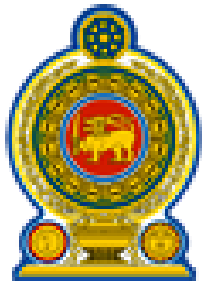


Public awareness, community engagement & enforcement programmes in Sri Lanka to mitigate the impacts from plastic burning

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Central Environmental Authority
Ministry of Environment
Sri Lanka





மெசம் சரீசர் ஐவிகாரீச
மத்திய சுற்றாடல் அதிகாரசபை
Central Environmental Authority



Our Vision

A Clean & Green
Environment
through
Service Excellency

Our Mission

Flagship of the nation in protecting
and managing the environment
by
coordination, public participation,
enforcement, appropriate
technological interventions,
education and awareness





Content



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2. Impacts of Plastic burning
3. Current Status of Plastic Use and Waste Management in Sri Lanka
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5. CEA's Regulatory and Operational Role in Preventing Open Burning of Plastics
 - a. Enforces the National Environmental Regulations
 - b. Environmental Protection Licenses (EPLs) that prohibit burning in licensed premises
 - c. Conducting awareness programmes.
 - d. Conducting surveys to monitor the effectiveness of the regulations
5. Challenges and Implementation Gaps
6. Way forward for an effective enforcement





1. Open Burning of Waste: Sri Lanka's Regulatory focus on Plastics

- Many strategic approaches are implemented for waste management in Sri Lanka focusing on improving collection, recycling and disposal.
- However, open burning remains a persistent challenge in many communities.
- Among the different waste types, plastic waste has drawn special attention due to its toxic emissions.
- As a result, Sri Lanka has imposed a regulation to prohibit the open burning of plastics.
- This presentation therefore focuses on the policies, awareness programmes, and enforcement mechanisms established to prevent plastic waste burning.





2. Impacts of Plastic burning



a.) Air Pollution

- Releases **Dioxins, Furans**, fine particulate matter (**PM_{2.5}**), PCBs and heavy metals into the air.
- Open burning of waste is estimated to release more than 40% of global dioxin emissions.
- Dioxins are persistent organic pollutants that accumulate in the food chain and can cause cancer in humans.
- One ton of burned plastic can emit up to 3 tons of CO₂ equivalent.





Impacts of Plastic burning continued..

b). Cause human health risks

TOXIC CHEMICALS RELEASED BY PLASTIC BURNING



CARBON MONOXIDE
 BENZENE, HYDROXYMETHOXYBENZALDEHYDE, PHENOL, CYCLOPENTASILOXANEDECAMETHYL

GREENHOUSE GASES
 DECANE, OCTANE, TRICHLOROFUOROMETHANE

FURANS
 ETHANOL, NAPHTHALENE

ETHYL
 TETRACHLOROBENZOFURANE, TRICHLOROPHENOL

LEAD
 ALCOOL, CHLOROFORM

ETHYL
 BENZOIC ACID, BENZYL BUTYLPHTHALATE

MERCURY
 CAFFEINE, DIMETHYLCYCLOPENTANE

DIOXINS
 ACETONE, FORMIC ACID, HEXACHLOROBENZENE

FLUORENE
 PENTACHLOROBIPHENYL, XYLENE, CHLOROBENZOIC ACID

BURNING OF PLASTIC IS DANGEROUS FOR YOUR HEALTH



Damage the nervous system - HEADACHE, STROKE

Disrupt endocrine system and provoke imbalance hormones - COUGH

Provoke heart disease - ASTHMA

Cause and aggravate respiratory diseases - EMPHYSEMA

Cause kidney & liver disease - ALLERGIES

Create skin rashes - HEARTH ATTACK

Affect reproductive system - INFERTILITY

Modify DNA
 Develop cancers
 Affect immune system

RESIDUAL ASH IS TOXIC

Sources: Thanal, GAIA, WECF, HRW, WHO, EPA, EduGreen TERI, Carahhealth.com





Impacts of Plastic burning continued..

c). Environmental contamination

- Deposition of toxic pollutants (dioxins, furans, heavy metals, PAHs) onto soil, water bodies, crops, and vegetation; these bio accumulate in food chains and persist for decades.
- Soil near open burning sites often shows elevated persistent organic pollutants (POPs) concentrations above safety limits.
- Dioxins and furans bind to organic matter in soil and sediments, slowly degrading over years to decades.
- Pollutants enter irrigation water and surface waters, affecting fish and aquatic ecosystems.

d). Loss of resources

- Destroys potentially recyclable plastics, undermining circular economy goals.

e). Climate impact

- Contributes to greenhouse gas emissions (CO₂, methane, black carbon).





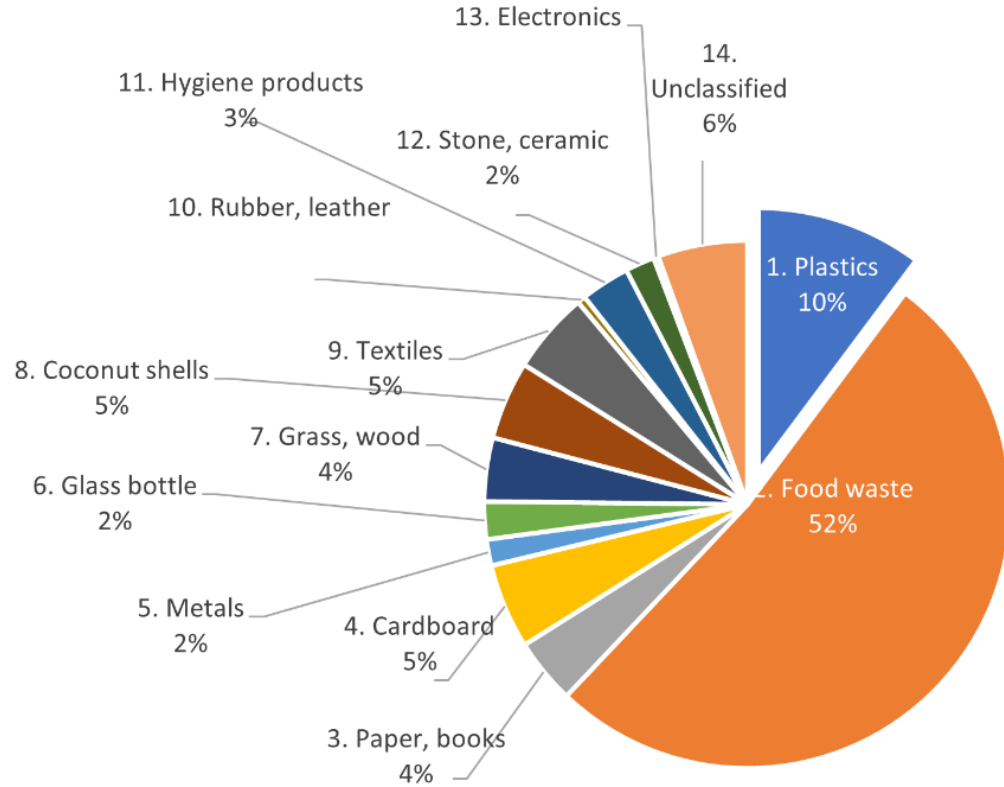
3. Current Status of Plastic Use and Waste Management in Sri Lanka

- Sri Lanka is a country with a population of 21.4 million. Sri Lanka generates 12000 MT of solid waste per day.
- The most common plastic waste products are polyethylene bags, straws, yoghurt cups, mega bottles, lunch sheets, milk packets, meal boxes, sachet packets and wrappers.
- According to the graph below 10 % of municipal waste is plastic.

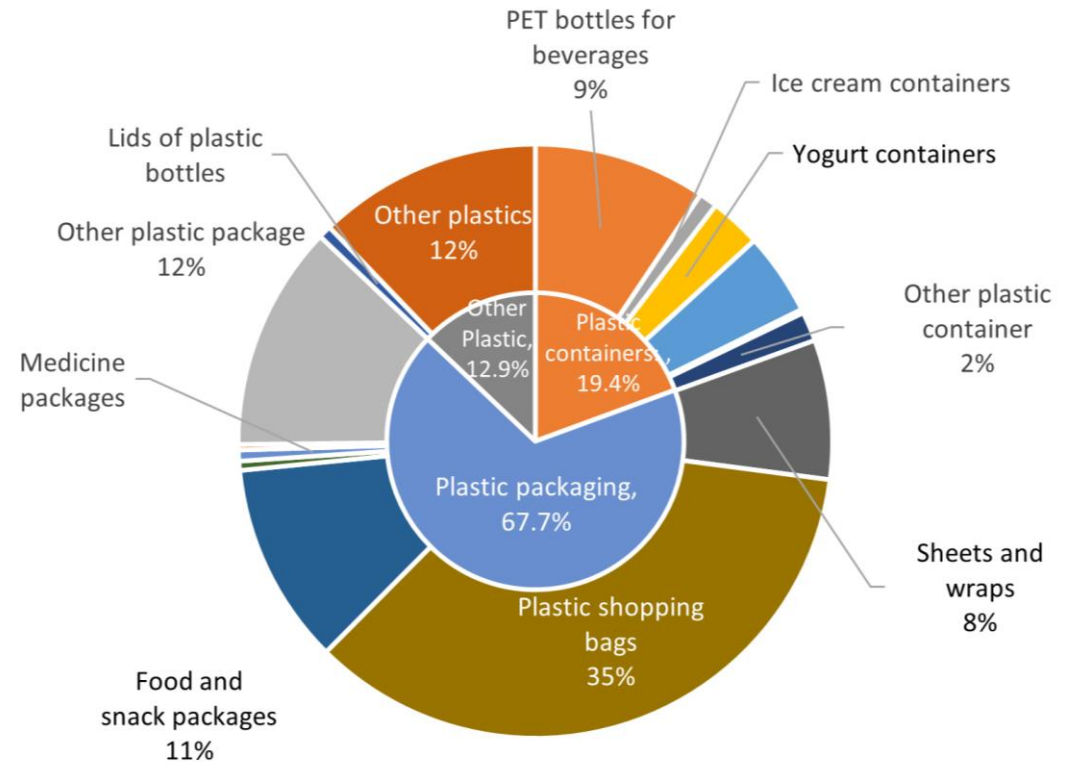




Current Status of Plastic Use and Waste Management in Sri Lanka continued..



Graph 01: Composition of urban solid waste in Sri Lanka



Graph 02: Plastic waste composition in Sri Lanka

Source: Project for Strengthening Plastic Management Capacity in Sri Lanka, Waste amount and composition survey focused on plastic waste (P-WACS) by Japan International Cooperation Agency (JICA) Kokusai Kogyo Co., Ltd. 2024





Current Status of Plastic Use and Waste Management in Sri Lanka continued..



End of life	Waste generation	MSW generation (kg/person-day)		0.64	Dharmasiri (2020)
		Total waste generated (tonnes/day)	13,440		
		Total waste generated (tonnes/year)	4,900,000		Wood (2021)
		MSW composition [SDG Indicator 11.6.1]			
		Plastic waste generated in a year (CPC Codes) = Apparent consumption of plastics in a year (CPC Codes) x probability of plastic becoming waste in a year			
		Plastic waste generation (kg/person-week)	0.11	2016	Thennakoon (2018)
		Plastic waste generation (kg/person-year)	5.72	2016	Thennakoon (2018)
		Plastic waste generation (tonnes/day)	938.42	2020	NAP, MoE (2021)
		Plastic waste (%)	6 to 10		
		MSW generation in urban areas (kg/capita/day) [SDG Indicator 11.6.1]			
		MSW generation in urban areas (kg/capita/day)	0.75-0.85		Wood (2021)/Ministry of Environment and Natural Resources (2007)
		MSW generation in rural areas (kg/capita/day)	0.4-0.6		Wood (2021)/Ministry of Environment and Natural Resources (2007)
		Plastic generation across rural/urban districts		2016	See Sheet 2: Thennakoon (2018)
		MSW collection coverage (%)	27		Moratuwa University & NSWMSC (2013)
		MSW collected (MT/day)	3,458	2020	NAP, MoE (2021)
		MSW collected urban areas (tonnes/day) [SDG Indicator 11.6.1]			
		Proportion of population with access to basic MSW service in city (%) [SDG Indicator 11.6.1]			
		MSW collection services	306/341 of Local Aut	2018	IGES and CCET/UNEP (2020)
		Informal waste collected			
		Inadequately managed MSW (%)	75%		According to values above (3,458/13,440)*100
		Uncollected MSW (MT/day)	7310	2020	NAP, MoE (2021)
		Plastic waste collected (MT/day)	300	2020	NAP, MoE (2021)
		Informal plastic waste collected			
		Uncollected plastic waste (MT/day)	638.12	2020	NAP, MoE (2021)
		MSW managed in controlled facilities in the city (tonnes/day) [SDG Indicator 11.6.1]			
		National recycling rate (tonnes of material recycled) [SDG Indicator 12.5.1]			
		Formal plastic recycling (%)	3 to 7		Bandara (2011); Mannapperuma, 20
		Formal plastic recycling (tonnes/day)	38.48	2020	NAP, MoE (2021)
		Registered recycling and waste centres			CEA (2020) data - map in NAP Jayasinghe (2023)
		Informal plastic recycling (%)			
		Informal plastic recycling (tonnes/year)			
		Plastic to controlled/sanitary landfill (tonnes/year)			
		Plastic for energy recovery (MT/day)			
		Plastic for chemical recycling (MT/day)			
		Open dumping of plastic waste after collection and sorting (tonnes/day)	261.82	2020	NAP, MoE (2021)
		Direct discard of plastic waste to water (MT/day)	8.45	2020	NAP, MoE (2021)
		Self-disposal (MT/day)	139.82	2020	NAP, MoE (2021)
		Illegal dumping of plastics (MT/day)	70	2020	NAP, MoE (2021)
		Open burning of plastics (MT/day)	419.47	2020	NAP, MoE (2021)
		Mismanaged plastic waste (kg/person/year)			
		Mismanaged plastic waste (tonnes/year)			

Table 01: Data related to waste management in Sri Lanka





Current Status of Plastic Use and Waste Management in Sri Lanka continued..

- As the data shows, open burning of plastic waste is 419.47 MT per day.
- Considering the negative impacts of the open burning of plastic waste or plastic mixed waste, the government of Sri Lanka took initiatives to prohibit the open burning of plastic or mixed waste.





3. Sri Lanka's policy & legal framework to ban the open burning of plastic waste



- The CEA was established in August 1981 under the National Environmental Act (NEA) No. 47 of 1980.
- The CEA has regulatory powers to perform Pollution control, Environmental management and Natural resource management.
- A gazette regulation was issued under the provisions of Section 23W of the National Environmental Act, No. 47 of 1980, as stated in Extraordinary Gazette No. 2034/36 dated 01.09.2017, the open burning of refuse or other combustible materials, inclusive of plastics, is banned. Violations are subject to a fine of 10,000 rupees or imprisonment for up to 2 years.





4. CEA's Regulatory and Operational Role in Preventing Open Burning of Plastics

- a. Enforcement of Regulation (Gazette No. 2034/36 dated 01.09.2017)
- b. Issues Environmental Protection Licenses (EPLs) that prohibit burning in licensed premises
- c. Conducting awareness programmes.
- d. Conducting surveys to monitor the effectiveness of the regulations





4 a.) Enforcement of Regulation (Gazette No. 2034/36 dated 01.09.2017)

- Monitoring for plastic burning is carried out island wide by the head office and regional offices of the CEA.
- The CEA receives public complaints (E.g.-via hotline) and conducts inspections accordingly. When violations are identified, warning letters will be issued or legal proceedings will be initiated.
- These inspections are conducted collaborating with Sri Lanka Police.





4 a.) Enforcement of Regulation (Gazette No. 2034/36) Continued..



- In 2024 a total number of 127 public complaints were received by the CEA

Month	No. of complaints received for plastic burning
January	9
February	15
March	18
April	14
May	8
June	6
July	10
August	23
September	7
October	8
November	2
December	7
Total	127

Table 02: public complaints received by the CEA in 2024





4 b.) Issuance of Environmental Protection Licenses (EPLs)

- Licensed industries are prohibited from open plastic burning within their premises as a condition.
- Solid waste disposal methods are evaluated during the issuance of Environmental Protection Licenses for industries.
- Incinerators are monitored for plastic burning related toxic emissions.





4 c.) Conducting awareness programmes



- The CEA conducts island wide awareness programmes for target groups, focusing on regulations against plastic burning, the air pollution and health impacts associated with plastic burning and proper waste disposal practices.
- Awareness is promoted through TV and radio programmes, advertisements, distribution of informative leaflets, and the display of banners and posters in places such as urban hotspots, supermarkets.
- Public and private institutions are encouraged by the CEA to conduct awareness campaigns, with the CEA providing the necessary knowledge and resources to support these initiatives.



Environmental Education & Awareness Unit

Environmental Education & Awareness Unit



Preschool



Eco Club



National Environmental Pioneer

Green Leader



Universities



Other Program

Regional Dialogue on Transformative Action to End Open Burning of Waste in South Asia



Eco Club Program

Student from Grade 1 to 5

Membership Badge



Formative Action



CLIMATE &
CLEAN AIR
COALITION
TO REDUCE SHORT-LIVED
CLIMATE POLLUTANTS

IGES
Institute for Global
Environmental Strategies



National Environmental Pioneer Program

Start One group in 1984 – 61 Students

Possible Schools 5780,

Initiated 4381

Summery of Medals achievement in National Environmental Pioneer Program from 01.03.2024 to 31.12.2024									Summary of Certificates achievement in ECO Club Program from 01.03.2024 to 31.12.2024					
No	District	No. of target EPP schools	No. of total achieved EPP schools	Pioneer medal	Green medal	Silver medal	Gold medal	Presidential medal	No	District	No. of total Eco Club schools	Thurulatha	Vihanga	Soba
1	Colombo	200	239	3,739	507	323	177	4	1	Colombo	197	6,186	2,777	817
2	Kalutara	135	149	3,663	659	252	29	1	2	Kalutara	148	5,234	1,446	385
3	Gampaha	174	255	4,988	734	167	36	3	3	Gampaha	245	5,839	2,718	667
4	Galle	207	150	1,297	361	250	25	1	4	Galle	64	3,336	822	504
5	Matara	179	175	3,679	721	158	53	15	5	Matara	180	3,962	1,829	696
6	Hambantota	160	122	2,217	565	122	19	1	6	Hambantota	281	4,689	1,351	539
7	Kandy	342	380	3,925	886	329	170	6	7	Kandy	227	6,465	2,491	1,380
8	Matale	168	121	1,189	208	42	7	1	8	Matale	22	613	397	44
9	Nuwaraeliya	160	126	2,163	572	46	-	1	9	Nuwaraeliya	115	1,303	507	169
10	Badulla	184	168	1,652	330	168	58	-	10	Badulla	558	1,706	466	159
11	Monaragala	140	89	2,461	529	79	43	11	11	Monaragala	171	1,422	362	107
12	Ratnapura	135	71	1,667	266	115	31	-	12	Ratnapura	42	2,453	1,414	698
13	Kegalle	220	178	3,247	482	116	48	5	13	Kegalle	62	3,071	1,432	738
14	Kurunegala	340	194	4,768	414	170	69	10	14	Kurunegala	411	10,800	3,475	625
15	Puttalam	94	54	424	171	48	23	-	15	Puttalam	27	608	43	-
16	Anuradhapura	184	130	3,003	456	79	3	-	16	Anuradhapura	171	2,933	674	147
17	Polonnaruwa	76	114	1,900	1,700	639	97	-	17	Polonnaruwa	46	1,911	510	265
18	Trincomalee	147	98	820	375	31	9	-	18	Trincomalee	98	-	-	-
19	Batticaloa	108	83	1,717	1,011	96	31	8	19	Batticaloa	55	1,241	859	640
20	Ampara	210	32	1,200	657	350	100	14	20	Ampara	83	3,482	2,280	1,672
21	Jaffna	190	189	3,260	499	11	-	6	21	Jaffna	205	5,345	1,266	528
22	Kilinochchi	64	64	983	987	174	71	3	22	Kilinochchi	85	1,697	135	44
23	Vavuniya	79	65	1,361	476	-	-	-	23	Vavuniya	167	562	252	-
24	Mannar	72	72	760	311	15	10	-	24	Mannar	66	1,404	478	-
25	Mullaithivu	49	43	998	320	-	-	-	25	Mullaithivu	41	941	711	-
TOTAL									TOTAL					
37,981									3,767					
7,197									77,203					
3,780									28,695					
1,780									10,824					

Regional Dialogue on Transformative Action to End Open Burning of Waste in South Asia



National Environmental Pioneer Program

- Training Programs for Provincial, Zonal and Divisional Coordinators of the Education Department.
- Training Programs for School Principals.
- Training Programs for Teachers.
- Training Programs for Environmental Pioneer Commissioners.
- Youth Leadership Development Programmes for Environmental Pioneers
- Increasing medals holders and membership
- Production of materials for Environment Pioneer Programme
- Implementation of Eco projects at School Level
- Implementing Eco projects for Presidential medal winners
- Printing of District Environmental Pioneer News Letter.
- Organizing and conducting Environment Pioneer District/ Provincial and National Camp
- Awarding of Environment Pioneer President's Medal

Regional Dialogue on Transformative Action to End Open Burning of Waste in South Asia





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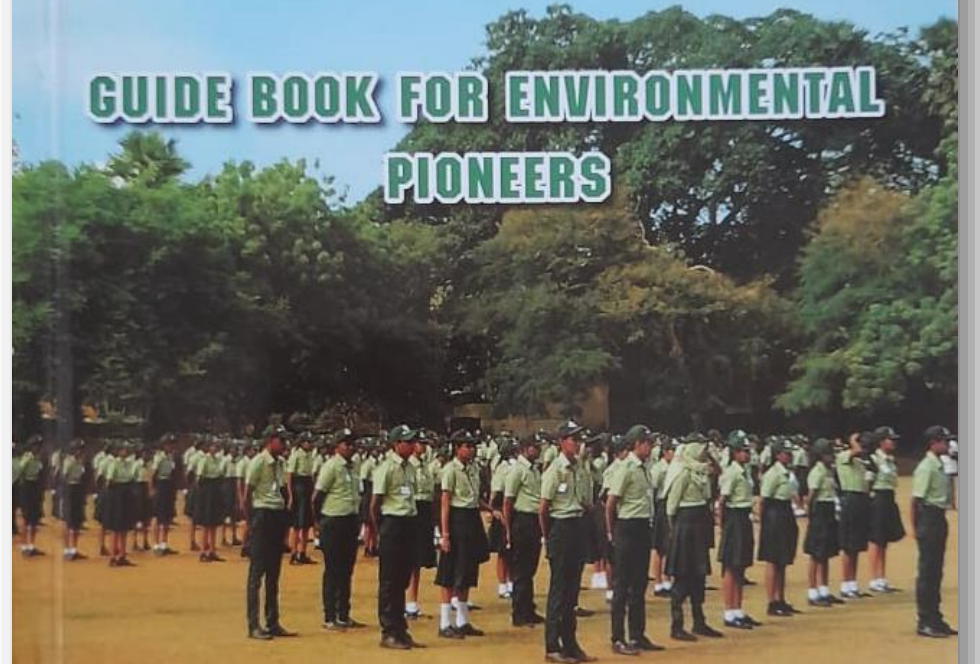


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Waste Burning in South Asia

ENVIRONMENT PROTECTS US:
LET US PROTECT ENVIRONMENT

GUIDE BOOK FOR ENVIRONMENTAL PIONEERS



Central Environmental Authority



පරිසරය අප රකියි - රකිමු අපි පරිසරය

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Regional Dialogue on Transformative Action to End Open Burning of Waste in South Asia

Medals & Certificates

National Environmental Pioneer Program

Envi. Pioneer



Green



Silver



Gold



President



Road Map to Environment Pioneer President's Medal



Environmental Study Report



Environmental Project



Interaction with state institutes



- Participation in at least 04 lectures/workshops on Environment
- Planting 02 trees and looking after them for 06 months
- Note Book on environmental activities
- Ability to recite the Environmental Oath and the Song
- General Knowledge on the Environmental
- Short observatory report on Environment
- Contribution to minimize the use of polythene/ plastic
- Presenting the Parade Salute
- Conduct of Examinations

- Participation in at least 04 lectures/workshops/ training programmes
- Make of a list of threatened flora and fauna in Sri Lanka
- Preparation of a Plant Book
- Maintaining the Note Book issued by the CEA
- Activities carried out on special days related to the environment
- Activities relating to Energy Conservation and Waste Management
- Submitting the Plant Maintenance Book
- Presenting the Salute
- Conduct of the Examination

- Preparation of a report containing sufficient information on environmental issues
- Observation of a place of historical/ scenic/ archaeological importance and preparation of a report
- Successful completion of soil erosion and landscaping activities in the school or home garden
- Energy saving at home or waste management
- Identifying the bio-diversity in a given Ecosystem and preparing a report
- Report on one animal or plant species:
- Presentation of a variety entertainment item on environment conservation (drama/ drawings/ music/ photographs/ oratorical/ posters/ exhibitions etc.)
- Submitting the Plant Maintenance Book
- Presenting the Salute
- Conduct of the Examination

- Commencement and implementation of an Environmental Pioneer/Environment Eco Club Programme in a nearby school.
- Conduct of three (03) lectures for Environmental Pioneers
- Implementation of an Environmental Programmes on a special Environment Day with community participation
- Implementation of Community Awareness Programmes on Waste Management (for 20 family units at the minimum)
- Create awareness among members of the School Development Society
- Organizations in the area on current environmental issues.
- Preparing a situational Report on environmental problems in an environmentally sensitive area
- Presentation of three (03) indigenous technological methods
- Introduction of water conservation methods and presentation of two creations using waste materials
- Submitting the Plant Maintenance Book
- Presenting the Salute
- Conduct of the Examination

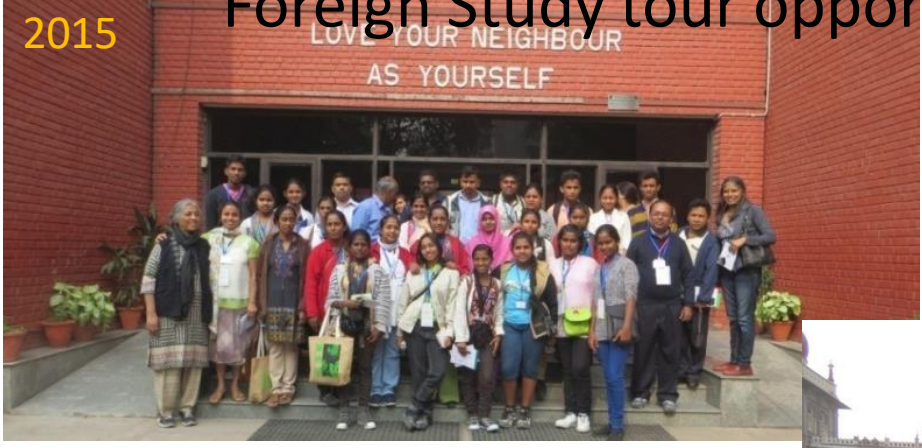
- Submission of an Environmental Study Report
- Active participation in environment conservation activities
- Interaction with state institutes engaged in environment-related activities
- Ownership of an Environment Project - Small scale environment project which should be implemented and it is essential that it is conducted by the Pioneer himself.
- Understanding of the National Environment Act, Environmental Standards and the International Environmental Conventions ratified by Sri Lanka
- Submitting the Plant Maintenance Book
- Presenting the Salute
- Pre-test
- Conduct of the Examination
- Presenting the Project results
- Submitting the Plant Maintenance Book
- Presenting the Salute
- Conduct of the Examination

From 2003 - 2023

Environment Pioneer President's Medal Winners



Foreign Study tour opportunity for President's medalists



Regional Dialogue on Transformative Action to End Open Burning of Waste in South Asia



Environmental Pioneer National Camp

Memories of National Environmental Pioneer Camps





Regional Dialogue on Transformative Action to End Open Burning of Waste in South Asia



Environmental Pioneer National & District Forum

Environmental pioneer forums in National & 17 districts by gathering passed out presidential medalist and gold medalist to implement environmental protection and conservation activities within the districts under coordination of CEA Provincial and District offices & EEU.



Regional Dialogue on Transformative Action to End Open Burning of Waste in South Asia



Green Leader

The Green Leader Program, established by the Central Environmental Authority in collaboration with the Ministry of Education and the National Institute of Education, aims to enhance environmental awareness and cultivate environmentally conscious and leadership-oriented student teachers in National Collage of Education (NCoE).

Additionally, the program will focus on coordinating and conducting environmental initiatives in schools. It is imperative that this program be implemented in all NCoE's.



Green Leader Environmental Programs - Progress

National College of Education

1. Addalachahenai National College of Education
2. Batticaloa National College of Education
3. Dharga Nagar National College of Education
4. Hapitigam National College of Education
5. Jaffna National College of Education
6. Maharagama National College of Education
7. Mahaweli National College of Education
8. [Nilwala National College of Education](#)
9. Pasdunrata National College of Education
10. Peradeniya National College of Education
11. Pulathisipura National College of Education
12. Ruhuna National College of Education
13. Ruwanpura National College of Education
14. Siyane National College of Education
15. Sri Pada National College of Education
16. Uva National College of Education
17. Vavuniya National College of Education
18. Wayamba National College of Education





"Environment Protects Us:
Let Us Protect Environment"

Green Leader

Activity Note Book



Central Environmental Authority



Central Environmental Authority
"ParisaraPiyasa"
No. 104, Denzil Kobbekaduwa Mawatha,
Battaramulla
Telephone: +94 112124612
www.cea.lk

th Asia



CLIMATE &
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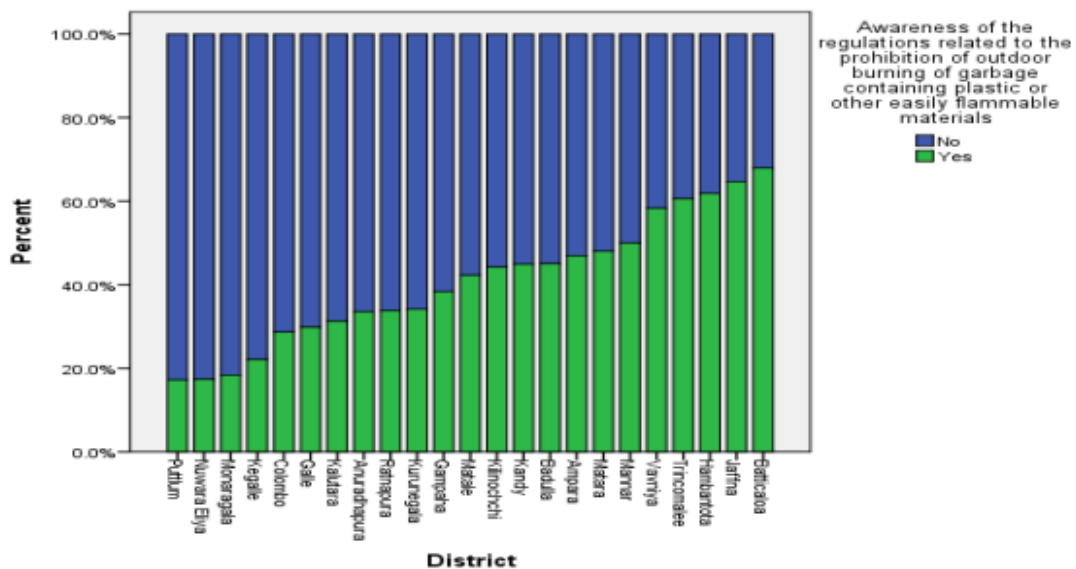




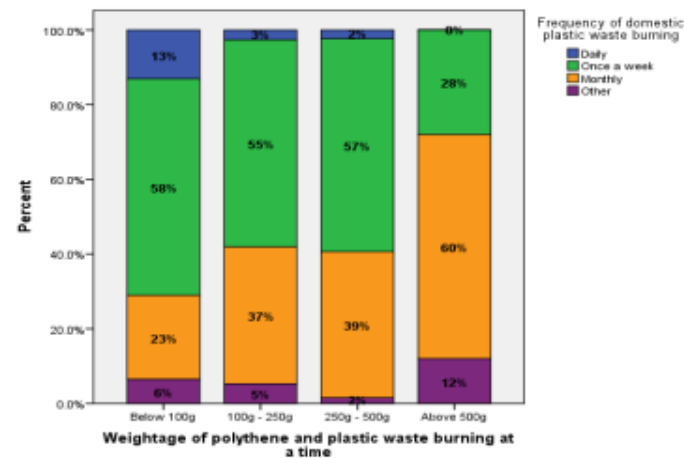
4 d.) Conducting surveys to monitor the effectiveness the regulations



- The CEA conducts surveys to assess public awareness regarding the impacts of plastic burning, knowledge of relevant regulations, and waste disposal practices.
- Below graphs are from a survey conducted by the Investigation unit of the CEA in 2023



Graph 03: District wise public awareness of the gazette regulation



Graph 04: Frequency and Quantity of the average plastic burning in households

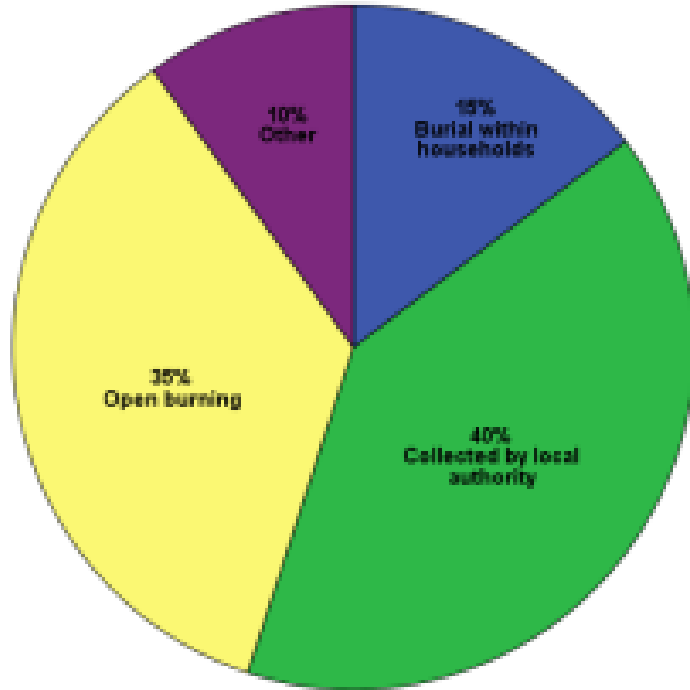




4 d.) Conducting surveys to monitor the effectiveness of the regulations Continued..

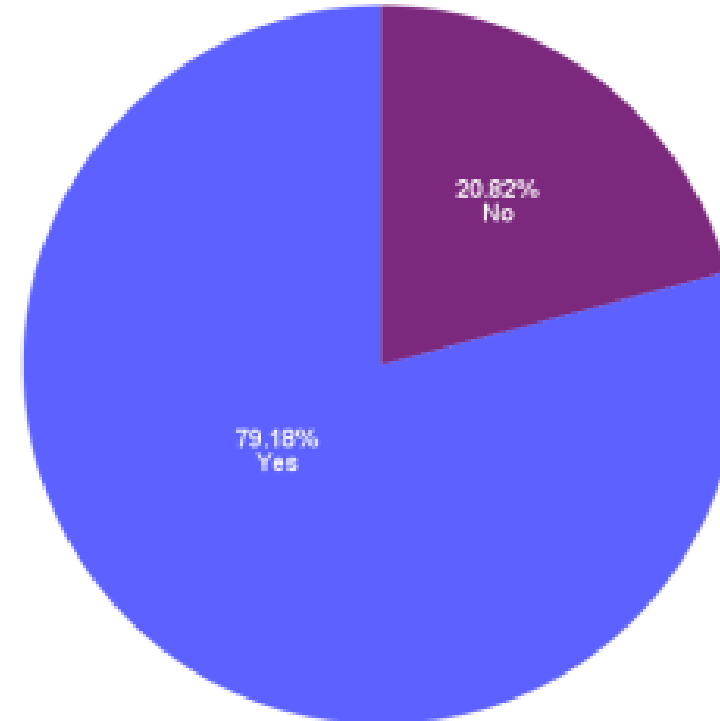


Plastic Waste Disposal Methods



Graph 05: Disposal methods of plastic waste in households

Segregation of household waste as biodegrad and plastic



Graph 06: Segregation of waste in households as biodegradable and non biodegradable





5. Challenges & implementation gaps

- The need for a more strengthened waste collection system and to expand the waste collection coverage to rural areas by local authorities.
- Unavailability of proper lands for waste disposal.
- More recycling facilities should be placed specially in rural areas.
- Difficulty in raising awareness about the environmental and human health impacts of plastic burning, particularly among elderly individuals and low-income communities.
- Low environmental sensitivity leads people to prioritize personal convenience over consequences to the environment.





6. Way forward for an effective enforcement

- Strengthening and expanding the waste collection system, with special focus on increasing coverage in rural areas by local authorities.
- Organizing more awareness campaigns specially for school children on the impacts of open waste burning, proper waste disposal practices, importance of sustainable life styles etc.
- Encouraging private sector involvement and innovation in recycling technology and biodegradable alternatives.
- Collaborating with Non Governmental Organizations in organizing island wide awareness campaigns .



Thank You



Regional Dialogue on Transformative Action to End Open Burning of Waste in South Asia

