Chapter 3 ECONOMIC AND SOCIAL INFRASTRUCTURE

3.1 Overview

The basic ingredients of stable economic and social infrastructure development, which generates rapid economic growth are efficient institutions, effective regulation, proper pricing, adequate investment and precise targeting. In addition to being a necessary condition for rapid growth, a well-developed system of infrastructure generates a series of tradable services and supports poverty alleviation by increasing access to both input and output markets. Therefore, failure to support continuous infrastructure development not only inhibits growth and poverty alleviation, but also generates an undesirable outcome by shifting demand from services consumed domestically to services consumed abroad such as in the case of health and education.

Three decades ago, infrastructure facilities were mostly supplied and regulated by the government, although most of these facilities could have been supplied more efficiently by the private sector. These facilities were not appropriately priced and targeted, leading to over consumption, an increased fiscal burden, an improper allocation of resources and the failure to continue with the required rate of public investment in infrastructure development.

With the economic liberalisation since 1977, the provision of infrastructure facilities has been reformed gradually to meet the rapidly expanding demand with the realisation by successive governments of the difficulties in pursuing an adequate public investment programme. These include difficulties in enhancing efficiency in the civil service and difficulties in pursuing proper pricing and targeting mechanisms free from political interferences. The reform measures included removing or relaxing entry barriers, outsourcing management, encuraging public-private partnerships, privatisation, refining pricing strategies, establishing regulatory authorities, improving welfare targeting and reforming the civil service.

In line with the Economic Policy Framework of the Government of Sri Lanka (EPF-GOSL), further progress was made in economic and social infrastructure development and reform, in 2004. Public sector institutions providing infrastructure facilities were subject to institutional reforms, the coverage of infrastructure was widened and policies were strengthened.

Several institutions supplying economic services were brought under the Strategic Enterprise Management Agency (SEMA) established in 2004 to improve their efficiency. These were the Ceylon Petroleum Corporation (CPC), the Ceylon Electricity Board (CEB), the Sri Lanka Ports Authority (SLPA), the Sri Lanka Railways (SLR), the Airport and Aviation Authority of Sri Lanka (AAASL), the Sri Lanka Central Transport Board (SLCTB) and the Cluster Bus Companies (CBCs), and the National Water Supply and Drainage Board (NWSDB). The financial performance of all these enterprises, except the SLPA had deteriorated in the past and continues to deteriorate in the absence of a proper reform programme. The widespread chronic sicknesses of such publicly held giants could even threaten the macroeconomic stability of the country, considering their strategic importance in the national economy in view of the services they produce.

The key recommendations made by the Presidential Task Force (PTF) on Health in 1997 continued to be implemented, focussing on improving healthcare reach, promoting awareness, reforming the organizational structure, developing alternative financing mechanisms and encouraging private-public cooperation. Furthermore, multifarious reforms and developments were brought under the National Health Development Master Plan that was designed with the cooperation of Japan International Coorporation Agency (JICA) in October 2003.

In the education sector, the recent wave of reforms that began in 1998 have been primarily targeting the improvement of education infrastructure, quality and service delivery at all levels. These efforts were further strengthened by implementing the 'Navodya Schools Programmeme' in 2004, aiming at providing greater educational opportunities to the students in remote areas.

Infrastructure services showed a mixed performance in 2004. Telecommunications and port services continued to expand, while the electricity sector suffered from the lack of new investment, the drought and high international oil prices. Passenger transportation operated by the state owned bus companies and the Sri Lanka Railways indicated a further weakening during 2004, but privately managed passenger transport services expanded. Air transportation revived with the expansion of the tourism industry, the recovery in the world aviation industry, expansion of services to new destinations and reforms introduced to the aviation sector in the recent past. Port services displayed a strong growth, supported by increased domestic and international trade, improved productivity and effective marketing. The housing market further expanded, largely benefiting from the low interest rate regime that followed from the improved macroeconomic performance. Although the provisions in the

Welfare Benefit Act were not yet implemented, the number of Samurdhi beneficiaries declined due to better targeting and various income enhancement programmes.

The much needed reforms in respect of infrastructure are yet to be completed, while public investment in this regard is not satisfactory. Hence, the infrastructure facilities have failed to keep pace with the developments in the rest of the world, let alone with some of the fast growing Asian economies. This has led to serious supply shortages and regional disparities in roads, electricity, telecommunications, transportation and water supply as well as in health and education facilities. The pricing of services does not cover the cost of production, rendering major infrastructure institutions to depend on continued budgetary support from the government. Independent regulatory mechanisms are lacking in many sectors and the available mechanisms are weak or ineffective. Public health care is saddled with labour disputes, insufficient investment and improper targeting. As a result, the population at large is prone to deadly epidemics costing valuable human lives and deteriorating the economic environment. The educational services have produced serious mismatches between their output and market needs, and have not been able to generate and retain the required human capital needed for rapid economic development.

The overall poor quality of economic and social infrastructure is manifested in several weaknesses. Sri Lanka's ranking of international competitiveness is low, undermining its strategic advantages of being close to major sea routes, having a high level of literacy, being an island and having liberal economic policies. Many essential services, such as healthcare and education are being obtained abroad by Sri Lankans, although the country has the potential to convert them into significant foreign exchange earners. Progress beyond the basic social infrastructure is neccessary for the country to be internationally competitive in social infrastructure services. In the absence of proper pricing, natural resources such as water are being exploited, in an unsustainable manner, leading to the ailment known as the

	Table 3.1	
Government	Investment in	Infrastructure

Voor	Econor Servic	mic es	Social Services		Total	
real	Rs.bn.	% of GDP	Rs.bn.	% of GDP	Rs.bn.	% of GDP
1995	36.1	5.4	9.9	1.5	46.0	6.9
1996	31.4	4.1	10.3	1.3	41.7	5.4
1997	32.5	3.6	11.6	1.3	44.0	4.9
1998	44.7	4.4	15.5	1.5	60.2	5.9
1999	44.9	4.1	17.5	1.6	62.4	5.6
2000	54.7	4.4	16.5	1.3	71.1	5.7
2001	54.9	3.9	14.6	1.0	69.5	4.9
2002	51.7	3.4	15.7	1.0	67.4	4.3
2003	58.7	3.3	19.2	1.1	77.9	4.4
2004(a)	61.3	3.0	29.0	1.4	90.3	4.4
(a) Provisional			Sou	rce: Centr	al Bank of S	Sri Lanka

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'tragedy of the commons'.¹ Therefore, a renewed effort has to be put in place to introduce the necessary reforms in the development of infrastructure, so that they could contribute to sustainable economic growth, while generating a series of competitive and tradable services.

3.2 Economic Infrastructure Policies, Institutional Set up and Performance

Communications Services

The two major communications services are the telecommunications and postal service. The reforms introduced since 1980s has made Sri Lanka's telecommunications sector one of the most liberal and fast growing sectors in the country. In contrast, the postal service continued to deteriorate in the absence of such a reform programme, increasing the fiscal burden and threatening its own long-term sustainability. This draws to the immediate attention that reforms in the postal sector can not be further delayed, for otherwise it would lose the opportunity of benefiting from the advancement in information and communications technology.

In the case of telecommunications services, a significant competition exists among the 77 licensed telecom operators.² However, at the same time, there is significant pent-up demand for their services. In 2004, the telecommunications sector, in terms of subscriber network, expanded by 36 per cent. The

2 This consists of 3 fixed access telephone operators, 4 mobile telephone operators, 32 external gateway operators, 29 data communication and Internet service providers, 4 paging operators, 2 payphone operators, 2 trunk radio operators and 1 leased circuit service operator.

Political philosophers and economists have understood that if citizens respond only to private incentives, public goods will be under provided and public resources over utilized. An illustration shows that if common grazing lands are opened to farmers, cattle could have a healthy growth and grazing land is not hurt, if only a few cattle are sent for grazing. However, unregulated access to common grazing land will result in excessive use of the land and cattle being underfed. Thus, well placed and the right degree of regulations may protect the rights and resolve conflicting interests of the diverse groups in society, accelerate economic growth, increase social welfare, ensure equitable distribution and protect natural resources and the environment. Still, such regulations need revision from time to time, and specially when the market players feel hindered or inhibited in a manner that restricts growth and development. (CBSL Annual Report 2001, Box 4).

mobile telephone operators dominated the market with a share of 67 per cent. The use of cellular telephones increased remarkably by 59 per cent in 2004 over the previous year.

The external gateway operation, which was the monopoly of Sri Lanka Telecom (SLT), was opened for competition in 2003 with 32 licences being granted by end 2004. As a result, International Direct Dialling (IDD) call charges have declined significantly and volumes have increased. The ten digit numbering system which was introduced in 2003 to accommodate the increasing demand for telecommunications services, in line with regional and international standards, was completed by early 2004. The Calling Party Pays (CPP) system, which was to be implemented from March 2004, was postponed due to unresolved issues on CPP charges. The CPP system would have stimulated further growth in the telecommunications sector as witnessed in India and Pakistan, and would have promoted telecommunications services in rural areas. The next wave of liberalization mainly focussing on strengthening regulations and improving competition as envisaged in the new National Telecommunications Policy approved by the Cabinet in November 2002, is still being awaited.

Although there is a wide disparity between the urban and rural sectors with regards to the availability of telecommunications facilities, it is in proportion to the extent of economic activities in the two sectors. Out of the total fixed access telephones (wire lines) 44 per cent was in the Colombo metropolitan area by end 2004. With a view to enhancing telecommunications facilities in rural areas. The telecommunications Regulatory Commission of Sri Lanka (TRCSL) is operating a subsidy scheme to encourage the installation of payphones in rural areas. Accordingly, 260 payphones have been installed under this scheme by end 2004. In addition, the TRCSL is also implementing a project to provide telecommunications facilities to 590 rural sub-post offices. A pilot programme was completed in the Monaragala district by providing telephone facilities to 41 sub-post offices.

Several telecommunications projects were in progress in 2004 to improve telecommunications facilities in the country. The SEA-ME-WE-IV (South East Asia -Middle East -West Europe-IV) submarine cable project, in which SLT is the local partner, is expected to be commissioned in 2005 with 15 other international partners. This would enhance the quality and the bandwidth of Sri Lanka's telecommunications system. SLT invested Rs. 6.5 billion in various projects in 2004 to improve the efficiency and to expand its capacity.

Given the high level of literacy in Sri Lanka, there is a great potential for further developing information technology based activities such as telemarketing, call centres, data processing and internet based products, if necessary infrastructure facilities are sufficiently made available at competitive prices.

The postal service is increasingly being challenged by the rapid developments in information and communication

Table 3.2 Growth of Postal and Telecommunications Services

	liem	2003	2004(a)	Percentage Change	
	nem			Perci Cha 2003 6.4 -9.0 23.4 1.3 6.5 49.6 -3.6 -48.3 22.0 0.0 0.3 0.1 1.8 7 -0.4 -4.0	2004(a
1	Telecommunications services				
	1.1 Fixed access services				
	SLT Telephone lines in service (N	o.)			
	('000)	818	860	6.4	5.1
	New telephone connections given	by			
	SLT (No.)('000)	63	54	-9.0	-14.3
	Applicants on waiting list for SLT		$M \in S(\mathbb{R}^n)$		
	telephones (No.)('000)	378	334	23.4	-11.6
	Wireless local loop telephones('00	0) 116	131	1.3	12.9
	Telephone density				
	(Telephones per 100 persons)	4.9	5.1	6.5	4.1
	1.2 Other services				
	Cellular phones ('000)	1,393	2,211	49.6	58.7
	Public pay phones	6,440	5,938	-3.6	-7.8
	Radio paging services	2,851	828	-48.3	-71.0
	Internet & e-mail	85,500	93,444	22.0	9.3
2	Postal service				
	Delivery areas (No)	6,729	6,729	0.0	
	Post offices (No)	4,630	4,702	0.3	1.6
	Public	4,050	4,040	0.1	-0.2
	Private	580	662	1.8	14.1
	Area served by a post office (Sq.Km)	14.1	13.9	-0.7	-1.4
	Population served by a post office	4,084	4,100	-0.4	0.4
	Letters per inhabitant	24	24	-4.0	0.0

(a) Provisiona

Telecommunications Regulatory Commission of Sri Lanka Department of Posts

technology (ICT), while at the same time offering it new opportunities. The postal infrastructure in the country represents one of the largest network of service delivery systems in Sri Lanka and has the potential for being developed into a modern system to deliver a better service with a multitude of products, such as financial and insurance agency functions, data transfer, etc. Such changes would be facilitated by the provisions in the proposed Postal Reform Bill. Delaying reforms will result in further weakening of the quality of services, loss of market share to other competing services and the continuation of operational losses adding to the already ballooning fiscal burden. However, the Department of Posts



(DOP) has been implementing various projects within the existing framework to introduce newer services such as e-mail and internet services, the international express mail service (EMS), the local speed post service, post fax service and electronic money order services. However, the total operating expenditure of the DOP grew slightly to Rs 3.356 million. exceeding its revenue. Consequently, its operating loss amounted to Rs. 971 million in 2004, exceeding the budgeted target of Rs. 297 million.

A salient feature of the postal services has been avowed hostility against any type of reforms in the sector by the labour unions. This is presumably because of the fear of losing employment. But this fear will soon be a reality, unless the sector makes an early effort to change itself in line with the rapidly changing market and technological developments. Economic history is abundant with examples of such painful episodes, which are unavoidable in any modernisation process, unless the threatened sector modernises itself.

Energy

The major source of energy in Sri Lanka is the bio-mass (48 per cent), used mostly by households and, on a limited scale, in the processing of plantation crops. However, the most commercially intensive energy sources are electricity and petroleum. Both of these sources are subject to shocks, making Sri Lanka's economy vulnerabile. Hence, serious reforms are necessary toachieve the required degree of resilience.

Electricity: In 2004, the electricity sector suffered from the twin shocks of the drought and high petroleum prices, which increased cost of production. The unchanged prices in such a scenario led to a deterioration in the financial position of the Ceylon Electricity Board (CEB), requiring greater budgetary support. Parallel to these adverse developments, the delays in implementing new plants, proposed reforms and measures to address the high system losses compounded its woes, threatening its long-term sustainability.

The problems in the electricity sector emanating from the insufficient generating capacity were further aggravated by the drought which lowered the reservoir water levels down to 15 per cent in the first half, before improving moderately later. Sri Lanka needs to increase the power generating capacity by over 10 per cent annually to meet the growing demand for electricity to achieve the anticipated medium term economic growth rate of above 6 per cent. The total installed capacity increased by 135 MW (6 per cent) to 2,358 MW, with the commissioning of The Heladhanavi thermal power plant in 2004. In addition, the private sector owned mini-hydropower plants added 35 MW in 2004. These developments changed the installed capacity of hydro:thermal ratio to 54:46 in 2004.

In the medium term, the generation capacity will be expanded by about 400 MW, with the establishment of several new power plants. The diesel power plant of 100 MW being constructed at Embilipitiya is expected to be operational by May 2005, while a 'Combined Cycle' Gas Turbine project with

Table 3.3 **Power Sector Performance**

Item	2003	2004(a)	Percentage Change		
			2003	2004(a)	
Available capacity (Mw)	2,243	2.378	1	6	
Installed capacity	2.223	2,358	15	6	
Hydro	1.247	1.282	6	3	
Thermal	973	1.073	29	10	
Wind	3	3	0	0	
Emergency power (End year)	20	20(b)	-93	0	
Units generated (Gwh)	7,612	8,158	12	7	
Hydro	3,310	2,960	23	-11	
Thermal	3,904	4,571	22	17	
Wind	3	3	-15	-11	
Emergency power	394	509	-57	29	
Self Generation		115	-		
Total sales by CEB (Gwh)	6,208	6,666	13	7	
Domestic and religious	2,030	2,204	11	9	
Industrial	2,159	2,266	16	5	
General Purpose	1,042	1.132	13	9	
Bulk sales to LECO	894	981	10	10	
Street lighting	83	83	0	0	
Composition of LECO sales (Gwh)	847	913	11	8	
Domestic and religious	403	435	9	8	
Industrial	215	226	11	5	
General Purpose	170	191	14	12	
Street lighting	22	23	10	5	
Other	37	38	23	3	
Overall System loss (%)	18.4	17.1	-8	-7	
Number of Consumers (c) ('000)	3,379	3,597	6	6	
Domestic and religious	2,992	3,182	6	6	
Industrial	35	37	4	5	
Commercial	352	378	6	7	

(a) Provisional

Source: Ceylon Electricity Board (b) All emergency power plants were Lanka Electricity Co. (Pvt) Ltd. decommissioned by end October 2004, except for 20 MW power plant

at Chunnakam (c) Inclusive of LECO consumers

a total capacity of 300 MW at Kerawalapitiya is scheduled to be completed by 2007. The feasibility study of the proposed Broadlands hydropower plant has been finalised and the environmental clearance is awaited. However, firm action has not yet been taken to increase the low cost generation capacity, such as coal power.

Despite the low hydropower generation, total electricity generation increased by 6 per cent to 8,158 GWh in 2004 due to increased thermal power from existing plants as well as from emergency plants. However, all emergency power plants were decommissioned by end October 2004, as the operation of the new power plant began, except for 20 MW power plant at Chunnakam, which provides electricity to a part of the Jaffna peninsula.

System losses have declined significantly to 17.1 per cent in 2004 from around 22 per cent in 2000, saving about 400 GWh per year, which is equivalent to having an additional hydropower plant with a capacity of 100 MW. However, system losses are still high, requiring continued efforts on the part of the CEB to reduce them further to reach the long-term tolerable level of around 12 per cent.

Insufficient capacity, resulting from excessive delays in the implementation of power generation expansion plans and



the non-implementation of low cost, large-scale power sources, such as coal power, has led to a high electricity tariff and frequent power shortages. These shortages have prompted both the CEB and consumers to resort to high cost small capacity alternative sources. This is uneconomical in a sector, which displays diminishing marginal costs with the increasing level of production, thus favouring high capacity plants.

The cost of power generation increased in 2004 due to short-term measures taken to meet power shortages by hiring emergency power plants as well as other inefficiencies such as the still high system losses. The transfer of this high cost to consumers has also been discouraged by the already high tariff rates in Sri Lanka compared with its competitor countries³. However, it is noteworthy that, while transferring the increased cost to consumers in the short run, measures should be taken to rectify the existing inefficiencies in the production of electricity. For otherwise, the public at large would be called upon to bear the burden created by institutional and policy inefficiencies.

The CEB retains the monopoly power over transmission and together with its subsidiary, Lanka Electricity Company Ltd. (LECO), enjoys monopoly in distribution. The share of generation by CEB in 2004 was over 65 per cent. However, in the absence of tariff revisions and measures to eliminate inefficiencies, its financial position further deteriorated in 2004, leading to increased short-term borrowings, delaying its debt service payments to the government and raising concerns about the viability of the institution.

A series of reforms were suggested in the Electricity Sector Reforms Act passed in 2002 to address the inefficiencies in the sector and adequate donor support is available to implement them. The proposed reforms focus mainly on the deregulation of the sector and unbundling, the main activities of the CEB, i.e., generation, transmission and distribution. Under these proposed reforms, the power sector was to be regulated by the Public Utilities Commission of Sri Lanka (PUCSL) established in 2003. However, the reforms did not materialise in 2004 and the CEB was brought under the purview of SEMA, the authority responsible for carrying out future reforms in public enterprises.

Petroleum: The petroleum sector experienced a major international price shock in 2004. The average international crude oil price (Brent) has increased by 35 per cent in 2004 over 2003. The delays and inadequate adjustments in prices led to a continued increase in domestic consumption of fuel, raising the losses incurred by the Ceylon Petroleum Corporation (CPC) and Lanka IOC Ltd. (LIOC). This led to both an increase in the subsidy payments by the government and a deterioration in the BOP position. Meanwhile, making matters worse, third player in distribution did not enter the market as planned, thereby adding to financing difficulties of the budget. Its entry could have improved competition further, with further improvement in the quality of service of petroleum distribution.

The value of petroleum imports increased by 44 per cent in 2004 to US dollars 1,211 million from US dollars 838 million in 2003 reflecting a 28 per cent increase in price and a 9 per cent increase in volume. However, as stated earlier, despite the rapidly rising international prices, the domestic fuel prices were not adjusted upward as per the pricing formula introduced in January 2002, except on a few occasions. Petrol prices were raised by Rs 8.00 per litre in July 2004, after a lag of six months. Petrol and diesel prices were further raised by Rs 3.00 and Rs 4.00 per litre, respectively, in August 2004. Diesel and petrol prices were raised again in two parts, applicable to Colombo city limit and outside in Septermber 2004. The price of diesel within Colombo city limits was raised by Rs.8 per litre and outside by Rs.6 per litre, while the price of petrol was raised only within Colombo city limits by Rs.2 per litre. However, the price of kerosene was not raised since January 2004. These revisions were not sufficient to cover the losses of the CPC in an environment of rising international prices. This has exerted a significant financial strain on the CPC, tying it to an unhealthy 'debt trap'. As a result, the government had to bear a large subsidy obligation to the CPC and LIOC, amounting to Rs. 18 billion (about 0.9 per cent of the GDP), adversely affecting the budgetary performance and, hence, imposing an unjustified burden unproportionately on the non-users of petroleum products. This is evident from the fact that the prices of kerosene and diesel in Sri Lanka are substantially lower than those in India, Bangladesh and Pakistan by end 2004.

The demand for major petroleum products increased by 10 per cent in 2004, compared to the 1 per cent increase in 2003, mainly due to the high demand for diesel and furnace oil for thermal power generation. The growth of petrol consumption, however, decelarated to 15 per cent in 2004 from 35 per cent in the previous year, mostly in response to the petrol price increase of 28 per cent during the year, despite an increase in the vehicle fleet. However, the demand for diesel increased by about 14 per cent in contrast to a drop of 5 per cent in 2003,

³ Average electricity tariff rates applicable to industrial sector in US Cents in selected countries are : Sri Lanka 7.00-7.50, Indonesia 1.52-3.90, Malaysia 2.63-10.52, Singapore 4.23-6.78, Thailand 2.89-7.01 and the Philippines 3.30-10.68

Iter	n	2003	2004(a)	Perce Cha	intage nge
				2003	2004(a)
Quantity imported (N	lt '000)				
Crude oil		1,995	2,200	-13	10
Refined products		1,168	1,259	-13	в
L.P. gas		141	148	12	5
Domestic L.P. gas pr	roduction (ML '000) 15	15	-6	0
Value of imports (c&	Ŋ				
Crude oil	(Rs. mn)	41,708	61,431	3	47
	(US\$. mn)	432	607	2	40
Refined products	(Rs. mn)	39,179	61,298	41	56
	(US\$. mn)	406	604	40	49
L.P. gas	(Rs. mn)	4,502	6,040	19	34
	(US\$. mn)	47	60	21	26
Average price of cru	de oil (c&f)(b)				
	(Rs./barrel)	2,824	3,773	18	34
	(US \$/barrel)	29.29	37.45	17	28
Quantity of exports	(mt '000)	111	128	-48	15
Value of exports	(Rs. mn.)	3,501	5,779	-12	65
	(US\$ mn.)	36	57	-13	58
Local sales (Mt '000))	3,419	3,762	1	10
Petrol (90 Octane	e)	375	433	35	15
Petrol (95 Octane	3)	15	20	67	33
Auto diesel		1,663	1,890	-5	14
Super diesel		42	36	-11	-14
Kerosene		207	204	-10	-1
Furnace oil		715	747	-8	4
Avtur		139	170	22	22
Naphtha		102	96	79	-6
L.P. gas		161	166	3	3
Local Price (at perio	d end) (Rs./litre)(d	c)			
Petrol (90 Octano	e)	53.00	68.00	8	28
Petrol (95 Octano	e)	56.00	71.00	8	27
Auto diesel		32.00	42.00	7	31
Super diesel		37.30	47.30	6	27
Kerosene		25.50	25.50	6	0
Furnace Oil					
500 Seconds		24.80	26.30	8	6
800 Seconds		23.70	25.20	8	6
1,000 Second	is	23.20	24.70	9	6
1,500 Second	is	22.30	24.30	8	9
3,500 Second	ls	20.70	22.00	10	6
L.P. Gas (Rs./kg	.)	10.00	A	_	
Shell gas		45.60	63.12	-5	36
Laugts gas		47.60	63.12	16	33
(a) Provisional		Sou	rces: Ceylo	n Petroleu	m
(b) As reported	by Ceylon Pet	roleum	Corp	oration	
Corporation			Lanka	a IQC Ltd.	

Table 3.4

(c) Diesel and petrol sold through retail outlets within Colombo Municipal Limits are levied with a premium of Rs. 2.00 per litre w.e.f. September 2004 Sheli Gas Lanka Ltd. Laugfs Lanka Gas (pvt) Ltd.

entirely due to its increased use for thermal power generation. The demand for kerosene declined by 1 per cent, mainly due to the decline in demand for lighting purposes with the expansion in electricity distribution, although the price of kerosene remained unchanged during the year.

The second distributor, LIOC, which commenced operations in Sri Lanka in March 2003, continued to expand its operations throughout the country through 170 filling stations. In addition, another 107 filling stations owned by the CPC have been earmarked for a third player, to enhance the competition



in distribution. Meanwhile, in terms of government policy, the activities of the CPC were brought under SEMA with the objective of enhancing the operational efficiency.

The high cost of bunkering fuel has been discouraging the fleet of vessels arriving at Colombo for bunkering. The privatisation of Lanka Marine Services Ltd has not yielded the required low prices and competition, indicating the need for further reforms in this sector.

As in the postal sector, the organised labour in the energy sector appears to be bent on a protest campaign against any type of reforms in the two public corporations involved. The weakening financial conditions of both the CEB and the CPC could drive them to virtual insolvency with an accumulation of debt obligations to the banking sector. While price revisions would enable them to cut current losses, recapitalisation is needed to ensure long-term solvency. The protest campaigns would have been motivated by a fear of losing employment, but delaying the needed reforms would hasten that feared eventuality, in addition to passing a burden to the taxpayers to rescue the two enterprises. A frank dialogue among all stakeholders involved is a must to reach a consensus for reforms and mapping out a way forward programme.

Transportation

The transportation network comprising land, sea and waterways and air transportation constitutes a vital part of the economic infrastructure. The efficiency of the transportation network determines, to a large extent, the degree of productivity, speed in delivery, the level of safety and finally, the competitiveness of the nation.

In Sri Lanka, land transportation is the dominant mode of internal transportation. The sea and waterways are being scarcely used for internal transportation. Air transportation is now becoming a popular mode of internal transportation with the improvement in the security situation.

Sri Lanka enjoys a comparative advantage in international marine transportation, largely due to its strategic location. However, the competitiveness of the country depends largely on the efficiency of the port services and how well the internal transportation network is linked with the internal transportation network. Air transportation has been hindered by international protection via landing rights. The new civil aviation liberalisation policies could lead to greater efficiency in air transportation, thereby Sri Lanka becoming a hub for airtransportation in the region.

Road Transportation

Road Development: Although the coverage of Sri Lanka's road network is adequate by international standards, the quality of its roads needs substantial improvements. The major problems associated with road development in Sri Lanka have been the excessive delay in implementing planned road projects, inability to secure sufficient funds needed for new road projects and the lack of funding for the maintenance of the existing road network. To address the issue of the lack of funds, the Budget 2003 proposed to establish a Road Fund through the imposition of a specific levy of Rs 1.00 on petrol and Rs.0.50 on diesel, per litre, respectively. However, the fund has not yet been set up, as proposed, though the levy has been enforced. The lack of funds can be resolved by raising funds from the capital market and encouraging BOO/BOT arrangements as well as introducing revenue generating systems.

The improvement in quality is hindered by the lack of funds for road expansion and maintenance, a general issue associated with Sri Lanka's poor budgetary conditions. Owing to the general budgetary constraints, priority is given to other more urgent needs, thereby pushing road development and maintenance to the backstage. Hence, addressing the issues in this sector pre-requires the implementing of the budgetary reforms.

The Road Development Authority (RDA) maintains 11,661 kilometres of national roads (A and B classes) and 4,429 bridges. It spent Rs. 11,199 million in 2004, a marginal decline over 2003 for maintenance, rehabilitation and reconstruction of national roads. Of the total expenditure, Rs. 4,942 million and Rs. 1,211 million were spent on rehabilitation of the existing road network and routine maintenance, respectively, while Rs. 1,833 million was spent on new construction. Provincial and local governments maintain about 15,000 and 75,000 kilometres of provincial roads (C and D classes) and local roads (E class), respectively. The issue of the lack of funds is more severe in local and provincial governments which has led to a low level of rural and provincial road maintenance.

To develop the road network, the RDA was engaged in the implementation of several foreign funded projects covering new construction of major highways, rehabilitation of roads and taking measures to reduce road congestion. The Southern Highway project was in progress at an estimated cost of Rs. 29 billion funded separately by the Asian Development Bank (ADB) and Japanese Bank for International Cooperation (JBIC). The construction work of the ADB funded section of the Southern Highway (Kurundugahahetekma – Godagama), commenced in early 2003 and is expected to be completed by 2006. The JBIC funded section (Kottawa -Kurundugahahetekma) is scheduled to be commenced in 2005. The proposed Colombo-Katunayake expressway project, which was commenced in 2000 and later suspended, is planned to be recommenced on a Public Private Partnership (PPP) basis. The Colombo Outer Circular Highway with an estimated project cost of around Rs. 17 billion is at the stage of completing the survey map. The Colombo- Kandy expressway is expected to be implemented on a BOT basis with the assistance of the Malaysian government at an estimated cost of Rs. 29 billion. the RDA also implemented the Road Network Improvement Project (RNIP), which includes the rehabilitation of 345 kilometres of roads and the improvement of 47 bridges with the assistance of the ADB and JBIC. During the year, the rehabilitation and improvement of the Balangoda -Bandarawela road with Korean assistance were also commenced.

To address the problem of road congestion in Colombo and its suburbs, the RDA has identified a number of projects, including the Marine Drive Project, the Duplication Road Project and flyovers at Nugegoda, Gampaha, Pannipitiya and Orugodawatta, but all of these projects have been delayed due to budgetary constraints. Under the 'Maga Neguma' programme, several rural roads were improved at a cost of Rs. 57 million in 2004, but this was inadequate, compared with the requirements. Several other road improvement projects were implemented with local funds.

Several road sections in the Western, Southern, Eastern and Northern coastal belt of the country were severely damaged due to the tsunami. The reconstruction cost of damaged roads and bridges has been estimated at Rs. 1,035 million.

It is time for Sri Lanka to look at a new model of road development, departing from the current method of providing funding through the budget or by the donors. Road usage could be made to be paid by the users, so that the continued reliance on the budget for funding could be avoided. The users, especially in the urban centres, have been hit by the slow movement of traffic owing to road congestions caused by the non-development of the road network to meet the demand. The problem is becoming acute day by day and much valuable worker-hours are being lost to the nation.

Road Passenger Transportation : The road passenger transportation provided by private bus operators and cluster bus companies contributes approximately 80 per cent of the total passenger transportation in Sri Lanka. The remainder is contributed by Sri Lanka Railways (7 per cent) and private vehicle owners (13 per cent). The quality of road passenger transportation showed no significant improvement in 2004 and the shortcomings prevailing during the last few decades continued to loom large. Inadequate service, poor quality and an increasing number of accidents were the weaknesses in the public road transport service. In addition, the cluster bus companies (CBCs) suffered from a lack of buses, deterioration of revenue, cost escalation due to the excessive work force, inadequate working capital and low investment. As a result, CBCs were running at a large loss, making them dependent on government assistance.

In terms of the national bus fares policy, fares were raised by an average rate of 9 per cent in September 2004 with the increase in the price of diesel by Rs.4.00 per litre and the escalation of other costs of operation. Bus fares were raised again by an average rate of 6 per cent from October 2004 as the price of diesel was raised by Rs.6.00 per litre in September 2004. The government's control of bus fares appears to have been made for protecting commuters, but the very same protection has done more harm to them, by way of discomfort, elongated travel time, high exposure to risk of accident and a general reduction in productivity. A liberal bus fare policy that automatically takes into account cost increases should be put in place to ensure the long-term sustainability of the sector.

In May 2004, the Cabinet approved the Ministry of Transport's strategic action plan, which covers all major aspects of passenger and goods transportation. The plan includes the preparation of effective time tables, provision of training to staff and bus crew, building 1,000 bus stands,

T			e 3 .		
Salient	Features	of	the	Transport	Sector

ttem	2003	2004(a)	Perce	entage ange
NG III			2003	2004(a)
1. New registration of motor vehicles (No	.) 181,502	223,842	60.1	23.3
Buses	1,949	2,167	36.4	11.2
Private cars	21,184	19,116	76.5	-9.8
Three wheelers	36,204	43,789	73.4	21.0
Dual purpose vehicles	13,268	10,736	54.4	-19.1
Motor cycles	86,877	124,474	58.6	43.3
Goods transport vehicles	11,014	10,703	34.9	-2.8
Land vehicles	11,006	12,857	46.3	16.8
2. Sri Lanka Railways (SLR)				
Operated kilometers ('000)	8,300	8,402	-2.0	1.2
Passenger kilometers (mn.)	4,627	4,684	13.4	1.2
Freight ton kilometers (mn.)	129	134	-3.5	3.9
Total revenue (Rs.mn.)	1,321	1,678	-3.0	27.0
Current expenditure (Rs.mn.)	3,383	4,328	1.7	27.9
Operating loss (Rs.mn.)	2,062	2,650	45.6	28.5
Capital expenditure (Rs.mn.)	1,437	1,732	-13.8	20.5
3. Cluster Bus Companies (CBC)	ų			
Operated kilometers (mn.)	334	296	-15.4	-11.4
Passenger kilometers (mn.)	17,446	14,537	-14.6	-16.7
Total revenue (Rs.mn.)	8,432	7,887	-9.2	-6.5
Operating expenditure (Rs.mn.)	10,896	11,403	-5.1	4.7
Operating loss (Rs.mn.)	2,464	3,516	12.2	42.7
4 SriLankan Airlines				
Hours flown (hrs.)	49,144	61,075	17.2	24.3
Passenger kilometers flown (mn)	6,926	8,316	12.1	20.1
Passenger load factor (%)	76	73	0.0	-3.9
Weight load factor (%)	52	55	18.2	5.8
Freight (mt. '000)	64	79	42.2	23.4
Employment (no.)	4,095	5,107	3.8	24.7
(a) Provisional Source: De Sri Na	parlment o Lanka Rai tional Tran	f Motor Tra Iways sport Com	lífic mission	

National Transport Commission Civil Aviation Authority of Sri Lanka SriLankan Airline recommencing school bus services, providing subsidies for the operations in rural areas and bringing in necessary amendments to the National Transport Commission Act.

The government's attempts to restructure CBCs on several occasions in the past have failed. In 2004, CBCs were brought under the purview of SEMA.

Railway Transportation: At present, Sri Lanka Railways (SLR) contributes around 7 per cent and 2 per cent, respectively, of the public passenger transportation and goods transportation in the country.

The monopoly of railway transportation suffers from several major weaknesses, emanating mostly from rigidities in pricing, management and labour, leading to poor and declining quality of services on the one hand and heavy operational and financial net losses on the other. The operational losses hindered the development of railway tracks, did not permit strengthening and maintaining the rolling stock and other operational systems, and forced SLR to heavily depend on continued budgetary support of large magnitudes.

Although the SLR has 1,445 track kilometres, it operates only on 1,200 track kilometres as services beyond Vavuniya on the Nothern Line and beyond Madawachchiya on Talaimannar Line have been suspended due to extensive damages. About a half of the available track is below the minimum standards and is subject to a very low maximum speed limit and high accident risks.

The available rolling stock is only around 85 per cent of the required level. By end 2004, SLR had only 131 locomotives and power sets although it required 153 to provide a satisfactory service. Most of the locomotives and power sets are over 25 years old, while 75 per cent of the coaches in the stock is over 15 years old. The operations monitoring system covers only a part of the network, and has not been updated.

The operated train kilometres improved marginally from 8.3 million in 2003 to 8.4 million kilometres in 2004. However, passenger kilometres (which takes into account the number of passengers as well as the distance) improved slightly from the previous year due to lower fares compared to fares of alternative modes of transportation services.

The total revenue of SLR increased by 27 per cent in 2004, mainly due to the 50 per cent increase in rail fares in 2004. The operating expenditure also increased by 28 per cent, largely due to the increase in the cost of fuel and salaries and wages. Consequently, the operating loss of SLR increased by 28 per cent to Rs. 2,650 million in 2004, exerting a heavy burden on the budget.

To overcome the deficiencies of SLR, it was converted to an Authority in 2003, in terms of the Sri Lanka Railway Authority Act No. 60 of 1993, aiming at providing the necessary flexibility and budgetary independence to run it as a commercial enterprise. However, due to labour agitation, the Department of Sri Lanka Railways was re-established in January 2005 and any restructuring programme has now to be implemented within the organisational structure of a government department that lacks the flexibility in decision making and financial independence. Hence, it is necessary to exempt SLR from prohibitive administrative and financial regulations and permit it to function as a commercial venture, as a prelude to any restructuring programme.

Civil Aviation : Benefiting from the ceasefire, both internal and international air travel increased during the last three years. Vital reforms were made in the civil aviation sector, leading to a greater degree of deregulation, and adopting bilateral liberalization agreements to attract more international carriers and tourists to the country.

Three domestic airlines continued to operate during 2004. The first civil helicopter service recommenced commercial operations in July 2004 after a lapse of eight and a half years. SriLankan Airlines introduced three water aerodromes or Airtaxis aiming at increasing domestic air transportation. For the convenience of the travellers to the Jaffna peninsula, a terminal facility at the Palaly Airport was built at a cost of Rs. 4 million. However, the number of passengers travelling domestically by air, dropped due to the improvement in road transportation to Jaffna. The construction of a domestic terminal at the Bandaranaike International Airport (BIA) was scheduled to be commenced by March 2005.

During 2004, 37 International airlines, including 8 cargo airlines, operated in Sri Lanka, compared to 30 airlines that operated in the previous year. The number of passengers who passed through the BIA, and freight tonnage handled increased by 25 per cent and 18 per cent, respectively, in 2004. However, the share of the national carrier, SriLankan Airlines, in passengers and freight transportation declined in 2004 with the expansion of activities of other airlines.

The Civil Aviation Authority of Sri Lanka (CAASL) established in 2002, which replaced the Department of Civil Aviation, continued to provide more flexibility to regulate civil air operations within Sri Lanka, while being responsible for formulating aviation policies, preparing aviation development plans and strategies, enforcing aviation safety requirements and coordinating with international civil aviation organizations. The Ministry of Ports and Civil Aviation has initiated the formulation of an aviation policy for Sri Lanka, covering the overall developments and the management of the aviation sector. To further enhance the liberalization, the Air Navigation Act No. 13 of 1950, will be replaced by the proposed Civil Aviation Act, which would provide greater flexibility in civil aviation.

Sri Lanka faces several deficiencies in attracting major airlines, with attendant disadvantages. Of them, insufficient infrastructure and inadequate ancillary services such as high cost bunkering services, poor road transportation and insufficient accommodation constitute the major shortcomings. This has inhibited Sri Lanka from emerging as a main hub, harnessing its strategic geographical advantage. Unless those weaknesses are addressed, there is a risk of losing a considerable share of air traffic to other airports in the region,

Tá	able	3.6
	ė	

arrived (No.) ombo	4,032	~2004(a)	2003	2004(a)
arrived (No.) ombo	4,032			
ombo		3,883	-1	-4
	3,838	3,688	1	-4
e	73	88	-4	21
comalee	121	107	-39	-12
rgo handled (MT '000)	30,500	33,962	8	- 11
odmo	28,198	31,299	7	11
e	482	581	-8	21
comalee	1,820	2,082	20	14
ntainer traffic (TEUs '000)	1,959	2,221	11	13
ipment container (TEUs '000)	1,371	1,531	13	12
nent (no.) (b)	13,936	13,765	-22	-1
odmo	12,522	12,420	-22	-1
e	638	634	-15	-1
comalee	776	711	-22	-8
	ent (no.) (b) nbo omatee nal	ent (no.) (b) 13,936 nbo 12,522 638 omatee 776 nal Source: S	ent (no.) (b) 13,936 13,765 12,522 12,420 638 634 omatee 776 711 nal Source: Sri Lanka Po	ent (no.) (b) 13,936 13,765 -22 nbo 12,522 12,420 -22 638 634 -15 omalee 776 711 -22 nal Source: Sri Lanka Ports Auth

Terminals Ltd.

TEUs = Twenty-foot equivalent container units

including South Indian airports. Therefore, it is of critical importance to expedite the implementation of the airport development project, which is in progress. Stage I of the BIA expansion project has begun, and will be completed as planned in 2005. Phase II of the project will commence in 2005.

Port Services: Port services recorded a healthy growth in 2004, having benefitted from the growth in international trade. The total cargo handling, inclusive of container handling, grew by an 11 per cent in 2004, while the container throughput increased by 13 per cent, reaching the highest ever number of containers handled. The domestic container throughput increased by 17 per cent and transhipments increased by 12 per cent.

Cargo handling efficiency at Jaye Container Terminal (JCT) of Sri Lanka Ports Authority (SLPA) improved during 2004, building on the performance that led to winning the National Award for Productivity in 2003, an award presented by the Ministry of Labour and Foreign Employment. The main factors that contributed to the better performance were the extension of working hours, rationalisation of the incentive payments, training of personnel and the implementation of a successful voluntary retirement scheme. The Unity Container Terminal (UCT), built under the North Pier Development Project, was opened for cargo handling in June 2004. As a result, the container handling capacity of the Port of Colombo increased by 250,000 TEUs per year. The development of the Colombo South Harbour, with deeper depths to serve mega ships carrying over 8,000 – 9,000 containers is expected to commence in early 2006 and be completed by 2009, when mega ships are expected to put in for servicing. The Hambantota port is expected to develop as a bunkering centre, and the Galle port



is earmarked for expansion by constructing two berths with deeper draft in the outer harbour funded by JBIC. The Trincomalee port will be developed as a 'port city' focusing on the development of tourism, as well as providing services to regional industries.

The number of container ships that arrived at the port of Colombo dropped by 1 per cent during 2004, although the volume increased, reflecting the arrival of large container ships. The number of conventional ships arriving at Sri Lanka ports in 2004 also decreased by 4 per cent. The drop in conventional vessels was mainly due to the diversion of cargo transportation from conventional form to containerized form as the latter is more economical, faster and safer. The number of ships calling for bunkering services has been declining in recent years, and in 2004 it declined to a mere 14 ships from a peak of 285 ships that arrived in 1993. The main reason is the higher prices of bunker fuel at Colombo, which are higher by about US dollars 80 – 100 per MT than prices in Singapore. This explains why the feeder vessels originating from Bangladesh and India travel to Singapore for such services bypassing Colombo.

The port services continued to face new challenges from regional competition, specifically, the new ports developed in the Middle East and South India. The technological advancements that contribute to the efficiency of port services are taking place at a rapid pace and any port that is oblivious to those developments is bound to be pushed back by the competitors. Hence, any plan to develop the port services should take cognisance of the future requirements rather than concentrating on the current issues.

Water Supply and Irrigation

Sustainable water supply and irrigation are national priorities. Achieving sustainable use of water resources requires improved water management practices, appropriate pricing to prevent wastage and over exploitation.

The sufficient availability of water to meet all the requirements of people is a major issue in many countries including Sri Lanka. Recognising this deficiency, one of the Millennium Development Goals (MDGs) set by the United

Table 3.7						
Water	Supply	by	NWSDB			

	2003	2004
Total no. of water supply schemes	280	287
Total no. of new connections given during the year	49,789	57,491
Total no. of connections given (as at end year)	782,724	841,215
Total water production (Mn. Cu. Mtr.)	357	367
Unaccounted water (%)		e n Mera
Greater Colombo	36.9	36.4
Regions	31.1	29.4

Source: National Water Supply and Drainage Board

Nations requires that all citizens in a country to have access to safe drinking water and adequate sanitation facilities by 2015. In achieving this target, Sri Lanka aims at providing access to safe drinking water for at least 85 per cent of the population by 2010.

Two major factors threatening the long term sustainability of water resources in Sri Lanka are improper pricing and deficiencies in regulation. Pipe borne drinking water is subject to a price, with a subsidy segment, but other forms of water supply are not subject to any pricing leading to possible over exploitation and inefficient utilisation. In this connection, only a few regulations exist on the usage of natural aquifers and other forms of water resources, threatening their long term sustainability.

The proportion of households with access to an improved water sources was about 71 per cent in 2004, of which, only about 28 per cent had access to pipe borne water. However, the supply is subject to frequent interruption. The supply of water, therefore needs to be expanded significantly to meet both current and future demand. The water supply and sanitation sector has shown continuous expansion, but at a slower pace, in the recent years. The government continues to play a major role by investing in the development of water supply schemes and the distribution of water.

The National Water Supply and Drainage Board (NWSDB) has estimated that the investment requirements for the water supply sector to reach MDGs by 2010 would be Rs. 85 billion. However, the annual allocation by the government for this purpose has been only around Rs.7 billion. This indicates that alternative funding sources need to be tapped in order to realise the MDGs on water supply and sanitation.

Two pilot projects, covering areas in Greater Negombo and Kalutara to Galle have been identified for private sector participation. The private sector has been requested to submit proposals for the design, construction and operation of '40 million gallon per day water treatment plant' on the right bank of the Kelani river. NWSDB has already outsourced meter reading and spot billing in certain areas.

The treated drinking water supplied to urban households costs about Rs. 24 per unit and the NWSDB provides it to domestic households at highly subsidised rates, at about Rs.5.88 per unit, when the monthly consumption is 20 units

Box 8 Maintenance of Mahaweli Reservoirs: Current Status and Emerging Threats

All major projects identified in the Mahaweli Master Plan (MMP) have now been completed. The challenge faced today is the proper maintenance of these projects in order to maximise benefits to future generations with minimum risk and burden to the economy, social life and the ecosystem.

• The weakening of structures as a result of inadequate maintenance increases the risk of a structural failure, which can potentially cause a massive destruction of human lives, physical properties, the eco-system as well as reduce the overall economic growth of the country.

Reservoir	eservoir Year Dam Dam Water Capacity Installed Aver eservoir Year Height Length million cubic meters Capacity MW p Commenced Meters Meters	Dam Height	Dam	Water Capacity	Installed	Average power	Cost of Construction	
		p.a. Gwn	Rs. mn	US\$mn				
Bowatenna	1970	29.8	226	52	40	83		
Polgolla	1970	14.6	144	4.1		- 1	550	101
Maduruoya	1978	41	1,090	597			2.660	170
Ulhitiya	1979	25	4,000	268			n.a.	na
Kotmale	1979	87	600	172	201	396	9.470	608
Victoria	1980	122	520	721	210	605	9,800	593
Randenigala	1982	94	485	861	126	366	5,800	279
Rantambe	1987	41.5	420	22	50	103	3,200	109
Total	AN ALCOHOL				627	1,553	31,480	1,860

Table 1: Main Features of Mahaweli Reservoir Projects

Sources: Central Bank of Sri Lanka

The Accelerated Mahaweli Programme and Its Impact (1988) By Dr. H.N.S.Karunatitake

At present, the Mahaweli Authority of Sri Lanka (MASL) manages reservoirs, dams and irrigation facilities under the Mahaweli programme and the Ceylon Electricity Board (CEB) operates power stations. The MASL depends entirely on funds allocated through the central government budget as it does not generate funds within to finance its operational and maintenance expenses. Under the exiting arrangements, water stored by the MASL is supplied free of charge to the CEB for power generation and to farmers for cultivation and other activities.

Owing to fiscal difficulties faced by the government and non-recognition of reservoir maintenance expenditure as a priority item, allocations made for maintenance of reservoirs has been significantly less than what is required. In addition to major repairs to be done once in a few years, funding requirements for routine maintenance of major reservoirs is around Rs. 300 million per annum, but amounts received are far less. Mainly due to the lack of sufficient funds, standard maintenance practices have not been carried out as required. There are two critical implications of not undertaking regular maintenance;

• The postponement of required maintenance work as per the standard maintenance schedule will not only result in an increase in the cost of maintenance substantially on a future date, but would also add a larger additional cost resulting from an exponential rate of deterioration leading to additional work or even replacement. It is important to note that the recent burst of a relatively small dam of 25-metres high and 147-metres long (about one fourth of the Randenigala dam), built very recently in 2003 in Pakistan washed away some 20 villages, killing hundreds of persons and leaving about 30,000 homeless. Further, after the tsunami catastrophe in December 2004, geologists warn that Sri Lanka is now more vulnerable to earthquakes and other natural calamities, as the country is now not far away from the newly formed hyperactive plate boundary, thus requiring greater vigilance in construction and maintenance of projects of this nature.

Recognising the immense contribution of reservoir projects to the overall economy, social life and ecosystem, many countries have published dam safety standards and regulations as a part of their legislation. However, such standards do not exist in Sri Lanka. The lack of timely allocation of available funds, weaknesses in procurement procedures and the lack of skilled workers also adversely affect adequate and timely maintenance. Problems relating to maintenance and protection of the catchment areas, silting, water management, financial management and human resources management also exist at the reservoir levels which need early attention of the relevant authorities.

Mainly due to the lack of funds, standard maintenance practices have not been carried out as required. Gates and associated structures of dams are controlled mainly via electrical and electronic systems. Vigilant supervision, timely maintenance and replacements of these items are needed to ensure reliable operation and safety of dams. Weaknesses in procurement procedures also unnecessarily delay timely maintenance. Reservoir site management also faces problems relating to retention of professionals and skilled workers mainly due to inadequate remuneration, difficult working conditions, the lack of training, basic infrastructure such as health, education, transport and communication facilities in the area and other logistic facilities.

This emphasises the need for establishing alternative sources of funding for proper maintenance of Mahaweli dams/reservoirs. The Mahaweli Irrigation and Hydropower Survey report submitted by the UNDP in 1969 has identified the importance of proper maintenance and raising adequate funds for the same and indicates 'there is no tradition in Ceylon of payment for irrigation water supplied by the Government. Therefore, it is suggested that, in the first five years of development, the settler should be asked to make only a nominal payment to the Government. He should thereafter be required to pay the annual maintenance and operation costs of suppling irrigation water. These charges should be related to the amount of water used, in order to prevent water wastage and promote crop diversification' (page 99). However, there is no such system yet established. On the other hand, there is no charge on water supplied to the CEB for power generation either. The Mahaweli power plants generated 1,428 GWh of electricity in 2003, to a value of Rs. 11 billion. The average electricity tariff could have been 25 per cent higher (by Rs. 1.93 per unit) than the current level (Rs. 7.70 per unit), if Mahaweli power plants were not available.

Box 8 (Contd.)

Early actions need to be taken to ensure proper maintenance of reservoirs. All pending urgent maintenance work needs to be completed as early as possible, giving high priority. A competent independent committee should examine problems relating to the sustainable maintenance of all dams/reservoir projects in the country and formulate a set of minimum standards to be maintained to minimise the risk of dam failures.

Alternative funding sources should also be explored. Introducing a reservoir maintenance contribution (RMC) payable by electricity consumers based on the water released from Mahaweli reservoirs for power generation can be considered as a source of financing maintenance. This will require only about Rs. 0.05 increase in the electricity tariff per unit, which will generate about Rs. 300 million per year. Introducing a user charge on irrigation water also should be considered to part finance the cost of maintenance of irrigation infrastructure and also to reduce wastage of water. Other forms of revenue generating activities such as licensing fishing rights in Mahaweli reservoirs subject to security regulations and promoting tourism and recreational activities also could be considered.

It is also needed to introduce legislation on dam safety standards and regulations and enforcing a periodic 'Engineering Audit' on all large-scale reservoir projects by qualified risk assessors. Setting up an insurance scheme for high risk work at reservoir sites and establishing an incentive scheme to compensate workers serving in remote areas should be considered to retain professionals and skilled workers. Necessary action should also be taken to protect catchment areas, including an effective awareness campaign, reforestation and afforestation schemes.

per month. Of the total water consumption, about 70 per cent is in the domestic sector, but it contributes only one third of the total revenue. A rational tariff system, which reflects the economic cost of water, would reduce wastage of water.

During 2004, NWSDB implemented several water projects utilizing both local and foreign funds. It invested Rs.12,747 million in water supply schemes in 2004, utilising almost all the capital funds allocated for the water sector. NWSDB handled 73 local funded projects and 14 foreign funded projects during the year. The Secondary Towns Water Supply and Sanitation Project, the Water Treatment Plant Project at the Right Bank of the Kelani river and the Third Water Supply and Sanitation Project were some of the major foreign funded water supply projects implemented in 2004. The total revenue of NWSDB increased slightly to Rs. 4,910 million in 2004. The increased revenue was largely driven by the expansion of the consumer network. Indicating the need for an urgent revision in water tariff rates, NWSDB reported a net operating loss of Rs. 383 million in 2004, in contrast to a net operating profit of Rs.279 million in 2003. However, when the depreciation of assets is accounted for, the net financial results of NWSDB record a significant loss, eroding its capital base and requiring the taxpayers at large to provide funding for its replenishment.

The Department of Irrigation carried out several locally and foreign funded projects during 2004. The Hambantota Irrigation and Rehabilitation Project and the Weli Oya Irrigation Project were two major foreign funded projects implemented by the department. In addition, the department implemented 26 locally funded projects. The total expenditure on locally funded projects and foreign funded projects in 2004 amounted to Rs. 225 million and Rs.357 million, respectively. Successive governments since independence have invested large amounts of funds in the construction of reservoirs, major irrigation and in land development. However, these assets have not been properly maintained. The lack of proper maintenance will not only result in an increase in the cost of maintenance substantially in the future, but also would lead to under utilisation and risks of structural failures.

The Irrigation Department continued to implement the participatory irrigation management project covering major and medium scale irrigation schemes through the 'Wap Haula' programme. The Department also renovated a large number of minor irrigation tanks in 2004, under the government's 1,000 minor irrigation tanks renovation project.

3.3 Social Infrastructure Policies, Institutional Set up and Performance

As the World Bank recently indicated, in many dimensions, Sri Lanka has already achieved the MDGs, notably in universal net primary enrolment, gender equality, as well as in minimising the infant and maternal mortality. Sri Lanka's key social indicators stand well above those in comparable developing countries and on par with many developed countries. However, the social infrastructure has not yet evolved into an internationally competitive service framework, capable of fuelling high economic growth and satisfying the growing demands of the population, especially in the areas of high quality education and health; it further faces the challenge of maintaining the existing achievements, since all indicators point to a gradual deterioration in both the quality and outreach.

Health

The health sector suffered from several major setbacks in 2004. As in the previous years, there were frequent labour disputes in the public sector health services, crippling the services and putting the general public into inconvenience. A major outbreak of Dengue Fever (DF) and Dengue Hemorrhagic Fever (DHF) infected more than 13,000 persons and claimed 73 lives. These illustrate the continuing difficulties in maintaining the heavy public funding of the government health care programmes provided to all without targeting. The deterioration in some aspects of public sector health services was to some extent, arrested by increased private sector investments mainly in curative health care. However, preventive care, mostly of a public good nature, suffered due to inadequate funding and other typical state sector inefficiencies, undermining Sri Lanka's historical achievements. Therefore, proper targeting could save funds for preventive health care thus elevating Sri Lanka's health performance. This is specially relevant since the private sector investors have a very minimal incentive in promoting preventive health care.

Under the health sector reforms, key recommendations made by the Presidential Task Force (PTF) on Health in 1997 continued to be implemented on five fronts; improving at least one hospital in each district, expanding the services to areas of special needs, developing health promotional programmes, reforming the organizational structure including alternative financing mechanisms and promoting resource sharing with the private sector. Along these lines, the Ministry of Health developed a National Health Development Master Plan with the cooperation of JICA, in October 2003.

Under the programme of developing at least one hospital in each district, 34 hospitals in outstations have been identified for a phased development. To decentralise and develop mental health services, action has been taken to establish at least one mental rehabilitation centre in each district. In addition, 50 hospitals under the estate sector management have been identified for further development by the government. Of these, 22 hospitals have already been taken over by the government and are being improved.

As a tradable service, Sri Lanka's health services are gradually gaining competitiveness through increased investment by the private sector. The recent surge in private hospitals indicates the need for meeting demand for high quality health care when the public sector fails to provide the same. This is specially relevant to Sri Lanka's efforts at attracting tourists by providing the necessary infrastructure in niche areas such as health tourism. With the increasing participation of the private sector in the provison of health care, it is essential to develop a market based regulatory framework to ensure that quality and standards are maintained.

It is apparent that the entry of the private sector into the provision of health care services has helped the country to prevent a general breakdown of the whole system. This was partly facilitated by releasing the vast amount of knowledge within the public sector health services for use by the private sector. Accordingly, the services of the specialists attached to the public sector health care system were formally made

Table 3.8 Health Services

Item	2002	2003	2004(a)	
Government				
Hospitals (practicing Western medicine) (No.)	605	606	598	
No. of beds	59,781	61,808	60,328	
Central dispensaries (No.)	385	387	375	
Total no. of doctors	7,459	8,342	8,749	
Total no. of Assistant Medical Practitioners	1,295	1,289	1,276	
Total no. of Ayurvedic physicians	16,455	16,799	17,038	
Total no. of nurses	16,139	16,711	17,316	
Total no. of attendants	6,955	6,880	6,696	
Private				
Hospitals (practicing Western medicine) (No.)	n.a.	172	174	
No. of beds	п.а.	8,500	8,650	
Total heatth expenditure (Rs.bn)	24.9	27.5	34,4	
Current expenditure (Rs.bn)	20.2	22.1	25.9	
Capital expenditure (Rs.bn)	4.7	5.4	8.5	
(a) Provisional Sources: Ministr	Sources: Ministry of Healthcare, Nutrition			

a) Provisional

and Uva Wellassa Development Central Bank of Sri Lanka available to the private sector. Similarly, though not officially sanctioned, the services of technicians too were tapped by private sector institutions. This move can be described as a privatisation of inputs of a health care system and it has benefited all the stakeholders involved. It is now necessary to move a step further by permitting private medical schools under a strict standard setting framework of the government. Such private medical schools will help students following the biology stream to realise their goal of pursuing a medical education which the public sector is unable to satisfy at present due to resources constraints, liberalise the input market further and provide effective competition to public sector medical schools to upgrade quality, attain excellence and be the benchmark setter in medical education. The mostly expressed fear that the quality of the services would be compromised is totally unfounded, since all other inputs of the health care services such as buildings, equipment, vehicles and drugs are produced and supplied by the private sector.

Education

A continuously improving education system is a pre-requisite for rapid growth and development. The education system includes general education, technical and vocational education and finally higher education. In the past decade, private sector involvement in general education has shown an exponential expansion, filling gaps in Sri Lanka's public sector driven educational system.

The education reforms introduced in 1998 primarily targeted improving the quality of public education, strengthening service delivery and improving the economic and social relevance of the educational institutions at all levels. At the same time, reforms of university education and vocational training provided by the state focused on the expansion and creation of opportunities in tertiary education.

The present policies in respect of general education emphasise on the need for reducing regional disparities. In this respect, several steps have been taken to improve the infrastructure facilities in rural and semi urban areas. These steps include those taken under the 'Navodya Schools Programme' and increasing the number of teachers in those areas.

Several steps were taken to improve the quality and the relevance of school education which were marginal improvements within the system: introduction of activity based learning approaches, addition of Information Technology Education to the curriculum, establishment of student counselling and career guidance programmes and the promotion of English education. However, these measures fall short of the sector-wide educational reforms that are needed for transforming the country's educational system to meet further requirements in line with the changing global practices.

The shortage of qualified and competent teachers to run the public school system has been a chronic issue, which has now become acute. In developed countries, graduates are required to follow postgraduate teacher training courses in order to obtain a licence to practice as teachers. Such training courses equip the prospective graduates who choose teaching as a career by choice, with innovative teaching methods, educational psychology and motive for self-learning for their own career advancement. It is therefore, imperative that the positions in schools be filled by those who choose teaching as a career and not by those who choose teaching in the absence of any alternative employment opportunities. Further, those who are recruited should be given a comprehensive training in teaching methods and educational psychology, to enable them to become competent teachers.

The general education sector was hit with a serious blow by the tsunami in December, completely damaging 68 schools in eleven districts, partly damaging 105 schools and a large number of schools housing refugees. The total estimated cost to rebuild these schools has been estimated at Rs. I,131 million.

University education in Sri Lanka, which is a public sector monopoly, suffers from both the failure to meet the demand and failure to supply a quality education in many fields compatible with global trends. This failure is demonstrated by many indicators: a large number of students entering the labour force at an early age, choosing vocational training instead of university education, travelling abroad for education and foreign education institutes making a commercial presence in Sri Lanka to attract local students. The rigid agitation within Sri Lanka by pressure groups has kept the government postponing the much-needed decision of deregulating the higher education sector, which is akin to regulating domestic production in favour of imports. However, it should be noted that at the time of independence, Sri Lanka attracted students from many foreign countries due to the high quality university education prevalent at that time.

The private sector's entry to university education is opposed on the ground that it is a retrograde step to deny the higher education opportunity to low income students in rural areas. Hence, it is argued that the public sector's supply of university education should be continued to support such students. However, it appears that those supporting this argument have failed to understand the ground reality, that is, the inadequate supply of public university education has hit the very same class of students by keeping them away from universities, whereas the well-to-do have been able to educate their children at foreign universities. If private universities are permitted, a part of the demand for places in the public university system will shift to private universities, thereby enabling students from low-income groups to secure more opportunities in public universities. Further, the competition between the private and public universities will promote quality and innovation, leading to excellence in university education, benefiting all the stakeholders.

However, the deregulation of the university education has to be accompanied by a comprehensive scheme of accreditation, continuous monitoring and periodic evaluation to maintain the required standards in line with the changing

Table 3.9			
General and	University	Education	

Item	2002	2003	2004(a)
General education			
Total schools	10,508	10,473	10,458
Government schools(b)	9,829	9,790	9,766
o/w National schools	323	323	324
Other schools	679	683	692
Private	80	85	85
Pirivena	599	598	607
Pupils ('000)	4,179	4,098	4,031
New admissions ('000)	325	316	302
Teachers ('000)	196	197	196
Pupil/Teacher ratio (government schools)	22	21	21
Total expenditure on education (Rs. bn) (c)	37	39	42
Current	31	32	33
Capital	6	7	9
University education			
Universities	13	13	13
Students (d)	48,666	64,291	64,801
Lecturers (e)	3,390	3,543	3,611
Number graduating	9,027	10,730	n.a.
Arts and Oriental studies	3,288	3,456	n.a.
Commerce & Management studies	2,018	2,121	n.a.
Law	170	307	п.а.
Engineering	1,060	652	n.a.
Medicine	754	1,274	n.a.
Science	1,159	1,876	n.a.
Other	578	1,044	n.a.
New admissions for first degrees	12,144	25,471(f)	13,396

(a) Provisional.(b) Excluding non-functioning schools.

Sources: Ministry of Education University Grants Commission on Central Bank of Sri Lanka

(c) Includes government expenditure on higher education.

 (d) In all Universities, excluding the Open University of Sri Lanka.

(e) At the begining of the year

(f) Students qualified at both GCE(A/L) examinations held in August 2001 (12,431) and April 2002 (13,040) were admitted in year 2003.

global trends. Many universities in the UK and Australia have accredited local institutions in developing and middle income countries, including Sri Lanka. Furthermore, distance education through the use of advanced communication and information technology is gaining its ground across the globe. Hence, alternative means of higher education need to be explored in the wake of a serious deficiency in higher education opportunities in the country.

International studies show that the social rate of return of primary and secondary education is significantly higher than the private rate of return, justifying the continuation of public investment in primary and secondary education. However, the private rate of return is higher in tertiary education, thus indicating that private individuals are willing to share the investment in tertiary education.

There are several other private and public institutions, which provide similar education in Information Technology and other professional education areas. Some of these institutions are Sri Lanka Institute of Information Technology, Institute of Chartered Accountants of Sri Lanka, Sri Lanka branch of the Chartered Institute of Management Accountants, National Institute of Business Management and the Institute of Bankers of Sri Lanka The department of Technical Education and Training (DTET) manages 36 Technical Colleges that offer several vocational training programmes for youth. The total number of students enrolled for various technical education and vocational training programmes was 54,000 in 2004. The Vocational Training Authority of Sri Lanka (VTA) provides semi-skilled and skilled training for unemployed youths. The National Apprenticeship and Industrial Training Authority (NAITA) conducts training programmes under the National Apprenticeship Scheme. National Institute of Technical Education of Sri Lanka (NITESL) conducted several training programmes for teachers. It also engaged in curriculum development, teaching aid and material development in addition to setting up of skill development projects with assistance from the ADB.

The shortage of instructors and technical staff and inadequate funds to provide equipment to training centres has become a serious issue in technical education and vocational training. Improving quality and relevance of vocational training through enhancing the competence of teachers and curriculum development and upgrading the existing infrastructure in training institutions are the major challenges in the sector.

Housing and Urban Development

The demand for houses and urban infrastructure increases with the continuing population growth and economic development. The annual demand for new houses in Sri Lanka is estimated to be rising at a rate of 80,000 to 100,000 units, in addition to the need for meeting a large pent up demand. At the same time, there are a large number of sub-standard houses requiring upgrading.

The government's involvement in housing is significant, although its role is now changing from the direct provider to a facilitator. With the increasing income levels, the private sector has now emerged as a strong force catering especially to middle and high-income households.

The National Housing Development Authority (NHDA), Ministry of Fisheries and Aquatic Resources (MFAR) and Plantation Human Development Trust (PHDT) play a key role in the provision of public sector housing. The NHDA continued to implement the Model Village Housing Programme, the Estate Housing Programme and the Direct Construction Programme. Under the Sevana Piyasa programme, the NHDA provides permanent roofing materials to poor households. The poorest segment is entitled to receive an additional financial grant of Rs.10,000 to meet the cost of the roof structure. A total of 2,133 households benefited under this programme in 2004. However, housing programmes implemented by the NHDA indicated a slow progress in 2004, mainly due to its financial constraints. In 2004, the MFAR completed 714 housing units for fishermen. The PHDT continued with implementing several housing construction and upgrading programmes in the estate sector under the Plantation Development Support Programme (PDSP) in 2004. The Real Estate Exchange (Pvt.) Ltd. (REEL), which is the implementing arm of the Sustainable Townships Programme of the Ministry of Urban Development and Water Supply, provides shelter for the urban poor in the city of Colombo. It is planned to commence construction of 3,000 housing units under this programme in 2005.

The government policy on housing is geared to creating a conducive environment to mobilise housing finances and credit facilities with a view to promoting individual housing construction, to clear the backlog and meet the future demand. It has been proposed to provide the initial capital to implement an estate sector housing programme over a 3-year period to complete 50,000 housing units. The government has also set a target of 300,000 housing units to be developed for low and middle-income people. Action has also been taken to provide government servants with housing loans up to Rs.1 million at a concessionary interest rate of 4 per cent per annum through commercial banks. It has also been proposed to allocate identified plots of land among property developers with BOI incentives for the development of residential houses at affordable prices. A new housing loan scheme has also been proposed in Budget 2005 for returning migrant workers.

The volume of housing loans from the financial sector has increased in 2004. Commercial banks have recorded an increase of housing loans by about Rs 15 billion in 2004. The State Mortgage and Investment Bank, HDFC Bank and the National Savings Bank together granted 18,741 housing loans in 2004, in comparison to 28,289 loans in 2003.

The construction of houses damaged by the tsunami will pose a gigantic challenge in 2005. About 65,000 houses are estimated to have been completely destroyed and 44,000 houses partly damaged by the tsunami in December 2004.

The urban population in Sri Lanka living in Municipal Council and Urban Council areas was 14.6 per cent as estimated in 2001. Since then, several Pradesiya Sabbas have been identified to be upgraded as urban areas, which would substantially increase the urban population.

Urban Development Authority (UDA) plays a key role in planning and executing urban development projects in the country. It also provides consultancy services to all local authorities in respect of urban planning and development. The main operational activities of the UDA include the construction of administrative complexes, commercial complexes, town improvement projects, industrial projects, integrated projects and social and cultural projects. Expediting the preparation of city development plans through Integrated Urbanization Planning Approach was a major task entrusted to the UDA in 2004. Though the development plans had been finalized for Galle, Matara and Hambantota, after the tsunami, the UDA had to launch a programme to prepare new plans including rehabilitation and reconstruction programmes in tsunami affected areas.

Safety Nets

In 2004, a total of 1.9 million families benefited directly from the income supplementary programme of the Samurdhi, representing about 41 per cent of the population. However, according to the Department of Census and Statistics, the population living below the poverty line of Rs. 1,423 in 2002 was only 19 per cent. This indicates the need for improving the targeting of social welfare programmes to increase the benefits to truly deserving households and to reduce the fiscal burden.

The Welfare Benefit Act (WBA) passed in 2002 provides the legal framework for improving the targeting of welfare programmes in a transparent manner. As a part of the implementation, a Welfare Benefit Board (WBB) has been set up to screen welfare recipients. The implementation of the Act

Cash Grants Amount (Rs.)	2002		2003		2004(a)	
	No. of Families (b)	Value (Rs.Mn)	No. of Families (b)	Value (Rs.Mn)	No. of Families (b)	Value (Rs.Mn)
Samurdhi Income Supplementary Programme						
Rs.1,000	3,954	67	3,801	47	3,616	44
Rs. 700 (Rs. 600 with effect from November 2002)	589,460	5,663	586,318	4,233	584,635	4,211
Rs. 400	335,727	1,860	336,203	1,613	334,672	1,608
Rs. 350	320,759	1,400	322,701	1,351	327,168	1,369
Rs. 250	238,593	701	243,225	723	249,022	742
Rs. 140	398,244	242	383,783	657	364,945	617
Total	1,886,737	9,933	1,876,031	8,623	1,864,058	8,591
Total (Excluding families receiving Rs. 125 or Rs. 140)	1,488,493	9,691	1,492,248	7,966	1,499,113	7,974
Dry Ration Programme						
Rs. 336 -1260 (c)	145,777	1,453	222,652	2,460	155,048	2,226
Nutrition Programme						
Rs. 150 (Rs. 200 with effect from June 2004)	83,171	80	90,866	117	103,967	127

(a) Provisional.

(b) based on Samurdhi cards issued during the second half of the Year.(c) As at end of the year.

Source: Department of the Commissioner General of Samurdhi



will ensure an improvement of the selection process, identification of eligible families, removal of overlap with other welfare programmes and finally, increasing benefits to poor families.

The total expenditure of the Smurdhi programme dropped marginally to Rs. 8,591 million in 2004 from Rs. 8,623 million in 2003. This includes families who were virtually retired from the income supplementary programme, but receiving Rs.140 per month to keep them involved in other community development programmes and to enable them to pay the social security premium and contribute to the compulsory savings fund.

Environment

Sustainable development is given high priority in any development plan. Negative externalities arising from economic activities could have an adverse impact on the natural environment. Economic instruments for environmental regulation, effective enforcement and creating awareness among the general public play an important role in protecting the environment. The Ministry of Environment and Natural Resources (MENR), the apex body of maintaining a balance between rapid economic development and sustainability of natural resources, has taken several steps to protect the environment.

With a view to protect watersheds in central hills, the MENR proposed the National Wetland Policy and the National Watershed Management Policy and obtained the Cabinet approval in 2004. The MENR also formulated the National Cleaner Production Policy and Strategies with a view to providing guidelines for sustainable production and consumption. It highlights the efficient use of row materials, use of ecologically sound practices and the efficient use of water and energy resources by minimising wastage in the production process. The MENR initiated the drafting of a National Policy and Strategy on Traditional Knowledge for Sri Lanka with financial assistance provided by the UNDP. To protect the marine environment from land base activities, the MENR formulated a 'National Action Plan' for the protection of the marine environment in collaboration with the Coast Conservation Department, the Ministry of Fisheries and Ocean Resources, Central Environmental Authority and the Ministry of Housing and Infrastructure Development. The Air Resources Management Center (Air MAC) implemented several programmes to improve public awareness on air pollution and finalised the Cleaner Air Action Plan –2007 during the year.

The MENR established the Environmental Treaties Reference Centre (ETRC) in 2004 to monitor, co-ordinate and implement international environmental treaties. These treaties include 'Combat Desertification and Drought Convention', 'Basle Convention for the Control of Transboundary Movements of Hazardous Wastes and Disposal' and the 'Stockholm Convention for the control of Persistence Organic Pollutants'.

It is necessary to prepare a local agenda for environmental conservation in line with "Agenda 21" ratified by most countries including Sri Lanka at the Rio summit held in Brazil in 1992.

During 2004, the Central Environmental Authority (CEA), the regulator of the sector, processed a total of 31 Environmental Impact Assessments (EIA). In addition, 16 grid connected mini-hydro power generation projects and 15 village hydropower generation projects were approved. The CEA also issued environment clearance for 215 projects during the year. Issuing of Environmental Protection Licences (EPL) to industries is a prime function of the CEA. In 2004, the CEA processed 221 applications and issued 177 EPLs. In addition, the CEA has delegated its power and functions to the local authorities on 45 activities to expedite approval and monitoring aspects.

Petroleum distributors commenced distribution of low sulphur diesel from January 2004, improving the air quality, particularly in Colombo.

The disposal of solid waste in an environmentally friendly manner is a key issue, particularly in urban areas. Since waste is not waste from the nature's point of view, but a resource, it is necessary to incentivise local authorities to convert waste into energy and re-cyclable usable matter. The production of solid waste on a rising scale is unavoidable with the concentration of population in urban centres and enlarged economic activities. Without proper disposal methods, the dumping of solid waste by the way side cannot be prevented altogether. Although, the 'CEA does not have direct responsibility on solid waste management, it has taken a lead role in urging the local authorities to comply with their obligations to the public by giving directions. Local authorities could be encouraged to reprocess waste by linking it to the annual grant they get from the central government, for example local authorities, which reprocess according to the set standards could be given an increased grant from the central government.