3

ECONOMIC AND SOCIAL INFRASTRUCTURE

3.1 Overview

Recognising the importance of developing both economic and social infrastructure to enhance the country's competitiveness and accelerate sustainable economic growth, the government continued with its infrastructure development work amid a tight fiscal space. In terms of economic infrastructure, development activities such as the construction of expressways, highways and regional roads, urban and housing development projects, irrigation, port and airport development activities and commissioning of power projects were in progress during 2017. Meanwhile, the economy benefitted from the improvement in communication and logistical support activities. In this respect, telecommunication and port sector activities continued their growth momentum supported by the private sector involvement. The Colombo Port City Project, which is a public-private partnership towards developing a world-class city in South Asia, along with a financial hub, rapidly progressed during 2017 in terms of land reclamation and breakwater construction. Airport development activities, including the resurfacing of the runway at Bandaranaike International Airport, were carried out during the year. Moreover, several urban development programmes were initiated by the government, with the support of the private sector. Further, the government and the Sri Lanka Ports Authority entered into a concession agreement with a Chinese company to further develop the Hambantota port with the aim of developing the country as a maritime hub. Given the fiscal constraints, the government needs to further encourage private sector participation in economic infrastructure development, especially for the efficient operation of transportation, telecommunication and port services, while ensuring the quality of such infrastructure and healthy competition among private sector participants.

Meanwhile, global and domestic developments posed challenges to the provisioning of consumer utilities, particularly in the energy sector. Rising global oil prices eroded the profitability of the Ceylon Petroleum Corporation (CPC), while financial losses of the Ceylon Electricity Board (CEB) widened due to increased reliance on thermal power generation owing to drought conditions. These state-owned business enterprises (SOBEs) have periodically faced similar adverse situations in the past, seriously challenging the financial viability of these entities. The weak financial performance of the SOBEs in the *energy sector highlights the importance of adopting cost-reflective pricing strategies, particularly for petroleum and electricity. During the year under review, the government strengthened the drive towards sustainable energy projects, but it is crucial to expedite the expansion and diversification of energy generation to ensure energy security while minimising energy generation costs.*

Although Sri Lanka has been successful in achieving human development goals to a great extent, government policies should focus on addressing the changing demands of the economy that arise due to social and demographic dynamics. During the year under review, the government continued to spend on health and education services, with the aim of improving the quality and equitable access to such services. However, the country's health sector policies need to be focussed to address the issues stemming from an ageing population and changing disease patterns. During 2017, the government continued with the '13 years of guaranteed education' and 'nearest school is the best school' concepts, with the objective of providing students equitable access to quality education services while meeting the skill requirements of the labour market and student aspirations. However, the private sector involvement in health and education sectors is vital as state sector institutions alone cannot meet the demand for these services that is growing with the gradually rising population and income levels as well as the demands arising from the labour market in the context of an increasingly complex economy. Hence, the government should facilitate private sector engagement in health and education services while strengthening the regulatory environment to ensure that private sector services provide value-for-money. A well-educated and healthy nation, not only supports high economic growth, but also helps the reduction of the incidence of poverty in the country. The overall poverty level in Sri Lanka has decreased considerably, but income disparity, existence of severe poverty pockets and a considerable fraction of economically vulnerable groups living just above the poverty line remain as social issues. Hence, social safety-nets and poverty reduction programmes need to be strengthened further by targeting under-privileged groups in the society, with the aim of uplifting their livelihoods while promoting inclusive economic growth. In designing these programmes, the focus should be on cash transfers rather than generalised subsidies which are often more costly and distort resource allocation, thereby reducing the growth and employment generation potential of the economy. Further, environmental aspects should be an integral part of the development policy framework of Sri Lanka with a view to minimising the impact of natural catastrophes and limiting the occurrence of man-made disasters.

Table 3.1
Government Investment in Infrastructure

Year	Economic Services		Social Services		Total	
	Rs. billion	As a % of GDP	Rs. billion	As a % of GDP	Rs. billion	As a % of GDP
2013	369.4	3.9	77.6	0.8	447.0	4.7
2014	330.1	3.2	112.3	1.1	442.5	4.3
2015	429.0	3.9	124.4	1.1	553.4	5.1
2016	424.0	3.6	117.3	1.0	541.3	4.5
2017 (a)	474.1	3.6	135.3	1.0	609.4	4.6

(a) Provisional

Sources: Ministry of Finance and Mass Media
Department of Census and Statistics
Central Bank of Sri Lanka

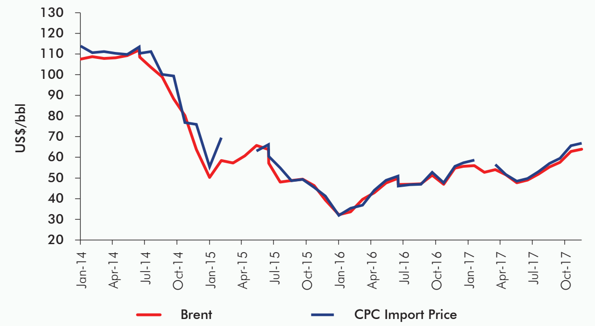
3.2 Economic Infrastructure Policies, Institutional Framework and Performance

Petroleum

During 2017, annual average global crude oil (Brent) prices rose above the levels observed in 2016. Crude oil prices witnessed a declining trend at the beginning of the year up to mid-June 2017 despite the decision taken in December 2016 by the Organisation of Petroleum Exporting

Countries (OPEC) and non-OPEC oil producing countries to curb oil production. Higher US oil production resulted in a supply glut in the world market that contributed towards the fall in crude oil prices. Consequently, the monthly average Brent price declined from US dollars 55.67 per barrel in January 2017 to US dollars 47.71 per barrel by June 2017. In May 2017, OPEC and a few non-OPEC oil producing countries, such as Russia and Venezuela, extended their production cut until March 2018. This decision, coupled with a slowdown in US drilling activities and stronger global oil demand forecasts, led to a reversal in the declining trend in prices. Although crude oil prices declined temporarily in end-August 2017 due to adverse weather conditions hampering the demand for crude oil from refineries in some parts of the US, prices rebounded with the gradual recommencement of refineries in these areas. Rising oil prices were further spurred by the decision taken by OPEC and several non-OPEC oil producing countries, on 30 November 2017, to extend the production cut until the end of 2018. This latest agreement allows oil producers to exit early from the deal in the event of the market getting overheated. The upward trend in prices continued in the month of December as well, due to the extended production cut deal, weaker dollar, higher demand driven by the cold

Chart 3.1
Average Price of Crude Oil (Brent) in the International Market and the Crude Oil Import Price of the CPC



Sources: Bloomberg
Ceylon Petroleum Corporation

winter in the Northern hemisphere and upward revision of global growth forecasts for 2018 by the International Monetary Fund (IMF). Accordingly, the monthly average Brent price rose to US dollars 63.92 per barrel by December 2017, recording a 16.8 per cent increase in comparison to December 2016. However, the rise in oil prices was limited to some extent by increased US oil production, which raised the US production to be on par with Saudi Arabia. In early December 2017, US crude oil production increased by 25,000 barrels per day (bpd) to 9.7 million bpd, which is the highest level recorded since early 1970s when the US production exceeded 10 million bpd. As a result of the overall oil market dynamics, the average price of Brent was US dollars 54.76 per barrel in 2017, which was an increase of 21.6 per cent compared to the average observed in the previous year.

Overall, movements of the average price of crude oil imported by the CPC were in line with global oil prices. Accordingly, the average price of crude oil imported by the CPC increased by 24.8 per cent to US dollars 57.79 per barrel in 2017 from the annual average import price of US dollars 46.30 per barrel in the previous year. At the same time, the average import price of refined petroleum products also recorded a 15.7 per cent increase from US dollars 434.62 per MT in 2016 to US dollars 503.06 per MT in 2017.

Despite the rising trend in global oil prices, domestic petrol and diesel prices remained unchanged in 2016 and 2017 since the last downward price adjustments effected in 2015. However, with effect from 09 January 2017, the retail price of kerosene was reduced by Rs. 5 per litre to Rs. 44 per litre, with a view to transferring the benefit of lower global oil prices that prevailed at the beginning of 2017 to consumers. Although domestic petrol and diesel prices were maintained unchanged, the government waived off a part of

Table 3.2
Petroleum Sector Performance

Item		2016 (a)	2017 (b)	Growth Rate (%) 2016 (a)	Growth Rate (%) 2017 (b)
Quantity Imported (mt '000)					
Crude Oil		1,685	1,591	-4.4	-5.6
Refined Products		3,885	4,895	17.0	26.0
Coal		2,407	2,530	27.8	5.1
L.P. Gas		345	387	24.3	12.2
Domestic L.P. Gas Production (mt '000)		9	19	-8.4	119.7
Value of Imports (CIF)					
Crude Oil	(Rs. million)	86,969	107,397	-13.5	23.5
	(US$ million)	596	704	-19.4	18.1
Refined Products	(Rs. million)	246,233	375,374	0.9	52.4
	(US$ million)	1,688	2,462	-6.3	45.9
Coal	(Rs. million)	28,692	39,699	32.8	38.4
	(US$ million)	197	261	23.9	32.9
L.P. Gas	(Rs. million)	24,208	35,505	8.4	46.7
	(US$ million)	166	233	1.2	40.1
Average Price of Crude Oil (CIF)					
	(Rs./barrel)	6,757	8,817	-9.4	30.5
	(US$/barrel)	46.30	57.79	-15.5	24.8
Quantity of Petroleum Exports (mt '000)		807	972	-11.1	20.4
Value of Petroleum Exports	(Rs. million)	41,794	66,280	-17.2	58.6
	(US$ million)	287	434	-23.3	51.4
Local Sales - Refined Products (mt '000)		4,937	5,379	19.7	9.0
o/w Petrol (92 Octane) (c)		1,036	1,109	13.7	7.1
Petrol (95 Octane)		137	168	36.5	23.0
Auto Diesel (d)		2,143	2,194	19.2	2.4
Super Diesel		75	92	38.9	21.5
Kerosene		137	161	5.6	17.4
Furnace Oil		817	1,040	29.8	27.3
Avtur		425	456	11.3	7.4
Naphtha		120	139	21.1	15.9
Local Sales - L.P. Gas (mt '000)		356	412	21.4	15.6
Local Price (End Period) (Rs./litre)					
Petrol (92 Octane)		117.00	117.00	0.0	0.0
Petrol (95 Octane)		128.00	128.00	0.0	0.0
Auto Diesel		95.00	95.00	0.0	0.0
Super Diesel		110.00	110.00	0.0	0.0
Kerosene		49.00	44.00	0.0	-10.2
Furnace Oil					
800 Seconds		82.20	82.20	0.0	0.0
1,500 Seconds		80.00	80.00	0.0	0.0
3,500 Seconds		80.00	80.00	0.0	0.0
L.P. Gas (Rs./kg)					
Litro Gas		105.68	114.48	-1.9	8.3
Laugfs Gas		105.68	114.48	-1.9	8.3
International Market Crude Oil Prices (US$/bbl)					
Brent		45.03	54.76	-16.2	21.6
WTI		43.38	50.92	-11.3	17.4
World Oil Supply (million barrels per day)		97.0	97.4	0.5	0.4
World Oil Demand (million barrels per day)		96.2	97.8	1.2	1.7

(a) Revised
(b) Provisional
(c) Including XtraPremium Euro 3
(d) Including XtraMile Diesel

Sources: Ceylon Petroleum Corporation
Lanka IOC PLC
Lanka Marine Services (Pvt) Ltd
Litro Gas Lanka Ltd
Laugfs Gas PLC
Sri Lanka Customs
Bloomberg
International Energy Agency

customs duties applied on petrol and diesel thrice during the year to ease the financial burden on the CPC from rising global oil prices. Accordingly, the customs duties on petrol and diesel were waived off by Rs. 10 per litre and Rs. 3 per litre, respectively, in each instance on 01 February 2017 and 15 December 2017. Moreover, the customs duties on petrol and diesel were further reduced by Rs.3 per litre and Rs.5 per litre, respectively, on 22 December 2017.

During 2017, petroleum product sales in the domestic market were primarily driven by the demand for energy generation and transportation. The drought conditions during most of 2017, together with the regular disruptions to the operations at the Norochcholai coal power plant, led to increased fuel-oil based power generation. As a result, petroleum sales for energy generation, which accounted for a 20 per cent share of total petroleum sales, grew by 20.7 per cent in 2017. Meanwhile, petroleum sales to the transportation sector, which contributed to 61.4 per cent of total petroleum sales in the domestic market, grew by 4.9 per cent during the period under review. Further, petroleum sales to the aviation sector, which accounted for 8.8 per cent of total petroleum sales, grew by 7.4 per cent during the year. Growth in diesel and furnace oil sales in 2017 was mainly driven by the demand from the energy sector, whereas the transportation sector demand was the key contributor to the increased sales of petrol. Growth in kerosene sales was mainly spurred by the household sector.

Non-adjustment of domestic market prices in response to elevated petroleum prices in the global market weakened the financial performance of the CPC during 2017, in comparison to the preceding year, in spite of adjustments made to customs duties. According to the provisional unaudited financial statements, the CPC has reported a profit of Rs. 5.1 billion before taxes in 2017, in comparison to Rs.69.6 billion in 2016. Profits from the sale of petroleum products to the energy generation sector and additional finance income that was derived from interest on CPC's bank deposits mainly contributed to the profit in 2017. Despite the reduced profits, the gross liabilities of the CPC to the banking sector declined by 8.1 per cent to Rs. 177.1 billion by end 2017, from Rs. 192.6 billion at the end of the previous year. On the other hand, local currency deposits of the CPC with the state banks recorded a decline to Rs. 5 billion by end 2017, from Rs. 32.8 billion as at end 2016, as these deposits were converted to repay foreign currency loans to the banking sector. Meanwhile, outstanding trade receivables of the CPC from government entities increased from Rs. 31.1 billion at the end of 2016 to Rs. 74.1 billion by end 2017. The CEB and SriLankan Airlines (SLA) accounted for 67.9 per cent and 17.4 per cent, respectively, of the total trade receivables of the CPC.

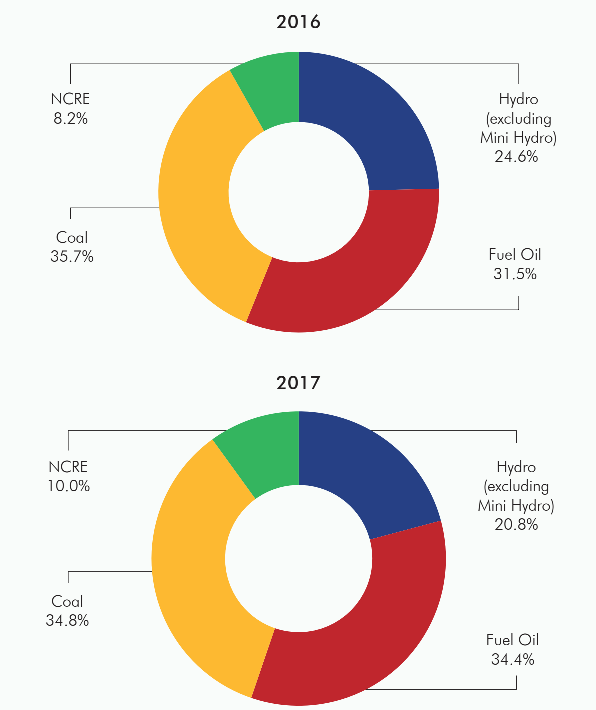
Rising oil prices in global markets and inefficiencies in administered prices warrant the implementation of a market-based pricing formula for petroleum products in the domestic market. During an upswing in global oil prices, administered prices that are not adjusted to reflect the actual cost of petroleum products lead to a deterioration of the financial performance of the CPC while creating macroeconomic imbalances, particularly through the severe burden on the government budget and heavy borrowings by the CPC from state banks. Further, when the administered prices are not cost reflective, domestic consumer demand does not adjust with the changing global prices, leading to an increase in the petroleum import bill. Similarly, consumers may not benefit from lower petroleum prices when the international oil prices are on a declining trend, under the current non-cost reflective pricing mechanism. Meanwhile, providing blanket subsidies for certain petroleum products is also inefficient since the subsidy is not targeting low-income earners. Therefore, it is of high priority to implement a market-based pricing strategy and an effective subsidy targeting mechanism to ensure the financial viability of the CPC and to reduce the fiscal burden.

The activities of the Petroleum Resources Development Secretariat (PRDS) for 2017 and beyond mainly focus on data acquisition and exploration, natural gas commercialisation, policy formulation and strengthening the legal framework for off-shore exploration. In early February 2017, the government called for Expressions of Interest from international gas and oil companies for the development of natural gas deposits, which have been discovered in Block M2 of the Mannar basin, and the production of gas. A mini bid round is planned to be announced in the first half of 2018 to select a suitable investor to explore the gas discoveries at Block M2. It is planned to utilise the natural gas produced at this site for electricity generation in the natural gas-powered plants proposed under the least cost power generation plan of the CEB. Meanwhile, a survey is scheduled to commence in 2018 as a joint study with an oil exploration company to acquire a 5,000 line-km of seismic data in the Eastern coast. Moreover, the PRDS is in the final phase of negotiations with a subsidiary of a global off-shore oil-field service providing company for an agreement to carry out an Umbrella Multi-Client Survey to enhance the off-shore exploration data repository capacity of the country.

Electricity

Electricity generation continued to expand with a higher dependence on thermal power generation during 2017. Total electricity generation increased by 3.7 per cent to 14,671 GWh in 2017, from 14,149 GWh in the preceding year. The drought conditions that prevailed since the latter part of 2016 continued during the first nine months of 2017, significantly hampering hydropower generation and increasing the country's reliance on thermal power generation. Consequently, hydropower generation, excluding mini hydro generation, registered a decline of 12.1 per cent to 3,059 GWh, whereas fuel oil-based power generation and coal power generation increased by 13.1 per cent and 1.1 per cent, to 5,045 GWh and 5,103 GWh, respectively. With the rise in mini hydropower generation due to the rainfall received during the latter part of 2017, electricity generation through non-conventional renewable energy (NCRE) sources increased by 26.3 per cent to 1,464 GWh in 2017, compared to the previous year. Accordingly, coal based electricity generation accounted for the largest share within the total generation followed by fuel oil, hydro and NCRE power generation, respectively, during 2017. This was despite the disruptions experienced in coal power generation from time to time in 2017 due to the breakdown of some units of the Norochcholai coal power plant and scheduled maintenance activities. Meanwhile, the power plants owned by the CEB contributed 72.9 per cent to the total power generation in 2017, while the remainder was purchased from the independent power producers (IPPs). The overall transmission and distribution loss as a percentage of total power generation continued to decline during the year due to measures taken to mitigate such losses through improved distribution efficiency. Meanwhile, electricity sales grew by 5 per cent during the year. The increase in electricity sales was mainly driven by the industry, general-purpose and domestic sectors, which accounted for 30.1 per cent, 20.7 per cent and 32.7 per cent shares, respectively, of total electricity sales in 2017. According to the provisional data of the CEB, the level of electrification of the country stood at 99.3 per cent by end 2016.

Chart 3.2
Electricity Generation Mix



Source : Ceylon Electricity Board

Table 3.3
Electricity Sector Performance

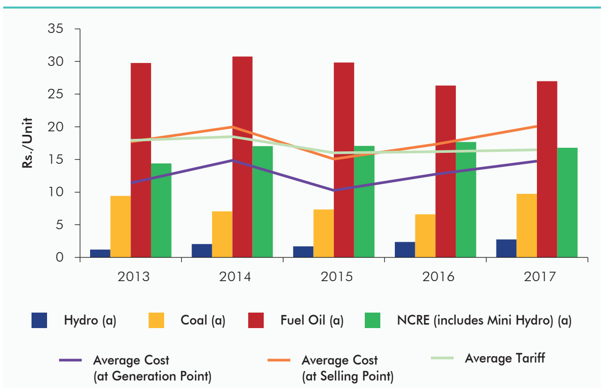
Item	2016 (a)	2017 (b)	Growth Rate (%)	
			2016 (a)	2017 (b)
Installed Capacity (MW)	4,018	4,138	4.4	3.0
Hydro (c)	1,384	1,384	0.5	0.0
Fuel Oil (d)	1,215	1,293	9.0	6.4
Coal	900	900	0.0	0.0
NCRE (e)	519	561	14.1	8.2
Units Generated (GWh)	14,149	14,671	8.1	3.7
Hydro (c)	3,481	3,059	-29.0	-12.1
Fuel Oil (d)	4,461	5,045	96.1	13.1
Coal	5,047	5,103	13.6	1.1
NCRE (e)	1,160	1,464	-20.9	26.3
Total Sales by CEB (GWh)	12,785	13,430	8.5	5.0
Domestic and Religious	4,272	4,463	8.3	4.5
Industrial	3,864	4,041	7.1	4.6
General Purpose and Hotel (f)	2,987	3,222	11.4	7.9
Street Lighting	109	108	0.3	-0.3
Bulk Sales to LECO	1,553	1,595	7.4	2.7
LECO Sales (GWh)	1,465	1,518	8.4	3.6
Domestic and Religious	613	629	8.5	2.6
Industrial	276	281	4.5	1.8
General Purpose and Hotel (f)	553	586	11.3	6.0
Street Lighting	23	22	-11.5	-4.3
Overall Transmission and Distribution Loss of CEB (%)	9.6	8.5	-4.0	-11.5
Number of Consumers ('000) (g)	6,500	6,741	5.3	3.7
o/w Domestic and Religious	5,731	5,923	5.3	3.3
Industrial	62	64	2.9	3.7
General Purpose and Hotel (f)	704	751	5.9	6.7

(a) Revised
(b) Provisional
(c) Excluding mini hydro power plants
(d) Inclusive of Independent Power Producers (IPPs)
(e) Refers to Non-Conventional Renewable Energy including mini hydro
(f) Inclusive of sales to government category
(g) Inclusive of LECO consumers

Sources: Ceylon Electricity Board (CEB)
Lanka Electricity Company (Pvt) Ltd (LECO)

The CEB recorded a significant financial loss during 2017 amidst lower hydropower generation and increased reliance on fuel oil-based power generation. Drought conditions coupled with the intermittent disruptions to the coal power generation resulted in high fuel oil-based power generation during 2017. The average cost of hydro, coal and fuel oil-based power generation by the CEB was Rs. 2.77, Rs. 9.74 and Rs. 25.72 per kWh, respectively. Meanwhile, the average cost of electricity purchased by the CEB from IPPs was Rs. 23.72 per kWh. Therefore, the CEB's average cost of electricity at selling point amounted to Rs. 20.06 per kWh although the average tariff was only Rs. 16.49 per kWh. The average tariffs per kWh charged by the CEB from industry, domestic, general-purpose, government and hotel sectors were Rs. 14.74, Rs. 13.49, Rs. 23.78, Rs. 17.95, and Rs. 17.62, respectively. Consequently, the overall loss margin of the CEB at selling point was Rs. 3.57 per kWh. According to the unaudited provisional financial statements, the financial performance of the CEB had further worsened with losses before tax increasing from Rs. 13.2 billion in 2016 to Rs. 45.7 billion in 2017. Moreover, the combined short-term liabilities of the CEB to the banking sector, CPC and IPPs increased from Rs. 91.5 billion at end 2016 to Rs. 138 billion by end 2017. Outstanding long-term liabilities of the CEB, primarily to the banking sector and the government, also increased to Rs. 319.6 billion by end 2017, recording an increase of Rs. 19.9 billion in comparison to the end of the preceding year.

Chart 3.3
Average Cost and Average Tariff of Electricity



(a) Average cost at generation point

Source : Ceylon Electricity Board

During 2017, the Public Utilities Commission of Sri Lanka (PUCSL) approved the Least Cost Long-Term Generation Expansion Plan (LCLTGEP) for the CEB for the next 20-year period with the aim of ensuring energy security while considering both financial and economic costs of energy generation. As per the approved LCLTGEP, 242 MW of major hydro, 215 MW of mini hydro, 1,389 MW of solar, 1,205 MW of wind, 85 MW of biomass, 4,800 MW of liquefied natural gas (LNG), 320 MW of furnace oil and 105 MW of gas turbine-based power plants will be added to the installed capacity of the country during the 2018 - 2037 period. It is crucial to execute the proposed generation plan in a timely and effective manner in order to meet the growing energy demand at the lowest economic cost to the economy. The generation plan approved by the PUCSL consists of 4,800 MW of natural gas-based power plants, although Sri Lanka does not have a natural gas supply at present. Hence, it is essential to expeditiously develop a reliable source of LNG supply to the country for the timely commissioning of LNG-based power generation. Failure to do so will compel the LNG power plants to operate on fuel oil, significantly increasing the generation cost of the CEB. In addition, the failure to achieve the milestones of LCLTGEP would result in the CEB having to resort to emergency power purchasing agreements with the high-cost independent thermal power producers. The share of thermal IPPs in total energy generation is already at a considerably high level, which was 17.1 per cent in 2017. The 'Financial Impact of Delay in Implementation of Power Plants' report released by the PUCSL in

2017 forecasts that the implementation delays in the power generation expansion schedule that is given in the LCLTGEP for 2018 to 2020 period will cost the CEB approximately Rs. 50.62 billion. Hence, the timely implementation of the generation expansion plan is vital to ensure energy security as well as the financial viability of the CEB. Meanwhile, the CEB has proposed to develop two 300 MW coal power plants by 2025, which are not in the LCLTGEP plant schedule approved by the PUCSL, with the aim of minimising the financial cost of power generation in the country. The government is currently in the process of evaluating this proposal to decide on the most appropriate technology for coal power plants in the country. Moreover, the Ministry of Power and Renewable Energy submitted a revised version of the new National Energy Policy and Strategies to the Cabinet of Ministers for approval. The preferred fuel options for power generation recommended therein are hydro, fuel-oil, coal, LNG, solar, wind and biomass. It is important to determine the optimal mix of energy sources for Sri Lanka in terms of both financial and economic costs, and thereby the long-term generation expansion plan for the country, without considering power projects in an ad-hoc manner.

Numerous generation expansion projects were in progress during 2017 with particular emphasis on enhancing the installed thermal power generation capacity. Bids are currently being evaluated to develop a 300 MW natural gas-fired combined cycle power plant in Kerawalapitiya on Build, Own, Operate and Transfer (BOOT) basis. In addition, the bidding process commenced for the construction of a 100 MW furnace oil-fired, barge-based power plant in Galle and four 24 MW furnace oil-fired power plants that are planned to be commissioned in 2018, and three 35 MW gas turbine power plants that are scheduled to be added to the national grid by 2020.

The government continued to increase the capacity of renewable energy generation in the country, with a view to enhancing sustainability in the energy sector. The construction of Uma Oya, Moragahakanda and Broadlands hydropower plants was in progress during 2017 and these projects are expected to add 120 MW, 25 MW and 35MW to the national grid by mid-2018, 2018 and mid-2019, respectively. Meanwhile, bids are being evaluated to construct a 100 MW wind park in the Mannar island. The 'Soorya Bala Sangramaya' programme, which was launched in 2016 in collaboration with the Ministry of Power and Renewable Energy, the Sri Lanka Sustainable Energy Authority (SLSEA), the CEB and the Lanka Electricity Company (Private) Limited (LECO), continued during 2017. To this end, the ‘Rivi Bala Savi’ loan scheme was introduced in 2017 to provide concessionary loans to households through the banking sector to setup rooftop solar power PV panels. The government allocated Rs. 1,500 million as subsidy payments to the banks in order to implement this loan scheme during 2017. Meanwhile, 4,275 consumers joined the Net Metering, Net Accounting and Net Plus plans as rooftop energy generators by adding 35 MW to the national grid during this year. Further, as per the Budget 2017, a project has been initiated to convert public sector buildings to solar rooftop power producers with a budgetary allocation of Rs. 350 million. Under this project, 10kW and 20kW solar rooftop systems were provided free for 13 schools, 77 hospitals and four government institutions. In addition, the ‘Rivi Aruna’ project commenced in 2017 to convert religious premises to rooftop solar power projects by providing solar panels free to selected religious places. Accordingly, 135 solar systems have been installed in religious places, adding 270 kW to the system. The excess electricity generated by these projects are purchased by the CEB either through Net Metering or Net Accounting plans. Although promoting such green energy projects is a commendable step towards increasing renewable energy generation, the government needs to formulate a cost recovery process to reduce the fiscal burden.

During 2017, several measures were implemented in the energy sector to introduce energy-related standards and regulations, and improve energy efficiency and demand management. In this regard, the SLSEA published the standards on energy labelling for CFL bulbs during 2017 and is currently in the process of developing standards for air-conditioners, refrigerators and computers. Meanwhile, the SLSEA provided consultancy and audit services related to energy conservation and demand management for government institutions while issuing accreditations for energy management officers and energy auditors in both private and public sectors. Moreover, the PUCSL approved an optional, time-based tariff scheme for single-phase domestic consumers, which was earlier limited only to the consumers who have three-phase and consuming 30A or above. With the time-based tariff scheme, the consumers have the option to pay a lower rate for the electricity used during off-peak hours, which in turn would lead to more efficient management of the demand for electricity and thereby lower their electricity bills. In 2016, the PUCSL introduced the national standard for plug and socket outlets in Sri Lanka for non-industrial applications to ensure the safety of electricity users. Accordingly, the manufacture and importation of non-standard plugs, socket outlets, adaptors and extension cords with universal sockets were banned from August 2017, while the sale of such non-standard items will be prohibited from August 2018.

Road Development

Amidst tight fiscal conditions, the government continued to improve the road network of the country for better regional integration and improved productivity, supporting economic growth. Sri Lanka's road network consisted of 12,210 km of Class A and Class B roads, 169.8 km of expressways and 4,662 bridges as at end 2017. The total expenditure incurred by the Road Development Authority (RDA) on roads and bridges increased by 45.8 per cent to Rs. 166.5 billion in 2017 in comparison to 2016. This included expenditure on expressway development, highway development, construction of flyovers and bridges and expenditure on widening and improving of roads.

Extensions to the national expressway network continued during 2017. The extension of the Southern Expressway from Matara to Hambantota, including the expressway link to Mattala, progressed during 2017. This 96 km-long extension to the expressway is expected to be completed by October 2019. Meanwhile, initial work of the Central Expressway extending from Kadawatha to Dambulla, with its Meerigama-Ambepussa and Pothuhera-Galagedara links, continued during 2017. This project consists of four sections, and currently land acquisition for section I from Kadawatha to Meerigama, land improvement for section II from Meerigama to Kurunegala and feasibility studies for section III from Pothuhera to Galagedara are in progress. Land acquisition and civil work related to the construction of Phase III of the Outer Circular Highway (OCH), which connects the Kadawatha and Kerawalapitiya interchanges with a link to the Colombo-Katunayake Expressway, also continued during 2017. This project has a road length of 9.6 km, involving an estimated cost of Rs. 77.7 billion, of which the civil work is funded through financial assistance from the EXIM Bank of China. The revenue generated by the three expressways currently in operation increased by 11.2 per cent to Rs. 7.9 billion with the rise in vehicular traffic during the year. Increased usage of expressways indicates the need for the development of an efficient road infrastructure network that will enhance the productivity of the economy.

The construction and development of various roads, bridges and flyovers were carried out during 2017. The Colombo National Highways Project commenced three new rehabilitation and improvement projects, namely, Kottawa–Thalagala road, Kotte–Bope road and Orugodawatta-Ambatale road during the year. Under the Western Province Road Development Project, work related to the rehabilitation and improvement of the Wadduwa-Morontuduwa road and Bellana–Moragala road commenced in 2017. The Badulla-Chenkaladi road improvement project continued with the commencement of civil work on the Badulla-Bibile road. The Integrated Road Investment Programme (i-Road) continued with a loan facility provided by the Asian Development Bank (ADB), and the rehabilitation of 3,130 km of rural roads was in progress under this project as at end 2017. At the same time, 285 km of national roads are expected to be rehabilitated and maintained over a period of seven years under the i-Road Programme. Under the Northern Road Connectivity Project funded by an ADB loan, rehabilitation and improvement of the Kandy-Jaffna road commenced in 2017. Concurrently, under the "Maga Neguma" programme, a road length of 164.3 km was rehabilitated during 2017. Under the Climate Resilience Improvement Project, which is funded by a World Bank loan, a total of three bridges are to be reconstructed during 2018 to mitigate flood risk from heavy rains. Meanwhile, Phase 1 of the Priority Roads Project-3 was in progress, for which the China Development Bank (CDB) provided a credit facility, and nearly 150.6 km road length of six highways were completed during 2017. Preliminary work in relation to the construction of a new bridge over the Kelani river, which would consist of six traffic lanes, at an estimated cost of Rs. 55,313 million, continued during the period. Meanwhile, the construction work of the Polgahawela, Ganemulla and Rajagiriya flyovers was completed during 2017 and the flyovers were operational by January 2018.

Several measures were undertaken to reduce traffic congestion and improve road safety in major cities. A project initiated with the technical assistance from the government of the Republic of Korea for developing a Centralised Traffic Control System with advanced traffic management features in the Colombo metropolitan region progressed during 2017. Under this project, detailed designs for 133 junction improvements were completed during the year.

The RDA has planned several other medium-term and long-term road development projects. The Ruwanpura expressway has been proposed to connect Ratnapura to the Southern expressway with a length of 74 km and six interchanges. The majority of the feasibility and environmental impact assessment studies for this project are being finalised. Initial work on the Port Access Elevated Highway project that will connect the OCH with the new Kelani bridge was in progress. Accordingly, the feasibility study for Phase 1 from the new Kelani bridge to Rajagiriya was completed and the environmental impact assessment was in progress. Meanwhile, feasibility studies are in progress to extend the Marine drive from Dehiwala to Panadura and to extend the Baseline Road up to the Galle Road at Ratmalana. Further, a feasibility study has been carried out to construct an underground tunnel connecting the Marine Drive in Colombo to the elevated airport expressway through the Colombo Port City to facilitate uncongested traffic movement in the surrounding area.

Road Passenger Transportation

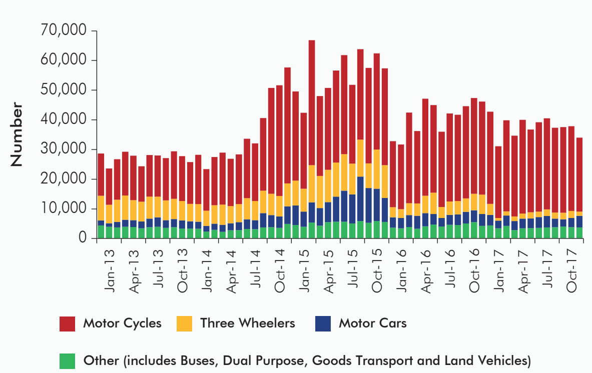
Bus passenger transportation witnessed a subdued performance as reflected through the developments in both public and private sector bus operations during 2017. The total operated kilometres of the Sri Lanka Transport Board (SLTB) decreased marginally by 0.8 per cent to 448.1 million km while passenger kilometres also decreased by 1.8 percent to 15.8 billion km in 2017, in comparison to 16.1 billion km in 2016. During 2017, operated kilometres of private buses decreased by 2.1 per cent to 1 billion km and passenger kilometres also declined by 2.4 per cent to 50.8 billion km, in comparison to the previous year. The reduction in terms of bus operations for both public and private operators was mainly due to the impact of floods in many parts of the island during May 2017. The total number of buses owned and the average bus fleet operated by the SLTB decreased by 6.3 per cent and 0.9 per cent to 7,305 and 5,266 in 2017, respectively, in comparison to the previous year. In the year under review, 283 buses were rehabilitated through the funds provided by the Ministry of Transport and Civil Aviation. In the meantime, the number of buses owned by private operators increased by 2 per cent to 19,998 in 2017, while the average bus fleet operated decreased by 0.9 per cent to 16,976 in 2017. However, major improvements to both public and private bus transport services are essential to overcome the exacerbating issue of traffic congestion in urban areas, and thereby reducing productivity losses in the overall economy due to road traffic. In this regard, increasing the frequency of bus operations to reduce over-crowding of buses, establishing integrated bus schedules and easy multi-modal payment methods in all regions, and enhancing inter-modal connectedness through transport hubs linking bus and rail transport systems etc. are necessary steps towards improving bus transport services. During 2017, the government implemented priority bus lanes in selected roads within the Colombo city, although this policy is not being implemented effectively at present.

The financial performance of the SLTB showed marginal improvement during 2017. Despite the upward revision to bus fares of both the public and private sector, by 6.3 per cent on 01 July 2017, the total revenue of the SLTB improved by only 3 per cent during 2017 to Rs. 42.2 billion as indicated by the provisional unaudited financial statements. However, as operating expenditure decreased by 4.6 per cent to Rs. 40.1 billion, the financial performance in 2017 resulted in an operational profit of Rs. 2.1 billion, as against the loss of Rs. 1.1 billion recorded in 2016.

The National Transport Commission (NTC) continued to take measures to improve the efficiency and coverage of road passenger transportation in 2017. The NTC is engaged in a project to implement a 'Unified Transport Card Solution (UTCS)', with multiple top-up and touch-out capabilities with the intention of providing a convenient transport payment card facility that can be used for multiple transport modes to minimise inconveniences faced by passengers and service providers. Meanwhile, 55 buses have been in operation under the project for strengthening the SLTB and railway coordinated services, connecting railway stations and principal locations within the Colombo city. During 2017, an equal number of buses were deployed by the SLTB and the private sector to operate on the Southern Expressway and Outer Circular Highway connecting Kadawatha and Matara under a coordinated time table. Measures were taken by the SLTB to improve the bus fleet through installation of new engines and renovation of used engines during the year. Meanwhile, the budget allocation by the government for the 'Sisu Seriya' bus service, which caters to school children, amounted to Rs. 562 million in 2017. Ninety new 'Sisu Seriya' services have been launched during the year and there were 1,389 buses operating under the programme. The 'Nisi Seriya' bus service continued to facilitate night time passengers by providing a secure public transport service. Under this project, 35 new buses were deployed in 2017. Meanwhile, Rs. 10 million has been assigned to the 'Gemi Seriya' programme that caters to the rural areas and the NTC has received relevant approvals to initiate 11 new services under this project.

The registration of new motor vehicles decreased during 2017. The number of new vehicle registrations during 2017 decreased by 8.4 per cent to 451,653, following a decline of 26.2 per cent in the previous year. The decline was mainly witnessed in three wheelers, dual-purpose vehicles and motor cars, while the registration of buses and goods transport vehicles increased during the year. The reduction in motor vehicle registration during the year could be attributed to the reduction in Loan to Value (LTV) ratios for selected vehicles with the aim of reducing motor vehicle imports to the country. Further, the tax revisions on the import of motor vehicles and the marginal depreciation of the Sri Lankan rupee against the US dollar also contributed to such a decline in the registration of new vehicles.

Chart 3.4
New Registration of Motor Vehicles



Source : Department of Motor Traffic

Rail Transportation

Rail transportation recorded a modest growth in both passenger and goods transportation activities in 2017. Rail passenger kilometrage increased by 1.1 per cent to 7.5 billion km in 2017 from 7.4 billion km recorded in 2016. Further, the goods kilometrage increased by 3.5 per cent to 144.8 million MT km in 2017. The overall increase in passenger and goods kilometrage was supported by the increase in available rolling stock of the Sri Lanka Railways (SLR) by 7 per cent to 1,676 in 2017, in comparison to 1,567 in 2016.

The SLR continued to engage in the construction of railway tracks, and improvement and rehabilitation work to provide continuous passenger and freight transportation services. The upgrading of the Kelani Valley Railway line, according to a special budget proposal in 2016, was completed in 2017. Meanwhile, the procurement process of rolling stock under an Indian line of credit is in progress and advance payments have been made during 2017. Further, the SLR has rehabilitated 18 passenger carriages, four locomotives and one power set. The completion of double tracking of the railway line from Kalutara South to Payagala South and Seeduwa to Katunayaka, and commencement of double tracking of the railway line from Kandy to Kadugannawa took place during 2017. Meanwhile, 30 new protected level crossing systems were established and 100 level crossing systems were repaired in 2017. Further, the SLR, with the assistance of the ADB, is in the process of preparing a railway master plan in order to expand and improve the railway infrastructure and services.

As per the provisional financial statements, the SLR recorded an operating loss of Rs. 7.6 billion in 2017, compared to a loss of

Table 3.4
Salient Features of the Transport Sector

Item	2016 (a)	2017 (b)	Growth Rate (%) 2016 (a)	Growth Rate (%) 2017 (b)
1.New Registration of Motor Vehicles (No.)	493,328	451,653	-26.2	-8.4
Buses	2,685	3,331	-35.1	24.1
Motor Cars	45,172	39,182	-57.2	-13.3
Three Wheelers	56,945	23,537	-56.0	-58.7
Dual Purpose Vehicles	26,887	16,742	-31.9	-37.7
Motor Cycles	340,129	344,380	-8.3	1.2
Goods Transport Vehicles	7,563	11,432	5.9	51.2
Land Vehicles	13,947	13,049	15.2	-6.4
2.Sri Lanka Railways				
Operated Kilometres ('000)	11,921	11,679	1.1	-2.0
Passenger Kilometres (million)	7,413	7,495	0.1	1.1
Freight Ton Kilometres (million)	140	145	7.6	3.5
Total Revenue (Rs. million)	6,623	6,477	4.6	-2.2
Operating Expenditure (Rs. million)	13,396	14,081	-4.6	5.1
Operating Profit (+) /Loss (-) (Rs. million)	-6,773	-7,604	12.2	-12.3
3.Sri Lanka Transport Board				
Operated Kilometres (million)	452	448	2.5	-0.8
Passenger Kilometres (million)	16,101	15,810	5.9	-1.8
Total Revenue (Rs. million)	40,928	42,164	14.2	3.0
Operating Expenditure (Rs. million)	42,004	40,079	3.6	-4.6
Operating Profit (+) /Loss (-) (Rs. million)	-1,076	2,084	77.2	293.7
4.SriLankan Airlines				
Hours Flown	96,225	107,673	-0.3	11.9
Passenger Kilometres Flown (million)	12,855	13,984	0.8	8.8
Passenger Load Factor (%)	81	82	0.1	1.5
Weight Load Factor (%)	56	56	11.5	-0.2
Freight (mt '000)	113	124	9.8	9.8
Employment (No.)	6,981	7,044	-0.6	0.9

(a) Revised
(b) Provisional

Sources: Department of Motor Traffic
Sri Lanka Railways
Sri Lanka Transport Board
Civil Aviation Authority of Sri Lanka

Rs. 6.8 billion in 2016. During 2017, the total revenue of the SLR decreased by 2.2 per cent to Rs. 6.5 billion, in comparison to the previous year, mainly due to the two unanticipated railway strikes carried out by the SLR workers, hampering normal operational activities. Further, operating expenditure of the SLR increased by 5.1 per cent in 2017 to Rs. 14.1 billion, from Rs. 13.4 billion recorded in 2016. However, the total expenditure of the SLR decreased by 7.3 per cent to Rs. 27 billion in 2017 in comparison to 2016, supported by the decline in capital expenditure with the completion of the Northern railway line reconstruction project.

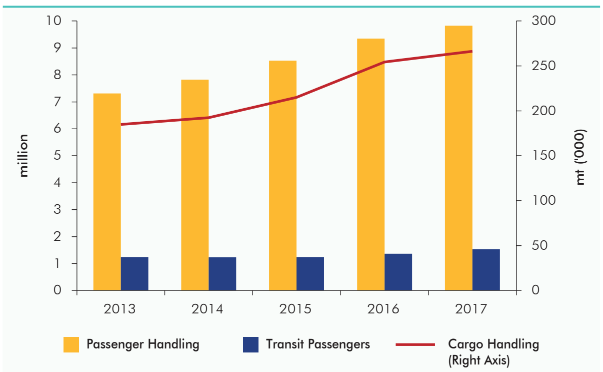
The rail transportation system in Sri Lanka has tremendous potential to enhance the interconnectedness between different regions economically and efficiently, while reducing emissions, energy consumption as well as productivity losses due to road traffic congestion. However, the lack of timely investment in fleet replacement and lack of technology usage by the SLR have resulted in over-crowding of trains and delays, reducing the reliability of the railway transport system. Further, frequent trade union actions which disrupt the smooth functioning of the service, and low passenger fares and goods transport tariffs worsen the financial viability of the SLR, and thereby reduce the available funds for future investment. Therefore, the SLR needs to focus on investing the available limited funds on rolling stock as well as on technology for general operations and management, and to improve customer services, such as the provision of online booking, paperless ticketing and easy payment systems. Further, the SLR needs to partner with the private sector to expand its freight market share and offer ancillary services such as courier services in order to generate additional revenue. Investment in workforce development through training, instilling a commercial mindset among the staff and improving accountability and transparency of the institution are essential to unleash the full potential of the SLR as an efficient transport mode that is complementary to road transportation.

Civil Aviation

The country's civil aviation sector registered overall positive growth in terms of passenger and cargo handling during 2017. Passenger movements at the Bandaranaike International Airport (BIA) grew by 5 per cent to 9.8 million, compared to 9.3 million in 2016. Further, the total cargo handling at the BIA increased by 4.7 per cent to 265,786 MT in 2017 in comparison to the previous year. However, the number of aircraft movements at the BIA increased only marginally by 0.3 per cent to 64,903 during 2017, due to the closure of the runway for 8 hours per day for the runway overlay project from 6 January 2017 to 6 April 2017. Resultantly, aircraft movements at the Mattala Rajapaksa International Airport (MRIA) increased by 6.9 per cent to 978 in 2017, in comparison to 915 in 2016. Further, passenger handling, inclusive of transit passengers of the MRIA, increased to 30,051 passengers in 2017 from 5,750 passengers in 2016. Meanwhile, 31 airlines were operating international flights to and from Sri Lanka during the year. Domestic passenger movements, which are catered by six local airline companies, decreased by 20 per cent to 24,597, in comparison to 30,741 in 2016. The decline in the demand for domestic air travel during the year was due to the absence of scheduled airline services at reasonable price levels covering the island wide domestic route network.

SLA continued its weak financial performance, recording an operational loss of Rs. 13.7 billion in 2017 in comparison to a loss of Rs. 10.4 billion in 2016. Although, revenue increased by 12.3 per cent to Rs. 148 billion, operating expenditure grew by 13.7 per cent to Rs. 161.7 billion, resulting in continued losses of SLA. The loss incurred by SLA was mainly due to poor load factor on some uneconomical routes.

Chart 3.5
Air Passenger and Air Cargo Handling



Source : Civil Aviation Authority of Sri Lanka

Hence, SLA plans to increase frequencies to New Delhi, Hyderabad and Lahore while reducing frequencies to Seychelles, Male and Gan Islands and discontinuing the flight to Kunming, China in 2018. Further, the airline took another decisive step in extending its route network with the launch of the daily direct flights to Melbourne from 29 October 2017. Meanwhile, the fleet composition of SLA included 13 wide body and 14 narrow body aircraft by the end of 2017, which is the largest fleet to date in the history of the airline. Further, the total seat capacity operated by SLA showed a 7 per cent increase in 2017. Meanwhile, in order to improve the financial viability of SLA, the government called for Requests for Proposal (RFP) in 2017, for the provision of consultancy services. A lead consultant was appointed to assist the restructuring process by conducting an independent assessment of SLA's current business model and providing assistance in identifying potential candidates for the proposed Public Private Partnership (PPP).

Construction work of several aviation development projects progressed during 2017. During the year, the single runway of the BIA was re-laid at a cost of Rs. 7.2 billion, fulfilling a long-felt need. This newly resurfaced runway is able to accommodate the landing of large aircraft such as the A380. The Automatic Dependence Surveillance-B project was completed at a cost of Rs. 200 million during the second quarter of 2017 to increase air safety and surveillance coverage within the Colombo Flight Information Region (FIR). Further, restructuring and remodelling of the existing passenger terminal building was also carried out at the BIA. Most of the refurbishment activities were in progress by the end of 2017, while the renovation of the departure walkway was completed in October 2017. Further, Airport and Aviation Services Sri Lanka Limited (AASL) is planning to build two airport hotels in proximity to the BIA premises and invest in an aeronautical information management system to keep abreast with the latest technology related to aircraft safety.

Port Services

Port sector activities continued to improve in 2017 due to increased commercial operations at the Colombo International Container Terminal (CICT) and South Asia Gateway Terminal (SAGT), amidst the slowdown in activity at terminals owned by the Sri Lanka Ports Authority (SLPA). Total container handling at the Colombo port, which stood at 5.7 million twenty-foot equivalent container units (TEUs) in 2016, grew by 8.3 per cent to 6.2 million TEUs in 2017. Compared to 2016, container handling at the CICT and SAGT increased by 19.3 per cent and 10.9 per cent, respectively, in 2017. However, the terminals owned by the SLPA recorded a negative growth of 4.3 per cent in terms of container handling during 2017 in comparison to 2016. Overall transshipment container handling registered a growth of 8.8 per cent during 2017, with the expansion in global merchandise trade activities. Meanwhile, total cargo handling also increased to 93.9 million MT in 2017, which is an 8.5 per cent growth in comparison to 2016, supported by the performance of the SAGT and CICT. However, cargo handling at the SLPA terminals in Colombo declined for the third consecutive year, recording a negative growth of 0.5 per cent in 2017. This was mainly due to the non-availability of container terminals with deeper draught berths equipped with high profile ships-to-shore cranes at the Jaye Container Terminal (JCT). Hence, CICT at the Colombo South harbour attracted ships and volumes from both JCT and SAGT. Although port activities in Sri Lanka have steadily grown due to the increase in the arrival of large ships, overall ship arrivals recorded a decline of 2.4 per cent in 2017.

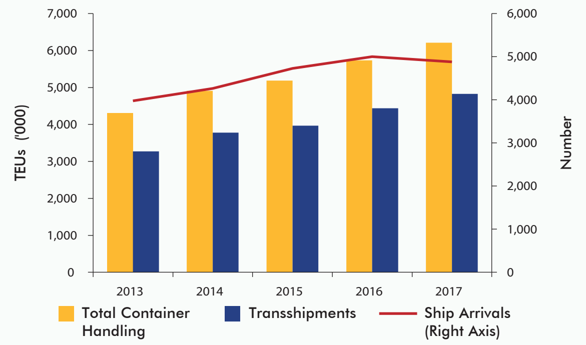
Table 3.5
Performance of Port Services

Item	2016	2017 (a)	Growth Rate (%) 2016	Growth Rate (%) 2017 (a)
1. Vessels Arrived (No.)	4,998	4,879	5.7	-2.4
Colombo	4,405	4,329	5.0	-1.7
Galle	96	87	33.3	-9.4
Trincomalee	216	233	31.7	7.9
Hambantota	281	230	-4.7	-18.1
2. Total Cargo Handled (mt '000)	86,519	93,857	11.5	8.5
Colombo	81,879	89,035	11.1	8.7
Galle	771	712	42.4	-7.8
Trincomalee	3,514	3,897	16.1	10.9
Hambantota	355	213	21.2	-39.9
3. Total Container Traffic (TEUs '000) (b)	5,735	6,209	10.6	8.3
4. Transshipment Container Handling (TEUs '000) (b)	4,435	4,826	11.8	8.8

(a) Provisional
(b) TEUs = Twenty-foot Equivalent Container Units

Source: Sri Lanka Ports Authority

Chart 3.6
Container Handling, Transshipment Volume and Ship Arrivals



Source : Sri Lanka Ports Authority

Major development projects initiated with the aim of enhancing productivity and competitiveness of port activities at the Colombo port as well as regional ports, such as Galle, Kankesanthurai and Trincomalee, continued during 2017. The SLPA is in the process of building the East Container Terminal (ECT) at the Colombo port with the assistance of the ADB. It will be the second-deep draught container terminal in the South Harbour with an annual capacity of 2.4 million TEUs and a 1,200m quay wall with 18m depth. Meanwhile, on 29 July 2017, the SLPA and the government entered into a concession agreement with China Merchants Port Holdings Company (CMPort) to improve operational

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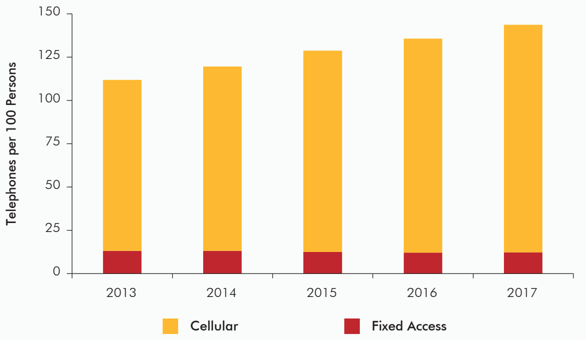
efficiency and future development activities of the Hambantota port. This agreement is expected to expand the revenue base, generate direct and indirect employment, improve the efficiency of the port management and its financial viability through the adoption of a viable business model. Accordingly, the CMPort has agreed to invest up to US dollars 1,120 million in port and marine related activities at the Hambantota port. As per the agreement, port operations at the Hambantota port will be carried out by two companies which are jointly owned by the CMPort and the SLPA, namely, Hambantota International Port Group (Pvt) Ltd. (HIPG) and Hambantota International Port Services Company (Pvt) Ltd. (HIPS). The SLPA effectively owns 15 per cent and 50.7 per cent of the HIPG and HIPS, respectively. The agreement is for a 99-year period and the SLPA is entitled for royalty payments for container and break-bulk handling activities at the Hambantota port. Meanwhile, a novation agreement was signed with a consultancy company for the design works of Galle Port Development Project – Phase I. During the initial phase, it is planned to construct the breakwater with funds borrowed from the Japan International Cooperation Agency (JICA). Meanwhile, a multipurpose berth is expected to be developed at the Galle port under a Public Private Partnership (PPP) during the second phase of the project. Further, the construction work of the Trincomalee port continued with the aim of developing a rail transportation system, improving warehouse facilities and commencing night time navigation at the port. The SLPA has also decided to develop the Kankesanthurai port as a regional port to serve the North and North Central Provinces. The Cabinet of Ministers has approved to vest 15 acres of land to the SLPA for the development activities at the Kankesanthurai port.

Despite the declining trend in container and cargo handling at the SLPA owned terminals, the financial performance of the SLPA improved in 2017 mainly due to lower finance expenses. The total revenue of the SLPA in 2017 increased by 2.2 per cent to Rs. 44 billion, while the operating expenditure decreased by 2.1 per cent to Rs. 28 billion in comparison to the previous year. Consequently, as per the unaudited provisional financial statement, the SLPA reported a profit of Rs. 13.2 billion in 2017 before taxes, in comparison to the profit of Rs. 1 billion before taxes recorded in 2016.

Communication Services

The telecommunication sector expanded with a sustained increase in telephone and internet connections during 2017. Reflecting the continuous growth in the telecommunication network of the country, mobile and fixed telephone connections increased during the year. In line with the growth in telephone connectivity, telephone penetration (connections per 100 persons) also increased to 143.6 by the end of the year due to the high mobile penetration level, reflecting the rising importance of mobile telecommunication services in the country. Total internet connections increased by 20 per cent in 2017 and this rapid growth was mainly supported by an increase of 31.5 per cent in fixed internet connections, while mobile internet connections also recorded a growth of 17.3 per cent in 2017. However, the internet penetration (connections per 100 persons) level of the country stood at 27.5 by the end of the year. Although internet penetration in Sri Lanka is low in comparison to developed Asian countries, the penetration, measured in terms of the number of internet connections, tends to underestimate the total penetration in the country, due to the usage of one internet connection by multiple persons. Meanwhile, the findings of the Household Income and Expenditure Survey (HIES) – 2016 of the Department of Census and Statistics (DCS) revealed that 8.5 per cent of households did not have access to telephone facilities.

Chart 3.7
Telephone Penetration



Sources : Telecommunications Regulatory Commission of Sri Lanka
Department of Census and Statistics

Table 3.6
Telecommunication Sector Performance

Item	2016	2017 (a)	Growth Rate (%) 2016	Growth Rate (%) 2017 (a)
1. Fixed Access Services (No.) ('000)	2,550	2,603	-2.0	2.1
Wireline Telephones in Service	1,166	1,198	3.4	2.8
Wireless Local Loop Telephones	1,384	1,405	-6.0	1.5
2. Cellular Phones (No.) ('000)	26,228	28,199	7.6	7.5
3. Other Services				
Public Pay Phones (No.)	5,301	5,137	-8.7	-3.1
Internet Connections (No.) ('000) (b)	4,921	5,904	20.3	20.0
4. Telephone Penetration (c)	135.7	143.6	5.4	5.8
Fixed Telephones	12.0	12.1	-3.0	0.9
Cellular Phones	123.7	131.5	6.4	6.3
5. Internet Penetration (c)	23.2	27.5	18.9	18.6

(a) Provisional
(b) Including mobile internet services
(c) Defined as connections per 100 persons

Sources: Telecommunications Regulatory Commission of Sri Lanka
Department of Census and Statistics

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Government initiatives focused on enhancing economic development through increased access to telecommunication and digital infrastructure. The Information and Communication Technology Agency (ICTA) was entrusted with digitalising the economy as proposed in the national budget 2017, with an allocation of Rs. 15 billion. Eight thematic areas were identified under this digitalisation initiative, focusing on various aspects related to a digital ecosystem, including connectivity, security, legislation and digital content. Digitalisation offers more opportunities for economic growth and facilitates to improve the quality of life and increase access to public services. However, advances in e-government initiatives must be in line with efforts to bridge the digital divide. According to a countrywide assessment carried out by ICTA on information and communication technology (ICT) access and usage in 2017, it was revealed that the proportion of households with access to internet services in the country is still at the low level of 15.8 per cent, and only 25 per cent of households possess at least one type of computer. An integrated approach is required to address social and economic factors that influence digital inclusion in order to bridge the digital divide and ensure most vulnerable groups benefit from ICT and e-government initiatives.

During the year, the Telecommunications Regulatory Commission of Sri Lanka (TRCSL) continued to regulate the telecommunication industry with a focus on quality assurance in the country. During 2017, the TRCSL continued to impose the 'Quality of Service' parameters and its relevant reporting requirements on telecommunication service providers and offered the 'Internet Speed Test Tool' facility for internet users to test their internet speed. Further, the 'Net Speed' tool was also used by the TRCSL to measure the internet speed of connections of service providers based on a common platform with test results made publicly available. Meanwhile, the TRCSL, in collaboration with the Department of Agriculture (DOA), Food and Agriculture Organisation (FAO) and International Telecommunication Union (ITU), conducted a training programme on 'Innovation and Application Development for E-agriculture' with the aim of enhancing the capability within the DOA to make innovations using emerging technologies to meet development goals and challenges in the agriculture sector. Further, the TRCSL conducted the Asia Pacific Telecommunity Policy and Regulatory Forum - 2017, which provided a platform to discuss sub-regional policy and regulatory issues in the telecommunication industry. Moreover, the

TRCSL conducted several training programmes to improve ICT knowledge among teachers and students of special schools, special education units of vocational training centres and universities, with the assistance of the ITU and National Information Agency of Korea. Meanwhile, the Colombo Lotus Tower project of the TRCSL, which would support the hosting of television and radio broadcasting while providing a telecommunication hub, is expected to be completed by mid-2018.

ICTA engaged extensively in implementing measures aimed at digitalising the economy to transform Sri Lanka towards a knowledge based economy. In 2017, 27 projects were initiated and 13 projects were successfully completed, with the aim of fully leveraging the potential benefits of digitalisation. Through the successful implementation of the Lanka Government Network (LGN), 860 key government offices, including Provincial Councils, Divisional Secretariats and local authorities, were digitally connected. Meanwhile, in order to make most government services available online through a single portal and to store government data in low cost common servers, ICTA implemented the Lanka Government Cloud (G-Cloud) and Lanka Gate eService initiatives. Under the government digitalisation programme, network infrastructure and secured Wi-Fi network connectivity solutions were installed at key government institutions. Further, ICTA deployed the document and workflow management system, namely, the Electronic Document Attestation System (eDAS) at the Consular Division of the Ministry of Foreign Affairs, which reduces document attestation times and completely eliminates fraudulent documents. The electronic Medical Record System was implemented as a pilot project in a few select Base Hospitals while the installation of hardware was completed in a further 48 hospitals. Meanwhile, installation of network facilities was completed in 46 hospitals through LGN in 2017. With the aim of strengthening the use of ICT in the classroom, several projects were initiated by ICTA in collaboration with the Ministry of Education during 2017.

The financial position of the Department of Posts (DOP) remained subdued, highlighting the need for continued effort towards further diversifying its services in line with global trends in postal communication. The diversification of services of the DOP was mainly carried out by introducing modern technological developments available in communication services through its network of post offices. The postal network of the DOP included 653 main post offices, 3,409 sub post offices, 523 agency post offices, 101 rural agency post offices and four estate agency post offices as of end 2017. Through this network, the DOP provided speedy and efficient postal services, financial services, and social and obligatory services, increasing its revenue by 6.4 per cent to Rs. 7 billion in 2017. However, operating expenditure also increased by 2.6 per cent to Rs. 12.6 billion, resulting in an operating loss of Rs. 5.6 billion during 2017, in comparison to the Rs. 5.7 billion loss in 2016. The continuous operating losses reported in the recent past can be attributed to the enhanced performance of alternative modes of communication, reduction in revenue from foreign parcels and international post, and increasing administrative costs. In order to recover from losses and to increase revenue, the DOP needs to formulate policies on costs and the pricing structure while diversifying its products and services further by incorporating technological advancement and international best practices to reduce costs and increase operational efficiency. The high penetration of the post office network within the country, which reaches remote areas that are not covered by banks and other financial institutions, could be used to provide multi-functional services. The parcel delivery services of the DOP need to be enhanced by upgrading the existing delivery channels to be competitive with the current online delivery operators. A major initiative taken in this regard is the launch of an e-commerce website in October 2017 as a trade facilitation programme that provides an online trading platform for the small and medium scale entrepreneurs to sell their quality products locally and internationally. Similar projects that make use of the existing delivery channels and modern technology would enable the DOP to reach a wider customer base while minimising losses in the future.

Water Supply and Irrigation

During 2017, the National Water Supply and Drainage Board (NWS&DB) continued to play an important role in improving access to water supply in the country. Accordingly, the NWS&DB provided 126,701 new water supply connections, raising the total number of connections to 2.2 million by end 2017, reporting a growth of 6.1 per cent over the previous year. The percentage of island-wide non-revenue water, i.e. the difference between the volume of water pumped into the water supply system and the volume of water that is billed as authorized consumption, decreased marginally to 25.2 per cent in 2017, from 25.6 per cent in 2016. With increasing water scarcity, population growth and urbanisation, better management of non-revenue water is becoming increasingly important. Thus, more emphasis is needed on further reducing non-revenue water, which would improve the financial viability of NWS&DB, enabling improved access to safe drinking water through increased supply. NWS&DB initiated five projects in Galle, Attampitiya, Thambuththegama, Katana and Matara to provide safe drinking water and sanitation services. Total estimated cost of these projects, which are to be funded by local and foreign borrowings, is approximately Rs. 46 billion, resulting in around 478,315 new water connections to the system. Meanwhile, as per the HIES-2016 of DCS, the North Central, Sabaragamuwa, Central and Uva Provinces had the lowest level of access to safe drinking water, ranging from 71.2 per cent to 79.4 per cent, with Nuwara Eliya, Anuradhapura and Badulla having the lowest access to safe drinking water at the district level. Thus, it is essential to implement projects focusing on these regions in order to improve living standards in the country. In 2018, the NWS&DB plans to implement 12 projects for the supply of water in the North Central, Central, Southern, Northern, Eastern and Western provinces, at an estimated cost of about Rs. 245.6 billion.

Profitability of the NWS&DB declined during 2017. According to the unaudited provisional financial statements, total revenue increased by 2.1 per cent to Rs. 25.6 billion, while the operational and maintenance cost also increased by 6.6 per cent to Rs. 24.9 billion. Consequently, the NWS&DB registered an operational profit of Rs. 738 million in 2017, compared to an operational profit of Rs. 1,759 million recorded in the preceding year.

Table 3.7
Water Supply by National Water Supply & Drainage Board

Item	2016 (a)	2017 (b)	Growth Rate (%)	
			2016 (a)	2017 (b)
Total Water Supply Schemes (No.) (c)	337	343	1.8	1.8
Total New Connections provided during the period (No.)	138,750	126,701	14.0	-8.7
Total Connections (No.) (c)	2,092,471	2,219,172	7.1	6.1
Total Water Production (MCM) (d)	649	679	8.2	4.6
Non Revenue Water (%)				
Colombo City	45.7	43.1	-1.0	-5.6
Islandwide	25.6	25.2	-6.4	-1.2
Access to Safe Drinking Water (per cent) (e)	87.8	89.3	2.1	1.7
Access to Pipe Borne Water (per cent) (f)	47.7	49.2	3.9	3.1

(a) Revised
(b) Provisional
(c) As at year end
(d) MCM=Million Cubic Metres
(e) Comparative figure based on the HIES-2016 of the DCS is 88.8 per cent
(f) Includes systems managed by other authorities

Source: National Water Supply and Drainage Board

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During 2017, the Department of Irrigation (DI) continued their efforts to improve the irrigation schemes in the country, with the aim of supporting the agriculture sector. Accordingly, the DI commenced two irrigation projects in Polonnaruwa and Monaragala districts in 2017. The Polonnaruwa District Irrigation Development Project was allocated Rs. 400 million and achieved a financial progress of 52 per cent by end 2017. Meanwhile, the 'Wellassa Navodaya' Accelerated Irrigation Project, which plans to rehabilitate existing major and medium irrigation schemes in the Monaragala district, was allocated Rs. 50 million. At the same time, 18 major irrigation schemes were allocated Rs. 8,542.6 million of which Rs. 4,172 million was spent on Yan Oya and Rs. 603 million on Kalugal Oya. DI and the Mahaweli Authority engaged in the Climate Resilience Improvement Project (CRIP) as implementing agencies to increase the resilience of hydraulic infrastructure against future floods and droughts. The project covers 21 major irrigation schemes in nine regions with a total awarded cost of Rs. 4,750 million. Further, renovation of large dams under the 'Dam Safety and Water Resources Planning' project continued during the year, covering major dams such as Rajanganaya, Angamuwa and Mahawilachchiya. However, to get the maximum benefit from the investment in irrigation schemes, it is necessary to maintain the retention capacity of the reservoirs, which is currently declining as a result of silting. Therefore, whilst taking action to de-silt existing reservoirs to enhance their capacity, it is necessary to take measures against deforestation and soil erosion, which are the main causes of silting in reservoirs. At the same time, a comprehensive evaluation is needed on the existing irrigation schemes in view of changing weather patterns, which have changed drastically during the recent past, thus challenging the traditional cultivation and harvesting seasons and regions.

3.3 Social Infrastructure Policies, Institutional Framework and Performance

Health

The government continued its efforts to improve healthcare facilities to the general public during 2017. Accordingly, Emergency Treatment Units (ETU) were constructed at the Teaching Hospital Jaffna, District General Hospitals in Kalutara and Polonnaruwa, and the Base Hospital in Kalmunai North, with the aim of improving ETU facilities in the country. In addition, the clinical building and out-patient department complex of the District General Hospital in Kalutara and the Epilepsy unit at the National Hospital of Sri Lanka were completed during 2017. Meanwhile, the construction work of an Ambulatory Care Centre at the National Hospital of Sri Lanka, a maternity ward complex at the Teaching Hospital Kurunegala, an accident service and wards complex at the Teaching Hospital Ragama, and three cancer hospitals in Thellipalei, Kandy and Matara was in progress during the year. According to provisional data for 2017, the 612 government hospitals in the state health sector had 3.6 beds for 1,000 persons in the country. In addition, there were 105 government Ayurvedic hospitals with 5,167 bed capacity. There was one qualified doctor for every 1,054 persons and one nurse for every 627 persons in these government hospitals by end 2017.

During 2017, Sri Lanka experienced outbreaks of several communicable diseases, including record levels of incidence and deaths related to the Dengue epidemy. Dengue prevalence increased by 237.4 per cent during 2017 compared to the preceding year, registering 186,101 Dengue cases, which translates into 868 cases per 100,000 of the population. Higher incidence of

Table 3.8
Salient Features of Health Services

Item	2016 (a)	2017 (b)
1. Government (No.)		
Hospitals (Practicing Western Medicine)	610	612
Beds	76,829	76,774
Primary Medical Care Units	475	506
Doctors	20,458	20,349
Assistant Medical Practitioners	1,011	910
Nurses	32,499	34,221
Attendants	8,268	9,218
2. Ayurvedic (No.)		
Ayurvedic Physicians (c)	23,082	23,206
3. Total Govt. Expenditure on Health (Rs. billion)	186.1	196.8
Recurrent Expenditure	155.4	161.3
Capital Expenditure	30.7	35.5

(a) Revised
(b) Provisional
(c) Registered with the Ayurvedic Medical Council

Sources: Ministry of Health, Nutrition and Indigenous Medicine
Department of Ayurveda
Ministry of Finance and Mass Media

Dengue was due to the heavy monsoon rains during the month of May, expansion of potential breeding grounds and improper garbage disposal. Meanwhile, the fatality rate related to Dengue (i.e. deaths as a percentage of total number of Dengue cases reported for the period) was 0.24 per cent during 2017, higher than the 0.18 per cent recorded in the preceding year. The Ministry of Health, Nutrition and Indigenous Medicine (MOH) conducted various activities to minimise the morbidity and mortality due to Dengue by promoting proactive case management, early diagnosis and vector control activities. Accordingly, a special Dengue Unit was established at the Infectious Disease Hospital (IDH), while Rs. 68 million was allocated to establish High Dependency Units at 10 selected major hospitals. With the aim of promptly diagnosing Dengue, the laboratory facilities at major state hospitals were upgraded and the government took steps to lower the fees charged by private laboratories for Dengue diagnostic tests. In addition, a mass scale Dengue vector control programme was implemented during 2017 in collaboration with the armed forces and the Police, and over 1,000 mosquito prevention field assistants were recruited to carry out premises inspections and other preventive activities to minimise breeding grounds. Meanwhile, an Influenza outbreak was also reported during the first half of 2017, causing 89 Influenza related deaths. In addition, a total of 3,626 Leptospirosis patients and 48 related deaths were recorded during the year. The MOH conducted comprehensive public awareness campaigns with the aim of preventing the spreading of Influenza and Leptospirosis. Recurrence of communicable epidemics and increasing severity of the epidemics warrant strengthening of outbreak preparedness activities, drawing support from all stakeholders in the economy.

The MOH continued with its initiatives to prevent and control acute and chronic Non-Communicable Diseases (NCDs), amidst the considerably high prevalence of NCDs in the country. According to the Demographic and Health Survey (DHS) – 2016 conducted by the DCS, the percentage of people suffering from heart disease, high blood pressure, wheezing, diabetes and high blood cholesterol during the 12-month period preceding the survey was 2.2 per cent, 8.2 per cent, 5 per cent, 5.7 per cent and 5.4 per cent, respectively. Meanwhile, among the households surveyed, the prevalence of high blood pressure, diabetes and high blood cholesterol was highest in the Colombo district. The percentage of households with at least one member who smoked tobacco was 33.9 per cent, while 28.9 per cent of the households had at least one member consumed smokeless tobacco. Meanwhile, 37.3 per cent of the households had at least one member consuming alcohol. This indicates that a considerable portion of the population has consumption habits that increase the risk of NCDs. These risky consumption patterns are highest among the lowest wealth quintile. Further, among ever-married women, 31.9 per cent was found to be overweight and 13.3 per cent obese, indicating a high-risk level for NCDs among females, which is reflected by high incidence levels of high blood pressure, diabetes and high blood cholesterol reported for females in comparison to males.

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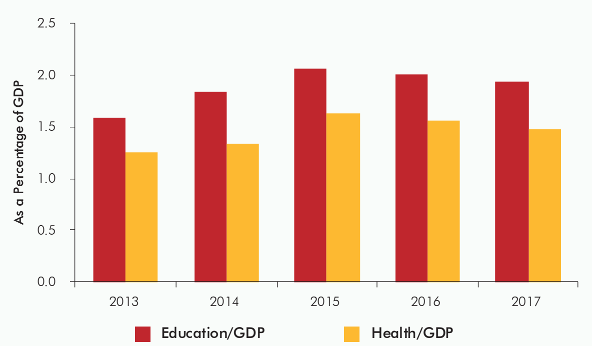
Considering the increasing prevalence of NCDs, which are associated with unhealthy lifestyles and consumption habits, the MOH continued preventive actions to curtail NCDs. Accordingly, various awareness programmes were implemented at the grass-root level as well as through the mass media, especially targeting school children, teachers and youth with a view to reducing unhealthy diet habits, smoking, alcohol consumption and physical inactivity. During 2017, the MOH continued with work-place screening programmes, outreach clinics that target the population in inaccessible regions, and Healthy Lifestyle Centres, which aim at screening apparently healthy people between the ages of 40 to 65 years.

Chronic Kidney Disease of unknown aetiology (CKDu) continued to receive attention from healthcare providers, academics and policy-makers due to its adverse socio-economic impact, especially on low-income households. During 2017, 25,512 CKD/CKDu patients were reported from 11 high risk districts. The number of CKD/CKDu patients was high in Anuradhapura and Polonnaruwa districts and the prevalence, i.e. number of CKD cases reported as a percentage of the total population, was also high in Badulla and Ampara districts. According to the DHS–2016, CKD prevalence was 0.6 per cent in the country. Currently, screening of population in high risk districts is being carried out through the analysis of serum creatinine among people above the age of 20 years, as an early diagnostic measure for CKD/CKDu. Meanwhile, kidney dialysis facilities were improved in the CKDu prevalent areas, with the commissioning of dialysis units at the Base Hospitals in Kebethigollewa and Mahiyanganaya and the Teaching Hospital Kandy. Meanwhile, new Renal Units will be established at the Teaching Hospitals in Jaffna and Batticaloa, Base Hospital Hambantota, District General Hospital Trincomalee and Provincial General Hospital Badulla. In addition, 278 new haemodialysis machines were provided to government hospitals in high-risk areas. Further, research work which aims to identify the causes for CKDu continued during 2017 although conclusive results have not yet been obtained.

During 2017, the private sector continued to play a major role in providing healthcare services. According to the HIES–2016 conducted by the DCS, 14.6 per cent and 15.7 per cent of the households have received services from private and government hospitals, respectively, in the form of out-patient treatment within a period of one month prior to the survey, indicating the notable importance of private healthcare sector. According to the MOH, 181 private hospitals with the capacity of 5,792 beds were registered with the Private Health Services Regulatory Council (PHSRC) by end 2017. Given the vital role played by the private healthcare providers, it is important to ensure a high level of quality and competitive pricing for healthcare services provided by the private sector. To this end, it is essential to make it mandatory for all private medical institutions, including individual healthcare service operators, to register with the PHSRC and require regular inspections and observations to ensure that these healthcare providers adhere to National Guidelines and Standards for patient care, treatment and conducting of preventive services.

Chart 3.8
Government Expenditure on Health and Education



Sources : Ministry of Finance and Mass Media
Department of Census and Statistics

Education

The government has taken various measures, including the implementation of the 13 years of guaranteed education policy, to improve school participation rates and align the general education sector with labour market requirements for skills as well as aspirations of students. Under the '13 years of guaranteed education' policy, a new vocational subject stream has been introduced after the G.C.E Ordinary Level examination, in selected schools. This new stream aims to enhance the vocational and technical skills of students, for increased career and higher education prospects, irrespective of the students' performance at the Ordinary Level examination. The vocational stream will be operational in schools on a staggered basis under three stages of a pilot project. Stage I of the project commenced in October 2017 in 42 selected schools. The National Institute of Education (NIE) developed curricula for nine generic subjects and 26 vocational subjects for the new stream while training 522 teachers under this programme. The Stage II of the pilot project is planned to commence in May 2018. In this regard, 150 schools, with at least one school in each education zone, have been selected. Stage III of the project will expand up to 500 provincial and national schools in 2019 and 1,000 in 2020. Meanwhile, free school uniforms and school shoes programmes were carried out benefitting 4.3 million students and 650,000 students, respectively. The mid-day meal programme funded by the World Food Programme was implemented in the Northern Province benefitting 159,792 students in 957 schools. The net enrolment ratio[1] of the age group of five to 14 years old stood at 96.28 per cent during 2017. Moreover, the gross survival rate through Grade 1 to 11[2] stood at 88.75 per cent, while gross survival rates for males and females were recorded as 86.54 per cent and 91.03 per cent, respectively.

The government continued to improve the quality of general education while reducing disparities across schools. During 2017, 537 teachers passed out from teacher training colleges, while around 3,000 are currently being trained at these colleges. In addition, the Ministry of Education conducted numerous teacher training programmes to improve the teaching quality in general education, particularly in relation to STEM education (Science, Technology, Engineering and Mathematics subjects), English, other foreign languages and aesthetic subjects. Several training programmes were conducted during the year, targeting teachers of plantation sector schools and Tamil medium schools in the Northern, Eastern, North Western and North Central Provinces. Meanwhile, 40 teachers were trained on new teaching techniques in Autism education while 30 special education teachers received training on sign language and Braille education to enhance the quality of education provided for students with special needs. In order to reduce disparities in physical infrastructure facilities across schools, 9,063 provincial schools and 282 national schools are currently being developed through the construction of new classrooms, technical buildings, laboratories, water supply schemes, etc., under the 'Nearest School is the Best School' concept. Meanwhile, funds were allocated through the annual budget of the Ministry of Education to rehabilitate schools damaged by floods and landslides in disaster affected districts. Moreover, the construction work of zonal ICT centres in Ibbagamuwa, Welimada, Teldeniya, Matara, Walikamam, Thenmarachchi, Batticaloa, Walapane,

1 Net enrolment ratio is the number of students of a particular age category enrolled in government and government-approved private schools as a percentage of all children belonging to that age category.

2 Gross survival rate through Grade 1 to 11 is the proportion of students who are currently studying in Grade 11 as a percentage of total students who enrolled in Grade 1 ten years ago.

Table 3.9
Salient Features of General Education

Item	2016 (a)	2017 (b)
1. Schools (No.)	11,021	11,053
Government Schools	10,162	10,194
Primary	3,778	3,881
Secondary	6,384	6,313
o/w National Schools	353	353
Other Schools	859	859
Pirivenas	754	753
Private & Special Schools (c)	105	106
2. Students (No.)	4,345,517	4,447,570
Government Schools	4,143,107	4,165,955
Other Schools	202,410	200,512
Pirivenas	66,003	61,855
Private & Special Schools (c)	136,407	138,657
International Schools	n.a.	81,103
3. Teachers (No.)	249,374	263,766
Government Schools	235,999	241,018
Other Schools	13,375	13,374
Pirivenas	6,503	6,335
Private & Special Schools (c)	6,872	7,039
International Schools	n.a.	9,374
4. New Admissions (No.) (d)	326,966	329,628
5. Student/Teacher Ratio		
Government Schools	18	17
Other Schools	15	15
International Schools	n.a.	9
6. Primary Net Enrolment Ratio (Grade 1-5)	95.91	93.90
7. Secondary Net Enrolment Ratio (Grade 6-11)	95.91	95.80
8. Age Specific Enrolment Ratio (Grade 1-9)	97.35	96.28
9. Teacher Training Colleges (No.)	8	8
10. Teachers Trained during the Year (No.)	2,294	2,553
11. National Colleges of Education (No.)	19	19
Teacher Trainees (No.)	9,478	8,014
Number Passed Out during the Year	2,073	2,602

(a) Revised
(b) Provisional
(c) Private schools approved by the government and schools for children with special needs (This figure excludes international schools, which are registered under the Companies Act)
(d) Government schools only

Source: Ministry of Education

Dimubulagala and Nivithigala was also completed, while the construction of three other centres was in progress during 2017. However, there were 3,148 schools with less than 10 teachers during 2017 highlighting a possible insufficiency in the teaching cadre in a considerable number of schools.

During 2017, measures were taken by the Ministry of Education to maintain the quality standards in the general education sector. During the year, 7,347 schools were evaluated by the Ministry of Education, Provincial Departments of Education, Zonal and Divisional Education offices, while 7,549 schools were evaluated through school internal evaluation committees with the objective of ensuring minimum standards of quality in general education. Meanwhile, 16 government-approved private schools were monitored through the provincial and zonal authorities. However, international schools are not within the purview of the Ministry of Education, or the provincial or zonal authorities, although the number of students enrolling in these schools has been rising. Therefore, it is crucial to set-up a mechanism to monitor and evaluate the quality of education provided by these international schools by engaging stakeholder representatives in the evaluation process. Meanwhile, there is room for further improvement in terms of maintaining quality standards in general education. Hence, in addition to training teachers on subject matters and general teaching skills, all staff engaged in education services should be trained on best practices in handling educational, behavioural and socio-economic issues related to children while establishing effective complaint handling procedures to resolve issues pertaining to school administration and mistreatment of students.

During the year under review, the non-state participation in the general education sector continued to be significant. During 2017, there were 106 private schools (excluding international schools) and 753 Pirivenas providing general education. The student population in private schools (excluding international schools) increased by 1.6 per cent during 2017, in comparison to the preceding year. However, the number of students studying in Pirivenas declined by 6.3 per cent during this period. Meanwhile, there were 81,103 students enrolled in 245 international schools, based on provisional responses to a survey carried out by the Ministry of Education in 2017.

The government continued with its efforts to enhance the accessibility of tertiary education through state-owned universities while improving

the quality of university education. During 2017, the University Grants Commission (UGC) approved seven new faculties, 39 new departments and 33 new degree programmes offered by the state universities. Online application for university admissions was made compulsory and the admission process was streamlined during 2017 to reduce the time gap between the release of G.C.E. Advanced Level examination results and student admissions to state universities. The UGC and the Ministry of Higher Education and Highways are in the process of establishing a new independent Quality Assurance and Accreditation Authority to strengthen and regulate the quality assurance process of both state and non-state universities. Meanwhile, a Directorate of Quality Assurance has been established at the UGC for continuous quality assurance in state universities and 42 quality assurance reviews in Humanitarian and Social Sciences degree programmes have been completed during 2017. The UGC commenced monitoring and evaluating state university degrees through a mechanism of self-reporting by universities, based on Internal Quality Assurance Unit performance scorecards. Meanwhile, a grievance redress mechanism was established to prevent ragging, sexual and gender-based violence within universities giving opportunities for students to make complaints through an online portal, email and 24/7 call centre.

The private sector continued to play an increasingly important role in providing tertiary education alongside the state universities. As at end 2017, there were 16 Non-State Higher Education Institutions (NSHEI) offering 99 accredited local degree programmes. Meanwhile, medical students from all state universities abstained from attending lectures, tutorials and clinical training due to student union action since January 2017, whereas medical doctors in government hospitals also carried out strikes on several occasions as trade union actions against the medical degree offered by the South Asian Institute of Technology and Medicine (SAITM). As a result, there was a notable impact on the state university education system and the overall health sector. The Presidential Commission appointed in this regard decided to abolish SAITM and absorb current SAITM students to the Kotalawala Defence University (KDU), establish a new non-state, not-for-profit medical degree awarding institution to commence operations in 2019, and establish minimum standards for medical education and clinical training monitored by the Sri Lanka Medical Council, while ensuring that the KDU and the proposed entity offer high quality medical education in line with these standards. State universities resumed their normal activities in December 2017. However, the discord created by this issue has serious ramifications on the current and prospective

Table 3.10
Salient Features of University Education (a)

Item	2016 (b)	2017 (c)
1. Universities (No.)	15	15
2. Other Higher Educational Institutions (No.)	18	19
3. Students (Undergraduates) (No.)(d)		
Universities (e)	84,451	88,855
Institutes	3,290	3,389
Open University	22,546	24,144
4. Total Staff (All Universities) (No.)		
Academic	5,440	5,498
Non-Academic	11,065	11,526
5. Student/Teacher Ratio	17.5	17.4
6. Age Specific Undergraduate Enrolment Ratio (19-23 yrs) (d)	6.8	6.8
7. Progression to University from GCE (A/L)		
Eligible for University Admission (%)	51.43	60.99
Admission as a Percentage of Eligible (%)	18.61	19.11
8. Students Graduated (No.) (f)	36,382	n.a.
Basic Degree	28,808	n.a.
Postgraduate Degree	7,574	n.a.
9. New Admissions for Basic Degrees (No.) (g)	29,083	30,668
10. Students Eligible to be Admitted to Universities (No.)	155,550	160,517

(a) Universities and higher education institutions that come under the purview of University Grants Commission
(b) Revised
(c) Provisional
(d) Excluding external degree courses
(e) Excluding Open University
(f) Including external degrees and Open University
(g) Excluding external degrees and Open University

Source: University Grants Commission

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medical student population in state universities due to the nearly one year delay in completing their degree programme, as well as university entrance for the next cohort. Further, the overall health sector is also affected due to the delay in recruiting new medical officers to the health sector cadre. The government needs to ensure that this issue would not hinder private sector participation in tertiary education in the medium to long-term, as state resources are inadequate to fulfil the country's higher education needs. Since state universities do not have the capacity to provide education to all those who qualify, private sector involvement in the provision of university education needs to be encouraged along with appropriate regulations and a quality assurance process in place across all disciplines of studies.

During the year under review, the Technical and Vocational Education and Training (TVET) sector continued to enhance opportunities to cater to the needs of the labour market. As at end 2017, there were 819 registered institutions in the TVET sector, including 333 public institutions and 486 private and non-governmental institutions. These institutions offered 2,972 accredited TVET courses while 65,212 National Vocational Qualification certificates were issued by these institutions during 2017. The Tertiary and Vocational Education Commission introduced an assessment monitoring programme with the aim of aligning the trainees' competencies with the National Competency Standards. During the year, 424 awareness programmes were carried out to attract students for Technical Colleges by the Department of Technical Education and Training. Further, 28 awareness programmes on the Self Employment Promotion Initiative (SEPI) and four programmes on SEPI Loan Scheme were also implemented during the year under review.

Table 3.11
Salient Features of Tertiary and Vocational Education and Training (TVET)

Item	2016	2017 (a)
1. Registered TVET Institutions (No.) (b)	764	819
Public	313	333
Private and Non-Governmental Organisations	451	486
2.Total Accredited Courses (No.)	2,659	2,972
Public	1,876	2,282
Private and Non-Governmental Organisations	783	690
3.Issued NVQ Certificates (No.)	47,017	65,212
DTET	4,169	6,104
NAITA	11,182	8,798
VTA	17,517	23,890
NYSC	1,957	1,219
Private	12,192	25,201

(a) Provisional
(b) As at year end

Source: Tertiary and Vocational Education Commission

Housing and Urban Development

The government, through the Ministry of Housing and Construction (MHC), the Ministry of Megapolis and Western Development (MMWD), and other relevant authorities, continued to provide appropriate housing and utilities to those in need while seeking to facilitate orderly urbanisation in the country. According to the HIES – 2016 of the DCS, out of all types of housing (shelter), 0.8 per cent of the houses in the country are slums/shanties, while 0.2 per cent could not be classified into a standard housing category. Furthermore, 10.3 per cent of the houses were less than 250 square feet, while 4.5 per cent, 4.4 per cent and 8.1 per cent of the houses have semi-permanent walls, floors and roofs, respectively. Meanwhile, 8.3 per cent of the houses had no toilet of its own and 7.8 per cent of the households had no access to drinking water facilities within 100 metres of the house. Only 21.4 per cent of households had their garbage collected by local authorities. These statistics indicate that the government has a substantial role to play in fulfilling housing requirements of the needy, with access to basic amenities, while ensuring that urbanisation takes place in a sustainable manner.

The MHC continued to study the current housing needs of the country to introduce a new National Housing Policy while implementing numerous programmes to provide decent housing facilities for all. The formulation of the new policy reached its final stage by the end of 2017 and is expected to be implemented in 2018. The Treasury had allocated Rs. 6,820.2 million for the National Housing Development Authority (NHDA), and the Urban Settlement Development Authority for 2017, while Rs. 1,118.5 million raised internally was also utilised for various projects of these authorities. The NHDA granted 3,000 free-hold and 5,000 lease-hold deeds to beneficiaries. Meanwhile, continuing with the efforts to provide decent housing facilities to every family, the NHDA carried out a number of housing projects. The Northern Province and Batticaloa District Housing Development Programme and the Bogasweva (Vauniya District) Housing Project provided land, a monetary grant and access to utilities for families displaced by the internal conflict. Meanwhile, a survey has been carried out by the MHC together with District and Divisional Secretariats and based on the survey, 250,604 low-income families have been identified as those who lack ownership of land to build houses. The Grama-Shakthi model village housing programme commenced during the year to provide land and cash grants for 1,304 such families to meet their housing requirements. The 'Viru Sumithuru' programme aims at constructing or renovating 3,650 houses for families of officers of the armed forces who lost their lives or became disabled. The NHDA provided concessionary loan facilities through Bank of Ceylon and National Savings Bank under the 'Sonduru Piyasa' bank loan programme, to assist low-income households who hope to extend or complete their houses. Further, the NHDA continued Lunawa, Kotiyagala, Horana and Rajgama housing projects, the scattered housing programme, and the middle-income housing programme, aiming to provide housing facilities to vulnerable groups such as low-income and Tsunami-affected families. The NHDA also undertook planning activities pertaining to the Venerable Sobhita Nahimigama Development Project in Vilachchiya and the Beire Lake Housing Project in 2017. Further, housing grants have been provided to kidney patients to build new houses or upgrade their existing housing facilities as well.

With rapid urbanisation, the demand for and supply of condominiums has increased substantially within the past decade, warranting modifications to the existing legal framework regarding condominium development to safeguard the rights of home-buyers. Generally, condominium property developers sell condominium units during the pre-construction period. However, some developers refrain from registering the provisional condominium plan before the sale of units and hence, buyers purchase a property which is not legally registered. Further, the existing legal framework does not impose mandatory obligations on the property developer to disclose potential issues that may affect the rights of the prospective buyer such as in the event of an expansion with additional units, developer's background and funding used for the project etc. Recognising the loopholes in the existing legal structure related to condominium properties, the MHC is in the process of amending the Condominium Management Authority Act No. 10 of 1973 and the Apartment Ownership (Special Provisions) Act No. 4 of 1999, in order to meet the present-day requirements of the condominium development industry in Sri Lanka. With these amendments, property developers will be mandatorily obliged to register the provisional condominium plan prior to the sale of units.

The Construction Industry Development Authority (CIDA) implemented policy initiatives to support sustainable urban development, urban living and housing construction in Sri Lanka. During 2017, the CIDA implemented the National Policy on Construction, which was approved by the Cabinet of Ministers in November 2016. Further, the CIDA formulated the national policy on high-rise buildings together with the MMWD in order to introduce proper standards to the construction of vertical structures which are taking place at a considerable pace and scale. A committee appointed by the CIDA, in 2017, studied alternatives for river-sand in construction and formulated an action plan to implement certain recommendations, in order to address the dearth of sand caused by the new restrictions imposed in 2015 on sand mining activities in rivers. The CIDA trained more than 11,000 youth in 2017 as construction industry workers. Further, the National Procurement Commission has issued guidelines related to the release of retention money of contractors upon the submission of an unconditional on demand bank guarantee or at the end of the defect notification period of construction projects. Meanwhile, a new Payment Guarantee Security Act is being drafted by the Ministry of Finance to ensure that construction contractors are paid on time as per the conditions of the contracts. These steps are aimed to ease the cash-flow issues faced by construction contractors, supporting the sustenance of the overall construction industry in the country.

Work relating to the Colombo Port City project, which is one of the key projects initiated towards greater urbanisation, advanced rapidly throughout 2017. By the end of 2017, 63 per cent of the reclamation work was completed together with 38 per cent of rock delivery and breakwater construction, 25 per cent of compaction work and 58 per cent of Chinese pods (concrete elements of the breakwater). The reclamation work and construction of breakwaters to build the Port City are expected to be completed by mid-2019. The construction of the Colombo International Financial Centre building complex is expected to commence before end 2018.

The MMWD implemented a host of urban development projects in Sri Lanka through the authorities under the purview of the Ministry. The Western Region Megapolis Development Plan (WRMDP) guided a diverse range of projects in 2017, from road construction to flood impact mitigation and waste disposal, with the aim of developing the Western region to meet internationally acclaimed standards of city development while resolving issues that arise due to urbanisation. These projects included the Greater Colombo Urban Transport Development Project (3K Project) that rehabilitates key roads, the Metro-Colombo Urban Development Project that aims to reduce the impact of floods and develop drainage systems, the Western Region Transport Development Project which comprises restructuring of bus services, introduction of the rapid transit system and the inland water-based passenger transport system, and the greater Colombo Flood Protection and Environment Development Project. A feasibility study for a light-rail transit system for Colombo was also conducted with Japanese government assistance.

The collapse of the landfill site at Meethotamulla in April 2017 highlights the need for prudent action on waste management, especially in urban areas. With the aim of establishing sustainable long-term solutions for waste disposal in the Colombo Metropolitan region, the government has taken steps to develop worked-out limestone quarries in Aruwakkalu, Puttalam into a sanitary landfill for the disposal of municipal solid waste that will be generated in the Metro-Colombo Region for at least 20 years, with waste being transferred using rail transportation from Colombo. The rail transfer will take place from Kelaniya to the sanitary landfill at Aruwakkalu. The Ministry has already completed the topographic survey and geo-technical investigation of Aruwakkalu and Kelaniya, preparation of the conceptual design, feasibility report and the Environmental Impact Assessment. Meanwhile, plans are underway to rehabilitate Bloemendhal and Meethotamulla landfill sites and covert them to urban parks with financial and technical assistance of the World Bank and Asia Infrastructure Investment Bank.

The MMWD undertook a multitude of other projects through the Urban Development Authority. These include Sukitha Purawara project, Town Development projects of all nine Provinces, relocation of the Manning market in Peliyagoda, Lake Drive Bridge and Approach Road Development in Rajagiriya, Matara Nilwala River-side Park Development and Urubokka Town Development. Meanwhile, activities related to the Strategic Cities Development Project in Kandy, Jaffna and Galle continued during 2017. Further, the MMDW is expecting to relocate approximately 1,000 families residing in the Anuradhapura citadel area to Lolugasweva since they are unable to obtain general urban services due to their unauthorised existence in an archaeological reservation area. Meanwhile, the Sri Lanka Land Reclamation and Development Corporation undertook wetland management, maintenance of canals, lakes and walkways, flood mitigation, development of wetlands and lowlands throughout Sri Lanka and implemented the Weras river storm water drainage and environment improvement project in 2017.

Poverty Alleviation and Safety Nets

Reflecting the socio-economic developments in recent years, overall poverty levels of the country have declined, but disparities remain at provincial and district levels, posing challenges in terms of ensuring equitable economic growth. The results of the HIES - 2016 of the DCS reveal that the poverty level in the country, as reflected by the Poverty Headcount Ratio (PHCR), has further declined to 4.1 per cent, from 6.7 per cent as per the HIES – 2012/13. This decline in the PHCR was seen in the urban, rural and estate sectors. However, in comparison to the national PHCR, the estate sector PHCR was considerably higher. At the district level, Kilinochchi district recorded the highest PHCR of 18.2 per cent, while the lowest PHCR of 0.9 per cent was reported from the Colombo district. According to the HIES - 2016, the number of poor in absolute terms, i.e. the number of persons below the official poverty line (OPL)[3], stood at 843,913. At the district level, the highest number of poor persons was recorded in the Kandy district, while the lowest number was in the Mannar district. However, according to the DCS, there is a considerable number of people in the non-poor population just above the OPL. Accordingly, if the value of the OPL rise by 10 per cent, the PHCR would increase to 6.1 per cent, resulting in the population below the poverty line increasing to 1,255,702 persons.

Poverty levels have steadily decreased during the past two decades, while the disparity in terms of household income has marginally declined. Accordingly, household income inequality, as measured by the Gini coefficient, declined to 0.45 based on the estimates of the

3 OPL is the real per capita expenditure per month for a person fixed at a specific welfare level with the consumption expenditure of food and non-food items. The OPL for 2016 is Rs. 4,166.

3

Table 3.12
Poverty Headcount Ratio (per cent)

Sector	2002	2006/07	2009/10	2012/13	2016
Sri Lanka	**22.7**	**15.2**	**8.9**	**6.7**	**4.1**
Urban	7.9	6.7	5.3	2.1	1.9
Rural	24.7	15.7	9.4	7.6	4.3
Estate	30.0	32.0	11.4	10.9	8.8

Source: Department of Census and Statistics

3

HIES - 2016, from 0.48 in the HIES - 2012/13. However, the poorest 20 per cent accounted for only 4.8 per cent of the total income, while the richest 20 per cent have earned 50.8 per cent of the total income, indicating the extent of income disparity, despite the rising income levels of the country as reflected through per capita GDP estimates. The income equality can be further improved by revisiting the income redistributive policies of the country and improving economic opportunities, particularly for poor households. Strategies to address this issue include ensuring better education opportunities for the existing labour force and future entrants while encouraging higher labour force participation, particularly among the female population. Sri Lanka declared 2017 as the 'Year of Poverty Alleviation', reiterating its commitment towards uplifting livelihoods in ensuring inclusive growth in line with the Sustainable Development Goals (SDGs) of the United Nations. To achieve the target of no poverty by 2030 under the SDGs, the Department of Samurdhi Development (DSD) prepared and implemented a people empowerment programme in 2017, targeting to empower 125,000 families by selecting nine families from each Grama Niladhari division. The empowerment programme aims to uplift poor families through education, entrepreneurship and employment with livelihood development, market promotion and model village programmes together with micro-finance facilities. Since financial inclusion is vital to enhance economic opportunities of the low-income earners, the formal financial sector also should develop financial products appropriate for underprivileged segments of the population.

Continued investment in safety nets would be an integral part of the poverty alleviation programme. In this context, the HIES - 2016 has explored the impact of social protection programmes on poverty, based on the information of 13 such programmes launched by the government. Accordingly, social protection transfers have lifted 2.6 per cent of the poor population out of poverty. Of these social protection schemes, it was found that pension transfers had the highest contribution towards poverty alleviation, in the absence of which the PHCR would increase to 5.7 per cent. Meanwhile, absence of Samurdhi will increase PHCR only up to 4.3 per cent, indicating the importance of better targeting of this social assistance programme. There is a strong case for improving the design and targeting of the social safety net with a focus on cash transfers rather than subsidies which distort resource allocation. The DSD continued with its social safety net programmes, disbursing Rs. 39.7 billion to 1,388,242 families under the Samurdhi Subsidy Programme during 2017 and Rs. 1,054 million to 251,524 beneficiaries under the Samurdhi Social Security Benefit Scheme. The DSD also granted 653,370 loans amounting to Rs. 42.3 billion through the Samurdhi Community-based banking network to poor and low-income families during the year. Meanwhile, according to DHS – 2016 of the DCS, the prevalence of stunting (lower height for age), underweight (lower weight for age) and wasting (lower weight for height) among children under five years were 17 per cent, 21 per cent and 15 per cent, respectively.[4] Further, 16 per cent of newborn

4. According to 'The State of Food Security and Nutrition in the World 2017' report published by the FAO, the prevalence of undernutrition in the total population of Sri Lanka was 22.1 per cent for 2014-2016, which is an improvement compared to 29.4 per cent prevalence reported for 2004-2006 period. According to the report, the prevalence of undernutrition in Sri Lanka is high compared to its regional peers.

Table 3.13
Main Welfare Programmes - Number of Beneficiary Families and Value of Grants

Year	Divineguma / Samurdhi Subsidy Programme		Nutrition Allowance Programme		Dry Ration Programme
	Families (No.) (a)	Value (Rs. million) (b)	Beneficiaries (No.) (a) (c)	Value (Rs. million)	Value (Rs. million)
2013	1,477,313	15,256	40,403	204	33
2014	1,479,811	15,042	47,858	279	28
2015	1,453,078	39,994	101,200	2,422	118
2016	1,407,235	40,740	337,554	5,746	111
2017	1,388,242	39,707	372,407	5,408	84

(a) As at year end
(b) Including the kerosene subsidy
(c) Revised

Sources: Department of Samurdhi Development
Ministry of Women and Child Affairs
Ministry of Finance and Mass Media

children born during the five year period before the DHS – 2016 survey, reported a low birth weight (i.e. below 2.5kg). Considering the importance of improving the nutritional health of mothers and children, the Ministry of Women and Child Affairs also continued numerous programmes during 2017. Nutritional food packages for expectant mothers were distributed among 372,407 beneficiaries at a cost of Rs. 5.4 billion by the Ministry in 2017. In addition, social protection programmes aimed at child protection and early childhood development were also conducted. Although extreme poverty levels have come down, there exist numerous challenges in ensuring the eradication of poverty through sustainable inclusive growth. With the decline in poverty levels, the population that remain below the low-income threshold would be the hardest to uplift due to the failure of overall income elevation schemes in addressing some of their challenges. Hence, social safety nets would have to focus on the vulnerable sectors of the economy, with a particular emphasis on the elderly and the differently abled social groups. In this context, the identification of genuinely poor population is necessary to reap the full benefits from the resources allocated to these programmes. In addition, there is the risk of a considerable proportion of the population slipping back towards poverty due to factors such as economic shocks and natural disasters. Hence, social insurance schemes should be made available to ensure that the realised gains in poverty eradication are maintained. Further, with the risk of increased incidence of natural disasters, it is required to strengthen the mitigation plans against natural disasters and include a mechanism to rebuild the livelihoods that have been affected by the disasters.

Environment

Natural disasters, such as drought and floods, significantly hampered overall economic growth during the past two years, highlighting the importance of giving due policy consideration to environment and disaster mitigation. In addition to drought and floods, Sri Lanka also encountered several other natural and human-induced disasters such as cyclones, landslides, drying-up of ground water due to development activities and collapse of a garbage landfill, though the impact of these disasters on economic growth was relatively limited. During 2017, the Ministry of Disaster Management implemented several flood mitigation projects in Gampaha and Puttalam and 239 disaster mitigation and safe evacuation projects in 23 districts while purchasing boats and equipment to strengthen the response capacity for floods and landslides. Meanwhile, a community-based early warning system covering 98 villages in Badulla, Nuwara Eliya and Kegalle districts and development of risk maps for the same areas were in progress during the year. Although, the disaster management authorities in Sri Lanka

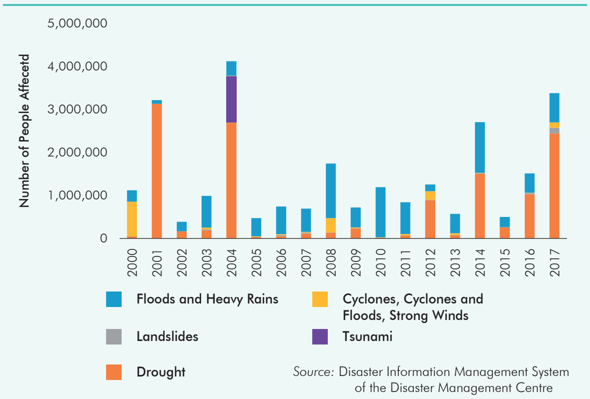
3

BOX 2
Disaster Management for a Resilient Economy

Introduction

The incidence and severity of disasters[1] in Sri Lanka have increased in recent years, resulting in adverse implications across all sectors of the economy. Floods, cyclones, landslides and droughts have been the key natural and human induced disasters that have occurred in Sri Lanka during the past two decades, in terms of frequency and the overall impact. Animal attacks and lightning strikes also have caused a considerable loss of human lives. In addition, Sri Lanka has also experienced infrequent catastrophic events such as the tsunami, which too had a significant damaging impact on human lives and physical infrastructure. These disasters are a result of climate change as well as domestic factors, other than the tsunami in 2004 which was triggered by an ocean earthquake near the west coast of Sumatra, Indonesia. According to the Disaster Information Management System (DIMS) of the Disaster Management Centre (DMC)[2], disasters that occurred in Sri Lanka during the 2013 - 2017 period have resulted in 837 deaths, 792 injured persons, 352 missing persons, 10,370 fully-destroyed houses and 90,040 partially damaged houses. Meanwhile, more recently, over two million people across various districts of the country were affected by severe drought conditions during 2017. Twelve of the twenty five districts were severely affected by the drought.

Chart B 2.1
Number of People Affected by Main Disasters in Sri Lanka: 2000 to 2017

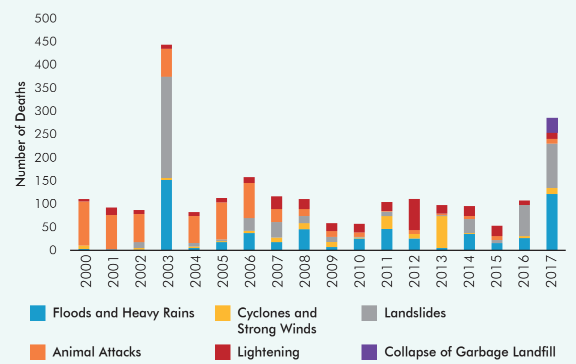


Source: Disaster Information Management System of the Disaster Management Centre

Economic Implications of Disasters

While disasters directly cause distress at the individual and household levels, most also have far reaching economy wide implications, which pose numerous challenges to the economic stability of relatively small countries like Sri Lanka. Disasters can hamper production and lower the productivity of a country due to physical damage to production, losses to the labour force caused by deaths and injuries, reduced investment in human and physical capital due to decreased savings, destruction of public and private capital, and disruption to utilities. Most natural disasters generally affect agriculture activities directly, which in turn, have ripple effects on industrial and services sector activities through forward and backward linkages. During 2016 and 2017, agriculture activities of Sri Lanka contracted by 3.8 per cent and 0.8 per cent, respectively, due to adverse weather conditions. These supply-side disruptions triggered a rise in domestic inflation, particularly through a rise in food prices. The decline or slowdown in growth coupled with rising price levels would result in macroeconomic instability, reduce the country's attractiveness as a tourist and foreign investment destination and retard the upliftment of living standards, dampening the effect of development efforts.

Chart B 2.2
Number of Deaths due to Main Disasters in Sri Lanka Excluding Tsunami* : 2000 - 2017



* Tsunami in 2004 caused 30,959 deaths

Source: Disaster Information Management System of the Disaster Management Centre

Disasters would also increase the country's external dependence through higher food and fuel imports due to constrained domestic capacity, exerting pressure on the external current account. Sri Lanka had to import 747,800 MT of rice due to the decline in domestic paddy production during 2017. Following the bumper harvest in 2015, rice imports in 2016 was only 29,524 MT. Increased imports of petroleum and coal for energy generation also contributed to a deterioration of the country's trade balance. Meanwhile, disasters cause a burden on the government budget, which is already under pressure, with increased expenses on disaster relief, rehabilitation activities and health services, resulting in a widening of the fiscal deficit.

1. The World Health Organisation (WHO) defines a disaster as an occurrence disrupting the normal conditions of existence and causing a level of suffering that exceeds the capacity of adjustment of the affected community.
2. The Disaster Management Centre was set-up in 2005 under the Disaster Management Act No.13 of 2005 with the objective of implementing disaster management functions assigned by the National Council for Disaster Management.

During 2017, the government had to incur a cost that amounts to around 0.1 per cent of the GDP for flood and drought relief activities. Further, imbalances within the economy amidst frequent supply-side shocks would pose a challenge for the effective implementation of monetary policy.

Moreover, disasters generally have a disproportionately high adverse effect on low income households and thereby challenge the country's efforts related to poverty reduction and inclusive growth promotion. The results of the Household Income and Expenditure Survey – 2016 show that if real per capita monthly expenditure declines by Rs. 100, the number of poor people in the country increases from 843,913 to 933,087, indicating a high concentration of non-poor population just above the poverty line. Such individuals have a higher probability of falling below the poverty line in the aftermath of disasters. Further, a recent cross-country study covering 147 countries has shown that households and firms get deeper into debt following natural disasters (Keerthiratne & Tol, 2017). In addition, more than a quarter of the labour force is engaged in agricultural activities in Sri Lanka. Hence, weather-related natural disasters affect the livelihoods of a large fraction of the country's population. Therefore, frequent occurrence of disasters raises the vulnerability at both the macroeconomic and household levels, warranting increased attention to strengthening disaster management and mitigation programmes.

Risk of Natural Disasters in Sri Lanka

Based on the average WorldRiskIndex (WRI) scores for 2012-2016, Sri Lanka was ranked at 63rd position in the WRI (lower the rank, higher the risk level) amongst 171 countries, whereas India, Pakistan and Nepal were ranked at 75th, 73rd and 107th positions, respectively, indicating a higher disaster risk level in Sri Lanka, in comparison to some of its regional peers. Meanwhile, Bangladesh was at the 5th position due to the country's frequent exposure to disasters (Bündnis Entwicklung Hilft, 2017). According to the WorldRiskReport - 2017, risks faced by a country not only depend on the probability of the occurrence of natural hazards and their severity, but also on the country's vulnerability. These vulnerabilities can be divided into three components: country's susceptibility, coping capacities and adapting capacities. Sri Lanka not only has a high exposure to natural disasters, but also has a high vulnerability particularly in terms of the weaker coping capacity of the country (Bündnis Entwicklung Hilft, 2017). This shows that although the exposure to natural disasters is inevitable, Sri Lanka has the potential to reduce the impact of disasters by broadening the scope of its disaster management programme from basic emergency relief activities to disaster forecasting, preparedness as well as adaptation and mitigation policies and measures.

With the overarching objective to create and facilitate an enabling environment, Sri Lanka already has a multi-hazard, multi-sector, multi-agency partnership oriented Comprehensive Disaster Management Programme for 2014-2018 that is based on risk knowledge. In addition, there is a National Adaptation Plan for Climate Change Impacts of Sri Lanka: 2016 - 2025. Nevertheless, the loss of human lives, damages to public and private properties during recent disaster events indicate that there is significant room for improvement in disaster management and mitigation activities in Sri Lanka.

Table B 2.1
WorldRiskIndex Overview
(Index Mean Values for 2012-2016)

		Index Value (Range from 0% to 100%)					
	WRI Rank	WRI	Exposure	Vulnerability	Susceptibility	Lack of Coping Capacities	Lack of Adapting Capacities
Bangladesh	5	19.57%	31.70%	61.72%	40.39%	86.41%	58.37%
Bhutan	57	7.84%	14.81%	52.93%	31.60%	75.10%	52.10%
Sri Lanka	63	7.52%	14.79%	50.83%	26.15%	78.80%	47.54%
Pakistan	73	7.11%	11.36%	62.54%	37.04%	86.71%	63.88%
India	75	7.00%	11.94%	58.62%	38.22%	80.47%	57.17%

Low Risk | Medium Risk | High Risk | Very High Risk

Source: WorldRiskReport - 2017

Building Capacities to Cope with Disasters

Experience from disaster prone countries, such as Japan, has shown that loss of human lives and damages to physical assets can be minimised by improving forecasting capabilities with regard to natural disasters and implementing effective early warning systems. Sri Lanka currently has several early warning systems, including early warning systems for Tsunami and landslides. However, heavy damages caused by floods and landslides in Sri Lanka were mainly due to poor forecasting of extreme weather conditions. Hence, the government needs to invest more on strengthening the country's disaster forecasting and early warning systems in disaster-prone areas to cope with recurrent disasters. Although costly, investment in technologically advanced disaster forecasting and early-warning systems can be justified given the heavy burden exerted by natural disasters on households and the government budget in the long-term. On the other hand, better regional cooperation may provide solutions for much-needed disaster forecasting and early warning systems.

While early warning systems can reduce human and physical losses, other disaster preparedness activities also play a key role in mitigating damage caused by catastrophic events. For example, Bangladesh, which is frequently exposed to floods and cyclones, has been able to reduce the loss of human lives during hazardous events by constructing over 1,800 cyclone shelters and 200 flood shelters for evacuation purposes (Nawaz & Shah, 2011). However, experience during recent disaster events in Sri Lanka highlights issues related not only to poor forecasting and early warning systems, but also to evacuation procedures, poor disaster-related data management systems and ambiguous roles and responsibilities of different government institutions within the disaster management framework. These deficiencies led to higher casualties, slower responses to disasters, lack of coordination in disaster relief measures and inefficient distribution of relief supplies. All stakeholders, including the Ministry of Disaster Management, other government and non-government institutions, and civil society should strive towards fulfilling their duties and responsibilities outlined by the country's disaster management framework in a more effective and timely manner while following the necessary guidelines and procedures. Disaster preparedness activities of the country should include expanding necessary infrastructure facilities such as designated evacuation centres in all disaster-prone areas, enhancing data management in relation to risk mitigation, further training of personnel in disaster management activities and educating the public on safety measures and evacuation procedures. Moving beyond the 'charity' mind-set of civil society during disaster events, a volunteer disaster management task force could be set-up to streamline civil society engagement in disaster relief activities. Social media can be effectively used not only to disseminate early-warning signals, but also to organise such volunteer task forces. Moreover, post-disaster action plans should also be in place to support vulnerable social groups and address post-traumatic stress, in order to build capacity to better cope with disasters.

A national disaster risk financing strategy is important for Sri Lanka to reduce the fiscal burden, disbursement of funds for relief activities effectively and use of available funds for disaster mitigation activities efficiently. To this end, the World Bank Group has conducted a fiscal disaster risk assessment for Sri Lanka, including an analysis of contingent liabilities of the government caused by disasters. Based on the risk level of each disaster, which in turn depends on the frequency and severity of impact, the government can select different financing instruments to mitigate the fiscal risk of each type of disaster (International Bank for Reconstruction and Development, 2016). For example, the government can use a contingent budget, annual budget allocations or a Natural Disaster Reserve Fund to mitigate the fiscal risk of high frequency, low impact disasters such as localised floods and landslides, which will ensure fast disbursement of funds for post-disaster activities. Further, insurance and additional sovereign catastrophic risk financing options can be used for low frequency, high impact disasters such as major floods, major earthquakes and tropical cyclones. The World Bank Group offers several sovereign risk financing options, such as Development Policy Loans with Catastrophe Deferred Drawdown Option[3], which allow member countries to access immediate liquidity during natural disasters, and Catastrophe Bonds and Weather Derivatives that allow countries to transfer the financial risk caused by natural disasters to global investors.

Insurance is increasingly used across many countries in the world as a disaster risk management strategy. However, insurance penetration, based on total premium as a percentage of GDP, stood at 1.2 per cent for Sri Lanka in 2017. This is extremely low when compared to peer countries. The government has already taken steps to insure lives and properties, particularly all households and small business establishments, against natural disasters, excluding drought, up to a maximum of Rs. 2.5 million per household or business, under the Natural Disaster Insurance Scheme (NDIS) through the National Insurance Trust Fund (NITF), thus reducing the burden on the government budget. However, it is important to promote private insurance of property against disasters, especially among higher income earners who can afford insurance. Meanwhile, the government also needs to strengthen the reinsurance of the NITF by extending the coverage to non-agricultural sectors as well.

Sri Lankan farmers rely more on borrowings from formal and informal sources than on crop insurance (Wickramasinghe, 2017), which is a better climate-risk management strategy. Crop insurance is successfully used in developing countries such as India, Bangladesh, Ethiopia, Kenya, Malawi, Thailand and Central America. Currently, there are two voluntary indemnity-based crop insurance schemes operating in Sri Lanka and an index-based insurance scheme, which is not commonly used at present. During 2008 Yala to 2017 Yala period, less than 3 per cent of the cultivated paddy lands in Sri Lanka had been insured, even under the less-efficient voluntary indemnity-based crop insurance schemes. However, when coupled with advanced technology, index-based insurance solutions are deemed to be more efficient with higher transparency, lower costs and timely pay-outs (Wickramasinghe, 2017). Hence, investing in meteorological equipment, promotion of crop insurance schemes, particularly index-based solutions, and educating farmers on crop insurance are imperative to enhance coping capacities of the farming community in facing natural disasters.

Reducing Exposure and Susceptibility to Disasters

Considering the increased frequency of flooding and landslides, resettlement of people away from disaster-prone locations is essential in the medium to long term. To this end, multi-hazard vulnerability assessments and risk-mapping are pre-requisites to identify risky areas and resettlements in low-risk areas. Designing houses that can better withstand regular disasters (for example, houses on stilts in flood-prone areas), revising land-use plans and building regulations based on risk levels and strictly enforcing those regulations are critical to minimise recurrent damages to buildings and settlements. While considering disaster risk levels, it is also important to consider livelihood, socio-cultural factors and infrastructure availability when resettling people in new locations, in order to prevent people moving back to familiar disaster-prone areas. On the other hand, structural mitigation methods, such as constructing drainage channels, constructing tanks to harvest high-intensity rainfall, desilting and rehabilitation of existing irrigation systems, and strengthening river banks, can be effectively used to reduce damage from

3. This option has been available for Sri Lanka since 2014

disasters. Investment in structural mitigation methods can be prioritised based on the expected losses from natural disasters to ensure efficient allocation of funds. Considering the historical data on direct and indirect costs arising from physical and private property damage caused by natural disasters, the World Bank Group has estimated Sri Lanka's average expected loss due to disasters at Rs. 50 billion per annum, of which Rs. 32 billion results from flooding (International Bank for Reconstruction and Development, 2016). Hence, higher investment in physical flood mitigation methods can substantially reduce the annual disaster losses to the country.

Multi-hazard risk assessment and environmental sustainability should be an integral part of all development activities in order to reduce the country's susceptibility towards disasters. Unsustainable development activities can cause man-made disasters while aggravating natural disasters such as drought, floods and landslides. Since damage caused by these disasters can outweigh the benefits of these economic activities, sustainability should be central to all development activities. Further, minimising deforestation, reforesting upstream areas, clearing and restoring wetlands, and giving due consideration to groundwater system in development activities could considerably reduce the exposure to natural and man-made disasters. Meanwhile, coordination between the National Planning Department, disaster risk management authorities and relevant line ministries needs to be strengthened further to improve the sharing of multi-hazard risk assessment information regularly for planning and development activities.

Adapting to Disasters

In the context of climate change and increasing food demand, climate-smart agriculture practices, which integrate agriculture development with climate responsiveness, are becoming essential to achieve food security and far-reaching development goals. Use of climate-adapted genetic material such as short duration and agro-ecologically suited plant varieties, adoption of seasonal-adapted planting times and changing crop establishment techniques, rainwater harvesting systems and micro-irrigation, mulching and thatching and planting of cover crops are some of the key climate-smart agriculture practices that can be used in crop production. Further, perennial cropping systems, crop diversification and livestock integration, manure production and reduced use of chemical inputs will enhance land productivity and the overall environment while improving climate resilience of agricultural activities. Some of these climate-smart agriculture practices are currently adopted in various agriculture production systems in Sri Lanka, though the adoption of some other practices is still limited. However, scaling up of climate-smart agriculture practices in the long-run will require efficient extension services as well as improved access to specific markets by the farmers. At the same time, it is essential to enhance food processing and storage mechanisms and maintain sufficient agriculture buffer stocks, to ensure food security of the country in the context of regular hazardous events. This needs to be accompanied with a change in consumption habits of people, such as the use of prepared/ processed food instead of fresh food alone.

Diversification is an effective adaptation method to reduce the vulnerability to disasters. Sectors such as agriculture, fisheries, forestry, tourism and energy generation are all sensitive to climate-change-induced disasters. Generally, the farming community is more susceptible to frequent disasters due to lack of diversification in terms of crops as well as their income sources. Hence, agriculture development policies need to focus on providing institutional support for capacity building to the farming community to move beyond their traditional one crop cultivation practice to crop diversification, livestock integration and non-farm income generation. Expansion and diversification of the country's energy sources should also be expedited to reduce heavy reliance on hydropower generation and shift towards other low-cost, eco-friendly energy sources. The growth strategy of the country should emphasise diversifying the export sector to reduce the vulnerability of export income to natural disasters.

Conclusion

Frequent occurrence of disasters is becoming the 'new normal' for many countries including Sri Lanka. Disasters tend to have macroeconomic implications while obstructing the attainment of sustainable development goals. Although disasters cannot be avoided completely, the disaster risk and the consequences could be mitigated to a great extent by building coping capacities of the community, reducing the susceptibility and exposure to disasters and adapting to impending disasters. Therefore, disaster risk management and climate-change adaptation should be embedded in the national development policy framework by aligning and streamlining sectoral policies and regulations. Collaborative and well-coordinated actions of the government and non-government organisations and civil society are needed to build technological, physical and institutional capacities for effective disaster management and climate change adaptation. Nurturing of sustainable development needs to be embedded in the country's long-term growth strategy, with a view to minimising the exposure to disasters, especially human-induced hazards.

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are implementing various disaster mitigation and management activities, these initiatives need to be further strengthened through coordinated efforts of the government, non-government organisations and civil society, to minimise the occurrence and impact of disasters.

During the year under review, the government laid-down regulations in relation to the production and use of polythene and plastic related products, with the aim of minimising the impact on the environment. Accordingly, manufacturing of polythene or any polythene product of 20 microns or below in thickness, food wrappers made from polythene, high-density polythene bags, food containers, plates, cups and spoons from expanded polystyrene for domestic usage was prohibited through gazette notifications issued on 01 September 2017. Further, sale, offer for sale, offer free of charge, exhibition or use of the same products were also prohibited. In addition, the open burning of refuse or other combustible matters inclusive of plastics as well as the use of all forms of polyethylene, polypropylene, polyethylene products or polypropylene products as decorations are also not permitted. After reviewing the opinions and concerns of the relevant stakeholders, including polythene and plastic producers and users, this ban came into full effect from 01 January 2018. While this is a creditable step towards an eco-friendly development path, it is also crucial to conduct research on alternative products for the prohibited plastic and polythene products, commercialise such products and promote the use of alternative products among the general public expeditiously.

The Central Environment Authority (CEA) carried out a range of activities in relation to regulating and monitoring, environmental impact assessments and waste management, with a view to supporting sustainable economic growth. The CEA is responsible for assessing the possible impact of projects on the environment through environmental impact assessments (EIA) and initial environmental examinations (IEE). During 2017, the CEA granted EIA approvals for 12 projects and IEE approvals for 259 projects. Meanwhile, the CEA initiated a ground water quality and industrial effluent monitoring project in the Gampaha district with the support of the Water Environment Partnership Association (WEPA) in Japan. Moreover, under the Pilisaru National Solid Waste Management project, the CEA continued to fund establishing and improving compost sites, bio gas plants and plastic recycling centres. During 2017, the CEA continued to operate the Green Park Waste Management Centre at Dompe, handling general waste from Dompe Pradeshiya Sabha and Colombo Municipal Council, non-hazardous industrial waste and glass wool from electricity generation companies. This project consists of a landfill site, composting site as well as a training centre.

During 2017, the government took steps to rectify the environmental and social issues caused by the Uma Oya Multipurpose Development Project and the Meethotamulla garbage landfill site, while minimising associated future externalities on the environment. Two water ingresses were encountered during the construction of Headrace Tunnel under the Uma Oya Multipurpose Development Project and the issue was resolved to a satisfactory level by end 2017. However, these water ingresses resulted in lowering the water levels in the domestic wells, drying-up of natural springs and developing cracks on walls and floors of the houses in several areas of the Bandarawela Divisional Secretariat (DS) Division, Ella DS Division and Haputale DS Division. Due to delays in the excavation process caused by the water ingresses, the project completion date is likely to be extended from mid-2019 to mid-2020. Proper environmental assessment and adoption of strategies to minimise the environmental impact of all development activities are crucial to reduce the environmental damage and resultant social issues caused by development projects. Following the collapse of the Meethotamulla garbage landfill site, the government gave high priority to establish long-term sustainable solutions for waste disposal in 2017. The MMWD was assigned the responsibility of the safe closure of the collapsed dump site. Accordingly, in the short-term, the closure of the garbage landfill site was completed and MMWD is planning to rehabilitate Meethotamulla landfill site into an urban park. As a long-term measure, abandoned limestone quarries at Aruwakkalu will be developed as a sanitary landfill site. The project is expected to be completed by end 2020 and the project recorded 20 per cent physical progress by end 2017. Meanwhile, Cabinet approval was granted to implement three waste-to-energy projects with the participation of the private sector and one such private company entered into a power purchasing agreement with the CEB.

Deforestation, which has the potential to create serious environmental damage, remains a key policy concern for the country. During the past decade, deforestation continued at a faster pace than reforestation, owing to legal and illegal logging, infrastructure development activities and rapid urbanisation. Sri Lanka's forest cover stood at 1,951,472 hectares according to the Forest Cover Estimation Survey conducted by the Forest Department in 2010. The latest survey had been conducted in 2015 using high resolution images and field verifications of these images. However, the results of the survey are still pending, delaying the adoption of necessary policy actions to mitigate deforestation. Meanwhile, a total of 10,226 hectares of forests were deforested during the last decade and infrastructure development initiatives may have contributed significantly to this deforestation. Concerns are further exacerbated by increased number of reports of illegal forest clearing, logging, and encroachment for human settlements during the recent past. The extent deforested during 2017 increased marginally to 1,241 hectares, from 1,240 hectares in 2016, which is considerably above the level in 2015 of 423 hectares. Meanwhile, the extent reforested in 2017 was only 956 hectares, whereas Sri Lanka has reforested more than 1,000 hectares in some years in the past. The number of forest offences increased to 3,887 from 3,618 in 2016 and 2,545 in 2015. The volume as well as the value of timber detected to have been illegally logged increased in 2017, compared to 2016 and 2015. Meanwhile, there were only 99 detected cases of smuggling of indigenous herbs in 2017, compared to 220 in 2016. If immediate policy attention is not paid to manage deforestation at a sustainable level, this issue will potentially lead to climate change and aggravate natural disasters such as landslides, loss of biodiversity and land degradation. With technological advancements in the world, the government should consider using innovative, low-cost technological options to collect data and monitor deforestation for better policymaking.