

Evaluation on the Performance of Clinical Waste Management Project Implemented at Hospitals by the Ministry of Health under Australian and Domestic Loans.



# Report No. HSM-E-MH-5-2019-26

## National Audit Office

### Division-HSM

1	Executive Summary	04
2	Nature and Background of the Report	06
2.1	Background	06
2.2	Authority for Conducting the Audit	18
2.3	Approach of the Audit	18
2.4	Objectives of the Audit	19
2.5	Scope of the Audit and Limitations on the Scope	19
2.5.1	Scope of the Audit	19
2.5.2	Limitations on the Scope	20
2.6	Methodologies Followed in Audit	21
2.6.1	Obtaining Documentary Evidence	21
2.6.2	Other Verifications Made	21
2.6.3	Physical Approach	21
2.7	Audit Criteria	22
3	Audit Observations	23
3.1	Identification of the Issue relating to the Management of Clinical Waste	23
3.1.1	Preliminary Studies on the Disposal of Clinical Waste	23
3.1.2	Measures Taken on the Disposal of Clinical Waste	24
3.1.3	Feasibility Study	25
3.1.4	Deciding on the Suitability of Machines	25
3.1.5	Proceeding with the Australian and Domestic Loan Project Agreement	26
3.2	Installation of the Machinery	27
3.2.1	Changing the Plan of Hospitals where the Machines should have been Installed	27
3.2.2	Handing Over of Machinery after being Inspected and Technical Instructions	31
3.2.3	Idle and Underutilized Assets	32
3.2.4	Functionality of the Project	33
3.3	Requirements to be Fulfilled While the Project is in Progress	38

3.3.1	Maintaining the Services	38
3.3.2	Deployment of Staff	40
3.3.3	Maintenance Works	40
3.4	Achievement of Expected Objectives of the Project	43
3.4.1	Management of wastes disposed after sterilization	43
3.4.2	Functionality of cluster hospitals on non-operation of cluster system	46
3.4.3	Minimization of improper disposal of clinical waste	47
3.4.4	Reaching the Expected Performance Level by the time of Repayment of Loan Installments	49
3.4.5	Cost Benefit Contribution	50
3.4.6	Build Bargaining Power for External Parties	50
3.4.7	Environmental Impact	51
3.4.8	Other Issues	54
4.	Recommendations	55

## 1. Executive Summary

-----

Waste in the nature of infectious, contaminated sharps, bodily waste, medicinal, toxic, chemical, and radioactive disposed of daily by the medical institutions including the Government hospitals, medical research institutions, and medical laboratories, is known as clinical waste.

Due to detrimental effect caused by such waste on persons and the environment and spread of communicable diseases, special attention should be brought on clinical waste. As such, proper management of clinical waste is a decisive factor for maintaining hygiene in the hospitals and controlling the diseases. Furthermore, according to the regulations imposed by the Central Environmental Authority, all clinical waste is deemed hazardous, and hence, such waste should be sterilized and disposed of within a period of 48 hours after being generated.

It can be stated that the lack of a proper methodology to facilitate the management of clinical waste generated by hospitals and various institutions related to health, was a serious issue faced by the Ministry of Health as well as health sectors in the 09 provinces over many past years.

An Australian company had submitted an unsolicited proposal on the management of clinical waste to the Ministry of Health. Approval of the Cabinet had been granted on 09 May 2013 to take into account that project proposal and implement it. Accordingly, in order to supply, install and activate 20 Metamizer machines & 15 Incinerators used in disposing of waste, construct the necessary buildings, service & maintain the Metamizer machines, and service & maintain the Incinerators, without being included in the contract dated 12 December 2013, four Agreements had been entered into by the Secretary to the Ministry of Health with R.R. Taylor (Pty) Ltd of Australia together with their local agent named Biomed International (Pvt) Ltd whilst the Biomed International (Pvt) Ltd had been involved in operating activities of the project.

The total value of the entire project amounted to US \$ 21.11 million or Rs. 452.24 million. It was the objective of this audit to evaluate the performance of the project.

Although it had been planned to implement the project at 134 Government hospitals divided into 06 clusters covering all the 09 provinces of the country, 02 of the 04 Agreements had been revised on 01 December 2015, and details are given in Annexure 01. Accordingly, the 15 Incinerators proposed to be supplied under the

Agreement for the supply & installation of the machines and construction of buildings, had been decreased to 05 machines, thus decreasing the agreed value of US \$ 18.445 million to US \$ 16.19 million. Similarly, the service and maintenance fee of US \$ 0.190 million or Rs. 36.382 million agreed to be paid for a period of 05 years under the Service Agreement of the Incinerators, had been decreased to US \$ 63,175 or Rs. 12.127 million. Nevertheless, the operating fee of the project had not been revised.

The Agreement of the loan project had been signed in the year 2013 and 134 hospitals covering the entire island had been divided into 06 clusters thus managing the clinical waste from each of those clusters; nevertheless, in a manner favorable to the project proposed by the Sisily Hanaro Encare Pvt Ltd to manage the clinical waste in the Western, Southern and Central Provinces, the officials of the Ministry had removed 10 Metamizer machines and 08 Incinerators from the project that had been agreed to be installed in the said Provinces, in the year 2014. Those 10 Metamizer machines had been installed in Northern, Eastern, North Central, North Western, Sabaragamuwa, and Uva provinces.

Furthermore, 10 of the 20 Metamizer machines have been installed at the base hospitals of Karawanella, Marawila, Akkaraipattu, Kalmunei, and Ashroff Hospital of Kalmunai where clusters were not in place along with the Teaching Hospital in Kuliypitiya, and the district hospitals in Embilipitiya, Monaragala, Chilaw, & Trincomalee.

With the direct or indirect involvement of the officials of the Ministry so as for the contract for the disposal of clinical waste of the Western, Southern and Central Provinces to be awarded to the Sisily Hanaro Encare Pvt Ltd, measures had been taken to enter into a commercial agreement favorable to the said company, revise the 03 provinces that had been covered by more than 50 per cent of the scope of the Australian and domestic loan project thereby debilitating the cluster system, and obtain Cabinet approval for revising the agreement of the Australian and domestic loan project with a view to managing the clinical waste only in the Northern, Eastern, North Central, North Western, Sabaragamuwa, and Uva provinces.

As measures had been taken in such a manner, the total sum that had to be paid to the Sisily Hanaro Encare Pvt Ltd and other institutions for the disposal of clinical waste from 21 hospitals during a period of 04 years from 2016 to 2019, amounted

to Rs. 384.122 million which was an extra burden of expenditure for the Government.

The Metamizer machines and the Incinerators supplied under the Australian and domestic loan project had not been functional up to the capacity mentioned in the specifications. It was not verified through an independent test as to whether the wastes from the machines had been made suitable to be released into the environment. The cluster system of disposing of clinical waste from several hospitals at a single location, the main objective of the Australian and domestic loan project, had become totally unsuccessful. Furthermore, a methodology to properly dispose of the waste generated by those machines, through the Local Authorities, had not been implemented island wide.

## 2. Nature and Background of the Report

-----

### 2.1 Background

-----

- (a) Proper management of waste is a serious issue faced by the Ministry of Health, Government hospitals, and the Local Authorities. Especially, the clinical waste disposed of by the hospitals and various health institutions gives rise to the spread of communicable diseases and environmental problems. Hence, in order to ensure hygiene at the hospitals and control the communicable diseases, it is necessary to ensure the proper management of clinical waste.
- (b) Clinical wastes comprise 07 types of waste. A description on each type is given below.

No.	Type of Clinical Waste	Description
----	-----	-----
1	Infectious waste	Bandages, cotton or gauze soaked with blood or bodily fluids.
2	Sharps	Used needles and cannulae.
3	Bodily waste	Tissues, organs, and placenta removed in surgeries.

4	Medicinal waste	Expired drugs.
5	Cellular toxic waste	Chemicals used to treat cancers.
6	Chemical waste	Thermometers containing mercury, discarded sphygmomanometers, and disinfectants.
7	Radioactive waste	Waste generated from the radiotherapy.

(c) A large amount of clinical waste is generated daily in the aftermath of patient care services provided by over 2,000 miscellaneous institutions including Government hospitals, private hospitals, and medical laboratories in Sri Lanka. Particulars on clinical waste generated by only 08 hospitals selected, are as follows.

No.	Name of the Hospital	Amount of Hazardous/Clinical Waste	Amount of Sharps	Total Amount of Clinical Waste Generated Daily
---	-----	-----	-----	-----
		Kilo Grams	Kilo Grams	Kilo Grams
1	National Hospital - Colombo	850	70	920
2	Teaching Hospital - Batticaloa	700	100	800
3	Teaching Hospital - Jaffna	Not separately mentioned.	Not separately mentioned.	750
4	Teaching Hospital - Karapitiya	538	47	585
5	Base Hospital - Thelippalai	Not separately mentioned.	Not separately mentioned.	500
6	Teaching Hospital - Anuradhapura	Not separately mentioned.	Not separately mentioned.	400
7	General Hospital - Ampara	Not separately mentioned.	Not separately mentioned.	150-180
8	Base Hospital - Diyathalawa	Not separately mentioned.	Not separately mentioned.	110-130

(d) The legal requirement of obtaining an Environmental Protection License - EPL, should be fulfilled for the disposal of clinical waste in terms of Subsection 68 under Section (a) of the Notice published on the Gazette Extraordinary, No.

1533/16 dated 25 January 2008 by the Minister of Environment and Natural Resources in accordance with the powers vested through Section 23 (a) of the National Environmental Act, No. 47 of 1980 amended by the Acts, No 56 of 1988 and 53 of 2000.

- (e) According to Regulation, No. 15 in Part II of the National Environmental (Protection and Quality) Regulations No. 01 of 2008 published on the Gazette Extraordinary, No. 1534/18 dated 01 February 2008 by the Minister of Environment and Natural Resources under Section 32 of the National Environmental Act, No. 47 of 1980 read with Sections 23(a) and 23(b) of the said Act, the legal requirement of obtaining a Scheduled Waste License – SWL, should be fulfilled to dispose clinical waste - a category of hazardous waste specified in Schedule VIII.
  
- (f) The Colombo Environmental Improvement Project – CEIP, had conducted the first study on waste management through an international consultancy firm during 1994-1997. That study had identified the serious requirement of managing the clinical waste generated by the hospitals in Colombo and suburbs.
  
- (g) The Colombo Municipal Council, in the year 1999, had prepared a 25 year plan to convert solid waste into compost; and, in the year 2001, an Agreement had been entered into with a private company for a new compost processing project.
  
- (h) A dire requirement of regulating the management of clinical waste had been identified with the commencement of the projects to control HIV/AIDS and Tuberculosis under aids from the World Bank. Furthermore, the situation in which the medical institutions not adhering to the provisions of the National Environmental Act, had detrimentally affected the public health and the environment. In that backdrop, the Ministry of Health had prepared a 05 year National Action Plan and a situation analysis in the year 2001 targeting the period 2002-2006 in view of identifying a national policy for regulating the management of clinical waste and establishing strategies for resolving issues. It had been recommended in the said analysis that the clinical waste should be managed through incineration and sterilization (Autoclaves/Hydroclaves).



- (i) It was revealed during the study of File, No. HSRIU/CWMS/14/2009 furnished to the audit by the Ministry of Health under the title “ *Strengthening Patient Care Services by Establishing Waste Management Systems in the Needy Hospitals Coming Under the Provincial Councils in Sri Lanka under Australian Government’s Assistance*” that the Ministry of Health and Nutrition had been presented with a conceptual proposal in the form of an unsolicited project proposal to establish systems for the management of clinical waste by CME Medical (Pvt) Ltd based in Australia which had later been established as R.R. Taylor (Pvt) Ltd. However, the so-called conceptual proposal for the project had not been furnished to the audit. According to the Project Concept Format included in the said File, the activities of the project had been as follows.

No.	Activity	As a Percentage of the Total Project Value	Total Value of the Project
----	-----	-----	-----
		Per Cent	Rs. Million
1	Procurement of waste treatment equipment.	75	1,125
2	Constructions for infrastructure.	15	225
3	Procurement of waste bags, waste bins & carts, and other equipment.	5	75
4	Capacity development of the hospital staff.	5	75
5	Domestic financing.		500
			-----
			<u>2,000</u>

- (j) Having been taken into consideration by the National Planning Department, approval had been granted on 15 July 2009 for the implementation of the said project proposal.
- (k) The Ministry of Health had entered into a Memorandum of Understanding- (MOU) with CME Medical (Pvt) Ltd based in Australia (R.R. Taylor (Pvt) Ltd thereafter) relating to the project on 16 December 2010. The Ministry should have prepared a Pre-Feasibility report with the assistance of the Aid Donors in terms of the said Memorandum of Understanding and Financial Regulation 3(2)(iii)(a) of the Democratic Socialist Republic of Sri Lanka.
- (l) The project proposal should have been presented to the Standing Cabinet Appointed Review Committee –SCARC, that had been appointed by the Cabinet for the review of unsolicited project proposals in terms of Public Finance Circular, No. 444 issued by the Ministry of Finance and Planning on 04 August 2010. As such, the project proposal that had received approval of the National Planning Department, was presented to the Standing Cabinet Appointed Review Committee.
- (m) A Project Committee comprising 06 members, had been appointed by the said Standing Cabinet Appointed Review Committee on 07 April 2011 in order to review the project proposal.
- (n) A report prepared by the Project Committee including reports of the physical inspection carried out by 02 members of the Committee after visiting R.R. Taylor (Pvt) Ltd in Australia along with reports obtained from 02 experts on those machines, had been presented to the Standing Cabinet Appointed Review Committee – SCARC on 28 September 2011; and the same report had also been presented to the Standing Cabinet Appointed Procurement Committee – SCAPC on 23 December 2012.
- (o) The Cabinet Appointed Procurement Committee – SCAPC, assembled on 18 January 2013, had given approval on the following matters.
  - (i) To give consent on the proposal of the project relating to operational plan and operating cost subject to a price reduction of 01 per cent.

- (ii) The contract for supply of the following items at a value of US \$ 18.445 million be awarded to R.R. Taylor (Pvt) Ltd based in Australia, subject to be approved by the Cabinet.

Serial No.	Item	Quantity	Total Value
-----	-----	-----	-----
			US \$ Millions
1	Medivac Sterilizing Machine with inbuilt Shredder, boiler, Water purifying unit, Odour management unit	20	14.168
2	Incinco Incinerator	15	3.020
3	Plant Room with Annex (for Sterilizer + incinerator)	11	0.728
4	Plant Room without Annex (only Sterilizer )	09	0.511
5	Small plant Room (for incinerator)	05	0.204
			----- 18.631
	Less 1% discount		(0.186)
			----- 18.445
			====

- (p) Following the approval granted on 04 contracts under this project by the Cabinet on 09 May 2013, the Secretary to the Ministry of Health had entered into Agreements with respect to the following 04 contracts on 12 December 2013 with R.R. Taylor (Pty) Ltd of Australia and their local agent, Biomed International Pvt.Ltd.

	Contract		Agreed Value		Party in Agreement	
	-----	-----	US \$	Rs.	-----	-----
			Millions			
(i)	<b>Contract</b>	<b>Agreement</b>	18.445	-	R.R.	Taylor
	(Meta Mizer machine 20 / Incinerator machine 15/ Plant Room/ 500 Wheel Bins, 25 Nos. Carts for the transport of wheel bins including clearing, transportation, installation, commissioning, testing, training & maintenance, one year comprehensive maintenance warranty cover)				(Pvt).Ltd	and their local agent, Biomed International Pvt. Ltd
(ii)	<b>Service &amp; Maintenance Agreement of 20 Meta Mizer</b>		2.475	90.090	-Do-	
(iii)	<b>Service &amp; Maintenance Agreement of 15 Incinerator</b>		0.190	36.382	-Do-	
(iv)	<b>Agreement for Operation of Waste Management Systems</b>		-	325.773	Local Agent	Biomed International Pvt. Ltd

(q) Accordingly, the Secretary to the Ministry of Health had entered into 04 Agreements with R.R. Taylor (Pty) Ltd and their local agent, Biomed

International Pvt. Ltd on 12 December 2013, to purchase the following equipment and construct the buildings.

Serial No.	Item	Quantity	Total Value
-----	-----	-----	-----
			US \$ Millions
1	Medivac Meta Mizer 240SSS Biohazardous Waste Disposal Device with inbuilt Shredder, boiler, Water purifying unit, Odour management unit	20	14.027
2	Incinco Incinerator FS50	15	2.989
3	Plant Room with Annex (for Sterilizer + incinerator)	11	0.720
4	Plant Room without Annex (only for Sterilizer)	09	0.506
5	Small plant Room (for incinerator)	05	0.202
6	500 Wheel Bins, 25 Nos. Carts for the transport of wheel bins including clearing, transportation, installation, commissioning, testing, training & maintenance, one year comprehensive maintenance warranty cover		-
			-----
			18.445
			=====

(r) According to the Contract Agreements mentioned in (p) above;

- (i) Supply, distribution, installation, making the machines functional, inspection and the warranty period in accordance with the scope of the contract; and, carry out maintenance works for the 05 ensuing years.

- (ii) To install 35 machines at 23 locations. To divide 134 hospitals into 06 clusters covering the entire island; and, collection, transportation, sterilization, and incineration of clinical waste collected from each cluster, thus properly disposing of the remaining waste through the Urban Councils.
- (iii) Guidelines and Regulations of the Central Environmental Authority should be followed. Approval should be obtained from the Central Environmental Authority whenever a machine is installed.
- (iv) To proceed with the Operating Agreement entered into with Biomed International (Pvt) Ltd with respect to execution of the waste management system; segregation, collection, transportation and treatment of waste, and disposal of remaining waste by that private institution.
- (v) The local agent or the service provider, being Biomed International (Pvt) Ltd should supply;
  - ❖ Fuel for the Incinerators.
  - ❖ Waste bags.
  - ❖ Eleven vehicles build on purpose.
  - ❖ Eleven drivers.
  - ❖ Thirty six unskilled laborers.
  - ❖ Twenty five machine operators and technicians.
  - ❖ A number of 500 waste bins and 25 carts.
- (vi) Biomed International (Pvt) Ltd, the local agent of the R.R. Taylor (Pty) Ltd of Australia had agreed as per Sections 6.3 and 6.4 of the Operating Agreement, that the waste treated after being sterilized and incinerated, be considered as normal waste and transported & disposed of through the Municipal Councils.
- (s) It had been recommended by the Review Committee, for which the Deputy Director General of the Ministry (Medical Service II) had served as a member, appointed by the Cabinet Sub Committee on Economic Affairs in the year 2015 for reviewing the unsolicited project proposals of the Health Sector, that only 05 Incinerators be purchased despite the 15 Incinerators that had already been agreed to be purchased; the services agreed to be obtained from Biomed

International (Pvt) Ltd being the service provider, be limited from 05 to 02 years; and a new division be established at the Ministry of Health to regulate those affairs.

- (t) Approval had been granted at the Cabinet meeting held on 29 July 2015 for the Cabinet Memorandum presented by the Minister of Health on 17 July 2015 with respect to the revisions mentioned in (s) above. However, the Secretary to the Ministry had again entered into an Addendum including the revision to reduce the number of Incinerators from 15 to 05 and the matters incidental there to on 01 December 2015 with the R.R. Taylor (Pty) Ltd. The discrepancies between the Agreements entered into on 12 December 2013, and the revised Agreements were as follows.

	Contract -----	Agreement entered into on 12 December 2013		Revised Agreement (Once the No. of Incinerators had been reduced to 05)	
		US \$ Millions	Rs. Millions	US \$ Millions	Rs. Millions
<b>1</b>	Contract Agreement  (Metamizer 20 / Incinerator 15/ Plant Room/ 500 Wheel Bins, 25 Nos. Carts for the transport of wheel bins including clearing, transportation, installation, commissioning, testing, training & maintenance, one year comprehensive maintenance warranty cover)	18.445	-	16.193	-
<b>2</b>	Service & Maintenance Agreement of 20 Metamizers.	2.475	90.090	2.475	90.090
<b>3</b>	Service & Maintenance				

Agreement of 15 Incinerators.	0.190	36.382	0.063	12.127
4 Agreement for Operation of Waste Management Systems.	-	325.773	-	325.773

(u) As mentioned below, the sum approved for the contract to purchase equipment and construct buildings as per those revisions, totaled US \$ 16.193 million.

Serial No.	Item	Quantity	Total Value
-----	-----	-----	-----
			US \$
(i)	Medivac MetaMizer 240SSS Biohazardous Waste Disposal Device with inbuilt Shredder, boiler, Water purifying unit, Odour management unit	20	14.027
(ii)	Incinco Incinerator FS50	05	0.996
(iii)	Plant Room with Annex (for Sterilizer + incinerator)	05	0.327
(iv)	Plant Room without Annex (only for Sterilizer )	15	0.843
(v)	Small plant Room (for incinerator)	Nil	Nil
(vi)	500 Wheel Bins, 25 Nos. Carts for the transport of wheel bins including clearing, transportation, installation, commissioning, testing, training & maintenance, one year comprehensive maintenance warranty cover		
			----- 16.193 =====



- (v) Once the scope of the project had been revised as mentioned above, the local agent - Biomed International (Pvt) Ltd, had been requested by the Ministry during 2016-2018 that the machines be installed at hospitals other than the ones mentioned in the Agreement. Particulars were given in Annexure 02.
- (w) Of the sum amounting to US \$ 16.193 million approved for the contract to purchase equipment and construct buildings, 85 per cent equivalent to US \$ 13.764 million had been obtained from the Export Finance & Insurance Corporation of Australia whilst the remaining 15 per cent or US \$ 2.429 million had been obtained from the Hatton National Bank. In order to settle the loan amount of US \$ 13.764 million obtained from the Export Finance & Insurance Corporation of Australia, in 20 half-yearly installments from the year 2017 up to 2026 whilst settling the loan obtained from the Hatton National Bank in 25 equal half-yearly installments within a period of 14 years after a grace period of 02 years, the Ministry of Finance had entered into Agreements with the relevant institutions on 17 December 2015 and 21 December 2015 respectively.
- (x) The following institutions had been involved in the implementation of this project.

Serial No. -----	Institution -----	Relevance -----
(i)	Ministry of Health, Nutrition and Indigenous Medicine	The overall supervision of the project, and responsibility for the implementation.
(ii)	R.R. Taylor (Pvt) Ltd of Australia.	Responsibility for the supply, installation and making the machines functional, and service & maintenance.
(iii)	Biomed International (Pvt) Ltd.	To act as the local agent of the supplier, thus collection & sterilization of clinical waste, and disposal of treated waste.
(iv)	Government hospitals, and hospitals under purview of the Provincial Councils.	Responsible for supervising the process of sterilizing the clinical waste.

- |      |                                  |   |
|------|----------------------------------|---|
| (v)  | Central Environmental Authority. | Responsible for the issue of clearances required for the management of clinical waste and environmental certificates, and taking follow up actions. |
| (vi) | Local Authorities.               | Institutions in which powers have been vested for the disposal of waste in the island.  |
- (y) As described in Annexure 02, twenty Metamizer machines and 05 Incinerators had been installed at the premises of 20 hospitals during the period of 03 years from 2016 to 2018.
- (z) Approval had been granted at the meeting of the Cabinet held on 30 January 2014 for the combined Cabinet Memorandum titled “ Entering into a tripartite agreement with the Sisily Hanaro Encare Pvt Ltd for the disposal of clinical waste as a national pilot project” that had been presented to the Cabinet on 07 January 2014 by the Minister of Health and the Minister of Environment and Renewable Energy while this project had been in progress. Furthermore, approval had also been granted at the Cabinet meeting held on 21 March 2017 to give a parcel of land in Muthurajawela to the Sisily Hanaro Encare Pvt Ltd on lease for a clinical waste management project. The Cabinet had approved at its meeting held on 26 June 2018 to enter into an agreement with Sisily Hanaro Encare Pvt Ltd for the disposal of clinical waste in Western, Southern, and Central provinces as had been requested by the Minister of Health in his Cabinet Memorandum presented to the Cabinet on 11 May 2018 requesting approval to further extend the centralized facilities for the management of dangerous clinical waste into the Western, Southern, and Central provincial health institutions through private investments.

## 2.2 Authority for Conducting the Audit

-----

The audit was carried out under my direction in pursuance of provisions in Article 154(1) of the Constitution of the Democratic Socialist Republic of Sri Lanka and provisions of the National Audit Act, No. 19 of 2018.

## 2.3 Approach of the Audit

-----

The Australian and domestic loan project had been implemented with the objective of managing clinical waste generated by the hospitals island wide, but due to immethodical or non-systematic approach followed by Government hospitals in disposing of clinical waste, it has come to the limelight on electronic and print media at the present day to discuss on the environmental impact thereof, and with careful attention being brought on the fact that an enormous expenditure is spent on the disposal of clinical waste through external parties, the necessity arose for selecting this topic in order to examine the reasons that caused the aforesaid project to become unsuccessful.

## 2.4 Objectives of the Audit

-----

- (a) To evaluate as to whether the clinical waste management process is taking place at Government hospitals in an economic, efficient, productive, and environmentally-friendly manner under this Project.
  
- (b) To evaluate as to whether the activities such as, the installation and maintenance of machines purchased for the management of clinical waste at the Government hospitals under the Project, collection of clinical waste, sterilization of waste, and disposal of waste after being treated, are taking place in accordance with the agreements.
  
- (c) To evaluate the payments made to a private company for the disposal of clinical waste despite this Project was in progress at Government hospitals for the same purpose.

## 2.5 Scope of the Audit and Limitations on the Scope

-----

### 2.5.1 Scope of the Audit

-----

- (a) The audit was carried out focusing on the period from the year 2010 up to December 2019.
- (b) Nine hospitals from 03 provinces wherein machines had been installed, were selected for audit. Particulars are given below.

Serial No.	Province	Hospital
-----	-----	-----
(i)	North Central	District General Hospital Polonnaruwa.
(ii)	North Western	Base Hospital, Marawila. District General Hospital, Chilaw. Teaching Hospital, Kuliypitiya. Teaching Hospital, Kurunegala.
(iii)	Sabaragamuwa	Teaching Hospital, Kegalle. Base Hospital, Karawanella Teaching Hospital, Ratnapura. District Hospital, Embilipitiya.

## 2.5.2 Limitations on the Scope

-----

It is stated that the scope of the audit was subject to the following limitations when conclusions were arrived at through the observations emphasized in this report.

- (a) Due to reasons such as, the project proposal revealed through the files as had been allegedly submitted by the R.R. Taylor (Pty) Ltd of Australia was not made available to the Audit, and failure in verifying as to whether the said proposal had been submitted to the Government of Sri Lanka or the Ministry of Health directly, no specific opinion could be given in that connection.
- (b) As the hospitals had not provided a dedicated electricity supply for the Metamizer machines, the number of units of electricity consumed by the machines and the cost thereof could not be computed. As such, a specific opinion could not be given in that regard.

- (c) Explanations could not be obtained for the reasons such as, failure in deploying persons with expertise for operating the machines that had been audited, and the hospital administration had not been provided with instruction manuals for the machines.

## 2.6 Methodologies Followed in Audit

-----

### 2.6.1 Obtaining Documentary Evidence

-----

- Basis plans.
- Agreements.
- Files.
- Payment vouchers.

### 2.6.2 Other Verifications Made

-----

Evidence was collected from the following sources that had been deemed significant so as to reach fair conclusions.

- Conducting interviews.
- Verification of information through field inspections.
- Study of files.
- Verification of information through questionnaires.
- Reading the media reports.

### 2.6.3 Physical Approach

-----

- (a) Verification of relevant cases through photographs taken during the field inspections.
- (b) Physical observation of the relevant machines and their functionality.

## 2.7 Audit Criteria

-----

- (a) The regulations imposed by the Central Environmental Authority that all forms of clinical waste are hazardous, and such waste should be sterilized within a period of 48 hours after being generated.
- (b) Section 68 of Part (a) of the Notice published in the Gazette Extraordinary, No. 1533/16 by the Ministry of Environment on 01 January 2008 necessitating the legal requirement of obtaining an Environmental Protection License- EPL for the disposal of clinical waste.
- (c) National Environmental (Protection and Quality) Regulations No. 01 of 2008 published by the Minister of Environment and Natural Resources on the Gazette Extraordinary, No. 1534/18 dated 01 February 2008 prohibiting the generation, collection, transportation, storing, and disposal of waste unless authorized through a license issued by the Central Environmental Authority.
- (d) Circular, No. 01-12/2006 issued by the Director General of Health Services on 21 March 2006 under the title “National Color Code for the Segregation of Hospital Waste”.
- (e) The Cabinet Decision, No. CP/14/0071/527/002 taken on 14 February 2014 to implement a national tripartite project for providing centralized incinerator facilities to dispose of clinical waste in consolidation with the Ministry of Environment and Renewable Energy/Central Environmental Authority and Sisily Hanaro Encare Pvt Ltd; and, Cabinet Decision, No. CP/17/0541/724/018 taken on 29 March 2017 to give a parcel of land in Muthurajawela in extent of 02 acres, 01 rood, and 23.99 perches to the Sisily Hanaro Encare Pvt Ltd on lease for a period of 30 years to implement the clinical waste management project at commercial level.
- (f) Cabinet Decision, No. CP/15/1130/616/065 dated 06 August 2015 requiring that clinical waste management systems be established at the Government hospitals under financial aid provided by Australia.

- (g) Sections 262 and 277 of the Penal Code (Cap. 19) stating that Whoever unlawfully or negligently does any act which is, and which he knows or has reason to believe to be, likely to spread the infection of any disease dangerous to life, shall be punished with imprisonment of either description for a term which may extend to six months, or with fine, or with both.
- (h) Conditions set out in the Agreement entered into by the Secretary to the Ministry of Health, Nutrition and Indigenous Medicine with the supplier company and the local agent on 12 December 2013, and the conditions mentioned in the Addendum entered into on 01 December 2015 in connection therewith.
- (i) Conditions set out in the Loan Agreement entered into by the Ministry of Finance with Export Finance & Insurance Corporation of Australia, and Hatton National Bank of Sri Lanka on 17 December 2015 and 21 December 2015 respectively.
- (j) Specifications on Metamizers provided by the supplier, and the handbook provided on functionality and maintenance of Incinerators.
- (k) Financial Regulations of the Government of Sri Lanka.
- (l) Report of the Project Committee.

### 3. Audit Observations

---

#### 3.1 Identification of the Issue relating to the Management of Clinical Waste

---

##### 3.1.1 Preliminary Studies on the Disposal of Clinical Waste

---

- (a) The initial study on waste management had been conducted by the Colombo Environmental Improvement Project – CEIP through an international

consultancy firm during the period 1994-1997. That study had identified the growing requirement of managing the clinical waste at the hospitals in Colombo and suburbs. Although the recommendations made by the project had been half-implemented at several medical institutions selected, that study had not provided a considerable contribution to control the disposal of clinical waste together with the normal waste.

- (b) A strongly-felt requirement had been identified in regard to the regulation of clinical waste with the commencement of projects to control the diseases such as HIV/AIDS and Tuberculosis under aid from the World Bank. Furthermore, failure of the medical institutions in adhering to the regulations of the National Environmental Act had caused a serious impact on the public health and the environment as well. In that backdrop, the Ministry of Health had prepared a 05 year National Action Plan and a situation analysis in the year 2001 targeting the period 2002-2006 in view of identifying a national policy for regulating the management of clinical waste and establishing strategies for resolving issues. It had been recommended in the said analysis that the clinical waste should be managed through incineration and sterilization (Autoclaves/Hydroclaves). Nevertheless, no action had been taken to adequately implement those recommendations.
  
- (c) Disposal of clinical waste had become a common issue among all the health related institutions and hospitals. Trends such as, increase in the amount of waste generated by the hospitals day by day, increase in the amount of waste due to increased number of surgeries and the researches relating to non-communicable diseases, increase in health related problems, increase in the usage of medicinal instruments, and changes in the techniques used in disposing clinical waste, were observed. However, until the project proposal for the establishment of clinical waste management systems had been submitted by the R.R. Taylor (Pty) Ltd of Australia in the year 2009, no preliminary studies had been conducted to identify this social and environmental problem having an impact on the entire health system and the future; nor had adequate action been taken in that connection as well.



### 3.1.2 Measures Taken on the Disposal of Clinical Waste

-----

Until this clinical waste management system was introduced under Australian and domestic loans that had been proposed in the year 2009 as an unsolicited project proposal, no action had been taken to identify or remedy the clinical waste management issue even under the Situation Analysis & National Action Plan prepared in the year 2001 targeting the period 2002-2006 or thereafter.

### 3.1.3 Feasibility Study

-----

- (a) A period of over 08 years had elapsed by the year 2009 since the feasibility study on the management of clinical waste had been conducted under the National Action Plan prepared in the year 2001 for a period of 05 years. Given the technological advances taken place during that period, the said feasibility study had become ill-timed and expired.
  
- (b) The feasibility study on the economy and environmental impact of the project had not been conducted in terms of Financial Regulation 3(2)(iii)(a) with respect to the Australian and domestic loan project proposal submitted in the year 2009, and the Memorandum of Understanding signed between the Ministry of Health and CME Medical (Pvt) Ltd of Australia (established thereafter as R.R. Taylor (Pty) Ltd) on 16 December 2010.

### 3.1.4 Deciding on the Suitability of Machines

-----

An engineer and an environmental officer being two officials of the Project Committee appointed by the Standing Cabinet Appointed Review Committee – (SCARC), had visited the CME Medical (Pvt) Ltd of Australia (established thereafter as R.R. Taylor (Pvt) Ltd) and carried out a physical inspection on the Metamizer machines. However, it was verified in accordance with an inspection report presented by those two officials that they had not had an opportunity to inspect the functionality of Incinerators as those machines had been manufactured in United Kingdom before being imported. As such, prior to entering into an Agreement for the purchase of 15 Incinerators at a cost of US \$ 2.989 million following an

unsolicited proposal submitted by an external institution, no verification had been obtained on the physical inspection, technical evaluation or functionality of those machines. Furthermore, no verification had also been obtained as to whether the purchased Metamizers would be functional under the climatic conditions in Sri Lanka.

### 3.1.5 Proceeding with the Australian and Domestic Loan Project Agreement

---

- (a) The scope, including the proposed cluster hospitals and preliminary locations for the installation of machines that had been recommended after this project being studied by the Project Committee appointed by the Standing Cabinet Appointed Review Committee –SCARC, had been revised by the Unsolicited Project Proposal Review Committee that had been appointed by the Cabinet Sub Committee on Economic Affairs in the year 2015. It had been agreed to implement the cluster schedule comprising 06 clusters for the management of clinical waste of the proposed 134 hospitals in accordance with the Section - “Waste Collection Plan of Hospitals Served by the Project” included in the initial Agreement signed by the Secretary to the Ministry of Health with the R.R. Taylor (Pty) Ltd on 12 December 2013, but that plan could not be implemented as the scope of the project had been revised.
- (b) Following the recommendations made at the meeting of the Cabinet Sub Committee on Economic Affairs held on 30 June 2015 and as per Cabinet Decision dated 29 July 2015, action should have been taken to shorten the Operating Agreement entered into with the Biomed International Pvt. Ltd, the local agent of the R.R. Taylor (Pty) Ltd, from 05 to 02 years thereby establishing a separate division in that connection at the Ministry. However, information relating to the decrease of the number of Incinerators by 10 and the matters incidental thereto had been included in the Addendum signed on 01 December 2015 though, the revision of the Operating Agreement being shortened from 05 to 02 years had not been included therein. Moreover, no action had been taken up to 20 May 2020 to establish a division a new at the Ministry for operating activities of the project. Accordingly, action had been taken without being compliant to the recommendations made by the Cabinet Sub Committee and the decisions taken by the Cabinet.

- (c) According to Section 5.1 of the Operating Agreement dated 12 December 2013, the annual operating fee for 20 Metamizer machines and 15 Incinerators totaled Rs. 325.773 million. Even though the number of Incinerators had been decreased from 15 to 05 through the Addendum signed on 01 December 2015, action had not been taken to revise the annual operating fee in line therewith, thus observing a risk of making overpayments to the relevant Company.

### 3.2 Installation of the Machinery

-----

#### 3.2.1 Changing the Plan of Hospitals where the Machines should have been Installed

-----

- a) Following the Cabinet Decision, dated 29 July 2015, the number of Incinerators had been decreased from 15 to 05 machines, but action had not been taken in parallel even up to May 2018 to revise and approve the Waste Disposal Equipment Distribution Plan included in the Agreement entered into between the Secretary to the Ministry of Health, R.R. Taylor (Pty) Ltd and Biomed International Pvt Ltd on 12 December 2013.
- b) The Australian and Domestic Loan Project Agreement entered into with awareness of the officials of 03 divisions of the Ministry namely, Project Division, Development Division, and Environmental Division, had been signed in the year 2013. The project would have been capable of dividing 134 hospitals into 06 clusters covering the entire country thus managing the clinical waste of each cluster. Despite that, and without drawing attention on the success of the Australian and Domestic Loan Project, the officials of the Ministry had presented recommendations required to obtain Cabinet approval on the proposal, “National pilot project for the disposal of clinical waste in the Western, Southern and Central provinces” that had been presented by the Sisily Hanaro Encare Pvt Ltd in the year 2014.
- c) Ten of the 20 Metamizer machines that had been in the agreement of Australian and Domestic Loan Project to be installed in the Western,

Southern, and Central provinces, had been removed from those 03 provinces; and, those machines had been installed in the Northern, Eastern, North Central, North Western, Sabaragamuwa, and Uva provinces, thus taking action to pave way for the pilot project proposal submitted by the Sisily Hanaro Encare Pvt Ltd. Particulars are given in Annexure 02.

- d) Contrary to the locations where 12 Metamizer machines and 03 Incinerators had initially been agreed to be installed as per the Waste Disposal Equipment Distribution Plan included in the Agreement entered into on 12 December 2013 between the Secretary to the Ministry of Health and the Companies, R.R. Taylor (Pty) Ltd & Biomed International Pvt Ltd, such machines had been installed at different locations. Particulars are given in Annexure 02.
- e) By the year 2020, ten of the 20 Metamizer machines had been installed at the Base Hospitals of Karawanella, Marawila, Akkaraipattu, Kalmunai, & Ashroff Hospital of Kalmunai, and the Teaching Hospital of Kuliypitiya, and the District Hospitals of Embilipitiya, Monaragala, Chilaw and Trincomalee where the cluster system had not implemented.
- f) In a backdrop wherein the Waste Disposal Equipment Distribution Plan had not been revised and approved as mentioned in (a) above, and the National Pilot Project for the disposal of clinical waste in the western, Southern, and Central provinces that had been proposed by the Sisily Hanaro Encare Pvt Ltd in the year 2014 was remaining functional as mentioned in (b) above, approval of the Cabinet was requested for the following 02 matters through the Cabinet Memorandum presented on 11 May 2018 by the Minister of Health, Nutrition, and Indigenous Medicine under the title of extending the centralized facilities to manage the clinical waste of the Government and private health institutions in the Western, Southern, and Central provinces through a private investment.
  - ❖ To enter into a commercial Agreement between the Ministry of Health and the Sisily Hanaro Encare Pvt Ltd for the disposal of clinical waste generated by the Government health institutions in Western, Central, and Southern provinces.

- ❖ To revise the Australian and Domestic Loan Agreement for the management of clinical waste in order to facilitate the aforesaid Company.

According to the observations made by the Minister of Finance and Mass Media on 29 May 2018 with respect to the said Cabinet Memorandum, it had been informed that a comprehensive analysis covering areas such as financial, environmental and other aspects be carried out by the Ministry of Health relating to the proposal requesting to revise the Australian and Domestic Loan Project Agreement for facilitating the Sisily Hanaro Encare Pvt Ltd, thus the results thereof be informed to the Cabinet; and, the said analysis be carried out through the experts of the subject.

Accordingly, the Minister of Health, Nutrition, and Indigenous Medicine had again reviewed the two projects by a note to the Cabinet on 22 June 2018 through a committee comprising experts and medical officers; and, the Cabinet had been informed that the proposed national clinical waste management plan was suitable for achieving the objectives expected by the Ministry in managing clinical waste in terms of financially and technically. The following observations are made in that connection.

- (i.) According to the observations made by the Minister of Finance and Mass Media, majority of the officials of the Committee appointed by the Secretary to the Ministry of Health in order to carry out an analysis covering financial, environmental and other aspects of the proposal to revise the Australian and Domestic Loan Project Agreement for facilitating the Sisily Hanaro Encare Pvt Ltd, had been the officers of the Ministry whereas experts of the subject had not been included in that committee. Moreover, a national clinical waste management plan had not been prepared by that committee thus depriving the possibility of taking optimum measures on the management of clinical waste.
- (ii.) Furthermore, evidence to the effect that the said committee had analyzed the relevant proposal technically, environmentally, and financially, was not included in the committee report dated 02 February 2018.

- (iii.) It had been endorsed under Recommendation 04 of the committee report that the clinical waste management activities in the 05 provinces of Northern, Eastern, North Central, North Western, Uva and Sabaragamuwa along with the cluster system be implemented in accordance with the Agreements entered into by the Secretary to the Ministry of Health with R.R. Taylor (Pty) Ltd and Biomed International Pvt Ltd on 12 December 2013. Nevertheless, the cluster system could not be implemented as the locations for installing the machines mentioned in the initial plan had later been revised.
  - (iv.) The Recommendation, No. 06 of the committee report proposed that the Ministry should hold discussions again with representatives of the Australian and Domestic Loan Project and Sisily Hanaro Encare Pvt Ltd, thus reaching a mutual agreement. However, it had not been so done.
  - (v.) It had been stated under Recommendation 07 of the committee report that revised agreements should be entered into by including the proposed changes, but it had not been so done.
  - (vi.) It had been stated under Recommendation, 09 of the said committee report that the 02 projects implemented through the Australian and Domestic Loan, and the Sisily Hanaro Encare Pvt Ltd should manage the clinical waste generated by all the hospitals, primary healthcare units, and MOH offices in the provinces relating to the projects. However, a proper methodology had not been in place for disposing the clinical waste generated by many hospitals even up to the date of this report.
  - (vii.) Recommendation, No. 11 of the committee report had proposed to install a Metamizer machine at the General Hospital of Matara, but it had not been so done.
- g) The observations mentioned from (a) to (f) above made it clear that, with the direct or indirect involvement of the officials of the Ministry so as for the contract for the disposal of clinical waste of the Western, Southern and

Central Provinces to be awarded to the Sisily Hanaro Encare Pvt Ltd, measures had been taken to enter into a commercial agreement favorable to the said company, revise the 03 provinces that had been covered by more than 50 per cent of the scope of the Australian and domestic loan project thereby debilitating the cluster system, and obtain Cabinet approval for revising the agreement of the Australian and domestic loan project with a view to managing the clinical waste only in the Northern, Eastern, North Central, North Western, Sabaragamuwa, and Uva provinces.

- h) Due to reasons such as 10 Metamizer machines and 08 Incinerators had been removed from the Western, Central and Southern provinces thereby entrusting the Sisily Hanaro Encare Pvt Ltd with the management of clinical waste in those 03 provinces, and those machines had been installed at locations other than the ones that had been agreed, an additional cost totalling Rs. 384.122 million had been incurred by the Government on the disposal of clinical waste generated by 21 hospitals inspected in the Western, Central and Southern provinces during the period 2016-2019, in addition to paying the loan instalments and interest of the Australian and Domestic Loan Project. Particulars are given in Annexure 03.

### 3.2.2 Handing Over of Machinery after being Inspected and Technical Instructions

---

- a) Twenty Metamizer machines and 05 Incinerators provided by R.R. Taylor (Pty) Ltd had been supplied and installed by their local agent, Biomed International Pvt Ltd, at the relevant hospitals by ensuring the machines' functionality. However, those machines had not been brought to the Register of Fixed Assets by those hospitals contrary to the Treasury Circular, No. 842 dated 19 December 1978. Moreover, the Ministry had not issued the directives even up to 24 February 2020 to issue those 25 machines to the relevant hospitals.
- b) Once the 20 Metamizer machines had been handed over to the relevant hospitals after being commissioned and tested, the software of the machines had been altered by the representatives of the R.R. Taylor (Pty) Ltd without

consent of the Project Engineer of the Ministry of Health and the hospitals. It was not verified as to the reasons that had caused the alteration of software within the warranty period of the machines itself. As such, it was not satisfactory in audit with respect to the durability, productivity, and economy of the machines.

- c) Copies of the Agreement for the purchase of machines and construction of buildings, service Agreement, and the operating Agreement that the Secretary to the Ministry had signed with the R.R. Taylor (Pty) Ltd and Biomed International Pvt Ltd, had not been provided for the hospitals in which the project had been in progress, even up to 15 February 2020. Furthermore, the relevant hospitals had not been provided with written instructions as to how this process should be executed. As such, the authorities of the hospitals in which the project had been in progress, had acted sans a clear understanding on the functionality of the project.

### 3.2.3 Idle and Underutilized Assets

-----

As the waste emitted by the Metamizer machine installed at the General Hospital of Ampara under this project on 27 February 2017, had been chunky, and lack of a methodology to dispose such waste, the machine remained idle and non-functional since the date of installation. Additionally, it was observed that the Metamizer machines installed at the other hospitals mentioned below had become non-functional on many occasions since the date of installation up to the date of this report. Particulars relating to some of such instances are given in Annexure 04.

Photo : Clinical waste being dumped near the hospital as the Metamizer machine of the Kurunegala Hospital had not been activated and the Incinerator had become non-functional.





### 3.2.4 Functionality of the Project

-----

- a) According to the cluster system implemented as per the Agreement entered into with the R.R. Taylor (Pty) Ltd and Biomed International Pvt Ltd on 12 December 2013, clinical waste from the nearby hospitals should have been transported through lorries to the centralized hospital where the machines had been installed; and, once incinerated, the remaining waste should have either been dumped at a landfill or disposed of at a location designated by the Local Authority. However, due to failure in obtaining a location suitable for dumping the waste treated by the machines, through the relevant Local Authorities, the process of disposing the treated waste at 19 other hospitals except the General Hospital of Ratnapura had become debilitated by the date of audit. Particulars are given in Annexure 02.
  
- b) The Ministry had not verified through an independent test that there had been no bacteria or other germs on the remains of clinical waste after being sterilized and shredded by the Metamizer machine, and such remains had been suitable for disposal through the methodology followed with respect to normal waste. Moreover, as the hospitals had put plastics such as syringes, and needles into the Metamizer machines, the treated remains

from the machines had contained pieces of plastic and needles. As such, there were instances in which the Local Authorities had downright refused to dispose of such remains. As the remains had remained dumped at the premises of the hospitals, the patient care services had been affected by such practices.

- c) Due to lack of a strict policy as to the categories of clinical waste to be treated by the Metamizer machines, and the failure of the Ministry of Health in properly apprising the hospital authorities in that connection, it was observed that different types of clinical waste had been put into the machines by each of the hospitals. Few examples are given below.

Serial No.	Hospital	Categories of Clinical Waste Put into the Machine
(i.)	Base Hospital, Marawila.	Only the clinical waste is put into the machine.
(ii.)	General Hospital, Badulla.	Only the clinical waste is put into the machine.
(iii.)	District General Hospital, Chilaw.	Clinical waste is put into the machine together with sharps.
(iv.)	Teaching Hospital, Kuliypitiya.	Clinical waste is put into the machine together with sharps.
(v.)	General Hospital, Polonnaruwa.	Clinical waste is put into the machine together with sharps. Remains from the Metamizer is incinerated by using the Incinerators.

Photo : Presence of pieces of plastic in the remains of waste after being sterilized and treated by the Metamizer.



d) According to the technical specifications prepared for the Metamizer machines, a period of 20 minutes is taken for one cycle of sterilizing the clinical waste whilst 03 cycles would take place within an hour. Nevertheless, it was verified during the physical inspection carried out on the machines installed at the following hospitals that one cycle had taken approximately an hour to complete.

Hospital	Time taken for One Machine Cycle
Base Hospital, Marawila	45 Minutes.
District General Hospital, Chilaw.	59 Minutes
General Hospital, Polonnaruwa.	54 Minutes

Photo : The Metamizer installed at the Polonnaruwa Hospital indicating 54 minutes for the completion of machine cycle at the physical inspection carried out by the Auditors on 02 December 2019 relating to the functionality of those machines.



- e) It was revealed in the physical inspection carried out by the Audit that the Metamizer machine had taken a warm-up period of 01-2 ½ hours each day the machine had been turned on. As the machines of the same model had taken different times for warming up, the amount of waste sterilized daily had become minimum.
- f) It was observed at the physical inspection carried out by the Audit at the Base Hospital of Marawila that the Metamizer had emitted warning signals (alarms) due to lack of pressure of the water supplied to the machine and stopped. Hence, a machine cycle had taken approximately 51 minutes for completion.

Photo : Time taken for the completion of one machine cycle at the Marawila Hospital.



- g) It was observed that the machine installed at the District Hospital of Chilaw had emitted warning signals indicating unusually-low oil levels in the tank supplying oil to the hydraulic system – an integral part of the Metamizer machines, and the machine had stopped recurrently during the sterilization process. In that backdrop, it was observed that the machine operator had disconnected the hydraulic sensor before turning on the machine.

Photo : The hydraulic sensor of the Metamizer machine installed at the Chilaw Hospital remains disconnected.



- h) It was the responsibility of the supplier to ensure smooth functioning of the machines with all the accessories during the period of agreement in terms of Section 4.1.1 of the Service and Maintenance Agreement entered into with the supplier. An odour management unit had been fixed to the machine in order to minimize the odour emanating from the remains of the waste sterilized by the Metamizer. However, the odour management units fixed to the machines at the hospitals in Marawila, Chilaw and Polonnaruwa, had become non-functional. It was hence observed that strong odour was prevailing around the areas nearby the machines.
- i) According to the specifications prepared for the Incinerators, temperatures in the primary chamber and the secondary chamber should have been maintained at 750-800 degrees of Celsius and 1000-1100 degrees of Celsius respectively. However, the thermometer in the primary chamber of the Incinerator installed at the General Hospital of Polonnaruwa had become non-functional whilst the temperature in secondary chamber had been around 629 degrees of Celsius. Due to insufficient temperature for the sharps to be burnt out, it was observed that unburnt waste had remained in the Incinerator. Furthermore, release of heavy smoke was observed due to incomplete burning process.

Photo: Temperature failing to reach the desired level during the burning process.



Photo: Presence of unburnt waste in the ashes disposed through the Incinerator installed at the Polonnaruwa Hospital.



### 3.3 Requirements to be Fulfilled While the Project is in Progress

-----

#### 3.3.1 Maintaining the Services

-----

- a) The Director of the Environmental and Occupational Health Division of the Ministry of Health who had served in the capacity of Project Director, had resigned in November 2017, but no action had been taken either to appoint a new Project Director or nominate a person responsible for proceeding the affairs of the project. However, the Audit was informed by the Secretary to the Ministry that a Project Director had been appointed in February 2020.
- b) According to Annexure X of the Agreement for the supply and installation of machines and construction of buildings dated 12 December 2013, it had been agreed by the Biomed International Pvt. Ltd to provide fuel for the Metamizer machines and Incinerators, waste bags, 500 wheel bins, 25 carts together with 11 purpose-built vehicles, 11 drivers, 36 unskilled laborers and operators, and 25 technicians. However, only waste bags, wheel bins, carts, and 19 operators and technicians had been provided whilst failing to fulfil the other requirements.
- c) The sum spent on fuel used for the operating Incinerators should have been incurred by the Biomed International Pvt Ltd in terms of Section 3.1 of the Agreement signed in the year 2013, but the said institution had not supplied fuel. The management of 04 hospitals in which the Incinerators had been installed, had spent a sum of Rs. 39,945,145 on fuel by 31 December 2019 as mentioned below.

Serial No.	Hospital	Amount of Diesel	Amount Spent	Observation
-----	-----	-----	-----	-----
		Liters	Rs.	
(i.)	General Hospital, Polonnaruwa.	163,350	16,726,490	Had not been reimbursed by the

				Company.
(ii.)	Provincial General Hospital, Badulla.	22,000	2,436,000	-Do.
(iii.)	Teaching Hospital, Jaffna.	171,802	17,737,255	No specific information had been made available.
(iv.)	Teaching Hospital, Batticaloa.	30,000	3,045,400	-Do.
		-----	-----	
		<u>387,152</u>	<u>39,945,145</u>	

### 3.3.2 Deployment of Staff

-----

According to the Cabinet Paper, No. 13/0416/509/021/TBR and the decisions taken at the meeting of the Cabinet held on 09 May 2013, approval of the Department of Management Services should have been obtained with respect to the cadre requirements of the project and payment of remuneration, and the approved cadre should have been deployed on part-time basis ensuring that the daily functions of the Ministry had not been affected. However, without obtaining approval in such a manner, and contrary to the said Cabinet Decision and the Management Services Circular, No. 01/2016 dated 24 March 2016, a sum totaling Rs. 3,945,476 had been paid as remuneration to 05 employees in the project staff relating to the period from September 2016 up to October 2019. Despite being informed by the Secretary to the Ministry on 23 July 2020 that approval had been obtained on the project staff, documentary evidence in that regard had not been furnished to the Audit.

### 3.3.3 Maintenance Works

-----

- a) The vapour outlet of the Metamizer machine installed at the Base Hospital of Marawila had remained blocked, and the tube had been detached. As such, a liquid produced with vapour while the machine was functioning, leaked out, but the agent had not taken corrective measures.



Photo: Vapour outlet of the Metamizer machine installed at the Marawila Hospital remains detached.



- b) It was observed that vapour had leaked from the Metamizer installed at the Base Hospital of Kegalle, water had been leaking from the Metamizer at the Base Hospital of Embilipitiya, and the door sensor of the Metamizer installed at the Kegalle Hospital had been uninstalled.

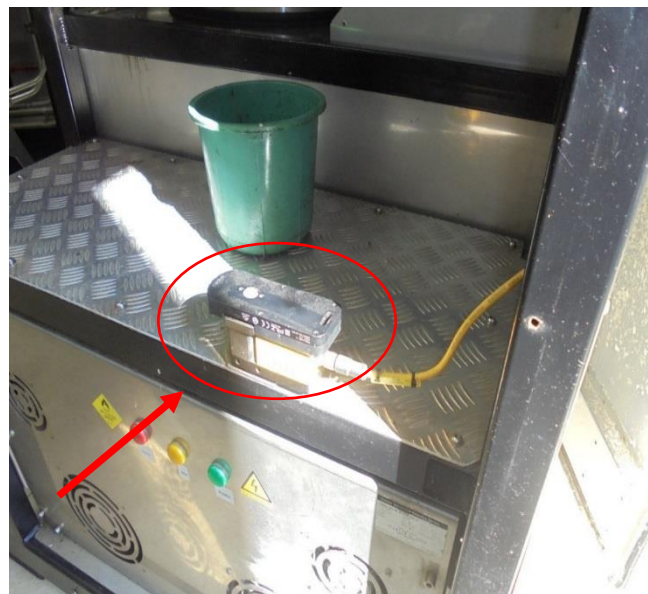
Photo: Vapour emanating from the Metamizer installed at the Base Hospital of Kegalle.



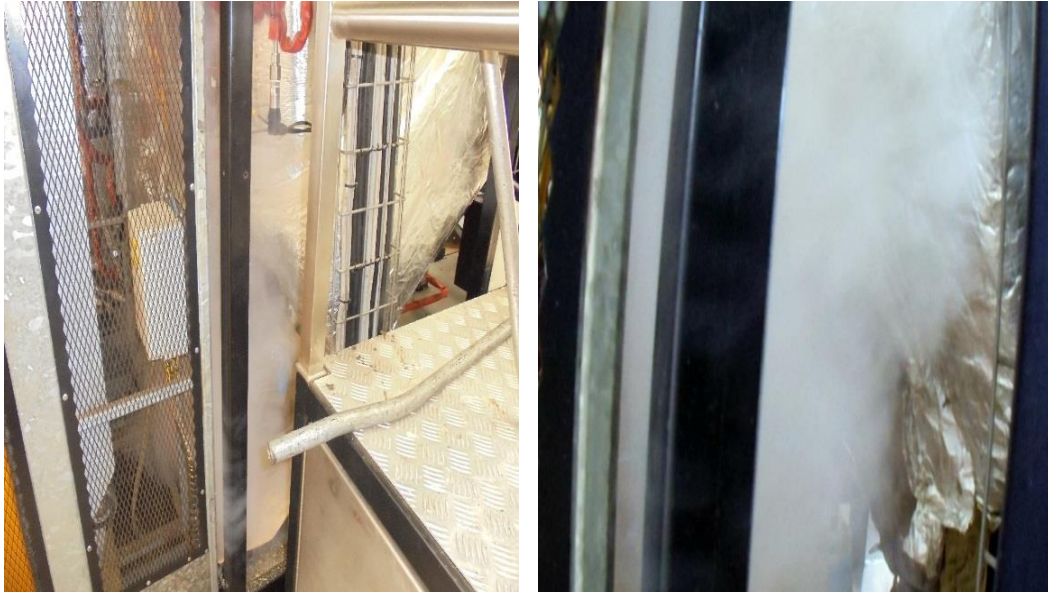
Photo : Water leaking from the Metamizer installed at the Embilipitiya Hospital.



Photo - Door sensor of the Meta Mizer machine in the Kegalle Hospital remains detached.



(c) It was observed that the waste sterilization process at the Kegalle Base Hospital was not properly in operation due to the emission of water vapor gas from the Meta Mizer machine of the hospital during the sterilization process.



- (d) In terms of paragraph 4.1.4 of the Services and Maintenance Agreement reached with RR Taylor (Pty) Ltd and Biomed International Pvt. Ltd, in case the relevant machinery is not in proper operation during the contract period, it shall be promptly notified to RR Taylor (Pty) Ltd or Biomed International Pvt.Ltd and it should be restored within 05 working days. However, defects found in the Meta Mizer machines installed at Marawila and Kegalle Base Hospitals had not been reported and rectified according to the agreement.

### 3.4 Achievement of Expected Objectives of the Project

---

#### 3.4.1 Management of wastes disposed after sterilization

---

- (a) Out of a sample of 09 hospitals subjected to the audit test check, the cluster system of 08 hospitals namely Marawila, Chilaw, Kuliypitiya, Polonnaruwa, Kegalle, Karawanella, Embilipitiya and Kurunegala had not functioned properly as specified in the agreement. As a programme to carry away the sterilized clinical waste and incinerated clinical waste from those hospitals by the local authorities had not been arranged with the mediation of the Ministry, the relevant waste had been dumped in the hospital premises.
- (b) It was confirmed that the waste dumped in the premises of Marawila Base Hospital was destroyed by re-incinerating in the same premises and the

Chilaw General Hospital was removing its waste from the hospital premises through a private supplier at a cost of Rs. 5,000 per ton. Accordingly, the Chilaw General Hospital had spent Rs. 770,000 in 2018/2019 to remove sterilized waste from the hospital premises. For the disposal of treated waste at the Kegalle Hospital, assistance from donors had been obtained.

- (c) The Polonnaruwa General Hospital had paid a total of Rs. 448,380 to the Municipal Council in 2018 and 2019 to remove the ash left over from the garbage incinerator at the rate of Rs. 14 per kilo of ash. However, due to failure in the identification of a method to remove the waste disposed of by the Meta Mizer machine through the local government authorities, such waste had accumulated in the hospital premises.

Photo - Waste removed from the Meta Mizer at Marawila Hospital being incinerated inside the hospital premises



Photo - Waste treated by Meta Mizer machine at the Chilaw General Hospital has been piled up in the hospital premises



- (d) Due to the failure to identify a method for disposing of the waste treated by the Meta Mizer of the Teaching Hospital, Kuliyaipitiya, such waste had been piled up in the hospital for months.

Photo: Treated waste piled up at Kuliypitiya Hospital



- (e) Due to the failure of the Municipal Council to remove the disposal from the Meta Mizer machine at the Kegalle Hospital, such waste had been dumped near a canal in the hospital premises and it was observed that there was a risk of the waste mixing with water sources during the rainy season.

Photo- Disposal from the Meta Mizer machine at the Kegalle Hospital had been dumped near a canal in the hospital premises

Photo- Disposal of Meta Mizer at Karawanella Base Hospital had been piled up on the hospital grounds due to not being taken away by the Municipal Council



### 3.4.2 Functionality of cluster hospitals on non-operation of cluster system

-----

Due to the subsequent changes of agreed locations for the installation of equipment purchased under the Australian and Domestic Loan Assistance Project, the contracted cluster plan could not be successfully implemented. Further, the services required to be provided under the operating agreement entered into with the Biomed International Pvt.Ltd had not been implemented in the contractual manner. Similarly, due to non-provision of suitable lands for disposal of treated waste as agreed by the Ministry in consultation with the relevant local government authorities and non-payment of operating fees duly, the Local Agent had quit the operational services which had been activated to some extent in the Sabaragamuwa Province up to 30 June 2019. By February 2020, the local agent had attached only

one machine operator to a hospital, and had contracted out other contract services such as waste collection and treated waste removal. As a result, it was observed that some hospitals in the Sabaragamuwa Province incinerated clinical waste and sharp waste within the hospital premises after July 2019.

### 3.4.3 Minimization of improper disposal of clinical waste

-----

Despite the operation of two clinical waste disposal projects through the Ministry of Health, it was confirmed by the following matters that the level of improper disposal of clinical waste in hospitals had not been minimized

- (a) Sharp waste disposed from the Marawila Base Hospital had been burnt inside the hospital premises and plastic and sharp parts of unburnt syringes had been dumped inside the hospital premises.

Photo - Clinical waste dumped at Marawila Base Hospital had been set on fire inside the hospital premises





Photo: Sharp waste of the Marawila Base Hospital had been dumped in the hospital premises





- (b) While the sharp waste from the Marawila Base Hospital was being burnt in the hospital premises, cleaning service staff of the hospital had been engaged in cleaning the area nearby.



- (c) Although there was a Meta Mizer machine and a small incinerator in the Karawanella Hospital, Em (Pvt) medicine phials had been disposed of in the hospital premises.

Photo- Em (Pvt) medicine phials released into the environment by Karawanella Hospital



#### 3.4.4 Reaching the Expected Performance Level by the time of Repayment of Loan Installments

---

As per the agreement reached with R.R.Taylor (Pty) Ltd of Australia, the supplier of machinery and equipment, the project period was 24 months from 31 December 2015 to 31 December 2017. Of the total loan amount of US \$ 16.19 million obtained for this project, 85 per cent or US \$ 13.76 million had been obtained from Export Finance and Insurance Corporation of Australia and the remaining 15 per cent or US \$ 2.43 million or Rs. 369 million had also been borrowed from Hatton National Bank. The Ministry of Finance had agreed to pay the loan obtained from the Export Finance and Insurance Corporation of Australia in 20 installments equivalent to US \$ 688,231.36 with effect from 15 June 2017 and the loan from Hatton National Bank in 25 equal installments of US \$ 97,162.07 within 14 years after a grace period of 2 years. Although the objectives of the project had not been fully implemented due to the non-implementation of the waste management cluster plan agreed with RR Taylor (Pty) Ltd for clinical waste management under the project, a sum of Rs. 621.11 million equivalent to US \$ 3.77 million as loan installments and Rs.294.27 million equivalent to US \$ 1.8 million as loan interest had been paid by the External Resources Department to the relevant institutions.

#### 3.4.5 Cost Benefit Contribution

---

- (a) In terms of the report dated 12 March 2012 relating to the physical inspection of the Meta Mizer machines carried out in Australia by two members of the Project Committee appointed by the Standing Review Committee appointed by the Cabinet of Ministers, it had been stated that the recurrent expenditure to be incurred on sterilizing and incinerating clinical waste from the Meta Mizer and Incinerator machines imported by this project is Rs. 23 per kg of waste and that the cost would be Rs. 62.50 per kilo of waste to obtain the service from outside and accordingly the Australian and Domestic Loan Assistance Project would be highly productive. Nevertheless, it had been stated according to the Note to Cabinet submitted by the Minister of Health on 22 June 2018 to the Cabinet that the cost for the disposal of waste under the Australian and Domestic Loan Assistance Project would be Rs. 212 per kilo for waste and it could be carried out by

outside parties at a cost of Rs.103 per kilo, thus resulting a saving of Rs. 109 per one kilo of waste to the Government.

- (b) In view of the above matters, the Cabinet approval had been granted on 26 June 2018 to enter into a commercial agreement with Sisili Hanaro Encore, a private company, for a contract for the disposal of clinical waste in the Western, Southern and Central Provinces. According to the above cost conditions, it was observed that no cost benefit whatsoever could be gained from the implementation of this Australian and Domestic Loan Assistance Project.
- (c) Likely, no evidence has been presented to confirm as to how the amount of Rs. 23 per kilo for waste disposal which was stated to be spent during the implementation of this project in 2012 has been increased to Rs. 212 per kilo by the year 2018 or as to how the amount of Rs. 62.50 per kilo which was stated to be spent in 2012 to carry out this task through the private sector has been increased to Rs.103 by the year 2018.

#### 3.4.6 Build Bargaining Power for External Parties

-----

- (a) The Finlay Rentocill (Pvt) Ltd, which used to dispose of clinical waste at government and private hospitals in Colombo and its suburbs prior to 2014 had refused to provide their service. Thereafter, action had been taken to award that contract to Sisily Honaro Encore Pvt. Ltd. and to set up a waste incinerator at Mulleriyawa East Hospital. Due to protests by residents in the area, a court order has been issued to suspend the activities of incinerator at the Mulleriyawa East Hospital with effect from 30 October 2018.
- (b) Subsequently, on 16 October 2019, the Ministry of Health had paid Rs. 17.69 million to the Sisily Hanaro Encore Pvt. Ltd from the provisions of the Australian and Domestic Loan Assistance Project in order to temporarily store clinical waste collected in hospitals in the Western, Southern and Central Provinces in containers until the construction of a garbage incinerator in Kerawalapitiya is completed by the Sisily Hanaro Encore Pvt. Ltd
- (c) Due to failure in implementing the Cluster Waste Disposal Process even by 31 December 2019 under the Australian and Domestic Loan Assistance

Project, which has been in operation since 2013 and due to the fact that Sisily Honaro Encore Pvt. Ltd is the only outsider currently involved in the clinical waste disposal process in the health sector, it was observed that a monopoly was developing to the company on the disposal of clinical waste. Although the amount paid to Sisily Hanaro Encore Pvt. Ltd. for the disposal of a kilogram of clinical waste was Rs. 67 by the year 2018, it was observed that this monopoly had a direct impact on the increase of that amount to Rs. 103 by the year 2019.

#### 3.4.7 Environmental Impact

- 
- (a) In terms of these project agreements, it was the responsibility of the supplier and his local agent to obtain the Environmental Protection Licence for Clinical Waste Management and the License for Scheduled Waste Management. Nevertheless, out of the 20 hospitals that were installed with Meta Mizer machines, 06 of the 09 hospitals inspected had not obtained the Environmental Protection Licence while 08 hospitals had not obtained the required licence for Scheduled Waste Management.
  
  - (b) Since the Ministry of Health together with the Local Government Authorities had not made arrangements to properly dispose of the waste sterilized and incinerated by Meta Mizer and Incinerator, some hospitals had burnt the waste discarded as treated waste within the hospital premises itself. The high levels of black smoke and foul odor emitted to the air during the waste sterilization process had posed impact on the environment.

Photo- Incineration of waste released from the Meta Mizer within the hospital premises by the Marawila Hospital.



- (c) Due to the inadequate height of the chimney of the incinerator of the Polonnaruwa Hospital, the wards and houses around the hospital had been affected by the smoke. Similarly, it was further observed that the Meta Mizer machines were subjected to various technical faults and toxic fumes were added to the environment from various places in the relevant machines.

Photo- Chimney of the incinerator of the Polonnaruwa Hospital remains at a low level.

Photo- Steam coming out of the Meta Mizer machine at Ratnapura Hospital



Photo- Steam coming out of the Meta Mizer machine at Kegalle Hospital



- (d) Since waste treated by these machines had been disposed of in various places and heaped up untidily in the hospital premises, there was a possibility in accumulating these waste natural water courses and the environment. As the treated waste that had accumulated in the Kegalle Hospital premises for about a year had been dumped near a canal that flows into the Kegalle Oya, there was a risk of such waste entering the Kegalle Oya.

Photo - Waste discarded from Meta Mizer of the Kegalle Hospital remains dumped on both sides of the canal.



#### 3.4.8 Other Issues

- 
- (a) Many Meta Mizer machines had been installed near patient wards in hospitals, thus causing inconvenience to patients receiving treatment in those wards due to the stench and fumes emanating from those machines. It was observed during the physical audit test check that the waste management yard had been set up in the center of the ward complex of the Chilaw Hospital, which emanates a strong stench to the surrounding wards. Likely, there was no cover on the top of the chimney of the incinerator of the Polonnaruwa Hospital and therefore rain water could not be prevented from entering the burner.

Photo- Waste Management Yard located near the wards of Chilaw Hospital.



Photo- Chimney of the incinerator without top cover at the Polonnaruwa Hospital.



- (b) It was revealed through various media that, in the recent past, disposal of clinical waste had not been properly carried out in hospitals and such waste had been dumped in hospital premises. It was further revealed that other contractors who had been contracted to dispose of the waste were untidily dumping the clinical waste on the roads and in various locations. Thus, it was confirmed that the disposal of clinical waste in the country was not successfully in operation.

#### 4. Recommendations

-----

- 4.1 A National Plan for Clinical Waste Management should be prepared and implemented so as to cover Central Government Hospitals and Provincial Council Hospitals.
- 4.2 All hospital authorities shall obtain an Environmental Protection Licence and a Scheduled Waste Management Licence annually for the disposal of clinical waste.
- 4.3 Action should be taken to examine and identify the parties responsible for failure

- in proper implementation of the recommendations of the Cabinet Sub-Committee and the decisions of the Cabinet of Ministers and to take appropriate measures.
- 4.4 The annual operating charge shall be revised comparatively to reduction of the number of machines in accordance with Section 5.1 of the Project Operations Agreement, which includes in the Australian and Domestic Loan Assistance Project Agreement dated 12 December 2013.
  - 4.5 All forms of clinical wastes are hazardous wastes and as such, a mechanism should be established to sterilize them within 48 hours of their generation.
  - 4.6 A revised agreement shall be reached incorporating subsequent changes made to the original agreement of the Australian and Domestic Loan Assistance Project.
  - 4.7 Hospitals and health institutions that dispose of clinical waste at present in the vicinity of hospitals where machines have been installed should be identified and a new cluster plan should be developed and implemented.
  - 4.8 In accordance with the Cabinet decisions, a formal programme should be formulated and implemented to maintain these clinical waste disposal activities continuously and efficiently after 02 years of service of the Agency.
  - 4.9 The directors of the hospitals where the machines are installed and the infection Control units should be given relevant instructions by a Ministry Circular and action should be taken to include the machines in the Register of Fixed Assets.
  - 4.10 Immediate steps should be taken to make the Meta Mizer machine installed at the Ampara District General Hospital operational.
  - 4.11 In the event of malfunctions and defects of the machines, an appropriate mechanism should be introduced to make them operational expeditiously.
  - 4.12 Places for disposal of treated waste should be identified in consultation with the Ministry of Health and the Ministry of Local Government .
  - 4.13 Action should be taken to verify through an independent examination the fact that



the materials remain after the sterilization of clinical waste entered in the Meta Mizer are free of bacteria or other germs and inform to that effect to the local authorities.

- 4.14 Steps should be taken to precisely identify the clinical waste to be disposed of by Meta Mizer machines and Incinerator machines and to inform the hospital authorities thereon .
- 4.15 In the initial stage of operation of the Meta Mizer, action should be taken to resolve the technical issues on exceeding the time to reach its optimum temperature level for each sterilization cycle than the time specified in the agreed specifications.
- 4.16 Action should be taken to resolve technical issues affecting the maintenance of the optimum temperature level required for the proper functioning of the incinerators.
- 4.17 Steps should be taken to obtain the required fuel, customized vehicles, drivers and unskilled labours from the relevant agency for the machinery to be supplied in terms of the agreements.
- 4.18 Money spent by the Ministry on fuel for incinerator machines should be recovered from the agency of the machine supplier.
- 4.19 Remunerations paid for staff appointed without the approval of the Department of Management Services should be recovered from the responsible parties.
- 4.20 On completion of the operation of this project, a suitable mechanism should be identified to manage the clinical waste utilizing these machines.
- 4.21 Appropriate measures should be taken to prevent dumping and re-incinerating the treated waste disposed of by the Meta Mizer by some hospitals and thereby to prevent contaminants from mixing with the water courses during the rainy season; to prevent uneconomic expenditure incurred on the disposal of such treated waste by other suppliers, and to minimize damage to the environment.
- 4.22 Despite the installation of Meta Mizer and Incinerator machines, some hospitals had unsystematically disposed of syringe needles and Em(Pvt) medicine bottles in the hospital premises and therefore appropriate action should be taken in this regard.

- 4.23 Action should be taken to prepare and implement plans and take follow up actions thereon for the task of achieving the desired objectives of the project economically, effectively and efficiently during and after the project period as well as to utilize the funds adequately and appropriately for that purpose.
- 4.24 Due to signing of clinical waste disposal agreements with another private entity by changing about 50 per cent of the planned scope of the Australian and Domestic Loan Assistance Project, the waste management cluster plan designed to be implemented under this project had become debilitated. Accordingly, necessary corrections should be made by focusing attention on the failure of the project to achieve the desired objectives due to installation of machinery in other hospitals without formal approval outside the proposed hospitals to install machines as per the original plan and its failure to establish a new cluster plan according to the hospitals where the machines had been so installed.

W.P.C. Wickramaratne  
Auditor General

..... October 2021

Province -----	(District) -----	Machine -----	Hospital where the machine is installed -----	Hospitals belonging to the cluster -----
Cluster-1 Western	Colombo	Meta Mizer	Incinerator	Sri Jayawardanapura
		Meta Mizer	Incinerator	Prison, Borella Police Hospital De Zoysa Hospital for Women Lady Ridgeway Hospital for Children IDH, Angoda - Mulleriyawa
		Incinerator	Base Hospital, Homagama	National Eye Hospital STD Clinic Avisawella Hospital
	Gampaha	Meta Mizer	Incinerator	Rehabilitation Hospital – Ragama Regional Hospital - Kandana Wijaya Kumaratunga Hospital Mahara Prison Handala Kelaniya
		Meta Mizer	Incinerator	Negombo Wathupitiwala Mirigama

	Kalutara	Meta Mizer		Kalutara	Beruwala Darga Town Aluthgama Panadura Horana
<b>Cluster-2</b>					
North Western	Kurunegala	Meta Mizer		Kurunegala	Kuliyapitiya Nikaweratiya Polpithigama Galgamuwa Dambadeniya
	Puttlam	Meta Mizer	Incinerator	Chilaw	Puttlam Marawila Dankotuwa Anamaduwa Kalpitiya Mundalama
North Central	Anuradhapura	Meta Mizer	Incinerator	Anuradhapura	Thambuttegama Padaviya Medawachchiya Nochchiyagama Kekirawa Kahatagas Digiliya Kebathigollewa
	Polonnaruwa		Incinerator	Polonnaruwa	Medirigiriya Welikanda

					Hingurakgoda
<b>Cluster-3</b>					
Central	Kandy	Meta Mizer		Kandy	Theldeniya Mathale Dambulla
		Meta Mizer	Incinerator	Peradeniya	Sirimavo Bandaranayaka Gampola Nawalapitiya Theldeniya
	Nuwara Eliya		Incinerator	Nuwara Eliya	Dickoya Rikillagaskada Maskeliya Walapane
<b>Cluster-4</b>					
Southern	Galle	Meta Mizer	Incinerator	Karapitiya	Mahamodara Balapitiya Elpitiya Udugama Ambalangoda
	Matara	Meta Mizer		Matara	Kamburupitiya Weligama Akuressa Dickwella Deniyaya
	Hambantota	Meta Mizer	Incinerator	Hambantota	Tissamaharamaya Walasmulla

**Cluster-5**  
(Uva)

Badulla

Meta Mizer

Incinerator

Badulla

Beliatta  
Tangalle

Diyathalawa  
Bandarawela  
Welimada  
Mahiyanganaya  
Monaragala  
Wellawaya  
Siyambalanduwa  
Bibila  
Passara  
Buttala

Sabaragamuwa

Ratnapura

Meta Mizer

Incinerator

Ratnapura

Embilipitiya  
Kahawatta  
Balangoda  
Ehaliyagoda  
Kolonna  
Kalawana

Kegalle

Meta Mizer

Kegalle

Mawanella  
Karawanella  
Warakapola  
Rambukkana  
Aranayaka  
Undugoda

**Cluster-6**

North	Jaffna	Meta Mizer	Incinerator	Jaffna	Point Pedro Thelippalai Kyts Chawakachcheri
	Vavuniya	Meta Mizer		Vavuniya	Mulathive Mannar Kilinochchi Weddikulam
East	Batticaloa	Meta Mizer		Batticaloa	Walachchena Kalavanchikudi
	Trincomalee		Incinerator	Trincomalee	Kanthale Muthur Kinniya
	Ampara	Meta Mizer		Ampara	Akkareipattu Dehiattakandiya Mahaoya Samanthurai Ashraff Memorial Hospital Kalmunai North

Annexure- 02

Details of the locations where agreements were reached to install Meta Mizer and Incinerator machines and locations where the machines were installed .

Serial No	Locations where machines were Proposed to be installed asper the agreement	Locations where the machines were installed
<b>01</b>	<b><u>Meta Mizer</u></b>	
1.1	Colombo South Teaching Hospital	Western Province
1.2	National Institute of Mental Health, Angoda	
1.3	Colombo North Teaching Hospital	
1.4	District General Hospital, Gampaha	
1.5	General Hospital, Kalutara	
1.6	Teaching Hospital, Kandy	Central Province
1.7	Teaching Hospital, Peradeniya	
1.8	Teaching Hospital, Karapitiya	Southern Province
1.9	General Hospital, Matara	
1.10	General Hospital, Hambantota	
1.11	General Hospital, Vavuniya	
1.12	Teaching Hospital, Jaffana	
1.13	Teaching Hospital, Kurunegala	Teaching Hospital, Kurunegala
1.14	District General Hospital, Chilaw	District General Hospital, Chilaw
1.15	District General Hospital, Ampara	District General Hospital, Ampara
1.16	Teaching Hospital, Anuradhapura	Teaching Hospital, Anuradhapura
1.17	Provincial General Hospital, Badulla	Provincial General Hospital, Badulla
1.18	District Hospital, Ratnapura	District Hospital, Ratnapura
1.19	Teaching Hospital, Kegalle	Teaching Hospital, Kegalle



1.20	Teaching Hospital, Batticaloa		Teaching Hospital, Batticaloa
<u>02</u>	<u>Incinerator</u>		
2.1	Colombo South Teaching Hospital	Western Province	-
2.2	Angoda Hospital		-
2.3	Hospital for Respiratory Diseases, Welisara		-
2.4	Colombo North Teaching Hospital		-
2.5	Teaching Hospital, Peradeniya	Central Province	-
2.6	General Hospital, Nuwara Eliya		-
2.7	Teaching Hospital, Karapitiya	Southern Province	-
2.8	General Hospital, Hambantota		-
2.9	District General Hospital, Chilaw		-
2.10	General Hospital, Ratnapura		-
2.11	General Hospital, Trincomalee		Base Hospital, Thelippalei
2.12	Teaching Hospital, Anuradhapura		Preliminary Care Unit, Omaththei
2.13	Teaching Hospital, Jaffna		Teaching Hospital, Batticaloa
2.14	Provincial General Hospital, Badulla		Provincial General Hospital, Badulla
2.15	District Hospital, Polonnaruwa		District Hospital, Polonnaruwa

## Additional costs incurred by the Government due to changes in the machinery installation plan

Serial No.	Hospital	Payments made to Sisilia Hanaro Encare Pvt. Ltd. for the disposal of clinical waste from 2016	Other expenses incurred thereon	Total amount spent
		Rs.	Rs.	Rs.
1	National Hospital - Kandy	86,187,345	17,995,318	104,182,663
2	Teaching Hospital-Karapitiya	82,102,112	105,000	82,207,112
3	Teaching Hospital- Kalubowila	44,819,628	-	44,819,628
4	Teaching Hospital- Peradeniya	30,151,004	-	30,151,004
5	Genera Hospital- Kalutara	28,070,846	-	28,070,846
6	District Genera Hospital- Matara	899,042	15,968,141	16,867,183
7	De Soysa Hospital for Women	11,395,111	-	11,395,111
8	Lady Ridgeway Hospital for Children	6,087,279	5,262,147	11,349,426
9	Base Hospital - Elpitiya	-	11,128,316	11,128,316
10	District Genera Hospital- Gampaha	-	9,262,877	9,262,877
11	Base Hospital – Wathupitiwala	-	8,593,786	8,593,786
12	Base Hospital – Colombo East	7,066,369	-	7,066,369
13	National Eye Hospital	5,594,462	-	5,594,462
14	National Institute of Mental Health	3,474,479	707,180	4,181,659
15	Rehabilitation Hospital - Ragama	3,117,390	-	3,117,390
16	District General Hospital - Matale	-	2,513,000	2,513,000
17	Base Hospital - Walasmulla	-	1,791,181	1,791,181
18	Base Hospital - Balapitiya	690,703	-	690,703
19	Colombo North Teaching Hospital - Ragama	665,437	-	665,437
20	Wijaya Kumaratunga Memorial Hospital	197,547	104,000	301,547
21	General Hospital - Nuwara Eliya	171,962	-	171,962
				384,121,662

## Details on non-functionality of Meta Mizer machine

Serial No.	Place of Inastallation	Description on dysfunctionality
1	Provincial General Hospital- Badulla	From 25 to 31 July 2018 From 01 to 03 August 2018 From 14 to 31 August 2018 From 01 to 29 September 2018 From 01 October to 05 November 2018 From 23 November to 27 December 2018 From 18 to 29 September 2019 From 05 to 11 October 2019 From 08 April to 15 May 2020
2	Preliminary Health Medical Unit, Vavuniya	From 01 January to 15 July 2019
3	Teaching Hospital - Batticaloa	From 18 October 2019
4	Teaching Hospital - Kurunegala	From 11 April to 14 October 2019
5	General Hospital – Trincomalee	From 04 to 28 August 2019
6	Base Hospital – Kegalle	From 11 November 2019 to January 2020
7	District General Hospital - Embilipitiya	November and December 2019
8	Base Hospital - Thelippalai	From June to October 2019