunits of administrative districts.

health administration scholarships and improved management; and (viii) introduce necessary changes in legislation to charge road accident insurance.

## D. Cost and Scheduling

30. The actual project cost amounted to $27.94 million, which was 16% lower than the appraisal estimate of $33.26 million. The reduction was attributed to the lower than anticipated costs of the equipment and furniture, as well as the devaluation of the Sri Lanka rupee. By the time of loan closing on 27 December 1999, $22.045 million had been disbursed and the balance of $3.095 million was cancelled. As envisaged, ADB financed the entire foreign exchange cost of $17.87 million and $4.17 million equivalent of the local currency cost. There were variations in the allocations during implementation. While savings were realized in several categories (equipment under Part A, consulting services, fellowships, studies, and local expenditures for project implementation and operation and maintenance), significant overruns were noted in others (civil works, equipment, and local expenditure for consulting services under Part B). These variations in allocation did not have any significant impact on the achievement of project outcomes.

31. Project completion was delayed by 8 months to allow for the completion of civil works and commissioning of medical equipment at several isolated PHC hospitals. The delay, however, did not significantly affect overall implementation of the Project.

## E. Procurement and Construction

32. The engagement of international and domestic consultants was made in accordance with ADB's *Guidelines on the Use of Consultants*, while procurement of goods was done in accordance with the *Guidelines for Procurement*. The Project utilized 27 person-months of international consultants and 184 person-months of domestic consultants, as compared to appraisal estimates of 23 and 88 person-months, respectively. The overall additional 4 person-months for international consultants resulted from adjustments in inputs for hospital administration by an additional 1 person-month to allow for establishment of a hospital administration course; nursing education and development by an additional 6 person-months to strengthen the postgraduate nursing education; and health personnel planning and development by a reduction of 3 person-months based on actual requirements. The bulk of the increase in domestic consultants' services was due to the additional 120 person-months for the design and supervision consultants for the renovation works, which had been omitted during appraisal. The terms of reference for the international and domestic consultants were satisfactorily met (para. 35).

33. Despite the civil unrest in Sri Lanka, construction and renovation works were completed with minor delay. Five training institutions and 35 PHC hospitals in Anuradhapura, Colombo, Kalutara, Kandy, Kurunegala, and Nuwara Eliya were renovated and upgraded, including three small hospitals linked to NIHS in Kalutara. There were no significant technical problems related to procurement and construction that would have prevented the Project from attaining its planned capacity. No significant deviations related to the procurement of equipment were encountered. Delays, however, were experienced in the further delivery of the equipment from the central to the provincial level. OEM inspection showed that, although construction and renovation were generally satisfactory, maintenance was a problem in many places.

## F. Organization and Management

34. The organizational structure worked reasonably well and there were no major technical or administrative problems affecting project implementation. Coordination between PMO and PIUs was good and the implementation of large subprojects, such as hospital renovation and construction of new buildings, was not seriously hampered by bureaucratic delays. Some problems were encountered with procurement for equipment, such as computers provided to the training centers and PHC hospitals, which were of substandard quality and had no maintenance and training package attached. The design of hospital buildings and layout site plans could have been improved had medical officers and trainers based in the periphery also been drawn into the consultative process.

35. The OEM concurs with the PCR's judgment that covenants to support project outcomes were generally complied with. The majority of consultants performed well and the envisaged knowledge transfer took place. While project implementation on the whole was satisfactory, there was little or no attention paid to performance monitoring. This drawback could have been avoided had appropriate monitoring indicators, targets, and goals been defined at appraisal and a mechanism identified for the collection of baseline data. Moreover, no project framework was prepared.[11] The monitoring and evaluation study undertaken in 1999[12] was limited in scope due to the lack of benchmarks against which to measure project impact and performance.

# III. ACHIEVEMENT OF PROJECT PURPOSE

## A. Operational Performance

### 1. Training and Human Resource Development

36. The Project was aimed at alleviating shortages and upgrading the skills of PHC personnel at national and provincial levels through in-service training and HRD. The main categories of personnel trained were PHC hospital staff, nursing personnel, public health inspectors, obstetricians and gynecologists (for laparoscopic sterilization), laboratory technicians, and hospital administrators. The institutions that were strengthened and upgraded to provide this training consisted of NIHS, the RTCs in Kurunegala and Kadugannawa, the nurse training centers in Kurunegala and Anuradhapura, and the demonstration-cum-training and resource center hospitals in Beruwela, Aluthgama, Dharga town, and Wariyapola, attached to the RTC in Kurunegala. In addition, the University of Peradeniya received support for training of laboratory technicians, the FHB for obstetricians and gynecologists, and the Post Graduate Institute of Management for the design of a master of sciences program in hospital administration.

37. The main categories of personnel trained overseas under the international fellowship program comprised medical officers, medical administrators, senior nurses, PHC trainers, public health inspectors, provincial health administrators, dentists, and ayurvedic physicians. These personnel have been making an effective contribution to the improved delivery of PHC services in their respective institutions since their return. Significant progress has been made in some training institutions for implementation and performance monitoring. This was demonstrated in

[11] The use of project framework became mandatory in 1998.
[12] The benefit monitoring and evaluation study was conducted by the Sri Lanka Institute of Development Administration, Colombo, on behalf of MOHNW.

the Health Services Department of the Northwestern Province, whose director received overseas training in monitoring and evaluation and is making effective use of his knowledge and skills.

38. A notable feature of the Project's training and HRD component is that all the upgraded training institutions are continuing to function effectively and build on the foundation laid by the Project. In general, senior managers are highly motivated and continue to use the expertise of trained staff to improve training curriculums for PHC staff. A model for the rest of the country in this regard is NIHS, which is equipped not only with appropriate training facilities, but also with high-quality management and staff. A high level of motivation among senior managers was also evident in RTCs in Kurunegala and Kadugannawa. Overall, the domestic training had a marked impact, particularly for teacher training and training of trainer programs conducted at NIHS. Training on counseling was provided, especially for midwives, and the rural poor now come regularly to midwives and rural hospitals for family planning counseling.

39. The focus group discussions confirmed the findings of the survey that training of hospital staff was highly relevant and useful and that this is one of the main reasons why the extent of bypassing is declining. Overseas fellowships and local training have contributed to improved teaching methods and increased professional capacity to deliver good services and professional hospital management.

### 2. Strengthening of the Referral System

40. The upgrading of the 35 small- and medium-sized hospitals and 5 training institutions, and the domestic and overseas training programs (which have benefited over 1,600 health workers, including medical administrators) have significantly improved and strengthened the institutional capacity of the public health system, particularly in planning, managing, and delivering PHC services. The majority of hospitals that were upgraded are now better equipped in terms of facilities as well as staff and play a more important and productive role in the referral system. The provision of staff quarters in small hospitals in isolated areas has helped ensure continuance of service. During the OEM's interviews and focus group discussions, the community living in these rural areas expressed their appreciation for the civil works and provision of improved facilities in the hospitals, including the availability of dental services, mini-laboratories, and emergency referral services. This is also shown by the results of the survey reported in Appendix 3. Doctors, nurses, and paramedics were better trained, with improved diagnostic skills. These developments helped strengthen the referral system and have made it more attractive to the population than it has been in the past. The number of inpatients increased at rural and district PHC hospitals in the project areas, as shown in Appendix 5.

### 3. Institutional Development and Policy Implementation

41. Fiscal decentralization calls for improved governance at the provincial level, and the Project has facilitated this process in respect of the health sector through its HRD components, which have benefited mainly the institutions in the provincial level. The quality of policy planning and program budgeting has improved, and so has the capacity of planning units under the provincial directors of health to undertake performance monitoring. This is shown by the quality of annual planning documents, which have become more comprehensive, analytical, and result-oriented, thus allowing greater accountability, and supports the Government's move toward performance-based budgeting. However, the MIS support provided by the TA has had limited impact. During the OEM, project files were not available, and disaggregated health statistics were very difficult to obtain, which indicated that improvement in MIS is much needed.

42. The in-service training programs at the five training institutions have proved to be sustainable and their curriculums are continually being improved and upgraded. The Project has had a major institutional impact on NIHS, particularly in the area of continuing education. NIHS has, over the years, emerged as a model training institution in the South Asian region, and is now attracting foreign students. At the time of this evaluation, there were health personnel from Finland and the Maldives undergoing PHC training at the Institute. The Kurunegala RTC is also providing continuing education, but the Kadugannawa RTC has yet to attain this level of competency.

43. The masters' program in medical administration at Post Graduate Institute of Medicine, which was designed and implemented with domestic and international TA provided under the Project, is also being sustained. The first batch of medical doctors graduated in 1998 (7 students), the second in 2000 (18 students), and the third in 2002 (16 students). The Government funds the program with partial cost recovery as the students have to pay tuition fees. This indeed is a progressive step that is likely to have a positive demonstration effect on other public institutions offering advanced degrees.

## B. Performance of the Operating Entity

44. The performance of MOHNW as the Executing Agency was satisfactory. The project coordinating committee played an effective role in providing overall policy guidance to PMO. The Training Advisory Committee worked closely with PMO in coordinating and implementing the training and HRD activities, which were the most successful components of the Project. The institutional development component was well managed. According to medical staff in some of the rural and district hospitals, PMO did not use a consultative process for planning and implementing the civil works subprojects. In their view, the design of hospital buildings and quality of building materials and fittings could have been improved. Beneficiaries in most project areas, however, are satisfied and there were no such complaints. It appears that inputs for the design of hospital buildings and layout site plans were often not solicited from medical officers working in the institutions that were selected for upgrading. Some provincial administrators expressed the view that management of the Project was overcentralized, despite health being a devolved sector.

## C. Sustainability

45. The Government aims to foster a healthy nation through the provision of comprehensive health services that are of high quality for the entire country. The Government has encouraged expansion of PHC due to its inability to keep pace with increasing demand for hospital-based care and higher quality services. In 2001, total government expenditure on health services amounted to around 1.3% of the gross domestic product, which is slightly lower than the average of 1.5% recorded during the latter half of the 1990s. Appendix 6, Table A6.1 shows the health sector expenditure from 1989 to 2000 and Appendix 6, Figure A6.1 portrays the source of funding from 1995 to 2000. The projections for health expenditure, presented in the Government's Poverty Reduction Strategy (PRS), suggest that the corresponding ratio for the period 2001–2005 will also be approximately 1.5% on average. According to the World Development Report 1999/2000, the average public sector expenditure on health was 2.4% of gross domestic product in middle-income countries.[13] In the case of Sri Lanka, budgetary constraints have curtailed the expansion of the public sector health care services. However,

[13] World Bank. 2000. *World Development Report 1999/2000*. Washington D.C.

there has been a "crowding in" of the private sector investments largely due to the underfunding of public sector health care services. The private sector share in curative health care has gradually grown to over 50% in recent years. However, unlike in more developed countries where a large part of private health expenditure is borne by health insurers, in Sri Lanka, private health costs are almost entirely borne by users. This indicates that there is a vast potential for the entry of health insurance to establish a viable and sustainable health care service in the country.

46. Some of the recommendations of the ADB health insurance study have been adopted. For example, around-the-clock health providers' on-call services are now available in most PHC units, and some units also have been equipped with mini laboratories and ambulances. Also, advanced degree programs in public health administration were introduced by the Post Graduate Institute of Medicine in the latter half of the 1990s. In its PRS, the Government declared its intention to develop a modern public health MIS, but this stated policy has yet to be translated into action due to lack of resources. It also committed itself to promoting widespread adoption of health insurance, but an action plan has yet to be developed in this regard. To date, attempts to introduce an element of cost sharing into the public health system have met with limited success. The previous government introduced a small-scale social health insurance scheme for civil servants in the late 1990s, but it was abolished in January 2003 due to widespread malpractices.

47. Overall, the training programs conducted at NIHS, RTCs, and nurse training schools, including trainer of trainer programs, were well designed and implemented, and are continuing to make a lasting contribution toward upgrading the skills and core competencies of paramedical personnel. It could be safely predicted that with the quality of paramedical staff continuing to improve, the problem of bypassing in the referral system will continue to decrease over time.

## IV. ACHIEVEMENT OF OTHER DEVELOPMENT IMPACTS

### A. Socioeconomic Impact

48. Sri Lanka's social indicators are by far the best in South Asia, largely due to the provision of universal access to health and education and continued investment in the social sectors. In fact, its human development index of 0.73 is not far behind the corresponding indexes of countries like Thailand (at 0.75) and Malaysia (at 0.77), which have considerably higher levels of per capita income.

49. The extent of consumption poverty[14] in Sri Lanka is estimated at around 25% and has remained so since the mid-1990s. Nevertheless, indicators of child malnutrition have registered significant improvements. Malnutrition, though not synonymous with poverty, is generally viewed as a reasonably good proxy for the health status of the poor. Between 1993 and 2000, the prevalence of stunting among preschool children declined sharply from 23.8% to 13.5%, while the prevalence of wasting declined slightly from 15.5% to 14%. The percentage of children with low birth weight also fell from 19.7% to 16.6%. The infant mortality rate decreased marginally from 17 to 16 per 1,000 live births, and the maternal mortality rate fell from 25 to 23 per 100,000 live births. The proportion of registered live births in public hospitals increased from 85% in 1993 to 93% in 1999 (Appendix 7), which speaks well for the referral system. Family

[14] The incidence of consumption poverty indicates the proportion of the population living below the poverty line.

planning performance has also shown a steady improvement, with the number of new acceptors growing from 169,689 in 1993 to 214,627 in 2000 (Appendix 8).

50. The Project has made a significant contribution toward improved trends in contraceptive acceptors. Available data[15] show that compared to 1993, the contraceptive prevalence rate[16] among married women in 2000 was 71% as compared with 66%. The two most popular methods were female sterilization (21%) followed by injectables (11%). The total fertility rate[17] was 2.1 in 2000 compared with 2.6 births per woman in 1990. The 2000 Demographic and Health Survey also indicated that knowledge of at least one contraceptive method, either traditional or modern, is universal (around 99%) among ever-married women as well as currently married women. Appendix 8 presents tables showing family planning new acceptors and contraceptive prevalence rates from 1993 until 2000 in Sri Lanka.

51. While it is difficult to quantify ADB's contribution to these improved health and population indicators, there is little doubt that the Project has had a significant impact on the health sector in qualitative terms. By training around 1,600 health workers; upgrading PHC hospitals and training facilities across the country, including Sri Lanka's apex training institution; strengthening the referral system; and targeting support for such areas as antenatal care, child welfare, preventive medicine, and family planning, the Project has helped improve the delivery services of the health and population sector to the poor. The majority of those interviewed at the focus group discussions were of the opinion that the impact of the Project on the referral system was good and that fewer clients were now bypassing the small- and medium-sized hospitals. The interviews also revealed that community support for maintenance and repair of hospital infrastructure and overall maintenance of equipment shows an outstanding potential for sustainability of project inputs.

### B. Environmental Impact

52. The Project did not pose any environmental problems as the upgrading of PHC hospitals at rural, peripheral, and district levels involved mainly small-scale physical infrastructure. The construction and rehabilitation of RTC, nurse training schools, NIHS, hostels, and staff quarters were generally well planned and executed. In fact, the Project had a positive impact on the environment, as it had also included civil water and sanitation works in its plan, which were generally based on environmentally friendly designs.

### C. Impact on Institutions and Policy

53. The upgrading of the 35 small- and medium-sized hospitals and five training institutions and the domestic and overseas training programs, which benefited around 1,600 health providers, have significantly improved and strengthened the institutional capacity of the public health system, especially in the planning, management, and delivery of PHC services. The majority of hospitals that were upgraded are now better equipped in terms of facilities as well as staff, and play a more important and productive role in the referral system. The institutional development impact was significant, particularly with regard to the strengthening of the planning and management capabilities of the health administration system at central, provincial, and district levels.

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[15] Department of Census and Statistics. 2000. *Sri Lanka Demographic and Health Survey*. Colombo.

[16] Contraceptive prevalence rate is the percentage of women of reproductive age using contraceptive methods.

[17] Total fertility rate is the number of children born to an average woman who experiences each of the age-specific fertility rates of a population in a given year as she progresses through her reproductive lifetime (ages 14–59).

54. Several policy initiatives relating to the health sector, such as the encouragement to adopt health insurance initiated by the Project and the TA, have been identified in Sri Lanka's 2002 PRS. In addition, the action plan for the health and population sector and related policy components contained in the 2002 *Regaining Sri Lanka* paper could be viewed as the Project's long-term policy impact as an outcome of planning and institutional capacity-building efforts undertaken during project life. At the same time, it must be recognized that other sources of assistance have also contributed toward improving the Government's planning capabilities in the health and population sector.

## V. OVERALL ASSESSMENT

### A. Relevance

55. The Project's goal, purpose, and outputs were consistent with and highly relevant to the Government's strategy for strengthening the referral system, improving PHC in poor rural areas, and enhancing the skills and management capabilities of health care personnel, including trainers and administrators. The Project was relevant to ADB's operational strategy for Sri Lanka at the time of appraisal. The three-pronged approach used to achieve project objectives was appropriate at the time of appraisal, and was based on the perceived need of the Government to enhance the quality of PHC services provided to the poor, especially those living in isolated areas, through training of health personnel with focus on paramedical staff, upgrading of small- and medium-sized hospitals, and institutional development. This approach was in line with decentralization of the public administration system, which commenced in the late 1980s, and with the need for enhanced planning and management capabilities at the provincial level. Therefore, the Project is rated as relevant.

### B. Efficacy

56. The Project has made a significant contribution toward strengthening the referral system in geographically disadvantaged areas and in upgrading the quality of services provided by key PHC training institutes in Sri Lanka. The Project has also achieved notable success in family planning (para. 50). During the latter half of the 1990s, there was a steady increase in new acceptors and in the contraceptive prevalence rate under the national program. Training on counseling was provided, especially for midwives, and the rural poor now come regularly to midwives and rural hospitals for family planning counseling. The percentage of registered live births delivered in public hospitals also increased from 85% in 1993 to 92.7% in 1999.

57. Based on its observations, the OEM is of the view that in-service training (where numerical achievements greatly exceeded appraisal targets) was the most efficacious as well as effective component of the Project. NIHS took the lead in this regard in mounting high-quality, on-the-job training programs for a wide range of health care personnel, including nurses, nursing officers, midwives, public health staff, pharmacists, dispensers, medical lab technologists, and assistant medical officers. Another positive feature of the Project was that the three integrated components were mutually reinforcing and created an overall synergism that is continuing to have a ripple effect in the PHC system. In addition, the health sector expenditure impact assessment (Appendix 4) shows that the Project has realized significant efficacy gains. The OEM's overall assessment of the Project is efficacious.

## C. Efficiency

58. The Project's efficiency impact in the target areas, as shown in Appendix 4, demonstrates a strong inverse relationship between government health expenditure (in real terms) and the average duration of stay for inpatients in the two main categories of PHC hospitals—district and rural. In other words, increasing expenditure is associated with decreasing duration of stay per patient. From 1993 to 2000, duration of stay fell by 26% and 30% in the district and rural hospitals, respectively. (The corresponding decline in the peripheral units is around 8%.[18]) This suggests on the whole that quality of services in the lower levels of the referral system improved in the target areas during the reference period. However, quality improvements have been accompanied by an increase in the real cost per patient treated. Overall, the results indicate that patients are benefiting socially and economically from having to spend fewer days in hospital, and health providers can deliver their services more efficiently. However, no direct benefits are accruing to the Government since quality gains are being achieved through rising, not decreasing, treatment costs per patient. Since most of the PHC hospitals are located in remote or isolated rural areas, the main beneficiaries are poor families. This assessment indicates that there have been significant economic and social benefits to patients. The OEM concludes therefore that the Project was efficient.

## D. Sustainability

59. Total expenditure for the health and population sector has averaged 1.5% of gross domestic product over the period 1992–2002. The Government has earmarked $257 million equivalent for this sector in the 2003 budget, which is slightly higher than the 2000–2002 average of $246 million, and it has been given a high priority. It ranks higher than agriculture and irrigation, manufacturing and mining, energy and water supply, as well as housing and community services, in the 2003 public expenditure estimates. However, funding and mechanisms for maintenance of health infrastructure and equipment are lacking, and the MIS on health and population needs to be improved. Consequently, the OEM assesses the sustainability of the Project as likely. Appendix 6, Figure A6.2 presents the real recurrent government expenditure on health from 1989 to 2000.

## E. Institutional Development and Other Impacts

60. All of those who were trained under the Project continued working and spreading their knowledge in Sri Lanka's health and population sector. The improved management capacity of MOHNW at central, provincial, and district levels has developed an enabling environment for good-quality health services, particularly in rural areas. The key areas where project impact has been realized include policy formulation and analysis, strategic planning, program budgeting, and project development. Senior health planners and administrators trained under the Project (at both central and provincial levels) provided key inputs to the 1997 Presidential Task Force on Health, as well as the 2002 PRS exercise, which has incorporated many of the task force's recommendations. The strategy has been integrated into the 2002 *Regaining Sri Lanka* document, which contains the Government's medium-term economic reform agenda as well as the integrated action plan covering the key sectors, including health and population.

[18] The peripheral units under the Project were upgraded to district PHC hospitals, thus bringing higher quality health services closer to the rural community. During the OEM, these peripheral units were identified as district PHC hospitals.

61. To meet the challenges posed by the demographic transition and the changing morbidity profile, the Government will continue to encourage the private sector to develop secondary and tertiary care in private hospitals. The Government will encourage the adoption of health insurance to meet the financing requirements of increasingly sophisticated medical care and use automation to modernize health MIS in about half of all pubic health facilities by 2005, which were the objectives of the TA and some of the Project's intentions. Overall, the Project's impact on institutional and policy developments is significant.

### F. Overall Project Rating

62. Based on the overall assessment of the relevance, efficacy, efficiency, sustainability, and impact on institutional and policy developments, the Project is rated successful.

### G. Asian Development Bank and Borrower Performance

63. ADB performed well in identifying, preparing, and supervising the Project. Overall, ADB's performance was satisfactory. The Borrower's performance was also satisfactory. MOHNW was successful in carrying out the Project as Executing Agency.

### H. Assessment of Related Technical Assistance

64. The associated TA supported a study on health insurance and another on MIS. The health insurance study provided a number of recommendations, of which only a few were feasible for adoption and implementation, such as the establishment of around-the-clock on-call health services in small hospitals, which has helped solve the problem of clients bypassing small hospitals to directly go to bigger ones, and thus also improved the referral system. Recommendations on alternative funding for health are currently being explored of which some have been adopted and are being implemented. The MIS part of the TA produced a HEALTHBASE software system (DOS version) for automating PHC data entry forms at the divisional level, but no further progress has been made in this regard, partly because DOS is now obsolete, and partly because the computer procurement for the Project was poorly managed, resulting in the PHC units receiving substandard equipment with no training and maintenance attached. Moreover, the supplier company went out of business during the implementation period of the Project. The lack of government funds for MIS also appears to be a constraint on automating data entry at the PHC level. However, the pilot project has yielded some benefits in the area of monitoring and evaluation, at the provincial and central levels, and the new health sector policy initiatives encourage the adoption of health insurance and improvement of MIS at the PHC level. Overall, the TA is considered partly successful.

## VI. ISSUES, LESSONS, AND FOLLOW-UP ACTIONS

### A. Key Issues for the Future

65. The training component of the Project was highly successful and the Government needs to ensure that the training institutions continue to engage PHC personnel, especially middle-level human resources, in continuing education programs. These programs are being conducted at the Kurunegala RTC, but not at the Kadugannawa RTC, where the training is being done in an ad hoc manner due to inadequate funding.

66. Efficient database management is vital for a good referral system. The Project attempted to do this on a pilot basis in selected areas in relation to the Pubic Health Midwife's Monthly

Return, the Quarterly MCH Clinic Return, and their consolidated version. However, this exercise has been abandoned and needs to be continued in line with the new health sector policy initiative to modernize health MIS at PHC facilities.

67. One of the main reasons for patients bypassing small- and medium-sized hospitals is to obtain services from qualified health providers and specialists, such as obstetricians and pediatricians. Continuing to increase the quality of general practitioners in rural areas and expanding the sharing arrangements of specialists with bigger hospitals, which is already being practiced in some areas, could solve the problem.

## B. Lessons Learned

68. The PPAR could not provide quantitative economic analysis of the Project due to the absence of baseline data. Therefore, it is very important to design a good and fully funded monitoring and evaluation plan at the time of project preparation. This plan should be continuously updated over the project life to enable producing a solid set of data, which is critical for good implementation and needed changes during implementation. The database will also be useful for impact evaluation. Whenever possible, the evaluation plan needs to consider establishing control groups for comparing the incremental impacts of project intervention.

69. In addition to the training provided to the health administrative personnel, in-service training targeted on health providers involved in day-to-day services proved to be effective.

70. Improving the technical and managerial skills of human resources in the health and population sector, upgrading PHC facilities, and increasing the availability of health providers in rural and remote areas where poor communities did not have adequate access to such services prior to the Project, had a significant impact on improving the referral system.

71. The civil works to upgrade rural PHC hospitals, peripheral units, and district PHC hospitals could have achieved better success had there been greater involvement and participation of the stakeholders at the provincial and district levels in planning and decision making, especially in the construction design, thus creating a strong sense of ownership at these levels.

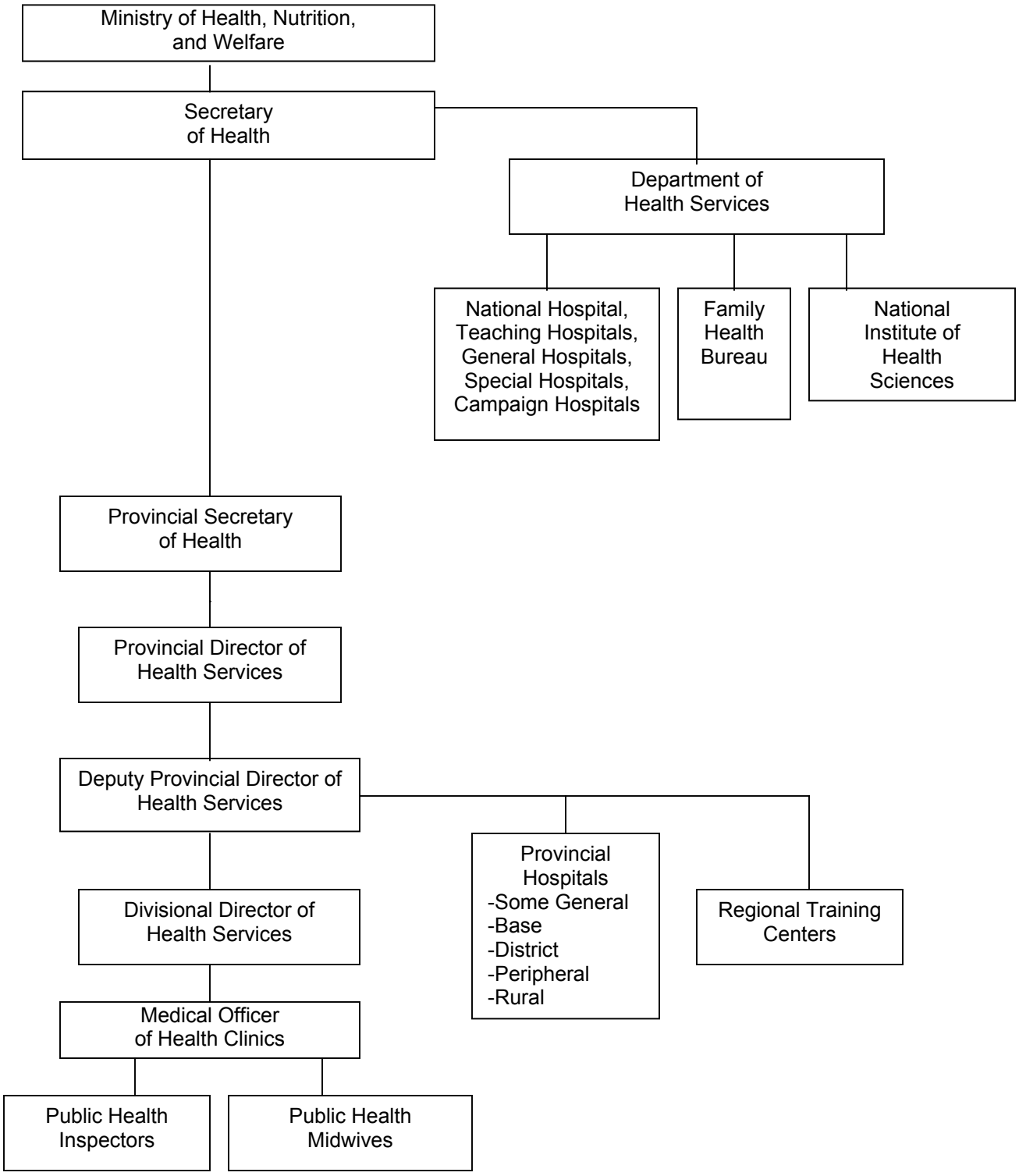
## C. Follow-Up Actions

72. The Government needs to ensure that all RTCs are engaged in continuing education programs for health providers by supporting adequate funding for training to these institutions by mid-2004.

73. The Government needs to continue promoting the skills of the general practitioners and support staff in rural areas and enable the most needed specialists to make regular visits to the smaller hospitals. Arrangements with bigger hospitals in sharing their specialists regularly should be expanded to areas where it is feasible by mid-2004.

74. The Government should introduce a pilot project for automating database MIS in PHC facilities, including the MOHNW offices, in a selected district to enhance the planning and management capabilities of PHC and training institutions. The pilot project should be designed by early 2004 and implemented by early 2005.

## SIMPLIFED HEALTH SECTOR ORGANIZATIONAL CHART[1]




Source: Ministry of Health, Nutrition, and Welfare.

[1] Only agencies relevant to the Project are included in the chart.

**PROJECT COST**
($ million)

| Item | Appraisal | | | Actual | | |
|---|---|---|---|---|---|---|
| | Foreign | Local | Total | Foreign | Local | Total |
| **A. Human Resource Development and Training** | **3.916** | **2.494** | **6.410** | **3.325** | **2.171** | **5.496** |
| Civil Works | 1.834 | 1.923 | 3.757 | 1.762 | 2.035 | 3.797 |
| Equipment, Supplies, Furniture, and Communications | 1.575 | 0.237 | 1.812 | 1.006 | 0.081 | 1.087 |
| Consultancies | 0.202 | 0.271 | 0.473 | 0.177 | 0.043 | 0.220 |
| Fellowships (International and Domestic) | 0.305 | 0.063 | 0.368 | 0.380 | 0.012 | 0.392 |
| **B. Strengthening of Referral System** | **11.529** | **7.101** | **18.630** | **13.893** | **7.364** | **21.257** |
| Civil Works | 4.926 | 5.166 | 10.092 | 4.840 | 6.194 | 11.034 |
| Equipment, Supplies, Furniture, and Communications | 6.598 | 1.508 | 8.106 | 9.030 | 0.587 | 9.617 |
| Consultancies | 0 | 0.211 | 0.211 | 0.012 | 0.493 | 0.505 |
| Fellowships (Domestic) | 0.005 | 0.216 | 0.221 | 0.011 | 0.090 | 0.101 |
| **C. Institutional Development** | **0.365** | **0.115** | **0.480** | **0.199** | **0.022** | **0.221** |
| Consultancies | 0.246 | 0.074 | 0.320 | 0.045 | 0.022 | 0.067 |
| Fellowships (International) | 0.082 | 0.004 | 0.086 | 0.140 | 0 | 0.140 |
| Studies | 0.037 | 0.037 | 0.074 | 0.014 | 0 | 0.014 |
| **D. Project Implementation and Recurrent Costs** | **0** | **1.870** | **1.870** | **0** | **0.514** | **0.514** |
| Project Management Office and Project Implementation | 0 | 0.540 | 0.540 | 0 | 0.511 | 0.511 |
| Operation and Maintenance | 0 | 1.330 | 1.330 | 0 | 0.003 | 0.003 |
| **E. Contingencies and Service Charge** | **3.130** | **2.740** | **5.870** | **0.449** | **0** | **0.449** |
| Physical Contingencies | 1.190 | 0.870 | 2.060 | 0 | 0 | 0 |
| Price Contingencies | 1.450 | 1.870 | 3.320 | 0 | 0 | 0 |
| Service Charge | 0.490 | 0 | 0.490 | 0.449 | 0 | 0.449 |
| **Total** | **18.940** | **14.320** | **33.260** | **17.866** | **10.071** | **27.937** |

Source: Asian Development Bank. 2000. *Project Completion Report on the Second Health and Population Project in Sri Lanka.* Manila.

## EVALUATION SURVEY RESULTS

### A. Background

1. The Operations Evaluation Mission visited all six districts in which the Second Health and Population Project has operated. Observations, informal discussions, structured focus group discussions, and interviews were conducted and questionnaires were provided to respondents who were beneficiaries of the Project—such as those who had undergone training in the hospitals and institutions supported by the Project, and clients from some of these hospitals. The survey was conducted from 17 March to 11 April 2003. Table A3.1 shows the hospitals and institutions surveyed and the number of respondents from each one.

**Table A3.1: Hospitals and Institutions Surveyed**

| District | Hospitals, Institutions, and Valid Responses | Total Responses |
|---|---|---|
| Colombo | Ministry of Health, Nutrition, and Welfare (4); Post-Graduate Institute of Medicine (3); Family Health Bureau (1); Postmaster General (1) | 9 |
| Kalutara | National Institute of Health Sciences (5), Beruwale District Hospital (5), Aluthgama Rural Hospital (11), Dharga Town Peripheral Hospital (3) | 24 |
| Kurunegala | Provincial Department of Health Services, North Western Province (5), Wariyapola District Hospital (1), Kobeigane District Hospital (9), Hettipola District Hospital (6), Bingiriya District Hospital (3) | 24 |
| Kandy | Kadugannawa Regional Training Center (3) | 3 |
| Anuradhapura | Provincial Department of Health Services, North Central Province (1), School of Nursing (1), Nochchiyagama District Hospital (2) | 4 |
| Nuwara Eliya | Provincial Department of Health Services (2), Walapone District Hospital (2) | 4 |
| **Total Provinces: 6** | **Total Institutions in Survey: 13** | **68** |

## B. Methodology

2. A draft guideline of the stakeholder-cum-beneficiary focus group discussion in English was developed and reviewed by the evaluation mission members for both content and structure. A preliminary version of the final guideline of the focus group discussion was tested, and feedback from interviewed respondents was taken into consideration in producing the final guideline for the focus group discussion. Based on this guideline, the secondary data on the health services sector, as well as on the project documents, the questionnaire was developed in English. The questionnaire was translated into Sinhala and was pretested and revised before the survey was conducted. Beneficiaries who are health providers and administrators that were trained under the Project, as well as hospital clients, were asked to fill in questionnaires following an explanation of the questions. The interviewer posed the questions in Sinhalese to those who are not conversant in English.

3. Focus group discussions were conducted with administrators, medical, and paramedical staff representing various district and provincial level hospitals. The survey explored respondents' opinions about the different components of the Project in terms of their relevance, efficacy, efficiency, possible sustainability, and impact on institutional development. Respondents were asked to choose from the following ratings for each item: very good (VG) = 3; good (G) = 2; somewhat good (SG) = 1; and not good (NG) = 0.

## C. Responses

4. Table A3.2 shows the responses of the questionnaire, based on five component groupings. There were 68 responses in all.

## Table A3.2: Responses to Questionnaire

| Summary of Questions | Results |
|---|---|
| **Project Relevance** | |
| 1. Project impact on health and population policies of the country | 1. Mode: 2, Mean: 2.103, Standard deviation: 0.493, Mode label: Good |
| 2. Probability of the hospital and training center facilities being used for issues related to child and maternity care | 2. Mode: 3, Mean: 2.559, Standard deviation: 0.5, Mode label: Very Good |
| **Project Efficacy** | |
| 3. Usefulness of training | 3. Mode: 3, Mean: 2.926, Standard deviation: 0.263, Mode label: Very Good |
| 4. Impact on referral system | 4. Mode: 2, Mean: 2.103, Standard deviation: 0.626, Mode label: Good |
| 5. Possible project impact on hospital clients | 5. Mode: 3, Mean: 2.441, Standard deviation: 0.583, Mode label: Very Good |
| 6. Condition of hospital facilities | 6. Mode: 2, Mean: 2.088, Standard deviation: 0.617, Mode label: Good |
| **Project Efficiency** | |
| 7. Competence of community health preventive and curative services (primary health care services) | 7. Mode: 3, Mean: 3.544, Standard deviation: 0.608, Mode label: Very Good |
| 8. Approach of medics and paramedics toward patients after receiving training | 8. Mode: 3, Mean: 2.338, Standard deviation: 0.683, Mode label: Very Good |
| 9. Impact of overseas fellowships on teaching methods | 9. Mode: 2, Mean: 2.324, Standard deviation: 0.531, Mode label: Good |
| 10. Impact of training on managerial aspects | 10. Mode: 2, Mean: 3.912, Standard deviation: 0.503, Mode label: Good |
| 11. Hospital capacity to deliver satisfactory services | 11. Mode: 2, Mean: 2.088, Standard deviation: 0.64, Mode label: Good |
| 12. Availability of drugs prescribed in the hospital dispensary | 12. Mode: 2, Mean: 1.897, Standard deviation: 0.392, Mode label: Good |
| **Possible Sustainability of the Project** | |
| 13. Maintenance and repair of medical equipment | 13. Mode: 2, Mean: 1.441, Standard deviation: 0.887, Mode label: Good |
| 14. Community participation for improving services and maintenance | 14. Mode: 2, Mean: 2.25, Standard deviation: 0.632, Mode label: Good |
| **Institutional Development** | |
| 15. Human resource development after training | 15. Mode: 2, Mean: 2.912, Standard deviation: 0.683, Mode label: Good |
| 16. Hospital infrastructure development | 16. Mode: 3, Mean: 2.515, Standard deviation: 0.635, Mode label: Very Good |
| 17. Impact on institutional development | 17. Mode: 1, Mean: 0.985, Standard deviation: 0.782, Mode label: Somewhat Good |

## D. Discussion

5. The number of respondents in this survey is a tiny fraction of the Project's beneficiaries—albeit representing a majority of the participating institutions—and a small proportion of trainees who received assistance. For this reason, the survey's results can only be considered as illustrative and not as offering conclusive evidence. By confirming other information, the survey's results, together with focus group discussion findings, play a useful role in increasing the reliability of other data gathered (for example, by means of reports, field observations, and interviews) to help assess the Project's outputs, impact, and sustainability.

6. The data suggest that the Project was highly relevant (average scale of 2.5), particularly in terms of strengthening child and maternity care and primary health care services (scale of 3.0). The Project's relevance and impact on health and population policies in Sri Lanka is rated good (scale of 2.0). The Project's efficacy also has an average scale of 2.5, which indicates that the respondents regard the Project as highly efficacious, with usefulness of training, and possible project impact on hospital clients ranking highest or very good (each has a scale of 3.0), while project impact on referral system and condition of hospital facilities are considered good (scale of 2.0).

7. Overseas fellowships, and in-country and in-service training had a positive impact on improving teaching methods and producing the professional capacity to deliver good quality services and professional hospital management. The survey rates the overall Project as efficient (average scale of 2.33), with competence of community health preventive and curative services, as well as the approach of medics and paramedics toward patients after receiving training, rated as very good (each has a scale of 3.0).

8. The possible sustainability of the Project is considered good or likely sustainable (average scale of 2.0). Maintenance and repair of medical equipment, and community participation for improving services and maintenance are both assessed as good. Results of the survey for institutional development range from somewhat good (scale of 1.0) to very good (scale of 3.0). The somewhat good assessment was mainly based on the efficient database and reliable management information system that has not yet taken place as particularly envisaged by the objectives of the technical assistance attached to the Project. Hence, the survey's overall rating of the Project is good (average scale of 2.29). In other words, the Project is considered to be successful.

## HEALTH EXPENDITURE IMPACT ASSESSMENT

### A. Background

1. Under the Project, 35 district hospitals, peripheral units, and rural hospitals (collectively known as small- and medium-sized hospitals) in five districts were upgraded in terms of buildings, equipment, and staff between 1993 and 1998. Over 90% of these hospitals are located in the districts of Nuwara Eliya, Kurunegala, and Anuradhapura, and the others are located in Kalutara and Kandy. The regions affected by the ethnic conflict (corresponding more or less to the Northern and Eastern provinces) were not included in the Project. The Asian Development Bank was a major player in the Sri Lankan health sector during the period under consideration. The Project contributed $22 million to the Government's health budget between 1993 and 1998, with emphasis on training, human resource development, physical upgrading, and institutional development. Considering that small- and medium-scale hospital upgrading in the entire country was concentrated in the project intervention areas, it could be assumed that the Project would have played a significant role in improving the overall delivery of health services at the lower levels of the referral system in the three main districts—Nuwara Eliya, Kurunegala, and Anuradhapura—collectively known as the target areas.

2. To test this assumption empirically, the behavior of selected health indicators (at least one representing efficacy and at least one representing efficiency) during the 1990s needs to be assessed in relation to real government expenditure on health, so as to determine whether an association exists between health expenditure (in real terms) and sector performance at the lower levels of the referral system. The results of this exercise (based on correlation analysis) could then be evaluated to determine whether there were any efficacy and/or efficiency gains during project life in the target areas, in respect of the lower levels (district hospitals, peripheral units,[1] and rural hospitals), bearing in mind that the poor are the main users of these facilities.[2]

3. It should be noted that Sri Lanka is somewhat of an outlier among developing countries in that it has been able to achieve rapid improvements in health status (average life span is 73, maternal mortality rate is 2.3 per 10,000 live births, and infant mortality rate is 16.3 per 1,000 live births) with a relatively low percentage level of public and private spending on health. The World Health Organization reports that in purchasing power parity terms, Sri Lanka's health expenditure (public and private combined) as a percentage of the gross domestic product is around 3.2, compared with 13.9 for the United States, 8.8 for the United Kingdom, 3.7 for Thailand, 3.6 for the Philippines, and 3.9 for Bangladesh.[3] Compared to international benchmarks, therefore, Sri Lanka's percentage level of health expenditure appears to be cost effective in respect of some vital indicators.[4] But further analysis is required to assess the impact of expenditure on some other health-related indicators (during a specific time period) that are of relevance to the Project.

4. One key outcome pursued by the Project in a national context was to reduce the problem of bypassing of district, peripheral, and rural hospitals—in other words, prior to the Project, they were significantly underutilized as they did not have proper facilities and consequently people chose to seek treatment elsewhere. Another key outcome was to improve

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[1] Peripheral hospitals are bigger than rural hospitals and smaller than district hospitals. Over the years, many of them have been upgraded to district hospitals, including those upgraded by the Project.

[2] A standard, ex-post benefit-cost analysis could not be undertaken due to the absence of necessary historical data. Hence, the reason for correlation analysis.

[3] World Health Organization. 2002. *Macroeconomics and Health Initiatives.* Colombo.

[4] The share of the private sector in the health expenditure:gross domestic product ratio is around 50%.

the quality of health care provided by these hospitals, with a view to ensuring a more efficient utilization of resources. The analysis should, therefore, help in determining whether the Project was more or less successful in attaining these outcomes in the target areas. Such a conclusion could only be made in an indirect sense, given that time series data are not available separately for all the individual hospitals upgraded under the Project. However, data are available collectively for the district hospitals, peripheral units, and rural hospitals in the target areas. The majority of these hospitals were upgraded. Hence, this analysis relates government expenditure on health, including ADB inputs during the 1993–1998 period (measured in real terms), to health sector performance—measured in terms of selected indicators—in the target areas. Table A4.1 contains the variables that have been identified for correlation analysis, covering the period 1993–2000 (Table A4.2 shows values and Table A4.3 gives the coefficients).

**Table A4.1: Variables Identified for Correlation Analysis**

| | | **Bypassing Variables** (target areas)[b] | | | | | | **Quality of Hospital Services Variable** (target areas)[c] | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | **Number of Inpatients Treated** | | | **General Outpatient Department Attendance** | | | | | |
| **Year** | **X1**[a] | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** | **Y7** | **Y8** | **Y9** |
| 1993 | 6,979 | 181,961 | 110,597 | 39,280 | 1,970,071 | 1,501,495 | 864,860 | 2.9 | 2.6 | 3.0 |
| 1994 | 7,570 | 185,269 | 96,760 | 37,479 | 1,866,885 | 1,256,626 | 860,265 | 3.1 | 2.4 | 3.0 |
| 1995 | 9,722 | 164,121 | 87,475 | 37,831 | 1,751,814 | 1,246,349 | 898,374 | 3.1 | 2.5 | 3.0 |
| 1996 | 9,605 | 180,250 | 89,060 | 50,392 | 1,917,802 | 1,228,865 | 1,116,294 | 2.8 | 2.4 | 2.8 |
| 1997 | 11,570 | 189,679 | 91,988 | 52,271 | 1,934,843 | 1,272,365 | 1,277,780 | 2.7 | 2.4 | 2.6 |
| 1998 | 14,444 | 198,531 | 93,628 | 63,739 | 1,828,808 | 1,196,309 | 1,148,645 | 2.6 | 2.5 | 2.4 |
| 1999 | 17,171 | 195,367 | 75,424 | 69,834 | 2,045,913 | 1,162,110 | 1,301,314 | 2.4 | 2.4 | 2.4 |
| 2000 | 17,873 | 226,570 | 77,510 | 72,432 | 2,247,567 | 1,094,207 | 1,244,887 | 2.3 | 2.4 | 2.3 |

X1 = real government expenditure on health (SLRs million), Y1 = district hospitals, Y2 = peripheral units, Y3 = rural hospitals, Y4 = district hospitals, Y5 = peripheral units, Y6 = rural hospitals, Y7 = district hospitals, Y8 = peripheral units, Y9 = rural hospitals.

[a] Real expenditure was calculated using the Colombo Consumer Price Index, from which is derived the annual inflation rate.

[b] Nuwara Eliya, Kurunegala, and Anuradhapura districts, collectively.

[c] Average duration of stay (number of days) covering Nuwara Eliya, Kurunegala, and Anuradhapura districts, collectively.

Source: Medical Statistics Unit, Ministry of Health, Nutrition, and Welfare.

**Table A4.2: Correlation Coefficients between Government Expenditure on Health (X) and Bypassing (Y1–Y6) and Quality Variables (Y7–Y9)**

| | **Y1** | **Y2** | **Y3** | **Y4** | **Y5** | **Y6** | **Y7** | **Y8** | **Y9** |
|---|---|---|---|---|---|---|---|---|---|
| X | 0.77 | (0.82) | 0.96 | 0.62 | (0.79) | 0.83 | (0.92) | (0.42) | (0.95) |

Source: Medical Statistics Unit, Ministry of Health, Nutrition, and Welfare.

## B. Discussion

5. In the majority of cases, real government expenditure on health and sector outcomes are highly correlated and the directions are also in accordance with expectations. The analysis shows a strong positive association between the expenditure and inpatient variables for the

district and rural hospitals, but not so for the peripheral units. In the latter, the association between health expenditure and inpatients is negative. The results are similar in terms of the association between health expenditure and general outpatient department attendance as well, i.e., a strong positive correlation for the district and rural hospitals, but not so for the peripheral units (where the association is negative).

6. Overall, the results indicate that upgrading is attracting more clients to the district and rural hospitals, but not to the peripheral units. The Project provided human resource development and infrastructure support mainly to the district and rural hospitals as many of the peripheral units were being upgraded to district hospitals at the time. Thus, in terms of reducing the extent of bypassing in the lower levels of the referral system, the Project appears to have met with considerable success, thereby contributing to improved efficacy.

7. The analysis demonstrates a negative association, as would be expected, between the expenditure and average-duration-of-stay variables for all three categories of hospitals—district, peripheral, and rural. (The association is very strong for the district and rural hospitals but somewhat weak for the peripheral units.) In other words, increasing expenditure is associated with decreasing average duration of stay in all three categories. From 1993 to 2000, the duration of stay per patient fell by 26%, 8%, and 30% in the district, peripheral, and rural hospitals, respectively. This suggests that quality of services has improved in all three categories of hospitals during the reference period. However, quality improvements (as measured by a quantitative variable) have been accompanied by an increase in the real cost of treatment per patient, as shown in Table A4.3. Between 1993 and 2000, the real cost per patient treated increased by a factor of 2.1 in the district hospitals, 3.7 in the peripheral units, and 1.4 in the rural hospitals. These costs increased because overall real per capita expenditure on health more than doubled during the period 1993–2000.

**Table A4.3: Real Cost of Treatment per Patient**
(SLRs)

| Year | District | Peripheral | Rural |
|---|---|---|---|
| 1993 | 38,354 | 63,103 | 177,673 |
| 1994 | 40,860 | 78,235 | 201,980 |
| 1995 | 59,237 | 111,140 | 256,985 |
| 1996 | 53,287 | 107,849 | 190,606 |
| 1997 | 60,998 | 125,777 | 221,346 |
| 1998 | 72,754 | 154,270 | 226,612 |
| 1999 | 87,891 | 227,660 | 245,883 |
| 2000 | 78,885 | 230,590 | 246,756 |

Source: Medical Statistics Unit, Ministry of Health, Nutrition, and Welfare.

8. Overall, the results indicate that since quality improvements are being achieved through rising real treatment costs, this is only a win, not a win-win situation for the country. In other words, the patients are benefiting economically from having to spend fewer days (on average) in hospital, but no direct benefits are accruing to the Government, since quality gains are being achieved through rising, not decreasing, treatment costs per patient. The benefits going to the patients could be viewed as efficiency gains on two counts: (i) they are spending less on transportation due to less “back-and-forth” traveling between homes and hospitals; and (ii) they

have more social and economic time as they are ill for fewer days. Since most of the primary health care hospitals are located in remote or isolated rural areas, the main beneficiaries are poor families.

## C. Conclusion

9. The assessment indicates that the Project has realized significant efficacy and efficiency gains. There have been improvements in treatment and reductions in the time that people are ill. Accordingly, there have been significant benefits to patients.

## INPATIENTS TREATED IN NUWARA ELIYA, KURUNEGALA, AND ANURADHAPURA [a]

(1993–2000)

| Year | Rural PHC Hospitals | District PHC Hospitals |
|---|---|---|
| 1993 | 39,280 | 181,931 |
| 1994 | 37,479 | 185,269 |
| 1995 | 37,831 | 164,121 |
| 1996 | 50,392 | 180,250 |
| 1997 | 52,271 | 189,679 |
| 1998 | 63,739 | 198,531 |
| 1999 | 69,834 | 195,367 |
| 2000 | 72,432 | 226,570 |

PHC = primary health care.

[a] Peripheral units are not included as those upgraded under the Project became district PHC hospitals.

Source: Medical Statistics Unit, Ministry of Health, Nutrition, and Welfare.

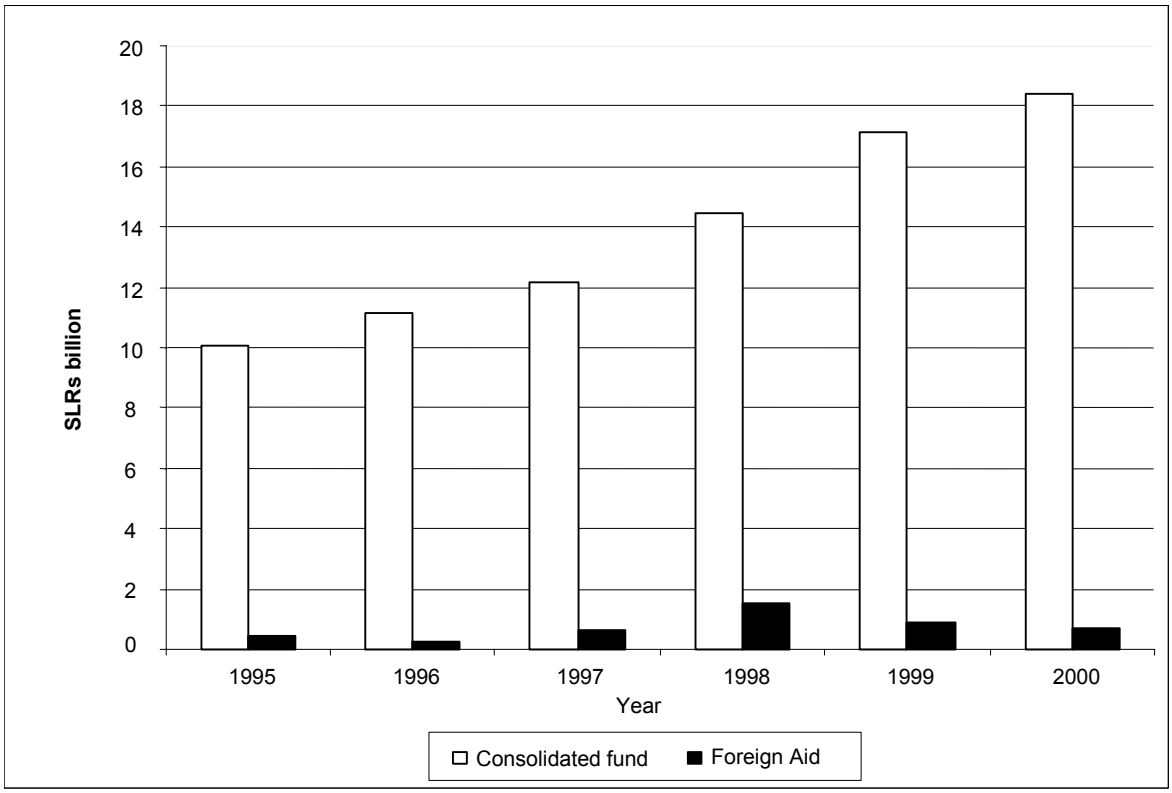
## GOVERNMENT EXPENDITURE ON HEALTH

### Table A6.1: Expenditure on Health 1989–2000

| Year | Government Expenditure on Health (SLRs million) | Total Government Expenditure (SLRs million) | Health Expenditure as a Percentage of Government Expenditure | Health Expenditure as a Percentage of Gross Domestic Product | Real Per Capita Expenditure on Health (SLRs) |
|---|---|---|---|---|---|
| 1989 | 5,038 | 82,468 | 6.1 | 1.84 | 264 |
| 1990 | 5,382 | 90,932 | 5.5 | 1.54 | 248 |
| 1991 | 5,438 | 109,724 | 5.0 | 1.40 | 276 |
| 1992 | 6,967 | 150,079 | 4.6 | 1.54 | 354 |
| 1993 | 7,904 | 158,881 | 5.0 | 1.41 | 396 |
| 1994 | 8,273 | 194,911 | 4.2 | 1.59 | 423 |
| 1995 | 10,533 | 244,505 | 4.3 | 1.64 | 489 |
| 1996 | 11,422 | 282,413 | 4.1 | 1.55 | 565 |
| 1997 | 12,785 | 273,075 | 4.7 | 1.36 | 623 |
| 1998 | 15,943 | 328,817 | 4.8 | 1.42 | 769 |
| 1999 | 18,018 | 323,452 | 5.6 | 1.41 | 901 |
| 2000 | 19,055 | 450,313 | 4.2 | 1.65 | 922 |

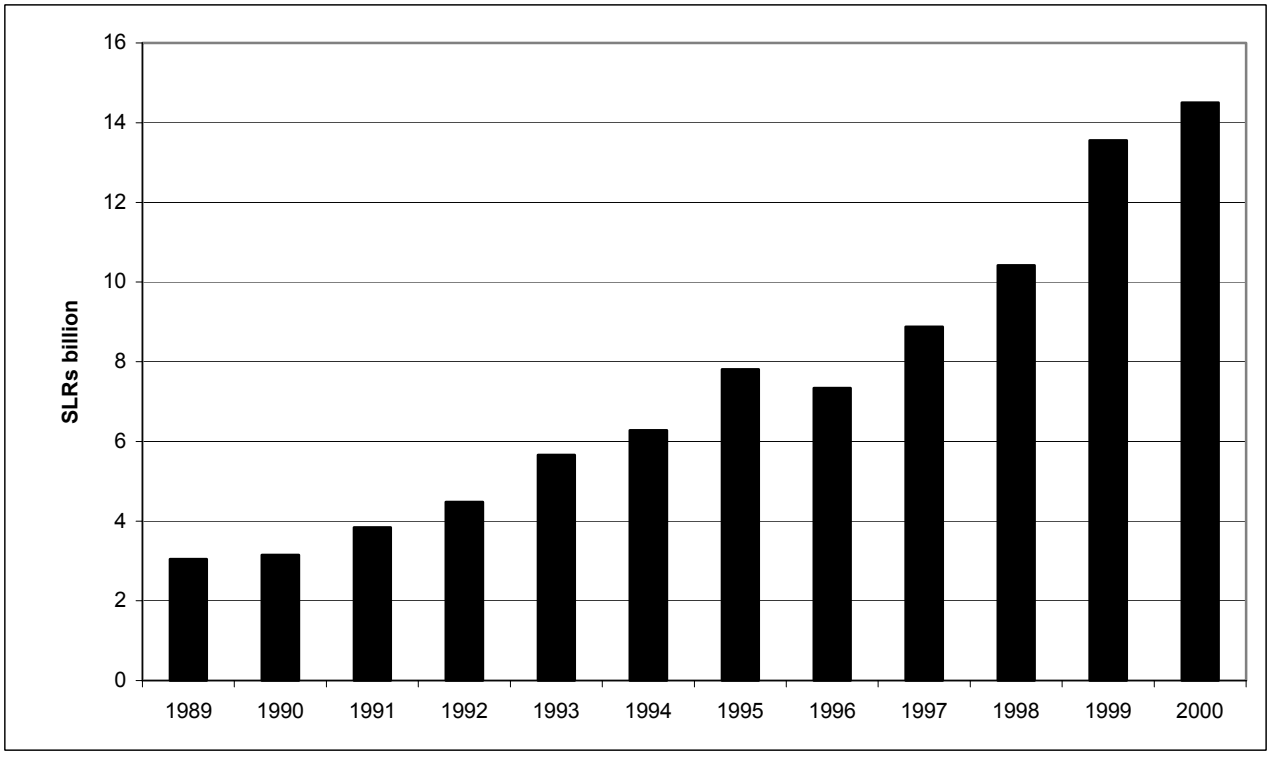
Source: Central Bank of Sri Lanka and Medical Statistics Unit, Ministry of Health, Nutrition, and Welfare.

**Figure A6.1: Health Expenditure by Source of Funding**
(1995–2000)




Source: Medical Statistics Unit, Ministry of Health, Nutrition, and Welfare.

**Figure A6.2: Real Recurrent Government Expenditure**
(1989–2000)




Source: Medical Statistics Unit, Ministry of Health, Nutrition, and Welfare.

## REGISTERED BIRTHS AND HOSPITAL BIRTHS
(1960–1999)

| Year | Registered Live Births | Live Births in Government Hospitals | % of Live Births in Government Hospitals |
|---|---|---|---|
| 1960 | 361,702 | 191,777 | 53.0 |
| 1965 | 369,437 | 230,986 | 62.5 |
| 1970 | 367,901 | 243,844 | 66.3 |
| 1975 | 375,857 | 251,039 | 66.8 |
| 1980 | 418,373 | 316,394 | 75.6 |
| 1985 | 389,599 | 292,970 | 75.2 |
| 1989 | 357,964 | 284,405 | 79.5 |
| 1990[a] | 294,120 | 241,390 | 82.1 |
| 1991[a] | 304,347 | 262,388 | 86.2 |
| 1992 | 356,842 | 296,484 | 83.1 |
| 1993 | 350,707 | 298,567 | 85.1 |
| 1994 | 356,071 | 300,180 | 84.3 |
| 1995 | 343,224 | 297,949 | 86.8 |
| 1996[b] | 330,963 | 287,514 | 86.9 |
| 1997[b] | 325,017[c] | 284,955 | 87.7 |
| 1998 | 323,926[c] | 287,514 | 88.8 |
| 1999 | 324,452[d] | 300,866 | 92.7 |

[a] Excludes Northern and Eastern provinces.
[b] Excludes Kilinochchi and Mullaitivu districts.
[c] Provisional.
[d] Estimated.
Source: Medical Statistics Unit, Ministry of Health, Nutrition, and Welfare.

## TRENDS IN FAMILY PLANNING AND CONTRACEPTIVE ACCEPTANCE
(1993–2000)

### Table A8.1: Family Planning New Acceptors

| | |
|---|---|
| 1993 | 169,689 |
| 1994 | 176,289 |
| 1995 | 183,727 |
| 1996 | 197,513 |
| 1997 | 212,635 |
| 1998 | 216,147 |
| 1999 | 218,273 |
| 2000 | 214,627 |

Source: Medical Statistics Unit, Ministry of Health, Nutrition, and Welfare.

### Table A8.2: Contraceptive Prevalence Rate (%)

| Contraceptive Method | 1993 | 2000 |
|---|---|---|
| **Any Method** | **66.1** | **70.8** |
| | | |
| **Any Modern Method** | **43.7** | **49.5** |
| Pill | 5.5 | 6.7 |
| Intrauterine Device | 3.0 | 5.1 |
| Injection | 4.6 | 10.8 |
| Diaphragm/Foam | – | – |
| Condom | 3.3 | 3.7 |
| Female Sterilization | 23.5 | 21.0 |
| Male Sterilization | 3.7 | 2.1 |
| Norplant | 0.1 | 0.1 |
| | | |
| **Any Traditional Method** | **22.4** | **21.3** |
| Safe Period | 15.2 | 11.9 |
| Withdrawal | 5.0 | 7.1 |
| Other | – | 0.9 |
| Prolonged Abstinence | 2.2 | 1.4 |

– = no data available.

Source: Department of Census and Statistics, Sri Lanka Demographic and Health Survey, 2000.