National Action Plan for **Haritha Lanka** Programme

National Council for Sustainable Development

Presidential Secretariat, Colombo 01.

Convener: Ministry of Environment and Natural Resources,
82, "Sampathpaya", Rajamalwatta Road, Battaramulla.

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National Council for Sustainable Development

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Message of H.E. the President

Having successfully prosecuted a war against the most brutal terrorist organization in the world, Sri Lanka is now in a position to fully enjoy our independence 61 years after the dawn of freedom. All our people can now live in peace and understanding, and together work towards forging a bright future for the nation.

While socio-economic development is of utmost importance, it is equally necessary that we protect our natural resources, safeguard the environment and are prudent in the use of the assets that nature has bestowed upon our land. This requires emphasis on sustainable development by the judicious use of resources today which will protect and even enhance them for the future.

Sri Lanka has an impressive record of natural resource management and sustainable use. In facing the major challenges of climate change and protection of the environment, it is necessary to combine the best modern concepts with the tried and tested methods that history has provided us. We should seek a successful blend of the best of modern science and the richness of traditional knowledge.

It is for this purpose that I have established the National Council for Sustainable Development, which functions under my Chairmanship and includes the Ministers in charge of major economic development programmes. This Council is charged with responsibility for producing an integrated policy, and overseeing and guiding the implementation of the Haritha Lanka Programme to ensure the sustainability of social and economic development programmes. I am glad that the National Action Plan for the Haritha Lanka Programme has been presented and look forward to its implementation with the least delay as the Road Map for the sustainable development of Sri Lanka.

Mahinda Rajapaksa
President of the Democratic Socialist Republic of Sri Lanka

Message of the Hon. Minister of Environment and Natural Resources

With human vulnerability to environmental change reaching unprecedented levels, environmental friendly development has now been recognized as the key to the long term sustainability of any economic activity. People's livelihood, as well as their health and well-being, are inextricably linked to the biological and physical properties and the proper functioning of the natural ecosystems. We in Sri Lanka, have to be especially concerned since our country has been identified as a "biodiversity hotspot" where its many endemic species are subjected to serious threat.

Today, we are confronted with a multiple global crisis situation relating to energy, food, fresh water and finance. It is clear that bail-out plans with injecting of funds to financial institutions that are becoming unstable would not solve the present problem as these institutions have been formed based on the expectation of unlimited growth leading to unsustainable production and consumption practices.

It has become necessary to direct even the short term plans along a path of sustainable economic and social development. It is in this context that the Government has introduced the Haritha Lanka program and established a National Council for Sustainable Development under the leadership of H.E. the President to ensure integration of environmental concerns into the economic and social development processes throughout the country.

The Haritha Lanka Programme of Action was developed through an interactive process involving all the key ministries. Its missions focus on addressing the critical issues that, if left unattended, would frustrate our economic development programmes. Clean air and clean and adequate supplies of water must be available to all. The country's priceless natural heritage of fauna and flora must not be allowed to get degraded. The cities have to be clean and provide a healthy environment for all the city dwellers. The industries must learn and put into practice measures for preventing environmental pollution. The island's limited land resources should be used optimally. And the coastal belt, one of the most picturesque parts of the country, requires special attention to ensure that its integrity remains unblemished and that it would continue to serve as a major contributor to the country's economy. Actions to address these key areas are embodied in the strategies and proposed actions set out under the ten missions of the Haritha Lanka Programme.

I sincerely hope that this National Acton Plan would lay a solid foundation leading to a sustainable future for the present and future generations of our country.

Patali Champika Ranawake M.P.
Minister of Environment and Natural Resources

10 Missions

- **Mission 1 :** Clean Air - Everywhere
- **Mission 2 :** Saving the Fauna, Flora and Ecosystems
- **Mission 3 :** Meeting the Challenges of Climate Change
- **Mission 4 :** Wise Use of the Coastal Belt and the Sea Around
- **Mission 5 :** Responsible Use of the Land Resources
- **Mission 6 :** Doing Away with the Dumps
- **Mission 7 :** Water for All and Always
- **Mission 8 :** Green Cities for Health and Prosperity
- **Mission 9 :** Greening the Industries
- **Mission 10 :** Knowledge for Right Choices

CONTENTS

ABBREVIATIONS

AirMAC	-	Air Resource Management Centre
Ayu.Ins	-	Ayurvedic Institutions
BOI	-	Board of Investment
BRT	-	Buss Rapid Transit
CBOs	-	Community Based Organizations
CCSec.	-	Climate Change Secretariat
CCD	-	Coast Conservation Department
CDM	-	Clean Development Mechanism
CEA	-	Central Environmental Authority
CEB	-	Ceylon Electricity Board
CERs	-	Certified Emission Reductions
CP	-	Cleaner Production
CPA	-	Consumer Protection Authority
CPC	-	Ceylon Petroleum Corporation
DC	-	Department of Customs
DFC	-	Department of Forest Conservation
DMC	-	Disaster Management Center
DMT	-	Department of Motor Traffic
DoA	-	Department of Agriculture
DoAP&H	-	Department of Ayurvedic Practices and Health
DoF	-	Department of Fisheries
DoI	-	Department of Irrigation
DoIEC	-	Department of Import & Export Control
DoM	-	Department of Meteorology
Dis.Secs	-	District Secretariats
Div.Secs	-	Divisional Secretariats
DWLC	-	Department of Wildlife Conservation
EDB	-	Export Development Board
EPDs	-	Education Publication Departments
GDP	-	Gross Domestic Products
GHG	-	Green House Gases
GIS	-	Geographic Information System
GJA	-	Gems & Jewellry Authority
GSMB	-	Geological Survey and Mines Bureau

HWM	-	Hazardous Waste Management
ICTAD	-	Institute for Construction Training and Development
IOC	-	Indian Oil Corporation
IPD	-	Industrial Policy Division
IUCN	-	International Union for Conservation of Nature
LAs	-	Local Authorities
LCM	-	Life Cycle Management
LDD	-	Legal Drarftman's Department
LPHA	-	Local Public Health Authority
LRC	-	Land Reform Commission
LRT	-	Light Rapid Transit
LUPPD	-	Land Use Policy Planning Division
M/AD&AS	-	Ministry of Agriculture Development & Agrarian Services
M/CD&WE	-	Ministry of Child Development & Women's Empowerment
M/CA	-	Ministry of Cultural Affairs
M/DM &HR	-	Ministry of Disaster Management & Human Rights
M/E	-	Ministry of Education
M/ED&IT	-	Ministry of Export Development & International Trade
M/E&NR	-	Ministry of Environment & Natural Resources
M/F&P	-	Ministry of Finance & Planning
M/F&AR	-	Ministry of Fisheries and Aquatic Resources
M/H&N	-	Ministry of Healthcare & Nutrition
M/H&CA	-	Ministry of Housing & Common Amenities
M/H&RD	-	Ministry of Highways & Road Development
M/ID	-	Ministry of Industrial Development
M/I&WM	-	Ministry of Irrigation & Water Management
M/L&LD	-	Ministry of Land & Land Development
M/LR&M	-	Ministry of Labour Relations & Manpower
M/LG&PC	-	Ministry of Local Government & Provincial Councils
M/MM&I	-	Ministry of Mass Media & Information
M/NB&EID	-	Ministry of Nations Building & Estate Infrastructure Development
M/P&E	-	Ministry of Power & Energy
M/PA&HA	-	Ministry of Public Administration & Home Affairs
M/PI	-	Ministry of Plantation Industries
M/RI&SEP	-	Ministry of Rural Industries & Self Employment Promotion
M/S& PA	-	Ministry of Samurdhi & Poverty Alleviation
M/S&T	-	Ministry of Science & Technology
M/Transport	-	Ministry of Transport

M/Tourism	-	Ministry of Tourism
M/TMDC&CA	-	Ministry of Trade, Marketing Development, Cooperative & Consumer Affairs
M/UD &SAD	-	Ministry of Urban Development & Sacred Area Development
M/V&TT	-	Ministry of Vocational & Technical Training
M/WS&D	-	Ministry of Water Supply & Drainage
M/YA	-	Ministry of Youth Affairs
MASL	-	Mahaweli Authority of Sri Lanka
MEPA	-	Marine Environment Protection Authority
REAPM	-	Regional Economic Advancement Project Matale
MRT	-	Mass Rapid Transit
NAQDA	-	National Aquaculture Development Authority
NACCC	-	National Advisory Committee for Climate Change
NARRA	-	National Aquatic Resource and Research Agency
NBGD	-	National Botanical Garden Department
NBRO	-	National Building Research Organization
NCE	-	National College of Education
NCPC	-	National Cleaner Production Centre
NECCDP	-	North East Coastal Community Development Project
NEHRP	-	North East Housing Reconstruction Programme
NEIAP-2	-	North East Irrigated Agriculture project - 2
NERDC	-	National Engineering Research & Development Center
NGOs	-	Non Government Organizations
NIE	-	National Institute of Education
NPD	-	National Planning Department
NPPD	-	National Physical Plan Department
NPSWM	-	National Policy on Solid Waste Management
NRMC	-	Natural Resource Management Center
NWS&DB	-	National Water Supply & Drainage Board
NSF	-	National Science Foundation
NYC	-	National Youth Council
NZG	-	National Zoological Garden
PAs	-	Protected Areas
PCs	-	Provincials Councils
PEP	-	Promotion of Eco-efficient Productivity
PGIAr	-	Post Graduate Institute of Archeology
PGIA	-	Post Graduate Institute of Agriculture
PS	-	Presidential Secretariat
Pvt. Sector	-	Private Sector

RCD	-	Rubber Control Department
RDA	-	Road Development Authority
REAP	-	Responsible Entrepreneurship Achievement Programme
REDD	-	Reducing Emissions from Deforestation and Degradation
REPSIP	-	Rehabilitation of Economic Physical & Social Infrastructure Project
RRI	-	Rice Research Institute
SAARC	-	South Asian Association for Regional Corperation
SD	-	Survey Department
SDR	-	Special Drawing Rights
SEA	-	Sustainable Energy Authority
SLCF	-	Sri Lanka Carbon Fund Limited
SLSA	-	Sri Lanka Samurdi Authority
SLLR &DC	-	Sri Lanka Land Reclamation & Development Corporation
SLR	-	Sri Lanka Railways
SLTB	-	Sri Lanka Tourist Board
SMEs	-	Small and Medium Enterprises
STC	-	State Timber Corporation
SUDS	-	Sustainable Urban Drainage Systems
TAARP-B	-	Tsunami-Affected Areas Rebuilding Project-B
TAARP-E	-	Tsunami-Affected Areas Rebuilding Project-E
Toe	-	Ton of oil equivalent
T&VEC	-	Technical and Vocational Education Centres
TRINCAP	-	Technical Cooperation Project for Agricultural & Rural Development for Rehabilitation and Reconstruction Through Community Approach in Trincomalee District
UDA	-	Urban Development Authority
UGC	-	University Grant Commission
ULAs	-	Urban Local Authorities
UNFCCC	-	United Nations Framework Convention for Climate Change
UoP	-	University of Peradeniya
UoM	-	University of Moratuwa
VC	-	Vidatha Centre
WCP	-	Wastewater Charge Programme
WMA	-	Waste Management Authority

INTRODUCTION

In the present century, human society, here and elsewhere in the world, faces the daunting, but vital, task of forging a relationship with nature that would ensure sustainability in all its activities aimed at improving the quality of life. "Sustainability" implies meeting current human needs while preserving the environment and natural resources needed by future generations.

It is towards this end that Sri Lanka has developed the **National Action Plan for the Haritha Lanka** Programme. This plan is the product of the concerted effort of all relevant ministries who actively participated in its development. Making its preparation a high level participatory process was intended to ensure that sustainability would not just remain a concept but would translate into practical reality. The programme is captured in ten mission statements and the proposed strategies and actions that are set out focus on fulfilling the ten goals set out in the mission statements.

Achieving sustainability rests to a large extent on national efforts. We must, however, be mindful of the vitally important place of global factors in influencing our efforts aimed at achieving sustainability. These are, notably, the looming crisis of climate change and the crippling effects of high dependence on fossil fuels, both of which would impact strongly on the three pillars of sustainability, namely, environmental conservation, economic stability and social equity. We should therefore strive to develop a cohesive programme for sustainable development. This has been the focus in developing the Action Plan.

This Action Plan has been developed in pursuance of a decision taken at a meeting convened by the Presidential Secretariat on 16th October 2008. In preparing the Plan, short-, medium-, and long-term solutions to meet current and emerging economic and environmental challenges were meticulously explored. A preliminary draft was initially developed by the Ministry of Environment and Natural Resources taking into consideration the five-year national environmental action plan entitled *Caring for Environment 2009 – 2013*, and the *National Strategy for Sustainable Development*, both of which were developed through extensive deliberations with the relevant ministries and other related key stakeholder institutions. Using the draft prepared by the Ministry of Environment and Natural Resources and incorporating the outcome of deliberations and conclusions reached during four meetings of secretaries of the relevant ministries, the final draft of the Action Plan for the Haritha Lanka Programme was prepared.

A National Council for Sustainable Development (NCSD) was established by the government under the Haritha Lanka Programme to function as a national platform to launch and promote the process of achieving sustainable development. The NCSD is chaired by H.E. the President. NCSD, while making policy integration, would oversee and guide the implementation of the Haritha Lanka Programme.

The ten broad missions/thrust areas covered by the programme are: *Clean Air - Everywhere, Saving the Fauna, Flora and Ecosystems, Meeting the Challenges of Climate Change, Wise Use of the Coastal Belt and the Sea Around, Responsible Use of the Land Resources, Doing Away with the Dumps, Water for All and Always, Green Cities for Health and Prosperity, Greening the Industries, Knowledge for Right Choices.* The programme includes short-, medium- and long- term targets spanning the period 2009 – 2016 and performance indicators.

The progress of implementation of this action plan will be monitored by the Ministry of Plan Implementation. The secretariat facilities for the NCSD will be provided by the Ministry of Environment and Natural Resources.

National Action Plan for Haritha Lanka Programme

Mission 1

Clean Air - Everywhere

Mission 1: Clean Air - Everywhere

Preamble

The earth's atmosphere – the air we breathe – is indeed one of the planet's key natural resources, on which the sustenance of every form of life depends. Many human activities in pursuit of what we broadly recognize as "development" discharge huge quantities of polluting substances into the atmosphere, and this trend has escalated in the current decades, despoiling this vital natural resource at an alarming rate.

Vehicular transport is the sub-sector that is most responsible for air pollution in Sri Lanka. Current trends show a sharp growth in the number of vehicles entering the road network of the country – buses, lorries, vans, cars, trishaws and motor cycles. Vehicle exhausts discharge noxious gases and particulate matter and it is well established that these substances, in the air we breathe, can lead to respiratory and cardiac diseases. Besides the pollution caused, pro rata, by the increased number of vehicles, we need to consider the additional impact of traffic congestion, where excessive quantities of pollutants are discharged by idling and slow moving vehicles.

The mission implicitly recognizes that the problem of air pollution takes different forms in different parts of the country and its ultimate aim is to ensure that clean air is present everywhere. Taking the transport sector, the areas most impacted by vehicular emissions are the cities. These areas are the home to nearly a third of the island's population and this figure is expected to rise to 45 per cent by 2015; hence the need to address this problem by every means available. The proposed strategies and actions to deal with this problem cover a wide range falling within the categories of improving public transport and related infrastructure systems; using cleaner fuels; and imposing standards for monitoring and vehicle emissions.

Industrialization and power generation have brought in a range of new dimensions in relation to the problem of air pollution. There has been rapid industrial growth in recent decades, bringing with it large increases in the volume of pollutants discharged into the atmosphere through stacks. In power generation, whereas two decades ago nearly all our power needs were met from hydro sources, now 40- 50 per cent is generated by burning fossil fuels which have the potential of discharging acidic substances to the atmosphere. Pollution from these sources has, for the most part, a localized impact but it needs to be addressed as it causes severe distress to the people resident in the surrounding areas. Strategies and actions for dealing with these problems have been set out.

In regarding the quality of the air we breathe, we tend to overlook the vast majority of people who live in the rural areas in the belief that they are exposed to clean air. Indoor pollution, however, from open hearth cooking is a serious health problem and this mostly affects women. Strategies and actions to address this problem are considered important and have been included.

Mission 1: Clean Air - Everywhere

Strategies

1. Develop environmentally viable transport and infrastructure systems.
2. Shift towards cleaner fuels.
3. Prepare and maintain emissions inventory.
4. Monitor emissions of power plants and high polluting industries.
5. Monitor & reduce vehicle emissions.
6. Establish a system for the surveillance of ambient air quality.
7. Manage indoor air pollution through technical and social interventions.

Mission 1: Clean Air- Everywhere

Actions

	Strategies/Actions	Key Performance Indicators	Targets[1]				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.	**Develop environmentally viable transport and infrastructure systems.**	Proportion of cities in the country with green transportation modes.	Available Infrastructure systems		20%	50%	**M/Transport**
	Actions						
1.1	Improve railway system to facilitate passenger and freight transport.	Car owners opting to use public railway system.	Available railway system	5%	30%	50%	**M/Transport,** M/UD&SAD
1.2	Implement mass transit systems such as MRT/LRT, BRT including Premium Bus-Service & one-way systems with centre-flow bus lanes in metropolitan regions.	Systems in place.	Available systems	30%	100%		**M/Transport,** M/UD&SAD
1.3	Enhance linkages between rail and road.	Systems in place.	Available linkages between rail and road	20%	70%	100%	**M/Transport**
1.4	Introduce integrated traffic signaling systems for core areas of the cities.	Integrated signal systems in municipal areas.	Available traffic signaling systems	Colombo 100%	Other cities 100%		**RDA,** LAs, M/UD&SAD
1.5	Introduce congestion road pricing and providing parking facilities surrounding Colombo for low occupancy vehicles.	Regulations in place. Parking Facilities Provided.	Available Parking facilities and regulations		50%	100%	**M/Transport,** M/UD&SAD, M/F&P

[1] Most targets are given as a percentage which, unless otherwise stated, indicates the degree of progress towards achieving the expected goal.

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.6	Introduce an effective road maintenance program in place of the existing programme.	Road surface almost always in proper condition.	Existing programme	60%	100%		**RDA,** LAs, M/UD&SAD, M/NB&EID
1.7	Introduce and encourage widespread use of international standards for road furniture.	Standards adopted.	Existing standards		60%	100%	**RDA,** M/UD&SAD
1.8	Introduce legislation to safeguard road users.	Legislation in place.	Existing Procedures	50%	100%		**M/Transport**
1.9	Introduce appropriate design and technology to reduce terrain effects in the construction of new roads and rehabilitation of existing roads.	Regulations in place.	Existing Regulations and designs		60%	100%	**RDA,** M/UD&SAD
1.10	Construct flyovers in selected locations.	Flyover projects being implemented in strategic locations.	Strategic locations		55%	100%	**RDA,** M/UD&SAD
1.11	Construct multimodal transport centers and internal container depots.	Multimodal transport centre and internal container depot projects implemented.	No. of centers and depots to be constructed		70%	100%	**M/Transport,** ULAs
1.12	Introduce Park & ride systems.	Increasing no. of vehicles using parking facilities provided under this system on weekdays.	System available	60%	100%		**UDA,** RDA, SLR, ULAs, M/Transport
2.	**Shift towards cleaner fuels.**	Carbon dioxide emissions per capita.	Gazette no. 1295/11	30%	70%		**M/E&NR**
	Actions						
2.1	Prepare a road map for cleaner fuels in Sri Lanka.	Action plan prepared.	Gazette no. 1295/11	40%	100%		**Air MAC,** M/E&NR CPC, IOC
2.2	Formulate fiscal policy to encourage cleaner fuels.	Regulations in place.	Gazette no. 1295/11	30%	100%		**M/F&P**

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
2.3	Introduce alternative fuels to the market including bio-fuels.	Availability of alternative fuels in the market.	In principle approval of the Cabinet		3% by 2010	10% by 2015	**AirMAC,** M/E&NR, M/P&E, SEA
2.4	Improve the quality of fossil fuels such as diesel which are already in use.	Availability of low sulpher diesel in the market.	Existing quality of fuels		85%	100%	**AirMAC,** M/E&NR, CPC, IOC, M/P&E
2.5	Develop a system to test quality of fuel through independent verification.	System established.	Existing system	20%	40%		**AirMAC ,** M/E&NR, CPC, IOC
2.6	Reduce tax on hybrid vehicles and cleaner technologies.	Regulations in place.	Existing regulations	20%	40%		**M/F&P**
3.	**Prepare and maintain emissions inventory.**	Emissions regulations in place. Policy instruments in place. Appropriate technologies adopted.	Green House Gas inventory 1994	30%	100%		**M/E&NR**
	Actions						
3.1	Strengthen and extend data collection system of CEA and Sustainable Energy Authority (SEA) by introducing electronic transfer of fuel consumption and emission data on a monthly basis.	Database & collection mechanism established. (currently annual fuel consumption data is being published in the energy balance)	Available data		80%	100%	**M/E&NR,** CEA,SEA, M/P&E, CPC
3.2	Establish an auditing mechanism to validate accuracy of emission data on a random basis.	Audit mechanism established and in use.	Existing mechanism	75%	100%		**M/E&NR** CEA, SEA, M/P&E, CPC
3.3	Summarize collected data quarterly and fill any identified gaps.	Data analysis system developed and being used.	Available data	60%			**M/E&NR,** CEA

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.4	Preparation and maintain emission inventory using above data.	Emission inventory prepared and maintained.	Available data		85%		**M/E&NR,** CEA
3.5	Enact the legislation to enable CEA and SEA to fulfill their obligations.	Legislation on emissions in place.	Available legislation	30%	100%		**M/E&NR,** CEA, SEA, M/P&E
3.6	Commission a project to identify a suitable air quality model for Sri Lanka incorporating relevant emission inventory data and meteorological data.	Air quality model developed.	Available data		85%		**M/E&NR,** CEA
4.	**Monitor emissions of power plant and high polluting industries.**	Emissions standards established.	Existing data 2008	90%	100%		**M/E&NR**
	Actions						
4.1	Identify high polluting (HP) industries.	Database in place.	Information available		90%	100%	**CEA**
4.2	Legalize stack emission standards for industries.	Emission standards established.	Information available	100%			**CEA**
4.3	Introduce a continuous self-monitoring mechanism for power sector emissions.	Mechanism in place.	Information available		100%		**M/P&E**
5.	**Monitor & Reduce vehicle emissions.**	Vehicle emission testing certificates issued islandwide.	Gazette no. 1295/11	100%			**M/Transport**

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
	Actions						
5.1	Update appropriately the stipulated vehicle emission levels.	Regulations in place.	Available regulations		30%	75%	**M/Transport,** DMT, AirMAC, M/E&NR
5.2	Establish the Monitoring unit of DMT to implement control/ testing of vehicle emissions.	Monitoring unit with facilities and staff established.	Existing facilities of the monitoring	100%			**M/Transport,** DMT
5.3	Network the DS Divisions in order to facilitate information exchange on vehicle emissions.	DS Offices networked.	Not available	100%			**M/PA&HA** AirMAC, DMT, M/E&NR
5.4	Execute the chassis - dynamometer test to issue emission certificates.	Regulations in place.	Existing data			100%	**M/Transport,** DMT
5.5	Ensure understanding by the authorities in the country of export of information required for importation of used vehicles to Sri Lanka.	MoUs signed.	Available system	60%	100%		**M/Transport,** DMT, DC
5.6	Ban importation of used heavy vehicles over two and a half years old and light vehicles over two years old.	Regulations in place.	Current procedures	70%	100%		**M/F&P**
5.7	Enforce a requirement to obtain a certificate from the principal manufacturer on the date of manufacture of vehicles.	Regulations in place.	Available system	70%	100%		**DMT,** M/Transport, DC
5.8	Introduce the requirement of a fuel efficiency certificate from the country of origin for used vehicles before shipment and prior to registration.	Regulations in place.	Current procedures	60%	100%		**DMT,** M/Transport, DC

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
6.	**Establish a system for the surveillance of ambient air quality.**	System for data analysis and institutional mechanism for monitoring in place.	Existing data 2008	70%	100%		**M/E&NR**
	Actions						
6.1	Design and implement an island wide ambient air quality monitoring programme to cover all major cities.	Monitoring stations available in major cities.	2 provincial stations available	30%	100%		**CEA,** M/E&NR
6.2	Acquire equipment/montitoring stations for key locations.	Monitoring equipment available.	Available equipment	30%	100%		**CEA,** M/E&NR
7.	**Manage indoor air pollution through technical and social interventions.**	Number of interventions adopted and practiced.	Data taken from the pilot project	20%	100%		**M/E&NR**
	Actions						
7.1	Compile database on indoor air pollution.	Database compiled.	Data taken from the pilot project	10%	100%		**M/E&NR,** AirMAC, NBRO,CEA
7.2	Develop a National Action Plan including projects.	Action Plan approved.	Data taken from the pilot project	65%	100%		**M/E&NR ,** AirMAC, NBRO,CEA, M/H&N
7.3	Facilitate change to use of safe and efficient cooking stoves by people, preferably using biogas.	Increase in purchase of such stoves/cookers.	Available data	10%	40%		**M/E&NR ,** AirMAC, NGOs, NERD

National Action Plan for Haritha Lanka Programme

Mission 2

Saving the Fauna, Flora and Ecosystems

Mission 2: Saving the Fauna, Flora and Ecosystems

Preamble

For a small country, Sri Lanka is endowed with an exceptionally rich and diverse array of fauna, flora and ecosystems. From time immemorial this rich biodiversity has served the people as a source of food, fuel, medicines and a range of raw materials needed for their livelihood. They used these renewable resources without depleting them. In other words they practised sustainable living centuries before the term "sustainability" was introduced in today's context of balancing economic development with environmental protection.

Times have changed, and today Sri Lanka is identified as one of the world's biodiversity hotspots i.e. an area which is rich in biodiversity but where the biodiversity is subject to high levels of threat. The natural forests of the country which are the home to the large majority of indigenous animal and plant species were cleared at a rapid rate during the colonial period for raising plantations of tea and rubber. In more recent times forests have been cleared for agriculture and to accommodate a rapidly expanding population. A good part of this clearing has been due to encroachment on state forest land. Estimates made in 1999 indicated that the island's forest cover was diminishing at the rate of approximately 30,000 hectares annually. Also subject to dwindling areas are the wetlands – the habitats of numerous aquatic species of plants and animals, including a rich diversity of birds. In and around urban areas the loss of wetlands is due to land fill.

Many of Sri Lanka's unique assemblage of species are endemic to the country i.e. they are found nowhere else in the world. Loss of habitat has led to a threat to their survival and the end result of this trend is extinction. The amphibians whose typical habitat is the inter-phase between land and water are extremely sensitive to environmental change. Some 21 species of amphibians that had been recorded earlier are considered to have gone extinct and of the 106 endemic species now present 52 are considered to be under threat. Many species of plants and animals show point endemism, being found in only a single location; this sharply increases their vulnerability.

A good part of Sri Lanka's biodiversity also resides in non-forest areas and croplands. Sri Lanka has been referred to as a "gold mine" in reference to the large number and diversity of rice varieties found in the country. The traditional village home gardens including typical Kandian home gardens are a veritable cornucopia of plant species used for food and medicines. Current trends place these valuable genetic resources under threat.

Sri Lanka's biodiversity, apart from its intrinsic value as our priceless natural heritage, is important as a storehouse of genes that could be used for improving the quality of cultivated plants and may provide pharmaceuticals of immeasurable value in treating human diseases.

A wide range of strategies and corresponding actions have been set out to strengthen the conservation measures now in place, and to introduce new measures where gaps exist, for conserving plant and animal species in forest, wildlife and wetland ecosystems; in croplands; and in ex situ conservation centres.

Mission 2: Saving the Fauna, Flora and Ecosystems

Strategies

1. Strengthen policy, legal and institutional framework for biodiversity conservation, including information sharing & networking aspects.

2. Establish optimum Protected Area network and ensure recovery of important threatened species.

3. Conserve and sustainable use flora and fauna outside the protected area network.

4. Establish biodiversity conservation financing mechanisms through biodiversity valuation and economics of conservation.

5. Wise use of genetic resources for agriculture in sustainable manner.

6. Limit access to genetic resources.

7. Preserve traditional knowledge and practices relevant to biodiversity conservation.

8. Integrate and promote research and development on bio-diversity conservation in all sectors.

9. Facilitate sustainable use of biodiversity through benefit sharing mechanisms.

10. Integrate agenda on biodiversity into education and agendas of other related sectors.

Mission 2: Saving the Fauna, Flora and Ecosystems

Actions

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.	**Strengthen policy, legal and institutional framework for biodiversity conservation, including information sharing & networking aspects.**	Knowledge and research networks and clearing house mechanism. Quantity and quality of information generated.	Available information up to 2008	50%	100%		**M/E&NR**
	Actions						
1.1	Formulate national policy on biodiversity conservation, including information sharing and networking aspects.	Policy in place.	Draft policy	100%			**M/E&NR,** DWLC, DFC
1.2	Establish & institutionalize bio-diversity information management network.	Information management network established.	No Network Available		100%		**M/E&NR**
1.3	Develop rules and guidelines for starting and operating exsitu conservation centers including the acquisition of specimens for breeding and the re-introduction of captive-bred specimens.	Rules and guidelines in place.	National Zoological garden Act. National Botanical Garden Act.		100%		**M/E&NR,** DWLC, DoA, M/AD&AS, NBGD, NZG
1.4	Strengthen the protection of indigenous crop and domesticated animal genetic resources and farmers rights through appro -priate legislative mechanism.	Legislation in place.	Available data		100%		**M/AD&AS,** DoA, M/E&NR, DoAP&H

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
2.	**Establish optimum Protected Area (PA) network and ensure recovery of important threatened species.**	Extent of PAs, increased. Number of representative ecosystems. Number of recovery plans in place.	28% of area covered 2 0		32% of coverage 10	 10	**ME&NR**
	Actions						
2.1	Identify critically important biodiversity hotspots in the country outside existing protected areas and declare these under a relevant category and develop representative Protected Area (PA) Network.	Number of new hotspots identified. Extent of protected area network. Number of representative ecosystems in PA Network.	25 5% of area			32 10% of area	**DWLC,** DFC, M/E&NR, CEA
2.2	Study the status/trends in wildlife areas, identify need for wildlife corridors, linkages as an option for species conservation.	Number of corridors. Extents of protected areas.	2			10	**DWLC,** DFC, M/E&NR, DoA, M/AD&AS
2.3	Prepare and implement recovery plans for threatened species that need special conservation actions.	Number of recovery plans prepared and being implemented. Decreasing number of threatened species.	No available data		5 2%	10 5%	**DWLC, DFC,** M/E&NR, DoA, M/AD&AS, NSF, NBGD
2.4	Take effective action to relocate encroachers whereever possible and prevent further encroachment of natural forests.	Further encroachment prevented by 2020.	No available data			2%	**DFC,** DWLC, M/E&NR

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
2.5	Determine population of domesticated elephants and tuskers.	Number of registered domesticated elephants. Number of registered tuskers.	90%	95%	100%		**DWLC,** M/E&NR
2.6	Determine best practices to mitigate animal - human conflicts and implement them. 1. Elephant - Human 2. Crocodile - Human	Increase in length of electric fencing in place. Other measures identified and implemented. Decrease in no. of elephant deaths and human deaths.	Existing data available	20%	50%	100%	**DWLC,** M/E&NR, M/DM&HR, DMC, SLSA , M/NB&EID
2.7	Improve management of Protected Areas by habitat enrichment, boundary demarcation and fire management.	Area of improvement of grassland habitats. Number of rehabilitation & construction of water bodies. Area of control of invasive species, length of boundary demarcation. Number of boundary posts. Number of fire protection belts.	5% 50%			100% 100%	**DWLC,** M/E&NR, DFC, CEA
2.8	Continue wetland conservation plans including implementation of Wetland Management Plans.	Follow up on Wetland Conservation Project. Establishment of relevant management committees/ working groups and action underway. Coverage of conservation of wetlands.	Existing conservation plans	15%	40%	100%	**CEA,** SLLR&DC, Dis.Secs, Div. Secs, DWLC, DFC, M/E&NR

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.	**Conserve and sustainable use flora and fauna outside the protected area network.**	Adequate no. of exsitu conservation techniques facilities in place and practiced.	Not available	20%	40%	100%	**M/E&NR**
	Actions						
3.1	Identify species requiring exsitu conservation measures, assess and restore their habitats and provide for their reintroduction.	Necessary assessments completed and restoration & reintroduction programmes underway.	Assessments 2% Programme 1%			50% 50%	**DWLC,** DFC, M/E&NR, NBGD
3.2	Establish more botanic gardens and field gene banks and mandate them to undertake exsitu conservation of biodiversity in all bioclimatic regions of Sri Lanka.	Botanic gardens in all bioclimatic regions. Increased no. of field gene banks.	2			10	**NBGD,** M/E&NR, M/AD&AS, DoA
3.3	Develop capacity of National Zoological Gardens to engage in ex-situ conservation programmes and serve as a regulator for zoological species exsitu centers in general.	Increased number of exsitu facilities.	1			3	**NZG,** M/E&NR
3.4	Expand the programme of setting up urban biodiversity parks and develop relevant education and awareness programmes.	At least one biodiversity park in each major urban area. Awareness programmes carried out.	5			20	**M/E&NR,** UDA, NBGD, NZG
3.5	Expand programmes for afforestation, reforestation and forest rehabilitation, using indigenous species as far as possible.	Increased extent of afforested, reforested and rehabilitated areas.	Number of areas to be covered	10%	40%	100%	**DWLC,** DFC, STC, M/E&NR, M/NB&EID

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.6	Establish domesticated animal genetic resource centers.	Number of centers established.	No available data			1	**M/E&NR**
3.7	Conserve pollinators and their habitats. Improve the soil microorganism communities for Sustainable agriculture productivity.	Number of conserved pollinators. Number of soil microorganism communities improved.	Not available			1	**DoA,** M/AD&AS, NBGD, M/E&NR, UoP
3.8	Establish threatened plant gardens, especially for critically endangered plant species.	Adequate no. of threatened plant gardens, including all critically endangered plant species.	1		5	8	**DFC,** STC, M/E&NR, NBGD, DoA, M/AD&AS
4.	**Establish biodiversity conserv -ation financing mechanisms through biodiversity valuation and economics of conservation.**	Contribution to the GDP.	Not available			10%	**M/E&NR**
	Actions						
4.1	Develop innovative financing mechanisms to generate sustainable self-financing for biodiversity conservation.	Number of innovative financing mechanisms developed.	Existing MBIs	1 mechanism	3 alternative mechanisms		**M/E&NR,** DWLC,DFC
4.2	Develop and implement bio-prospecting programmes with relevant institutions established and strong institutional support.	Number of bio-prospecting programs. Percentage GDP increase from natural products.	Not available			40% 5%	**M/E&NR,** DFC, EDB, M/ED&IT, Ayu. Ins
4.3	Identify and introduce appropriate economic instruments and remove the previous incentives for biodiversity conservation.	Number of incentive schemes removed & economic instruments introduced.	Existing MBIs	20%	50%	100%	**M/E&NR,** M/F&P, NPD

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
4.4	Develop and maintain database on value of biodiversity, undertake valuation studies and quantify the biodiversity contribution to GDP.	Data Base maintained and biodiversity contribution to GDP quantified. Coverage.	Not available	5%	10%	40%	**M/E&NR,** M/F&P, NPD
4.5	Investigate eco-friendly income generating cottage industries and agro-industries, and develop their transport and marketing systems.	Number of industries identified. Number of industries supported. Increase number of foreigners. Coverage.	Existing Industries	2 provinces	6 provinces	8 provinces	**M/RI&SEP,** DoA, M/AD& AS, M/TMDC&CA, M/NB&EID
5.	**Wise use of genetic resources for agriculture in sustainable manner.**	Genetic resources conserved and utilized. New niche from agro bio-diversity. Coverage.	10%	15%	20%	25%	**M/AD&AS**
	Actions						
5.1	Identify and conserve underutilized food crops and wild relatives of crops.	Number of crop species identified and recorded.	2%	5%	10%	30%	**DoA,** M/AD&AS, M/E&NR
5.2	Carry out genome mapping of food crops and their wild relatives.	Number of crops and relatives mapped genetically.	Not available		2%	5%	**DoA,** M/AD&AS
5.3	Increase genetic diversity of improved crop varieties.	Index of diversity of parent material.	0.5%		2%	5%	**DoA,** M/AD&AS
6.	**Limit access to genetic resources.**	Required regulatory mechanisms in place and implemented.	Existing mechanism	Available set of draft		Set of regulation	**M/E&NR**
	Actions						
6.1	Develop regulations, procedures, and guidelines & benefit sharing mechanisms for access to genetic resources.	Availability of regulations, guidelines and mechanisms.	Not available			Set of regulation	**M/E&NR,** DoA, M/AD&AS

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
6.2	Develop and implement a consultative process including public consultation, on regulatory mechanisms for access to genetic resources.	All necessary consultative meetings completed.	Available information	100%			**M/E&NR**
7.	**Preserve traditional knowledge and practices relevant to biodiversity conservation.**	Methods implemented and practiced.	Existing practices	20% coverage	60% coverage	100% coverage	**M/E&NR**
	Actions						
7.1	Identify and preserve traditionally important ecological sites, indigenous people and associated knowledge.	Traditionally important ecological sites & associated knowledge protected. Methods used.	Existing practices	Sites identified		Preservation methods implemented	**M/E&NR,** PGIAr, M/AD&AS, Universities, M/NB&EID
7.2	Mobilize and develop cultural practices and traditional wisdom related to biodiversity.	Number of practices mobilized. Coverage.	Existing practices	10%	50%	100%	**M/E&NR,** PGIAr, M/CA
8.	**Integrate and promote research and development on bio-diversity conservation in all sectors.**	Number of research findings applied in conservation.	Available Research reports	Research initiated in key sectors	Research reports		**M/E&NR**
	Actions						
8.1	Regulate harvesting of native freshwater organisms.	Regulations in place.	Existing regulations	Draft regulations	Gazette available		**DWLC,** MASL, M/I&WM, DFC, DoA, M/AD&AS, M/E&NR

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
8.2	Ensure management and control of invasive alien species.	Reduction in areas of spread of invasive alien species.	Existing areas to be covered (2008)	20%	100%		**DWLC,** MASL, DoA, M/AD&AS, M/E&NR
8.3	Initiate programmes to identify and rehabilitate degraded critical habitats.	All programmes initiated.	Areas to be identified	5%	40%	60%	**DWLC,** DFC, M/L&LD
8.4	Promote research on invasive alien species, with particular focus on documenting their impacts and determining efficient methods for their management.	Increased research in this field.	Research areas to be covered	1%	1%	2%	**DWLC,** M/E&NR, DOA, M/AD&AS
8.5	Initiate national level taxonomic revision of plant and animal species through collaborative research with foreign institutions and experts and Upgrade the status and capacity of bio-depositories to facilitate research on taxonomy.	Taxonomic revision underway. Status & capacity of bio-depositories upgraded as necessary.	Not available	1%	2%	5%	**M/E&NR,** Universities, DOA, M/AD&AS
8.6	Promote interdisciplinary research that focuses on plant-animal interaction.	Increased research in this field. Methods to promote research.	Not available	Report on methodo -logy	Research reports		**M/E&NR,** Universities
8.7	Conducting research about Wildlife.	Research reports.	Existing reports and gaps	5 Initiatives	5 research reports		**DWLC,** Universities
8.8	Initiate research and monitoring programmes on impacts of climate change and natural hazards on biodiversity.	Research initiated.	Areas to be covered	Coverage of key areas 10%	60% coverage	100% coverage	**M/E&NR,** Universities DOA, M/AD&AS

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
8.9	Initiate island wide survey of biodiversity in managed landscapes, including home gardens, urban areas and agricultural systems.	Research initiated.	Not available	10%	100%		**M/E&NR,** Universities
8.10	Assess the conservation status of all taxonomy in Sri Lanka and prepare complete Red List of Threatened Fauna and Flora of Sri Lanka.	Red List prepared. Area covered.	Existing list	10%	60%	100%	**M/E&NR,** IUCN, DOA, M/AD&AS
9.	**Facilitate sustainable use of biodiversity through benefit sharing mechanisms.**	Agreed and accepted benefit sharing mechanisms in place and practiced. Coverage.	Existing mechanism and gaps		60%		**M/E&NR**
	Actions						
9.1	Develop a database on harvesting levels and exsitu cultivation of medicinal plants, aquatic ornamentals and other horticultural species.	Database available, including information on income from ex-situ conservation.	2%	2%	5%	10%	**DWLC,** M/E& NR, DFC, M/TMDC&CA, DOA, M/AD &AS
9.2	Assess viability of production from principal wild food plants, identifying distribution, socio-economic impacts, harvesting levels and sustainability issues.	Number of assessment studies.	Not available	Finalized project proposals	Assessment reports	Assessment reports	**DWLC,** M/E& NR, DFC, DoA, M/AD&AS, M/RI&SEP

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
9.3	Plan and implement a mecha -nism to provide incentives for establishment of community woodlots near areas of high bio-diversity and minimize extraction of firewood from such areas.	Incentive schemes being implemented in all relevant areas, Court cases on illegal firewood collection.	Existing schemes	Incentive schemes	Incentive schemes		**DWLC,** DFC, M/E&NR
9.4	Monitor protected areas continuously to ensure that uses are sustainable, especially pollution and disturbance caused by vehicles and excessive visitors in fragile ecosystems.	At least one case study for every protected area. Coverage.	Protected areas to be covered	20%	100%		**DWLC,** FDC, CEA, M/E&NR
9.5	Improve the efficiency of conversion of raw materials to final products of all biological natural products including timber, medicinal plants and other non-timber forest products.	Increased rate of conversion efficiency. Introduction of new technology. % applications of zero waste concept.	Not available	100% available			**STC,** DFC, CEA, M/E&NR, DoAP&H, Ayu. Ins
9.6	Develop the infrastructure in the protected areas.	Buildings, roads and water bodies rehabilitated where necessary. Communication equipment needs satisfied.	Protected areas to be developed			100%	**M/UD&SAD,** DWLC, M/E&NR
9.7	Promote Eco- Tourism.	Annual income through tourism. Number of foreign visitors. Number of local visitors. Number of visitor centers. Number of camp sites. Ecological conservation. measures taken.	Data 2008	10% increase with ecological conservation	20% increase with ecological conservation	30% increase with ecological conservation	**M/Tourism,** DWLC, M/NB&EID, DFC, M/E&NR

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
9.8	Improve livelihood of surrounding communities thereby reducing dependency on protected area resources.	Number of Programmes developed. Number of micro planning implemented.	Existing data	Programmes	Programmes	Programmes	**DWLC,** M/E&NR, M/NB&EID
10.	**Integrate agenda on biodiversity into education and agendas of other related sectors.**	Biodiversity conservation aspects are incorporated in curricula at all stages of study.	Existing coverage and gaps	10%	100%		**M/E&NR**
	Actions						
10.1	Establish a mechanism to link educational institutes with biodiversity conservation agencies and departments.	Mechanism established. Monitoring reports. Coverage.	Existing linkages	20%	100%		**M/E&NR,** M/E
10.2	Prepare manuals, brochures, and booklets to support capacity building efforts and public awareness on biodiversity, and make them available in school libraries and bookshops.	Manuals, brochures and booklets available in school libraries & bookshops. Coverage.	Available data	20%	100%		**M/E&NR,** M/E

National Action Plan for Haritha Lanka Programme

Mission 3

Meeting the Challenges of Climate Change

Mission 3: Meeting the Challenges of Climate Change

Preamble

Member states of the United Nations adopted the Framework Convention on Climate Change in May 1992. In so doing they acknowledged that human activities are continually discharging greenhouse gases (GHGs) into the atmosphere – gases that are progressively causing global warming by trapping the earth's heat. Carbon dioxide causes the highest impact; the others are methane, oxides of nitrogen and chlorofluorocarbons. Besides the direct impact of the rise in temperature on plant and animal life, global warming will cause perturbations in the earth's weather patterns and a rise in sea level.

Alterations in weather patterns are generally expected to increase rainfall in wet areas and exacerbate water shortages in dry areas. Sea level rise will occur due to the melting of polar ice sheets and a decrease in the snow cover in mountainous regions as well as the expansion of ocean water bodies. That human induced global warming will occur is now inevitable, but its scale will depend on the extent to which the global community, particularly the developed countries, will adopt measures to restrict the emission of greenhouse gases.

Sea level rise will have a major impact in the coastal areas of Sri Lanka where a high proportion of the population lives. Dwellings, public utilities, many hotels that cater to the tourist industry and a range of infrastructures will fall victims to the advancing sea.

Climate change will have a wide range of adverse impacts. The incidence of vector-borne diseases is expected to increase; harmful insect pests in the dry zone, benefiting from the rise in temperature, will grow in abundance; people in the dry zone will experience more prolonged dry weather and more severe water shortages; and the fauna in the dry zone forests, including those in the national parks, will experience shortages of food and water. On the other hand wet zone will experience increased rainfall creating flooding and associated land sliding in the hill county.

Regarding agriculture, the increase in atmospheric carbon dioxide will increase yields up to a critical level if the temperature were to remain constant, but this potential increase will be offset by the negative effect of the increased ambient temperature which will decrease yields.

Although not a significant contributor to global warming, Sri Lanka has mapped out a series of actions to play its part in addressing this global problem. These include a wide range of actions to reduce the output of GHGs in the transport, industrial and energy sectors and increasing forestation which will serve as a means of carbon sequestration.

In order to combat the effects of global warming many strategies and corresponding actions have been proposed. These include carrying out health surveillance and identifying high risk areas in relation to human health as a result of predicted climate change and upgrading control measures; identifying species and varieties of crop plants that would respond positively to increased ambient temperature and higher levels of atmospheric carbon dioxide; adopting appropriate land and crop management technologies; promoting rain water harvesting in the dry zone; discouraging building construction in vulnerable sections of the sea coast; and enhancing Sri Lanka's capacity to engage in carbon trading.

Mission 3: Meeting the Challenges of Climate Change

Strategies

1. Establish country specific policies and action plans to counter adverse climate change impacts.
2. Promote the use of economically viable, environment friendly, renewable energy resources, with emphasis on non-conventional energy resources.
3. Optimize energy consumption through energy efficiency in enterprises and promoting substitution of fossil fuels by renewable energies in economic and production sectors.
4. Promote supply side & end use energy efficiency.
5. Promote carbon sequestration.
6. Promote Integrated waste management.
7. Identify Infrastructure vulnerability to climate change.
8. Ensure that land use zoning reduces vulnerability to adverse impacts of climate change.
9. Make rain water harvesting at site level mandatory.
10. Take adaptive measures expecting an increase of vectors.
11. Establish Food Security in the face of climate change threats.
12. Develop and adopt energy saving technologies in agriculture.

Mission 3: Meeting the Challenges of Climate Change

Actions

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.	**Establish country specific policies and action plans to counter adverse climate change impacts.**	All necessary national polices and action plans developed.	NACCC 2008 decision	40%	100%		**M/E&NR**
	Actions						
1.1	Develop the National Policy and Action Plan on Climate Change for Sri Lanka.	National Policy and Action Plan in place.	Initial National communicatiion 2000	100%			**M/E&NR,** Climate Change Secretariat
1.2	Develop the National Policy on Clean Development Mechanism to promote financially not feasible sustainable development programs in Sri Lanka.	National Policy on CDM established.	Draft CDM policy to be reviewed 2009	100%			**M/E&NR,** Climate Change Secretariat
1.3	Establish the SAARC action plan on climate change to provide a regional perspective to climate change issues.	SAARC Action Plan in place.	Cabinet paper directing development of action plan 2008	100%			**M/E&NR,** Climate Change Secretariat
1.4	Develop the second national communication as per the country obligations under the UNFCCC.	Second National Communica-tion prepared.	Project initiated 2008	40%	100%		**M/E&NR,** Climate Change Secretariat

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.5	Develop the National Green House Gas Inventory for Sri Lanka.	The Green House Gas Inventory available.	Preliminary inventory available 2000	45%	100%		**M/E&NR,** Climate Change Secretariat
1.6	Enhance capacity of the Sri lanka Carbon Fund to engage in Carbon trading and enhance the capacities of the National CDM Centers and local consultants in CDM.	Number of CERs facilitated by the Sri Lanka Carbon Fund.	Sri Lanka Carbon Fund established 2008	50%	100%		**M/E&NR,** Climate Change Secretariat
1.7	Increase national awareness on climate change impacts and CDM.	Increased awareness on climate change and CDM.	Not available	100%			**M/E&NR,** Climate Change Secretariat
2.	**Promote the use of economically viable, environment friendly, renewable energy resources, with emphasis on non-conventional energy resources.**	20% increase in the renewable energy percentage of the national grid.	4.80% SEA established			10% by 2016	**M/P&E**
	Actions						
2.1	Promote mini/micro hydropower projects.	Number of mini/micro hydro projects facilitated.	1365 projects	200 (Additional)	250 (Additional)	400 (Additional)	**SEA,** M/P&E, Pvt. Sector
2.2	Promote other renewable energy sources such as dendro, wind, waves, solar, ocean thermal electric conversion (OTEC), wastes to energy, biogas from sewage, etc.	Number of feasibility studies implemented. Priortisinng on the basis of countries potential.	12 surveys undertaken	24	64	100	**SEA,** M/P&E, Pvt. Sector, SLCF

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
2.3	Introduce solar power irrigation systems.	Number of systems introduced.	1%	2%	3%	10%	**M/AD&AS**
3.	**Optimize energy consumption through energy efficiency in enterprises and promoting substitution of fossil fuels by renewable energies in economic and production sectors.**	Benchmarked industries.	Not Available		7 by 2013		**M/P&E**
	Actions						
3.1	Replace petroleum based fuel by Gliricidia fuel wood for industrial heat.	Reduction of consumption of petroleum fuels for industrial heat.	3% (several projects initiated)	6%	15%	50%	**M/S&T**
3.2	Promote use of wood gasification technology.	Tons of Oil replaced by gassifiers.	17,000 gassifiers	43,000 gassifiers (Additional)	215000 gassifiers (Additional)	172000 gassifiers (Additional)	**M/S&T,** SEA, M/P&E, M/E&NR
3.3	Promote use of alternate transport fuel technologies that reduce GHG emissions (e.g.LPG/bio-fuels in place of petrol & diesel).	Reduction in fossil fuel used for transport.	Court case pending		3% by 2010	10% by 2015	**SEA,** M/E&NR, M/P&E
3.4	Promote biogas use for household cooking and lighting.	Number of household units using biogas.	5000 households. Technology available.	300	600	1000	**M/S&T,** M/NB&EID MREAP/ TAARP-B
3.5	Promote hot water boilers instead of steam boilers.	Popularity for hot water boilers.	Available data		100%		**SEA,** M/P&E, Pvt. Sector, SLCF

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.6	Adoption of fuel switching to water heating by introducing bio-mass boilers.	Fuel saving.	Projects already initiated		422t	1693t	**SEA,** M/P&E, Pvt. Sector, SLCF
4.	**Promote supply side & end use energy efficiency.**	Number of labeled appliances (Energy Intensity Toe/million SDR). Electricity transmission & distribution loss (%).	0 517 15.7%	2 loss reduction 513.25 GWh 2 projects	6 in 2013 Loss reduced to13.5% by 2013	500 by 2017	**M/P&E**
	Actions						
4.1	Introduction of Energy labels and man scale awareness.	Number of Energy labels introduced.	Studies available	3	6	50	**SEA,** M/P&E
5.	**Promote carbon sequestration.**	Number of projects implemented under CDM input to increase afforestation and reforestation.	National policy on CDM available		20%	50%	**M/E&NR**
	Actions						
5.1	Conserve existing carbon pools such as forests.	Number of projects developed for implementation through REDD initiatives.	Sri Lanka party to Kyoto protocol 2010			100%	**DFC,** M/E&NR
5.2	Increase the size of the carbon pool by reforestation and afforestation of degraded forests, marginal croplands and waste lands.	Extent of afforested and reforested land through improved sustainability by CDM.	800 ha/year		4000 ha/year	6000 ha/year	**DFC,** M/E&NR, Pvt. Sector
5.3	Adopt agronomic practices in cultivation species such as rubber etc.	Data available on carbon fixation in agronomic practices with crop like rubber.	CDM policy 2010		50%	100%	**RRI,** Estate managements, M/AD&AS

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
6.	**Promote integrated waste management.**	Proper waste management systems practiced.	Available waste management systems		50%	100%	**M/LG&PC**
	Actions						
6.1	Establish solid and liquid waste management programs with appropriate measures to reduce emission of methane and use CDM to improve the financial feasibility and long term viability of the projects.	Number of waste management projects implemented with CDM financing.	NPSWM available and implementation initiated		50%	100%	**CEA,** LAs, M/LG&PC, M/E&NR
6.2	Compost production and utilization for Agriculture.	Number of farms using.	2% of total available	3%	4%	10%	**DOA,** M/AD&AS
7.	**Identify Infrastructure vulnerability to climate change.**	Priority infrastructure under risk identified.	Available infrastructure facilities	30%	55%	100%	**M/UD&SAD**
	Actions						
7.1	Discourage construction of buildings forming barriers along the sea coast and encourage creation of wind corridors perpendicular to the sea.	Relevant planning guidelines in place.	Building guidelines available	100%			**UDA,** M/UD&SAD, LAs, M/LG&PC
7.2	Make shade tree planting along urban streets and urban public parks systems with at least 50% tree cover mandatory in all low and mid-country areas of the country and use of CDM financing to improve the long term sustainability of projects.	Regulations in place.	Urban development guidelines available	100%			**M/UD&SAD,** RDA, UDA

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
7.3	Undertake infrastructure vulnerability assessment study.	Report on infrastructure vulnerability.	Capacity available		100%		**M/UD&SAD,** RDA
8.	**Ensure that land use zoning reduces vulnerability to adverse impacts of climate change.**	National Physical Plan and Urban Development Plans truly integrating this concern.	Available data on land use zoning	50%	100%		**M/UD&SAD**
	Actions						
8.1	Implement an islandwide climate change vulnerability assessment exercise, initiating with in highly vulnerable areas such as coastal and low lying.	Report on vulnerability available.	NACCC established with a mandate	50%	100%		**NPPD,** UDA, M/UD&SAD
9.	**Make rain water harvesting at site level mandatory.**	Making rain water harvesting systems mandatory.	Available systems	100%			**M/UD&SAD**
	Actions						
9.1	Establish systems at the houses in the dry zone and other areas for good quality rain water harvesting.	Number of houses using rain water harvesting systems.	Activities already initiated	10%	25%	45%	**M/NB&EID/** TAARP-B/ TAARP-E
10.	**Take adaptive measures expecting an increase of vectors.**	Measures taken.	Existing Measures	20%	60%	100%	**M/NB&EID**
	Actions						
10.1	Identify high risk areas with respect to predicted climate change impacts and upgrade vector control programs.	Number of high risk areas identified. Number of programs introduced.	Few studies already available	20%	50%	100%	**M/NB&EID/** NECORD II/ Gamanaguma Programme, M/H&N

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
10.2	Increase health surveillance by health authorities in more vulnerable provinces to monitor increase of heat related diseases.	Improved systems to detect changes in health condition.	M/Health has necessary net working for surveillances			100%	**M/H&N**
11.	**Establish Food Security in the face of climate change threats.**	Action plan of food security developed and implemented.	Not available	20%	60%	100%	**M/AD&AS**
	Actions						
11.1	Select high yielding, improved climate change resistant rice varieties and those that are positively responsive to elevated CO_2.	Number of varieties identified.	0.5%		1%	2%	**RRI ,** M/AD&AS
11.2	Use of ultra short term varieties that tolerate biotic and abiotic stress.	Number of hectares cultivated with such varieties. Coverage.	0.5%	2%	3%		**DoA,** M/AD&AS, Farmers
11.3	Adopt suitable land and crop management technologies.	Identification and application of better technologies.	10%	15%	20%	25%	**DoA,** M/AD&AS, Farmers, M/NB&EID
11.4	Adjust rain fed farming to rainfall variations-cultivation of short duration paddy in the Yala season and long duration paddy in the Maha season.	New cultivation patterns identified and introduced.	30%	40%	60%	90%	**DoA,** M/AD&AS, Farmers

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
11.5	Adjust crop seasons to suit new climate, e.g. certain climatic conditions favour outbreak of the Brown Plant Hopper (BPH) in the low country dry zone - adapt changes in agronomic practices in paddy cultivation such as advancing the time of cultivation from May to March, introducing pest resisting varieties and use of recommended insecticides.	Changes made by farmers in crop patterns and crops cultivated.	10%	10%	15%	20%	**DoA,** M/AD&AS, Farmers
11.6	Establish a surveillance and forecasting system.	Forecasting system in place.	1%	1%	2%	5%	**DoA,** M/AD&AS
11.7	Select rubber genotypes to suit different environments- Clones RRISL 215 and RRISL 217 are highly stable overall with a high mean performance and are not as sensitive to changes in environmental conditions. RRIC 100 is the most suitable clone for areas with low rainfall (Withanage, 2004).	Cultivation of climate adjusted rubber varieties by planters.	Studies available			100%	**RCD**
11.8	Adjust cultivation timing in home gardens - the cropping calendar should be altered to match the simulated cropping calendar in order to minimize irrigation water demand for crops.	Changes made to cropping calendar by farmers & home gardeners considering climate change.	5%	10%	15%	25%	**DoA,** M/AD&AS, Farmers, DoA

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
12.	**Develop and adopt energy saving technologies in agriculture.**	Energy saving technologies developed and adopted in agriculture.	1%	1%	2%	5%	**M/AD&AS**
	Actions						
12.1	Switch to fuel efficient agro-mechanization.	Percent area under such uses.	0.005%	0.1%	0.5%	3%	**DoA,** M/AD&AS, DoEA
12.2	Introduce renewable energy use, e.g. solar power technology for irrigation and agro - processing.	Number of units in use. Coverage.	0.005%	0.05%	0.1%	2%	**DoA,** M/AD&AS, DoEA
12.3	Recycle crop residue and farm waste.	Percent area/farms adopting such techniques.	10%	15%	20%	25%	**DoA,** M/AD&AS
12.4	Promote low energy rainwater harvesting technologies.	Reduction in energy use for irrigation.	0.005% energy use	0.05% energy use	0.1% energy use	2% energy use	**DoA,** M/AD&AS, M/NB&EID

National Action Plan for Haritha Lanka Programme

Mission 4

Wise Use of the Coastal Belt and the Sea Around

Mission 4: Wise Use of the Coastal Belt and the Sea Around

Preamble

Many parts of the coastal belt are densely populated. Fisheries, manufacturing, tourism and many service activities are highly concentrated in the coastal zone, and in 2004 it was estimated that the coastal zone contributed 44% to the national GDP. With the high concentration of economic activities in the coastal area, there is an overwhelming need to take action to maintain the integrity of the environment.

The fishery industry is foremost among the many economic activities that use the resources of the coastal belt and the surrounding sea. The marine fish resources are found in the coastal waters that overlie the continental shelf and in the deep sea beyond. Around a million people depend on the fishing industry for their livelihood, and fish constitutes an important protein intake of the population . The vast bulk of fish production comes from the coastal waters. As a result of the sharp increase in the frequency and intensity of near shore fishing and the common failure to apply proper fishing technologies fish stocks have got depleted. Besides fish species, lobsters, crabs, prawns, cuttle fish and holothurians form an important part of the harvest. Many species are now on the point of being endangered due to over-exploitation.

Other economic activities involving the use of natural resources are coral mining for lime production, capturing of live ornamental fish mainly for export, and sand collection from the beaches and sand dunes. These activities, at current levels of exploitation, are environmentally damaging.

Tourism in Sri Lanka is based, to a considerable extent, in the coastal belt, the main attraction being the sandy beaches, coastal waters, and lagoons and estuaries. Many of the tourist hotels are located in close proximity to the beaches. Maintaining the natural beauty of the coastal environment is vital to sustaining this industry.

Sea erosion is a serious problem in some sections of the coast. This problem is aggravated by the destruction of coral reefs and by sand mining both in the beach and in river beds. River bed mining reduces sand nourishment of the beaches and so promotes coastal erosion. The tsunami of 2004 led to many programmes aimed at attaining sustainability in coastal and marine resources management suffering a serious setback.

Safeguarding the coastal belt and the near shore areas is of critical importance to the continuing development of the country. The coastal fishing grounds will have to be given protection by increasing production from the deep sea and inland sources and reducing the catch from coastal waters. Better fishing techniques have to be used. Special measures based on scientific studies will have to be adopted to conserve endangered species. Reduction in post-harvest losses could make a significant impact on the sustainable management of these resources. Fishery management plans will have to be implemented with the participation of the fishing community. The coastal zone management plan has to be put into full effect, with emphasis on protecting vulnerable parts of the coast from erosion, relocating communities where necessary to maintain a healthy coastal zone environment; and effectively preventing pollution.

Mission 4: Wise Use of the Coastal Belt and the Sea Around

Strategies

1. Develop marine & inland fisheries in an ecologically sustainable manner.

2. Develop and rehabilitate the coastal belt conserving its natural resources and minimize vulnerability to natural hazards.

3. Stabilize eroding coastal stretches using soft solutions such as coastal resources & habitat rehabilitation to the maximum level.

4. Promote environmentally friendly fishing practices in place of harmful fishing practices.

5. Prevent Coastal and marine pollution through appropriate measures.

Mission 4: Wise Use of the Coastal Belt and the Sea Around

Actions

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.	**Develop marine & inland fisheries in an ecologically sustainable manner.**	Sustainable development of marine and inland fisheries ensuring production increase by 5% annually and 65% by 2035. Measures taken to ensure sustainability. Number of applications introduced.	Applications Available	10%	20%	40%	**M/F&AR**
	Actions						
1.1	Implement SAM Plans with measures to ensure sustainability.	Number of SAM Plans implemented. Number of applications introduced to ensure sustainability.	9		12 by 2011		**M/F&AR,** CCD
1.2	Promote & facilitate inland fisheries in order to reduce exploitation of marine habitat in an ecological sustainable manner.	Increased production from inland fisheries. Number of applications introduced to ensure ecological sustainability.	Available data 2008	100%			**M/F&AR,** DoF, M/NB&EID
1.3	Take necessary measures to conserve the endangered species by creating awareness among the fishermen and relevant stakeholders.	Awarness programmes conducted. Number of target groups addressed.	Available data	50%	100%		**M/F&AR,** DoF, NARA, M/E&NR

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.4	Adopt measures to conserve the resources through establishing closed seasons and closed areas for fishing.	Area covered.	Existing Practices	40%	100%		**M/F&AR,** DoF, NARA
1.5	Conduct fish stock surveys at appropriate intervals to ensure sustainability of the ecosystem.	Number of surveys conducted.	Present suruey on identified species.		100%		**M/F&AR,** DoF, NARA
1.6	Introduce co-management for inland and coastal fisheries so that those engaged in fishing will, on their initiative, adopt responsible fishing practices and protect the resources.	Increase the number of fisheries societies.	403 coastal and 415 inland fisheries societies	30%	100%		**M/F&AR,** NAQDA, DoF
1.7	Introduce long line fishing technology to engage fishing in offshore in order to reduce the over exploitation of coastal water.	Number of Long liners introduced.	Not available		100%		**M/F&AR,** DoF
1.8	Encourage multi day fishing vessels to fishing in high seas in order to reduce the over exploitation of coastal water.	Increase number of fishing vessels for offshore fishing.	10			75%	**M/F&AR,** DoF
1.9	Introduce better designs for boats in order to reduce post harvest losses and waste of fish resources.	Reduce post harvest losses.	30%			100%	**M/F&AR,** DoF

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
2.	**Develop and rehabilitate the coastal belt conserving its natural resources and minimize vulnerability to natural hazards.**	Area Covered.	Existing area covered	25%	50%	100%	**M/F&AR**
	Actions						
2.1	Revise Coastal Zone Management Plan (CZMP) & relevant regional physical plans, and expedite gazetting of coastal area Urban Development Plans not yet gazetted.	Relevant zoning plans revised/prepared & gazetted.	1997 CZMP, some coastal regional and urban development plans in place	2010			**M/F&AR,** CCD, NPPD, UDA, NARA
2.2	Identify & relocate communities /activities incompatible with zoning plans.	Relocation projects formulated and successfully completed.	Available data	25% by 2010	60% by 2013	100% by 2016	**M/F&AR ,** CCD, UDA
3.	**Stabilize eroding coastal stretches using soft solutions such as coastal resources & habitat rehabilitation to the maximum level.**	Area Covered.	Existing eroding coastal stretches	25%	50%	100%	**M/F&AR**
	Actions						
3.1	Implement artificial beach nourishment measures.	Reduction of user conflicts among fishermen.	Data available 2008 (08km)			100%	**M/F&AR,** CCD
3.2	Construct coastal protection structures only where essential in accordance with zoning regulations, without degrading the visual environment, and restore areas visually degraded by earlier structures.	Minimum, well-integrated coastal protection structures & restoration of coastal landscapes where necessary.	Available data 2008 (18km revertments, 2.06km groynes, 0.3km gabian boxes)		40%	100%	**M/F&AR,** CCD

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.3	Expand the green belt on the coastline with the participation and sustainable use of communities/coastal inhabitants.	Increased area of coastal forest Prevent Sea erosion.	90km	25%	50%	100%	**M/F&AR,** CCD, CEA, DoF, NGOs & CBOs, M/NB&EID, M/Tourism, SLTB, M/DM&HR
3.4	Prevent coral mining in damaging reefs.	Number of raids reduced. Demands for alternative sources for lime increased.	29 raids per year	100%			**M/F&AR,** Police, CCD, DWLC, GSMB
3.5	Strictly manage sand mining in an ecologically sustainable manner.	Number of control measures applied. Demands for alternative sources for sand increased.	30 raids per year	100%			**M/F&AR,** Police, CCD, DWLC, GSMB
3.6	Establish and maintain coastal information systems.	Proper data & information available.	Information system in Place	35%	80%		**M/F&AR,** CCD, NARA
3.7	Establishment of green belt within the coastal zone.	Area Covered.	100ha			100%	**CCD,** DoF
3.8	Development of beach access.	Number of access roads.	33			100%	**CCD,** RDA
4.	**Promote environmentally friendly fishing practices in place of harmful fishing practices.**	Zonation in place. Surveillance system and responses in place.	System available	40%	100%		**M/F&AR**
	Actions						
4.1	Establish a data base on harmful fishing practices on a district basis and assess their impact on marine biodiversity.	Database available at district level.	Existing data		100%		**M/F&AR,** NARA, DoF, Universities, CCD

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
4.2	Introduce community based management systems to control harmful fishing practices.	Fishery management area gazette available. Number of fisheries cooperative societies formed.	Fishery management area gazette available		100%		**M/F&AR,** DoF, CCD, NARA, M/NB&EID/ REPSI
4.3	Provide support for fishermen engaged in harmful activities to change their fishing activities.	Number of complaints on illegal and harmful fishing activities reduced.	Available data		100%		**M/F&AR,** DoF, Police, CCD, M/NB&EID/ NECCDEP/ REPSI/ NEHRP
4.4	Strengthen enforcement of regulations on illegal fishing.	Number of raids increased.	Available data	20%	80%		**M/F&AR,** DoF, Police, CCD
4.5	Initiate studies to estimate the wild stocks of marine mammals around Sri Lanka and assess the impacts of by-catch on the wild population.	Study reports available.	Data on marine Mammals	40%	100%		**M/F&AR,** NARA, Universities, NSF
4.6	Conduct awareness to prevent catch & sale of the flesh of threatened species.	No further catch & sale of threatened species.	Data on threatened species		100%		**M/F&AR,** DoF, CCD, NARA, Universities
4.7	Develop environmentally friendly and cost effective fishing gear, vessels, fishing techniques and practices, create awareness among fishermen and promote application of these practices.	Number of environment friendly fishing techniques adopted. Number of awareness programmes conducted. Number of target groups.	Available data	50%	100%		**M/AD&AS,** DoA,

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
5.	**Prevent coastal and marine pollution through appropriate measures.**	Legal framework developed and implemented. Conservation measures practiced and monitored.	Existing legal frame work and Existing conservation practices	10%	50%	90%	**M/F&AR**
	Actions						
5.1	Implement the provisions of the Coastal Zone Management Plan and other coastal related laws and regulations.	Management system in place. Incidents of breach of law reduced.	Existing Management Plan	100%			**M/F&AR,** CCD
5.2	Rehabilitate the coastal and marine environment affected by Tsunami.	Natural eco-systems restored. Area covered.	Available data		40%	80%	**MEPA,** CCD, M/NB&EID/ NECCDEP/ TAARP-B
5.3	Promote the culture of marine and brackish water fish including ornamental fish to reduce pressure on natural stocks in an ecological sound manner.	Fish culture farms increased. Demand for natural stock decreased.	Available data 2008		100%		**M/F&AR,** DoF, NARA, M/Tourism, SLTB
5.4	Introduce laws and regulations to the structures which are functioning in the Tourism related activities on the beaches.	Regulations in place. Reduction of pollution in coastal area covered.	Regulations in Place	40%	100%		**M/Tourism,** SLTB

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
5.5	Introduce alternative livelihoods to reduce pressure on the coastal and marine environment.	Change from environmentally detrimental livelihoods to alternative ones, sometimes involving relocation of families living in the coastal areas.	Available data		40%	80%	**M/F&AR,** CCD, UDA, M/Tourism, SLTB
5.6	Develop/introduce environmentally friendly and economically viable fish waste disposal systems.	Fish waste management and disposal system established.	Existing Systams	40%	100%		**M/F&AR,** DoF, M/AD&AS
5.7	Prevent disposal of hazardous waste including waste oil and untreated effluents into aquatic environment by improving existing systems and developing new systems.	Preventive measures taken.	Not available	50%	100%		**MEPA**

National Action Plan for Haritha Lanka Programme

Mission 5

Responsible Use of the Land Resources

Mission 5: Responsible Use of the Land Resources

Preamble

For over two millennia, Sri Lanka's society has been agrarian based. During the time of Sri Lanka's ancient, famed hydraulic civilization, the rulers, while promoting agricultural development, recognized the importance of proper use of the land. In the undulating landscape of the dry zone, different areas were appropriately set apart for cultivation, for settlements, and for retention in forest cover. The changes that have taken place subsequently, mainly the birth of the crop plantation sector, the growth of the industrial sector, and the rapid rise in population with the consequential emergence of a wide range of social issues have led to a situation where the country's vital land resource began to be heavily over-exploited, leading to land degradation.

In the agricultural landscape, paddy cultivation is the dominant feature and it has expanded considerably with the establishment of many major irrigation schemes. The tea, rubber and coconut plantations are next in importance. Chena cultivation, mainly in the dry zone, and vegetable gardens in the mid- and up-country contribute substantially to the food requirements of the people. In the industrial sector, the land resource is the base for the extraction of many different minerals. Strategies and actions for fulfilling the mission have to focus on the many issues relating to the different forms of land use.

It is the agricultural sector that requires the greatest attention. Land improvement measures have to be adopted on an extensive scale to correct past malpractices. Improved land preparation and efficient irrigation and plant nutrient management practices have to be put into effect. The vegetable, potato and tobacco cultivations and the neglected tea lands in the hill country should be the target for the adoption of strict soil conservation measures for protecting the land as well as preventing the silting of downstream reservoirs. The scientific capability has to be strengthened and effectively used to support the farmer in a variety of ways such as for proper crop selection, for promoting the use of crop and animal species that are resistant to pests and diseases, for adopting soil conservation measures, and by providing soil testing facilities. With the possibility of increased drought conditions resulting from climate change, there is need to develop drought resistant crop varieties. Chena cultivation causes continuing soil degradation and has to be replaced by a more productive and stable farming system.

Action needs to be taken to establish a forest cover in degraded and neglected cultivated land, particularly in upper watershed areas. Action will also be taken to improve management practices in natural forests and forest plantations.

In the mining sector, sand collection, particularly from river beds, will be strictly controlled. Measures will be taken to find alternatives to river sand and for a greater use of off shore sand for building construction. In all mining operations (e.g. gem mining) action will be taken to ensure that mined sites are rehabilitated.

The review of all land related laws and regulations with a view to strengthening their effectiveness in addressing land degradation problems and the revision and implementation of the National Physical Plan are among the other proposed actions.

MISSION 5: RESPONSIBLE USE OF THE LAND RESOURCES

STRATEGIES

1. Reduce land degradation in agricultural areas.
2. Rehabilitate deteriorated lands.
3. Develop and implement programmes for the use of non-cultivated agricultural lands.
4. Optimize soil conservation through mandatory & other measures.
5. Promote precision farming, traditional verities of crops and crops to fit agro-ecological condition.
6. Conserve, restoring and improve important representative landscapes.
7. Integrate a system to restore, reclaim and rehabilitate mined areas
8. Carry out assessment on Forest cover of Sri Lanka, including different categories of forests.
9. Improve management of commercial plantations.
10. Promote the integrated management of upper watersheds.
11. Mitigate and adaptation to drought.
12. Review Land related Laws.

Mission 5: Responsible Use of the Land Resources

Actions

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.	**Reduce land degradation in agricultural areas.**	Area covered.	Extent of reduced land degradation so far	10%	30%	100%	**M/AD&AS**
	Actions						
1.1	Promote minimum tillage practices.	Area covered.	Practiced in limited areas	5%	10%	15%	**M/AD&AS**, DoA
1.2	Select and recommend crops according to the land class.	Number of site-specific recommendations.	Present method of recommendation	25%	40%	50%	**DoA**, M/ AD&AS
1.3	Provide incentives for undertaking of land improvement measures.	Funds disbursed. Area covered.	Amount of funds distributed in 2007	20%	30%	50%	**M/AD&AS**, DoA
1.4	Introduce integrated plant nutrient management practices.	Area covered.	Extent covered in 2007	20%	30%	50%	**DoA**, M/ AD&AS
1.5	Introduce better irrigation management practices/technologies to reduce soil erosion.	Reduction of percentage of soil erosion.	Present irrigation managemennt practices	10%	25%	50%	**DoI**, DoA, M/ AD&AS, M/IWM
1.6	Conduct further research studies on soil fertility improvement measures, conservation farming practices, home garden models and agro forestry systems, including livestock.	Research finding of relevant areas.	Existing research findings	5%	10%		**DoA**, LUPPD, M/ AD&AS

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
2.	**Rehabilitate deteriorated lands.**	Area Covered.	Extent rehabilitated in 2007	5%	10%	25%	**M/AD&AS**
	Actions						
2.1	Rehabilitate saline-affected lands.	Area rehabilitated.	Extent of saline affected land rehabilitated 2007	2%	5%	10%	**DoA**, M/AD&AS
2.2	Improve drainage systems in low-lying agricultural land.	Area improved.	Present drainage systems in low line agricultural lands	5%	10%	15%	**DoA**, M/AD&AS
2.3	Rehabilitate existing solid waste dumping sites and prevent further contamination.	Number of sites rehabilitated.	Available data 2007	25%	60%		**PCs**, LAs, CEA, WMA, BOI, M/ID, M/E&NR, M/PC&LG
2.4	Prepare a national action plan to replace chena cultivation with a sustainable farming system.	Action plan prepared.	Not Available	100%			**M/AD&AS,** DoA M/NB&EID
2.5	Promote the plan among farmers and provide incentives to the farmers to implement the plan.	Farmers changing their practices. Awareness campaigns.	Present farming practices		25%	35%	**M/AD&AS,** DoA, M/NB&IED, SLSA, M/S&PE
3.	**Develop and implement programmes for the use of non-cultivated agricultural lands.**	Number of Programmes implemented.	Abandoned agriculture land extent	10%	30%	50%	**M/AD&AS**
	Actions						
3.1	Cultivate abandoned paddy lands.	Area cultivated.	Extent cultivated in 2007	5%	10%	25%	**M/AD&AS**, DoA, M/NB&EID

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.2	Promote incentive programmes.	Number of incentive programmes promoted.	Available programmes	10%	25%	40%	**M/AD&AS** , DoA, MASL
4.	**Optimize soil conservation through mandatory & other measures.**	Legislation enacted and extent of soil conservation measures expanded.	Soil Conservation Act	15%	25%	40%	**M/AD&AS**
	Actions						
4.1	Extend area of landslide hazard mapping by NBRO as necessary to ensure full coverage of such areas in Sri Lanka.	Additional mapping completed.	Data 2007	50%			**NBRO,** M/L&LD, DMC, M/DM&HR
4.2	Improve and disseminate guidelines for soil conservation.	Guidelines improved & disseminated.	Soil Conservation master plans	10%	20%	35%	**M/AD&AS ,** NRMC of DoA, LUPPD
4.3	Establish Committees of representatives from relevant authorities.	Committee appointed and monitoring mechanism established.	Committees established	75%	80%	100%	**M/AD&AS,** LUPPD, DoA, Dis. Secs
4.4	Restrict further settlements, cultivation or other human activity including road & railway construction in areas identified as highly landslide prone areas.	Regulations in place.	Available regulations & Acts	75%			**LUPPD,** Dis. Secs, M/L&LD
4.5	Divert a part of the taxes levied on export of plantation products, especially tea, to financing soil conservation measures instead of cutting down the subsidies of planters who do not adopt soil conservation measures.	A sustainable financing system in place (Sustainable Subsidy Scheme).	Present method of taxing	20%	80%		**M/F&P,** M/L&LD, M/PI

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
4.6	Promote high quality organic fertilizer.	Increased use of organic fertilizer.	Present practices	10%	25%	50%	**M/AD&AS** , DoA, M/NB&EID
5.	**Promote precision farming, traditional varieties of crops and crops to fit agro-ecological condition.**	Measures Taken.	Not Available	10%	15%	25%	**M/AD&AS**
	Actions						
5.1	Introduce mobile soil testing laboratory services before cultivation seasons.	Mobile lab service in operation.	Not Available	15%	30%		**DoA**, M/AD&AS
5.2	Promote laboratory services to check the soil nutrient requirement and ascertain what fertilizers and chemicals are required to meet it.	Farmers testing soil and using fertilizers and chemicals as per requirement.	Existing practices	25%	30%	50%	**DoA**, M/AD&AS
5.3	Identify traditional crop and animal species that are resistant to pests and diseases.	Crops and animal species identified.	Available information	50%	65%	75%	**DoA**, M/AD&AS
5.4	Identify areas where such crops could be cultivated effectively.	Area map for cultivating traditional varieties.	Available information	25%	50%	75%	**DoA**, M/AD&AS
5.5	Promote cultivation of such species in suitable areas.	Promotion campaigns. Traditional crops cultivated in suitable locations.	Available information	10%	35%	55%	**DoA**, M/AD&AS
5.6	Practice crop zoning principles; e.g. one crop - one village.	Number of crop villages established. Area planted under crop zoning.	Not Available	3%	7%	20%	**DoA**, M/NB&EID, M/AD&AS
5.7	Introduce Crop Rotation.	Area cultivated.	Existing practices	75%	90%	95%	**DoA**, M/AD&AS

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
6.	**Conserve, restoring and improve important representative landscapes.**	Landscape character map prepared and used in national regional and local level physical planning and land scape conservation on going.	Data 2007	20%	50%	100%	**M/UD&SAD**
	Actions						
6.1	Prepare Landscape Character Map/s and recommendations for whole island.	Landscape Character Map/s prepared and relevant recommendations for revision of existing physical plans made.	Some work done by CCDwith UoM	Map & recommend -ations ready by 2010			**M/UD&SAD** , UDA
6.2	Revise national, regional and local level physical plans where necessary.	Revision of plans completed.	Presently available plans		50% relevant revision of physical plans completed by 2012	100% relevant revision of physical plans completed by 2015	**NPPD**, UDA, M/UD&SAD
6.3	Formulate & take action to implement revised plans.	On-going implementation of actions required owing to revision of physical plans.	Data 2007		50% relevant actions being implemented by 2013	100% relevant actions being implemented by 2016	**NPPD**, UDA & all other relevant Departments, M/UD&SAD
6.4	Establishment of environmental Resource Information system using GIS technology.	Environment resource information system established.	Available resources information system		40%	75%	**CEA**, M/E&NR
6.5	Introduce Strategic Environmental Assessments (SEA) for major development programmes/Plans/Policies.	SEA introduced.	Data 2007		15%	45%	**CEA**,M/E&NR, other agencies doing develop -ment activities

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
6.6	Identify geologically unique sites and declare them as preserved areas.	All unique sites declared.	Sites identified in 2007	75%			**M/E&NR,** GSMB
6.7	Revise & implement National Physical Plan.	Revised National Physical Plan gazetted & being used.	Available plan 2007	70%			**NPPD**
7.	**Integrate a system to restore, reclaim and rehabilitate mined areas.**	Regulations improved. Monitoring system in place and land degradation due to mining reduced.	Existing system	30%	60%	100%	**M/E&NR**
	Actions						
7.1	Introduce & enforce stricter legislation including severe penalties for default in rehabilitation of mined areas.	Proportion of relevant projects carrying out successful rehabilitation annually.	Available legislation	30% by 2010	60% by 2013	100% by 2016	**GSMB**, GJA, SLLRDC, NERD, M/E&NR
7.2	Establish a monitoring committee/squad for each district, to monitor compliance.	Monitoring committees/ squads established.	Present monitoring system	30%			**GSMB**, GJA, CEA,M/E&NR
7.3	Carry out further research on alternatives to river sand.	Further alternatives to river sand found.	Available research findings	20%	55%		**ICTAD**, Universities , GSMB,NBRO, CEA, M/E&NR
7.4	Promote use of alternatives to river sand through awareness and making it easier for the consumers to reach them.	Awareness campaigns. Consumer friendly delivery of alternatives.	Data 2007	12%	27%		**M/E&NR**, CEA, ICTAD, Pvt. Sector, NBRO
7.5	Strictly implement rules and regulations on sand mining.	Implementation mechanisms in place with strong institutions.	Present method of implementation	40%			**GSMB,** M/E&NR, DoP
7.7	Implement National Sand Policy.	Sand Policy incorporated in other programmes.	Sand policy	25%			**GSMB,** M/E&NR, CEA

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
7.8	Promote use of sea sand.	Volume of sea sand issued to market for construction.	Data 2007	20%	80%		**SLLRDC**
8.	**Carry out assessment of Forest cover of Sri Lanka, including different categories of forests.**	Area Covered.	Present assessments available	75%			**M/E&NR**
	Actions						
8.1	Purchase Satellite Imageries.	Satellite imageries purchased.	Data 2007	65%			**DFC,**M/E&NR
8.2	Prepare guidelines.	Guidelines prepared.	Available guidelines	80%-90%			**DFC,**M/E&NR
8.3	Interpretation.	Guidelines interpreted.	Present method of interpretation	75%-80%			**DFC,**M/E&NR
8.4	Estimation of different categories of forests.	Different categories of forests estimated.	Present categorization	60%			**DFC,**M/E&NR
9.	**Improve management of commercial plantations.**	Area Covered.	Data 2007	62%			**M/E&NR**
	Actions						
9.1	Survey Plantations & Prepare Maps.	Surveyed Plantations & prepare Plantation Maps.	Data 2007	60%			**DFC**,M/E&NR
9.2	Take Pre & Post Felling Inventory.	Update plantation Database.	Data 2007	70%			**DFC**,M/E&NR
9.3	Silvicultural treatments.	Treatment Plantations.	Data 2007	50%			**DFC**,M/E&NR
9.4	Updating maps.	Updated Maps.	Available maps	60%			**DFC**,M/E&NR
9.5	Regeneration.	New Plantations.	Data 2007	40%			**DFC**,M/E&NR
10.	**Promote the integrated management of upper watersheds.**	Measures taken. Area covered.	Available plans and data.	10%	30%	70%	**M/E&NR**

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
	Actions						
10.1	Develop master plan to integrate catchments conservation practices for important watersheds.	Developed Master Plans.	Available plans		100%		**M/AD&AS,** M/E&NR
10.2	Identify degraded or degradation prone areas and regularize or relocate encroachers and settlers as the case may be.	Relocation of people who live in sensitive areas.	Data 2007			5%-10%	**LUPPD,** M/E&NR, SD, M/L&LD
10.3	Promote on-farm and off-farm soil and water conservation measures in critical watershed areas.	Practicing water and soil conservation measures in critical watershed areas.	Existing Practices	25%	40%	60%	**DoA**, NGOs, CBOs, M/AD&AS
10.4	Promote and strengthen coordination among different organizations dealing with land and water management practices.	Coordination between different organization dealing with land and water management practices.	Present method of coordination	40%	60%	75%	**M/AD&AS,** M/E&NR, M/L&LD
10.5	Promote participatory approaches to land resources management.	Increasing the number of participation.	Data 2007	5%	60%	80%	**M/ L&LD**, NRMC, DFC, DoA, M/AD&AS
10.6	Identify hill country areas which are unsuitable for farming although farming practices are going on.	Vulnerable areas identified. Areas with farming practices identified.	Data 2007	45%- 50%	65% -75%		**M/L&LD,** LUPPD, DMC, M/DM&HR
10.7	Identify alternative farming practices and lands.	Alternative farming practices and lands identified.	Data 2007	5%	40%	60%	**DoA,** LUPPD, M/AD&AS

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
10.8	Shift farmers from current practices to sustainable farming practices.	Farmers moving to alternate lands and/or agricultural crops.	Present farming practices	20%	25%	50%	**M/AD&AS,** DoA LUPPD, Dis. Secs, M/NB&EID/ Gamanguma Programme
11.	**Mitigate and adaptation to drought.**	Measures taken.	Existing Practices	10%	25%	50%	**M/AD&AS**
	Actions						
11.1	Promote water conservation practices and domestic rainwater harvesting.	Number of rainwater harvesting tanks established in area.	Number of tanks established in 2007	5% of existing tanks	15% of existing tanks	40% of existing tanks	**DoA**, PCs, M/AD&AS
11.2	Improve the facilities at the research involved resistant crop verities and appropriate technologies.	Improve the facilities in research center.	Available facilities in research centers	2%	10%	25%	**DoA**, M/AD&AS
11.3	Integrate concept/ characteristics of a green village into the village management system.	Coverage. Number of villages.	Existing village management systems	2%	10%	25%	M/NB&EID/ Gamanguma Programme
12.	**Review Land related Laws.**	Number of Laws reviewed.	Available laws			90%	**M/E&NR**
	Actions						
12.1	Review all existing land related laws and regulations and assesses legal impact on land degradation and suggests necessary changes.	Review the existing laws.	Available laws			90%	**M/L&LD**
12.2	Explore the possibility of developing an umbrella framework law to deal with land related issues in a manner.	Developed umbrella Framework law.	Available law			80%	**M/L&LD**

National Action Plan for Haritha Lanka Programme

Mission 6

Doing Away with the Dumps

Mission 6: Doing Away with the Dumps

Preamble

Solid waste is generated by households, commercial and industrial establishments, markets, etc. Over the years, the proper disposal of this waste has proved to be an intractable problem despite the many efforts that have been made to address it; hence the unsightly and environmentally degrading waste dumps that are a common sight. The generation of waste is primarily an urban phenomenon, and the high rate of urbanization will continue to pose a growing challenge to the local authorities who are responsible for the collection and disposal of waste. Current developments such as the use of polythene and other non-degradable packaging material, the discarding of growing quantities of used electrical and electronic equipment, the increasing discharge of clinical waste, and the entry into the country of e-waste in the guise of resources are factors that have collectively added to the difficulties in resolving the problem of waste management.

Many forms of waste (e.g. discarded electronic equipment and clinical waste) are potentially hazardous. The indiscriminate dumping of hazardous material with other solid waste can pose a threat to those who engage in handling and picking waste while also exposing the people living in the area to a variety of communicable diseases.

At present nearly all of the solid waste collected by the local authorities is unloaded at dump sites or used for land fill. No attempt is made to segregate the material at the source into what is hazardous, what is recyclable, and what can be treated (e.g. for composting), while leaving only the remaining part to be used for land fill. A serious problem facing local authorities is the acute shortage of land for waste disposal. Hence the use of whatever land that is available in a more economical manner will help to ease the problem by prolonging the life span of the land fill site. It is expected that the pilisaru programme developed in line with the national policy on solid waste management will accelerate the integrated approach to addressing this problem. Farms could adopt a variety of measures to reduce the generation of waste such as promoting the production and use of organic fertilizer and reducing post harvest losses.

In the industrial sector, the production of waste can be reduced considerably through "life cycle management" where minimizing the generation and reducing the toxicity of waste is factored into the designing, manufacturing, consumption and disposal of a product. The "polluter pays principle" should also be enforced to ensure environmentally sound treatment and disposal of industrial solid waste. The accumulation of hazardous wastes in the non-hazardous waste stream has to be avoided and the management of hazardous waste improved.

Local Authorities need to strengthen their institutional mechanisms for solid waste management. New initiatives are needed – obtaining community participation; segregating waste at the source and setting up mechanisms to deal with the different categories of waste; and integrating collection sites, storage sites, and landfill sites. A range of actions are proposed for dealing with the waste management issues and doing away with the dumps.

Mission 6: Doing Away with the Dumps

Strategies

1. Promote Life Cycle management of waste.

2. Strengthen the institutional mechanism for solid waste management in every Local Authority.

3. Establish necessary infrastructure for solid waste management in each Local Authority or adopt appropriate alternative methods.

4. Prevent accumulation of Hazardous Wastes in to the non hazardous wastes streams.

5. Apply Polluter Pay Principle and environmentally sound treatment and disposal of industrial solid waste.

6. Apply zero waste concepts in agricultural farms.

Mission 6: Doing Away with the Dumps

Actions

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.	**Promote Life Cycle management of waste.**	Number of possible waste streams covered.	Existing Life Cycle Management Practices	20%	50%	100%	**M/E&NR**
	Actions						
1.1	Promote life cycle management in designing, manufacturing, consumption and disposal of products, based on principles of sustainable consumption and production.	Number of waste streams covered under Life Cycle Management. (LCM) Number of major waste streams that can be considered for LCM 2008.	Existing systems in place	20%	50%		**CEA**, M/E&NR, LAs, M/PC&LG, WMA, M/ID, BOI, PCs
1.2	Integrate strategies to prevent, reduce, re-use and recycling before treatment and final disposal of waste and ensure treatment and final disposal of residual waste.	The country is free from waste dumps.	Existing strategies available	40%	100%		**CEA,** M/E&NR, LAs, WMA, BOI, M/ID, M/PC&LG, PCs
2.	**Strengthen the institutional mechanism for solid waste management in every Local Authority.**	Measures taken to strengthen the institutional mechanism.	Existing mechanisms	50%	100%		**M/PC&LG**

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
	Actions						
2.1	Strengthen the institutional mechanism to involve residents individually and collectively in SWM.	A suitable institutional mechanism in place. Number of LAs covered.	Existing Implementation mechanism	60%	100%		**M/PC&LG,** LAs, PCs
2.2	Set targets, Monitor Progress and take collective action to bridge gaps.	Number of targets achieved to prevent, reduce, recycle treatment and final disposal of waste in an environmentally sound manner.	Existing systems in place	50%	100%		**M/PC&LG,** LAs, CEA, M/E&NR, PCs
2.3	Conduct surveys, community education and awareness programs on waste minimization segregation, recycling and composting and set targets to achieve the desired objective.	Number of waste management systems in place in each LA areas.	Survey reports available	100%			**CEA,** LAs, M/PC&LG, M/E&NR, PCs
3.	**Establish necessary infrastructure for solid waste management in each Local Authority or adopt appropriate alternative methods.**	Infrastructure facilities established in all Local Authorities.	Facilities available	20%	70%	100%	**M/PC&LG**
	Actions						
3.1	Integrate collection sites, storage sites and landfill sites in every Local Authority development plan.	Availability of a legally enforceable physical plan showing sites for solid waste management.	Existing plans	40%	100%		**LAs in consultation with the UDA,** RDA, CEA, M/E&NR, M/SD&SAD, PCs

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.2	Design landfills having capacity for at least 10 years, and extend their lifespan through minimizing and treatment options.	Designs and feasibility studies for the infrastructure for waste management.	Feasibility studies available	100%			**CEA**, LAs , M/PC&LG, PCs
3.3	Establish appropriate infrastructure for integrate waste management system.	Collection system, storage centers, recycling plants, composting plants, other suitable processing plants and landfills available.	Existing system available	10%	40%	100%	**LAs** , M/PC&LG, CEA, PCs
4.	**Prevent accumulation of Hazardous Wastes in to the non hazardous wastes streams.**	Hazardous Wastes Management systems in place.	Existing System	10%	60%	100%	**M/E&NR**
	Actions						
4.1	Formulate legislation to effect buy back of used electronic items.	Legislation in place.	Not available	100%			**M/E&NR,** CEA, CPA, M/TMDC&CA
4.2	Develop guidelines for environmentally sound resource collection, recovery and disposal of e-waste.	Guidelines in place.	Existing mechanism	100%			**CEA**, M/E&NR
4.3	Formulate legislation to prevent e-waste entering the country in the guise of resources.	Legislation to control e-waste in place.	Existing import control system	100%			**M/E&NR,** DoIEC, CEA
4.4	Formulate guidelines to distinguish e-waste from usable e-items.	Guidelines to identify e-waste developed and implemented.	Not available	100%			**M/E&NR**,CEA

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
4.5	Establish HCWM units at all major hospitals, with specific mandates.	HCWM units established at all major hospitals.	Existing units Available	20%	100%		**M/H&N**
4.6	Maintain the performance of the Health care Waste Management policies and take collective actions to bridge gaps.	Health Care waste Management system in place in major hospitals and implemented. Coverage.	Present monitoring schemes and gaps	20% improvement 20% filling of gaps	100% improvement 100% filling of gaps		**M/H&N**
4.7	Establish public-private sector partnerships to obtain services for hazardous waste management.	Cost effective hazardous waste management system.	Existing systems	50%	100%		**M/E&NR**, CEA, DoIEC, M/Tourism, BOI, M/ID
5.	**Apply Polluter Pay Principle and environmentally sound treatment and disposal of industrial solid waste.**	Number of applications.	Available schemes	40%	100%		**M/E&NR**
	Actions						
5.1	Formulate legislation to prevent release of untreated liquid waste into the environment with the cost recovery mechanism.	Legislation to prevent release of untreated sewage into the environment with cost recovery mechanisms in place.	Load Based License Scheme	40%	100%		**M/WS&D,** NWSDB, CEA, M/E&NR
5.2	Develop guidelines to prevent pollution of land and water due to sewage based on Polluter Pays Principle.	Guidelines for release of sewage to environment in prioritized sectors developed.	Available guidelines	100%			**NWS & DB,** M/WS&D, CEA, M/E&NR
6.	**Apply zero waste concepts in agricultural farms.**	Number of Agricultural farms with zero waste management systems.	Success stories & failures (2008)	20%	75%	100%	**M/AD&AS**

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
	Actions						
6.1	Promote organic fertilizer production and use.	Quantity of waste processed. Area using organic fertilizer. Reduction in mineral fertilizer use.	Practices available	10%	40%	60%	**DoA,** M/AD&AS, M/NB&EID
6.2	Reduce post-harvest losses.	Quantity saved.	Practices available	25%	50%	75%	**DoA,** M/AD&AS,
6.3	Use clean (waste-minimizing) technologies.	Number of technologies Used. Area covered.	Available technologies	30%	100%		**DoA,** M/AD&AS,
6.4	Introduce sanitary composting technology.	Number of technologies introduced.	Available technologies	2%	25%	50%	**DoA,** M/AD&AS,

National Action Plan for Haritha Lanka Programme

Mission 7

Water for All and Always

Mission 7: Water for All and Always

Preamble

Sri Lanka can be considered as a country that is well endowed with water resources since it receives, on an average, over 2000 mm of rainfall annually. Its spatial and temporal distribution, however, is such that a large part of the country (65%), referred to as the dry zone, experiences water shortages and droughts during several months in the year. Hence, taking action to ensure that the inhabitants of the dry zone have access to adequate supplies of water to meet their agricultural and domestic needs is of prime importance.

Another critical issue in relation to water, even in parts of the country where the resource is adequate in quantity, is the rapid deterioration of water quality owing to pollution from industrial, agricultural and domestic wastes. In the dry zone, heavy extraction of ground water from the limestone aquifers in the north and north-west can result in contamination with salt water while contamination with nitrogenous compounds has been seen to occur in different parts of the dry zone due to the heavy and unrestricted use of fertilizers.

In taking action to fulfill the mission, the major policy initiative, particularly applicable to the dry zone, would be to introduce water resources allocation and management on the basis of river basin units and sub-units. With the introduction of a water allocation system a series of actions can be put into effect through the active participation of the community to conserve and efficiently manage the limited water resources in an equitable manner. We could also draw lessons from Sri Lanka's past at which time village tanks were built in a cascade pattern, where a connected series of tanks was constructed within a micro-catchment. The water that is used for irrigation under one tank is passed on to the next for reuse, thereby making optimum use of this scarce resource. Many of these tanks are still in use while many others are non-functional but can be restored.

Regarding the country's irrigation system, new initiatives have to be put in place to secure the stability of the system and ensure efficiency in the use of irrigation water. The institutional mechanisms where the Departments of Agriculture and Irrigation will collaborate in implementing watershed conservation and water management practices have to be activated and a range of measures implemented. Micro and drip irrigation are technologies that could be adopted where feasible to economize on the use of water.

Contamination of water resources arises from many different causes, and a wide range of actions have to be adopted to address the problem. The first target should be to identify and eliminate pollution sources at water intakes and within the related catchments. On a wider scale, the polluter pays principle has to be enforced and the setting up of water treatment plants promoted. In the dry zone, regulating ground water extraction and improving fertilizer use efficiency are necessary measures to keep the ground water resource free of contamination.

Avoiding waste of water during any form of use is one sure way of ensuring that the available sources will last longer. Where necessary and feasible, the harvesting of rainwater and the adoption of recycling technologies will pay dividends in the form of ensuring a more secure supply.

Mission 7: Water for All and Always

Strategies

1. Establish a systematic water allocation system and improve efficiency and equity in water distribution for various purposes.

2. Organize a rehabilitation scheme for small tanks and revitalize the tank cascade system developed.

3. Transform the irrigation system to meet new challenges.

4. Keep drinking water sources free from contamination through proper zoning and control measures.

5. Integrate conservation, re-use and recycling practices at all levels of water use.

6. Strictly enforce the Polluter Pays Principle for water polluting industries/activities.

7. Strengthen implementation of integrated water resource management systems.

8. Reduce fertilizer leaching and eutrophication.

Mission 7: Water for All and Always

Actions

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.	**Establish a systematic water allocation system and improve efficiency and equity in water distribution for various purposes.**	River basin management units established at various levels based on a classification with required guidelines for ground water extraction.	Existing system gaps	Coverage of the Country 20%	Coverage of the Country 40%	Coverage of the Country 100%	**M/AD&AS**
	Actions						
1.1	Establish institutions for basin and sub river basin level management.	% in establishment of River basin & sub river basin management units. A suitable mechanism established.	Not available	20%	50%	100%	**M/AD&AS,** DoA, M/E&NR, CEA, M/I&WM, M/WS&D
1.2	Obtain participation of gender balanced stakeholders and state in establishing water sharing policies.	% increase in number and composition of stakeholders.	Present Composition	40%	75%	85%	**M/AD&AS,** DoA, M/I&WM
1.3	Practice a river classification system to abstract and utilize water.	Classified river systems in place.	Not Available		Event		**M/I&WM,** DoI, MASL
1.4	Formulate guidelines for ground water extraction for all purposes.	Guidelines developed.	Existing Practices	100%			**M/I&WM,** DoI, DoA, M/AD& AS, M/E &NR, CEA,NWS&DB, M/WS&D

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.5	Carry out a national level survey to explore the water use patterns by all user types, with the aim of attaining water security.	% Water use statistics covering all water user levels.	Existing use patterns	40% Coverage	100% Coverage		**M/I&WM,** DoI, DoA, M/AD& AS, M/E&NR, CEA, NWS&DB, M/WS&D
1.6	Introduce water-saving land preparation for paddy cultivation.	% of area covered.	Existing methods	40%	70%	90%	**M/AD&AS,** DoA, MASL
1.7	Develop and popularize drought-resistant crop varieties.	Number of crop varieties. Area planted.	Present Practices	15%	50%	75%	**M/AD&AS,** DoA
1.8	Introduce Micro Irrigation Technology.	Number of units.	Existing practices	25%	50%	70%	**M/AD&AS,** DoA
2.	**Organize a rehabilitation scheme for small tanks and revitalize the tank cascade system developed.**	Number of tanks rehabilitated and revitalized.	Number of tanks to be rehabilitate	20%	40%	100%	**M/AD&AS**
	Actions						
2.1	Formulate watershed improvement plans for the most critically affected minor irrigation systems.	Number of Watershed management plans in place.	Existing Level	20%	50%	75%	**M/AD&AS,** DoA, M/E&NR, CEA
2.2	Rehabilitate small/minor tanks using an ecological approach based on a survey of degraded minor irrigation systems.	Minor irrigation systems rehabilitated.	Existing Level	10%	50%	75%	**M/AD&AS,** DoA, DoI, M/I&WM, M/NB&EID/ NEIAP-II/ TIIP/REPSI

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
2.3	Trace and re-establish cascade systems.	Number of cascade systems traced and re-established.	Existing systems available		50%	75%	**M/AD&AS,** DoA, DoI, M/I&WM
2.4	Recognize and revitalize the village tank irrigation system and hand over the systems to farmer communities to manage them through an ecological approach.	Number of village tank irrigation systems recognized and revitalized. Number of farmer communites given responsibility in managing village tank irrigation system.	Existing implementation system	10%	60%	85%	**DoI,** M/I&WM, M/AD&AS, DoA, MASL, M/L&LD
2.5	Conserve ecologically significant water resources bases/watersheds.	Number of such ecologically important watersheds that are identified and conserved.	Existing practices	5%	30%	50%	**DoI,** M/I&WM, M/E&NR, DoA, M/AD&AS, MASL
3.	**Transform the irrigation system to meet new challenges.**	Number of additional benefits secured.	New challenges to be addressed	20%	40%	60%	**M/AD&AS**
	Actions						
3.1	Establish Institutional mechanism at DOA &DOI to integrate watershed conservation practices in all the water management programmes.	Implementation mechanism established.	Existing implementation mechanism	30%	50%	80%	**M/AD&AS,** DoA, DoI, M/I&WM
3.2	Introduce energy efficient, effective new irrigation techniques and devices.	% amount of energy saved. Number of energy audits per year carried out.	Existing energy audits	30%	60%	75%	**M/AD&AS,**DoI, DoA,M/I&WM, M/NB&EID

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.3	Carry out research and development on new irrigation techniques that have lesser irrigation water footprints.	Number of innovations.	Not available	1 activity	5 activities	15 activities	**M/AD&AS,** DoI, DoA, M/I&WM
3.4	Popularize solar powered irrigation systems and techniques.	% of increase in solar power techniques employed in the irrigation sector.	Present level	10%	50%	75%	**DoI,** M/AD&AS, DoA, MI&WM, Universities, M/S&T
4.	**Keep drinking water sources free from contamination through proper zoning and control measures.**	Keep drinking water sources free from contamination. Treatment cost reduced.	Present level	20%	60%	100%	**M/E&NR**
	Actions						
4.1	Develop and implement island wide water quality surveillance and monitoring programmes in water schemes.	% of island wide water quality surveillance and monitoring programmes in water schemes.	Existing programs		30%	70%	**CEA,** M/E&NR, M/WS&D, M/AD&AS, DoA, M/H&N
4.2	Conduct surveys on water bodies to identify pollution sources and types and to initiate appropriate actions.	Number of surveys carried out. Area covered.	Exising water quality monitoring programmes	100%			**CEA,** M/E&NR
4.3	Conserve watersheds that yield water for drinking water projects.	Number of such watersheds that have been identified and conserved. Coverage.	Number of schemes to be conserved	50%	100%		**NWS&DB,** M/WS&D, CEA, M/E&NR, M/NB&EID

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
4.4	Identify the pollution sources of water intakes and prevent further pollution.	Number of pollution sources identified and number of preventive actions taken. Coverage.	Existing pollution sources, records available	100%			**M/I&WM,** DoI, NWS&DB, M/WS&D, CEA, M/E&NR, LAs, M/LG&PC, M/H&N
4.5	Promote central waste water treatment plants for polluting industries and other agencies/establishments.	Number of central waste water treatment plants established. Coverage.	Existing plans	100%			**CEA,** M/E&NR, LAs, M/LG&PC, BOI, M/ID
4.6	Adopt measures to regulate extraction and contamination of ground water resources.	Percentage compliance.	Existing regulations	100%			**M/WS&D**
4.7	Decentralize the centralized rural water schemes and village sanitation programmes with participation of relevant stakeholders for sustainable management as appropriate.	Number of rural water schemes decentralized. Coverage.	Existing water schemes	10%	50%		**M/WS&D,** M/H&N
4.8	Draw up zoning plans for areas for water conservation.	Number of zoning plans developed.	Existing zoning plans		Plans available		**M/WS&D,** NWS&DB, M/E&NR, CEA, DoI, M/I&WM
4.9	Identify and demarcate catchment area water intakes and implement suitable protection programmes.	Increased number of protection programmes in catchment areas Area covered.	Programmes available		10%	25%	**M/AD&AS,** M/E&NR

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
4.10	Adopt a participatory approach for planning, construction, maintaining and monitoring of community water supply and sanitation projects.	Number of sanitation projects monitored through participatory approach.	Sanitation projects available	20%	50%	100%	**M/WS&D,** NWS&DB
4.11	Identify and conserve the peculiar water holding areas.	Number of peculiar water holding areas identified. Area covered.		20%	50%	100%	**M/I&WM,** DoI, M/E&NR, MASL, NWS&DB, M/WS& D
4.12	Protect water bodies, canal systems and wetlands.	Additional measures taken.	Existing water bodies, canal systems and wetlands		Measures available		**M/UD&SAD,** UDA, SLLR&DC, M/WS&D
5.	**Integrate conservation, re-use and recycling practices at all levels of water use.**	Water saving techniques introduced and assessed. % coverage in different systems.	Existing practices	20%	60%	100%	**M/E&NR**
	Actions						
5.1	Introduce water saving/re-using, recycling devices for conservation.	Number and types of water saving techniques used.	Available techniques	100%			**M/I&WM,** DoI, M/AD&AS
5.2	Promote the harvesting of rain water in urban areas.	Amount of rain water harvested. Coverage.	Existing data available	30%	100%		**UDA,** M/UD&SAD

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
5.3	Establish and spread new technology for reducing water use and improving productivity of small and medium schemes via micro and drip irrigation systems.	Number of farmers adopting new technology. Coverage.	Not available	20%	60%	100%	**M/I&WM,** DoI, M/E&NR, M/NB&EID
5.4	Carry out water usage audits in order to establish water foot prints for all institutions and duly reward those who use water efficiently and effectively.	Respective water foot prints.	Not available	20%	40%	100%	**CEA,** M/E&NR, M/WS&D, NWS&DB, LAs, M/LG&PC
5.5	Ensure effective drainage and handling of waste water from farming and food processing.	Area covered. Volume of water. Number of processing plants.	Not available		5%	25%	**M/AD&AS,** DoA, MASL
6.	**Strictly enforce the Polluter Pays Principle for water polluting industries/ activities.**	Prevention and control degradation the quality of water bodies in the country.	Available parameters	50%	100%		**M/E&NR**
	Actions						
6.1	Amend the National Environmental Act (NEA) to accommodate Wastewater Charge Programme (WCP).	Cabinet approval for the amendment. Draft amendment to the Act. Amendment passes through the Parliament.	Draft NEA amendment	Regulation in place			**CEA,** M/E&NR, LDD

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
6.2	Draft new regulations to implement the WCP.	Drafted regulations. Gazetted regulations.	Drafted regulations	100%			**CEA,** M/E&NR, LDD
6.3	Introduce and implement Wastewater Charge Programme.	Number of industries enters to the programme. Reduction of pollution load into the environment.	Concentration based standards.	50%	100%		**CEA,** M/E&NR
6.4	Take legal actions against industrialists who do not comply with legal requirements of the WCP.	Number of cases to be filed against industries/ Activities.	Number of cases to be taken up	10%	25%	50%	**CEA,** M/E&NR
6.5	Promote Cleaner Production principles & practices in industrial activities come under the WCP.	Number of industries enters the CP scheme. Reduction of effluent load and reduction of water utilization in the process.	Apply CP to Textile industries	10%	20%	30%	**CEA,** M/E&NR, BOI, M/ID
6.6	Conduct survey on Prescribed industries under the Gazette notification No.1533/16.	Database on prescribed activities.	Awareness programmes	100%			**CEA,** M/E&NR
7.	**Strengthen implementation of integrated water resource management systems.**	Extent of catchment areas increased. Institutional set-up in place for integrated water resource management.	Existing systems	10%	20%	50%	**M/E&NR**
	Actions						
7.1	Strengthen inspection procedures to detect illegal water consumption.	Number of cases filed.	Available inspection procedures		100%		**CEA,** M/E&NR, NWS&DB, M/WS&D

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
7.2	Enhance the capacity of the institutions to better manage irrigation systems including ground water resources.	Number of stakeholder institutions strengthened.	System available		100%		**M/I&WM,** DoI, M/AD&AS
7.3	Commit adequate funds for conservation of water catchments by major water users such as NWSDB and CEB, from their tariffs.	% of tariffs committed for water catchment conservation.	Available information	100%			**M/WS&D,** NWS&DB
7.4	Dedicate Upper Watershed areas for conservation and prevent them being exploited.	Extent of new catchment areas being conserved.	Available conserved catchment areas	100%			**M/E&NR,** Presidential Secretariat
7.5	Carry out surveys on water bodies to identify pollution sources and types island wide.	Number of surveys per year carried out.	Available records	100%			**CEA,** M/E&NR, NWS&DB, M/WS&D
7.6	Carry out surveillance and take actions where necessary to ensure that untreated sewage is not discharged into waterways and water bodies.	% increase of surveillance inspection on untreated sewage discharge.	Data available	100%			**CEA,** M/E&NR, NWS&DB, M/WS&D, Local Public Health Authorities
7.7	Establish more sanitary landfills islandwide for solid waste including hazardous wastes.	Number of landfills established. Coverage.	Information available			100%	**CEA,** M/E&NR
7.8	Complete the construction of central waste water treatment plants for industries in the coastal zone.	Construction completed.	Plans available	10%	50%	100%	**M/F&AR,** CCD, M/Tourism

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
8.	**Reduce fertilizer leaching and eutrophication.**	Percentage reduction. Area covered.	Available Programmes	25%	50%	75%	**M/AD&AS**
	Actions						
8.1	Promote methods to increase fertilizer use efficiency.	Amount of fertilizer saved.	Available Programmes	25%	50%	75%	**M/AD&AS,** DoA
8.2	Adopt control of soil erosion technology.	Area covered.	Soil conservation Act.	10%	25%	50%	**M/AD&AS,** DoA
8.3	Introduce split application of fertilizer.	Area covered.	Fertilizer Application guidelines	50%	75%	90%	**M/AD&AS,** DoA, MASL

National Action Plan for Haritha Lanka Programme

Mission 8

Green Cities for Health and Prosperity

Mission 8: Green Cities for Health and Prosperity

Preamble

Urban expansion that has taken place at a phenomenal rate since three decades ago was not accompanied by a planned framework. As a result, a number of problems have surfaced. These include urban sprawl; ribbon development along main roads; unplanned fragmentation of land; utilization of low-lying and environmentally sensitive areas for industrial, commercial and residential uses; decreased effectiveness of storm water drainage; and inadequate facilities for sewerage and solid waste disposal. At present urban areas account for over 30 per cent of the population and this is expected to grow to 45 per cent by 2015. Considering the current situation, and faced with the prospect of the challenges growing in magnitude, there is now an urgent and pressing need to address the issues if we are to attain the goals of the mission.

While declaring an Urban Sector Policy Framework is the starting point, the need of the hour is to move into implementation. Urban development plans integrating environmental concerns have to be prepared, making provision as appropriate for the different needs and proposing an urban design/townscape. Adequate land should be reserved for conservation needs including the protection of important wetlands. Provision must be made for setting apart adequate public outdoor recreation space. Biodiversity parks, while also supporting outdoor recreation, will promote appreciation of the country's biological wealth, and the setting up of such parks should be encouraged. The green cover of the cities should be expanded to improve the quality of the city environment.

Storm water management is a matter that requires urgent attention. Management plans have to be developed for all urban areas and projects initiated for their implementation.

Integrated solid waste management and hazardous waste management strategies and actions should be implemented in all urban areas. This would include the provision of suitable sites for the management of these wastes and facilitating public-private partnerships for construction, management and operation of solid waste management systems. Taking measures for reducing waste output and for recycling and treating different types of waste will go a long way in reducing the volume of material that finally reaches landfill sites. These measures have been emphasized under the Mission: Doing Away with the Dumps.

Sewer networks are now found only in three cities – in Colombo it serves 70% of the population and in Dehiwala and Kolonnawa only a small percentage of the households are connected. The development of networks with proper treatment facilities particularly for densely populated parts of some of the cities is one of the proposals. The setting up of biogas plants as a means of treating sewage is also considered.

Improving the transport system would make a significant contribution towards enhancing the quality of the city environment. One of the proposals is to develop efficient transport systems and mark out bus lanes where necessary. Proposals are also made for tree-planting, and for providing for pedestrian movement and for cyclists along urban roads.

Mission 8: Green Cities for Health and Prosperity

Strategies

1. Develop integrated urbanization plans to meet future environmental challenges.
2. Introduce state-of-the-art integrated solid waste management and hazardous waste management for all urban areas.
3. Manage urban sewage beneficially, without causing pollution.
4. Develop healthy & efficient transport networks in urban areas.
5. Conserve urban wetlands to maintain ecological stability.
6. Institutionalize actions related to landscape design & promoting establishment of green cities.

Mission 8: Green Cities for Health and Prosperity

Actions

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.	**Develop integrated urbanization plans to meet future environmental challenges.**	Number of physical plans gazetted at regional level.	2 provinces	03	04		**M/UD&SAD**
	Actions						
1.1	Workout and establish National Urbanization Sector policy Framework (USPF) to meet future challenges.	Policy established. Additional measures incorporated.	Existing policy	100%			**M/UD&SAD,** UDA, NPPD, M/E&NR, M/H&CA, M/PC&LG and Donors
1.2	Strengthen the institutional mechanism to implement the (USPF) policy.	Institutional Mechanism Strengthened at National Provincial and City Level.	Existing mechanism	100% National level 20% City level	50% provincial level 30% City level	100% provincial level 50% City level	**UDA,** M/UD&SAD
1.3	Prepare and gazette urban development plans integrating all environmental concerns.	Number of development plans gazetted. Availability of disaster management measures. Urban design/townscape proposed. Urban landscape master plans with public outdoor recreation space systems for urban areas islandwide prepared.	31	15 (additional)	25 (additional)	50 (additional)	**UDA,** M/UD&SAD

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.4	Develop compact, energy-efficient urban centers.	Number of compact, energy-efficient centers developed.	Not available	5 Urban cities	10 Urban cities	15 Urban cities	**M/UD&SAD,** UDA, NPPD
1.5	Keep adequate lands for conservation needs in urban areas.	Number of urban plans. Area covered for conservation needs.	As per the declaration of each urban plan	20% of Urban plans	30% of Urban plans	100% urban plans	**M/UD&SAD,** UDA, NPPD
1.6	Monitor the performance and take actions to mitigate gaps.	Performance Monitoring plan available at city level.	Not available	20% of Urban cities	30% of Urban cities	100% of cities	**UDA,** M/UD&SAD
1.7	Prepare/update storm water management master plans for all urban areas integrating SUDS principles and technologies.	Number of ULAs with integrated SUDS master plans.	2% of ULAs	25% MCs by 2010	35% of UCs by 2013	All MCs & 50% of UCs by 2015	**M/PC&LG,** ULAs, SLLR&DC, M/UD&SAD, NWS&DB, M/WS&D
1.8	Formulate and implement action projects in accordance with storm water management master plans.	Number of ULAs implements SUDs master plans.	Not available	5% LAs by 2010	10% LAs by 2013	15% LAs by 2015	**M/PC&LG,** ULAs, SLLR&DC, NWS&DB, M/WS&D
1.9	Establish drainage system monitoring and maintenance squads in all ULAs to ensure systematic regular inspection and attention to cleaning, repairs, etc.	Number of Squads established at ULAs.	Not available	5% LAs by 2010	10% LAs by 2013	15% LAs by 2015	**M/PC&LG,** ULAs
1.10	Formulate and gazette regulations for development of Public Outdoor Recreation Space (PORS) Networks in all urban areas in keeping with guidelines already prepared by UDA.	Regulations gazetted.	Not available	5% LAs by 2010	10% LAs by 2013	15% LAs by 2015	**M/UD&SAD,** UDA

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.11	Formulate action plan to prepare/improve and implement PORS plans for each urban area and implement it.	Number of PORS Plans prepared for cities.	Not available	10% of urban LAs by 2010	17% ULAs by 2013	25% ULAs by 2015	**M/UD&SAD,** UDA, ULAs
1.12	Encourage Urban Biodiversity Parks as part of the PORS network in each urban area.	At least one urban biodiversity park in each ULA area.	Not available	10% of urban LAs by 2010	17% ULAs by 2013	25% ULAs by 2015	**M/UD&SAD,** UDA, ULAs
1.13	Facilitate development of urban planting material nurseries incorporating international standards.	Number of Cities with urban planting material nurseries.	Not available	10% of ULAs by 2010	17% ULAs by 2013	25% ULAs by 2015	**ULAs**, DFC, DBG
2.	**Introduce state-of-the-art integrated solid waste management and hazardous waste management strategies for all urban areas.**	Number of solid waste management strategies adopted in Local Authorities.	one	10% of urban LAs	20% of urban LAs	30% of urban LAs	**M/UD&SAD**
	Actions						
2.1	Ensure provision of sites for solid waste management and hazardous waste management activities.	Percentage of urban areas where sites assured.	Existing systems	50% by 2010	100% by2013		**M/L&LD,** M/PI, UDA, M/UD&SAD, LRC, ULAs, M/PC&LG
2.2	Facilitate public-private partnerships for construction, management & operation of solid waste management systems.	Number of ULAs with total scientific solid waste disposal systems.	Available solid waste management systems	All MCs by 2011	All UCs by 2013	All PSs by 2016	**M/E&NR,** CEA, ULAs, BOI, M/ID, M/PC&LG
2.3	Rehabilitate all existing dumps.	ULAs where existing dumps rehabilitated.	Existing dumps	All MCs by 2011	All UCs by 2013	All PSs by 2016	**M/PC&LG,** LAs

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.	**Manage urban sewage beneficially, without causing pollution.**	Reduction of pollution level. Area covered.	3 cities	5 cities	10 cities	20 cities	**M/UD&SAD**
	Actions						
3.1	Provision of sewer networks in highly dense urban cities.	Number of sewer networks at city level.	3 cities	5 cities	10 cities	20 cities	**M/UD&SAD,** UDA, ULAs, M/PC&LG
3.2	Increase use of bio-gas technology for sewage treatment and promote use of the gas as an energy source.	Number bio gas plants with sewer net work each city.	Existing facilities	5 cities	10 cities	20 cities	**M/S&T,** Universities, NWS&DB, M/WS&D
4.	**Develop healthy & efficient transport networks in urban areas.**	Number of healthy & efficient transport networks developed. Area covered.	Not available	10%	20%	50%	**M/UD&SAD**
	Actions						
4.1	Establish guidelines and standards for space provision for trees, pedestrian movement and cycle movement along roads in urban areas throughout Sri Lanka.	Publishing Guidelines and Standards.	Not available	2009			**M/UD&SAD,** UDA
4.2	Introduce efficient public transport systems including bus lanes where necessary, MRT systems, LRT systems, etc. integrated in the townscape in an aesthetic manner.	Number of Cities with MRT/ LRT systems.	Not available			one System by 2015	**UDA**, ULAs, M/Transport, M/H&RD, RDA, M/UD&SAD

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
4.3	Plan and establish public pedestrian movement networks where necessary.	Number of plans for public pedestrian movement networks at ULAs.	Not available	10% of ULAs by 2010	20% of ULAs by 2013	35% ULAs by 2015	**UDA**, ULAs, M/UD&SAD
5.	**Conserve urban wetlands to maintain ecological stability.**	Number of wetlands conserved.	Wetland Zoning Guidelines prepared by UDA	10% of ULAs areas by 2010	20% of ULAs by 2013	35% ULAs areas by 2015	**M/UD&SAD**
	Actions						
5.1	Declaration of wetlands.	Declaration of wetlands in ULAs.	Western Province	Three provinces by 2010	Five provinces by 2013	All provinces by 2015	**UDA,** M/UD&SAD, SLLR&DC, M/L&LD
5.2	Establishing city based monitoring systems for declared wetlands.	Number of ULAs institutionalizing monitoring mechanism.	Not available	10% of ULAs by 2010	25% ULAs by 2013	35% ULAs by 2015	**UDA,** M/UD&SAD, SLLR&DC, M/L&LD
6.	**Institutionalize actions related to landscape design & promoting establishment of green cities.**	Number of Green cities established.	Not available	10% of ULAs by 2010	25% ULAs by 2013	35% ULAs by 2015	**M/UD&SAD**
	Actions						
6.1	Establish Landscape Units and design the city incorporating greening aspects, design management and implementation, in all Local Authorities.	Number of ULAs where units established.	Not available	All MCs by 2010	All UCs by 2011	All PSs by 2015	**UDA,** M/PC&LG, PCs, ULAs

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
6.2	Set targets to cover entire area and monitor performance.	Targets set monitoring plan.	Not available	10% of ULAs by 2010	25% ULAs by 2013	35% ULAs by 2015	**UDA,** M/UD&SAD
6.3	Transform urban cities in to green urban cities extending the green cover at all appropriate places.	Green cities converted.	Existing green cities	10% of ULAs by 2010	25% ULAs by 2013	35% ULAs by 2015	**UDA,** M/UD&SAD

National Action Plan for Haritha Lanka Programme

Mission 9

Greening the Industries

Mission 9: Greening the Industries

Preamble

Sri Lanka's industrial sector, driven by private enterprise, is a major contributor to the country's economy. Its contribution to the GDP has progressively increased over the years and now stands at 27%, second only to the services sector. Expectations are that it will continue to gain in importance in its capacity for providing employment and its potential for attracting foreign exchange.

The manufacturing industries have the potential for causing environmental damage by discharging waste products which are often toxic and hazardous. Among the industries of particular concern are textile dyeing and bleaching; paper; paints; cement; asbestos; leather tanning; rubber processing; food processing; distilleries; manufacturing of agricultural and mineral products; and metal works. Industrial effluents are sources of toxic inorganic compounds containing heavy metals as well as organic compounds.

Hitherto much effort has gone into trying to resolve the problem of industrial waste management. The National Environmental Act is the main legislative enactment under which several regulations pertaining to the discharge of pollutants have been gazetted. The main regulatory body is the Central Environmental Agency. Under the law it is mandatory that an initial environmental examination report or an environmental impact assessment be prepared and approval obtained before certain prescribed industries are set up. The environmental protection licensing scheme requires existing industries that produce considerable quantities of liquid waste to have in-house waste water treatment plants. One approach that has been adopted and could be replicated is to have a common effluent treatment plant for industries grouped in an industrial estate.

Despite the range of legislative, administrative and regulatory actions taken to improve the performance of industries in safeguarding the environment, pollution from industrial sources is still a common occurrence. Strategies and actions are proposed for greening the industries and eliminating sources of environmental degradation in accordance with the national policy on cleaner production.

Several measures for consolidating cleaner production in industries are set out. These include reducing emission of pollutants and wastage of resources, targeting small and medium industries to exercise environmental care and social responsibility, promoting energy use efficiency, and switching to renewable energy use where possible.

The establishment of eco-friendly industrial parks in the regions is proposed while also taking steps to improve the environmental infrastructure in the existing industrial estates. A scheme for establishing environmental performance criteria for the individual industries in the industrial estates could be introduced. Industries should be encouraged to obtain ISO14001 certification. Among the other proposals are promoting the use of environmentally friendly raw material, encouraging industries to recover resources from selected wastes, and encouraging industries to apply for carbon credits for their renewable energy projects.

MISSION 9: GREENING THE INDUSTRIES

STRATEGIES

1. Consolidate Cleaner Production in Industries.
2. Establish Eco-industrial parks.
3. Certification of Industries.
4. Greening the Supply Chain.
5. Closing the Loop and Industrial Ecology.
6. Incentives for environmental friendly investments.

Mission 9: Greening the Industries

Actions

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
1.	**Consolidate Cleaner Production in Industries.**	Percentage of Industries practicing CP.	Current Situation <2%	5%	30%	50%	**M/ID**
	Actions						
1.1	Reduce resource wastage and Industrial Pollution from Industries.	% emission reduction. Industries covered.	Current Emission level (To be established)	5%	25%	50%	**M/ID,** NCPC, M/H&N
1.2	Drive Environmental & Social Responsibility of SMEs.	Participation of SMEs in the REAP project. Best practices adopted.	No organized projects for SMEs	5 SMEs	25 SMEs	100 SMEs	**M/ID,** NCPC, M/RI&SEP, M/H&N
1.3	Promote energy efficiency among industries to reduce dependence on fossil-fuels.	Total reduction in GHG emission from industries.	Current Emission Level (to be established)	10%	30%	50%	**M/ID,** NCPC
1.4	Recognize, appreciate and reward industries excel in Environmental Responsibility through resources conservation through National Cleaner Production Awards.	% industries participation.	Less than 50 industries participate currently	2%	5%	10%	**M/ID,** NCPC

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
2.	**Establish Eco-industrial Parks (EIPs)**	Percent growth in EIPs.	No EIPs currently	20%	50%	75%	**M/ID**
	Actions						
2.1	Improve environmental infrastructure in existing Industrial Estate.	Environmental infrastructure introduced/improved.	Current situation	20%	50%	75%	**M/ID/** Regional Industrial Development Division
2.2	Establish Environmental performance criteria for all industries in Industrial Estates.	Environmental Performance Criteria established.	Currently no special criteria	20%	50%	100%	**M/ID/** Regional Industrial Development Division
2.3	Develop regional industrial estates in each region with enhanced environmental considerations.	Number of regional industrial estates established with eco friendly applications.	Currently no such estates	01	04	10	**M/ID/** Regional Industrial Development Division
3.	**Certification of Industries.**	Percent Growth of certified industries.	<1% Now	10%	20%	50%	**M/ID**
	Actions						
3.1	Promote ISO 14001 certification of industries established outside the Industrial Estate.	Number of industries certified.	Currently <50 industries certified	10Nos	100Nos	500Nos	**M/ID,** NCPC

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
3.2	Facilitate ISO 14001 certification of industries located within industrial estate.	Number of industries certified.	Currently no industrial estate	01	03	10	**M/ID,** NCPC
4.	**Greening the Supply Chain.**	Percent growth in establishments resorting to green procurement.	Current situation (Zero)	2%	5%	10%	**M/ID**
	Actions						
4.1	Develop guidelines to facilitate industries to select and procure environmentally friendly raw materials.	Guidelines available.	Current Guidelines		Draft Guidelines	Set of Guidelines	**M/ID, NCPC,** M/H&N
4.2	Promote green purchasing.	Green purchased network available.	Currently no green Procurement network	10%	20%	35%	**M/ID,** NCPC
4.3	Facilitate industries to Switch to renewable fuels.	Number of industries switched to renewable fuels.	Current level <2%	10%	25%	75%	**M/ID,** NCPC
4.4	Encourage industries to apply for carbon credits for their renewable energy projects.	Number of CERS received.	Current level (0)	10 PDDs	25 PDDs	75 PDDs	**M/ID,** NCPC
4.5	Encourage Substitution of hazardous substance with non hazardous substances in industries.	% reduction in hazardous substances.	Currently no formal Change currently	5%	20%	30%	**M/ID,** NCPC

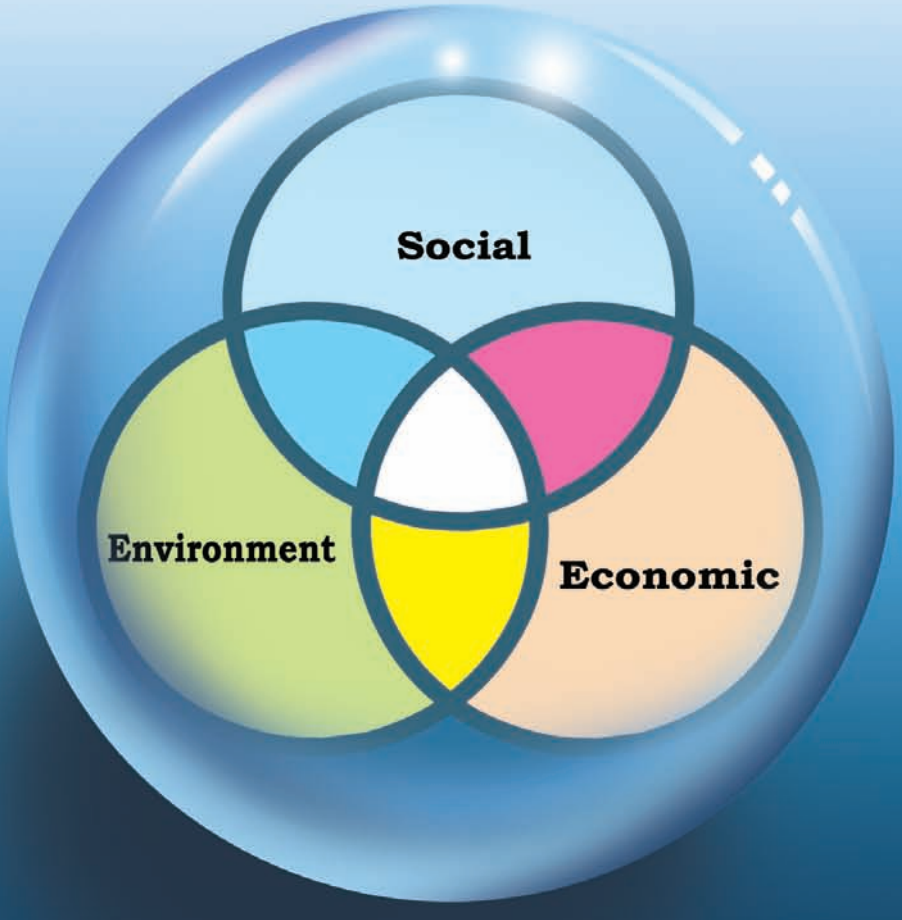
	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
4.6	Encourage use of renewable materials in industries in place of non renewable materials wherever possible.	% reduction of non renewable.	Currently no formal Change	5%	10%	25%	**M/ID,** NCPC
5.	**Closing the Loop and Industrial Ecology.**	Percent waste emissions / discharges switched as resources for other enterprises.	Current level <0.1%	5%	15%	25%	**M/ID**
	Actions						
5.1	Promote industries to recover resources from selected wastes streams within and between industries.	% wastes recycled.	Current Situation <2%	10%	25%	50%	**M/ID** Industrial Policy Division, NCPC
5.2	Match industries when selecting industrial estates to maximize resource reuse and focally recycled materials in industries.	Number of industries involved in resource/waste materials sharing.	Current situation no formal matching	20%	50%		**M/ID** Industrial Policy Division, NCPC
5.3	Create a platform to motivate the use of locally recycled material symbiosis within closely located industries.	% recycled materials used.	Current situation <0.1%	5%	15%	30%	**M/ID** Industrial Policy Division, NCPC
6.	**Incentives for environmental friendly investments.**	Reduction of total Environmental Pollution Load through Green Investments.	Current Situation (to be established)	5%	15%	40%	**M/ID**

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
	Actions						
6.1	Promote innovative low interest financial scheme/s (Green Credit) to facilitate industries to switch to Environmental Sustainable Technologies(EST).	Financial scheme/s available.	Exfriends loan scheme PEP grant scheme	50 beneficiaries	125 beneficiaries	300 beneficiaries	**M/ID**
6.2	Monitor performance strictly to evaluate the expected outcome and take actions timely to bridge the gaps.	Measures taken.	Current Situation (to be established)	20%	50%	100%	**M/ID**

National Action Plan for Haritha Lanka Programme

Mission 10

Knowledge for Right Choices



Mission 10: Knowledge for Right Choices

Preamble

Accomplishing the missions and attaining the goal of Haritha Lanka would require the country to steer through a path of sustainable development. The importance of sustainable development was highlighted at the United Nations Conference on Environment and Development, dubbed the Earth Summit, which was held in 1992. For the first time in the history of the United Nations, countries were invited to be represented by their heads of state. The message was clear – there was an overwhelming need for all countries to make a concerted effort to meet the challenge of balancing economic development with environmental care, and this message had to be accepted and acted upon by all countries at the highest political level.

Sri Lanka's strategy for sustainable development focuses on eradicating poverty, ensuring competitiveness in the economy, improving social development, ensuring good governance and maintaining a clean and healthy environment. Every action in pursuit of economic development requires hard choices to be made to strike a balance between obtaining short term benefits and exercising proper environmental care. The government's role is clear – it has to take measures to support economic development while ensuring that such development does not degrade the environment and so stultify the sustainability of the development programmes. Political will, supported by a clear understanding of the need to balance economic development with environmental protection is a *sine qua non* for accomplishing the missions. Foremost among the strategies is, therefore, the dissemination of information on sustainable development to the political sector. While the attention of those in the political sector will be focused mainly on socio-economic development, they must be made aware of the environmental safeguards that must be applied. Members of parliament, in particular, must be informed periodically on key national and international environmental issues which need priority attention. Members of provincial councils and local government bodies should also be kept informed on different aspects of sustainable development.

Much could be achieved by sensitizing the school going population on the benefits of protecting the environment. This could be done through making the necessary changes in the existing curricula and syllabi. It is also very necessary to conduct awareness programmes for principals, teachers and student leaders. While learning the tenets of environmental care, the students could be encouraged to take part in practical exercises relating to the subject in and around the school. Sustainable development aspects at a much more advanced level should be incorporated into appropriate course units in the universities and technical colleges.

The youth and the general public are vital segments of the population that need to be convinced of the importance of exercising proper environmental care if sustainable development programmes are to achieve complete success. In this respect, women could play an active role as change agents.

Knowledge on sustainable development should also be disseminated among the private sector and professional bodies.

Mission 10: Knowledge for Right Choices

Strategies

1. Disseminate information periodically on sustainable development to the political sector.
2. Promote behavior of students in support of the sustainable development.
3. Integrate physical, ecological and other environmental sensitive policies and practices within the school education system.
4. Incorporate sustainable development aspects in the curricular of Universities.
5. Incorporate sustainable development aspects in the curricular of Technical Colleges.
6. Promote behavioral changes amongst youth towards sustainable production and consumption.
7. Promote women to become change agents towards sustainable production and consumption practices.
8. Promote sustainable production & consumption practices amongst the general public.
9. Disseminate knowledge on Sustainable Development among the private sector and other professional bodies.
10. Ensure Environmental concerns are adequately incorporated at the project planning stage of all projects.

MISSION 10: KNOWWLEDGE FOR RIGHT CHOICES

ACTIONS

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
	Actions						
1.	**Disseminate information periodically on sustainable development to the political sector.**	Increased awareness on key environmental issues to be considered in socio-economic development. Reduction of complaints / conflicts.	Existing conflicts / complaints (in 2008) taken up at the Parliamentary Consultative Committee	25%	60%	100%	**M/E&NR**
1.1	Keep the members of parliament (MPs) informed periodically on key national and international environmental issues which need priority attention in socio-economic development, through parliamentary consultative committees and other means.	Increased awareness on key environmental issues to be considered in socio-economic development. Reduction of complaints / conflicts.	Number of items taken up at consultative committee meetings on conflicting issues. Number of decisions taken to solve conflicting issues.	20% reduction	50% reduction	80% reduction	**M/E&NR,** CEA, DWLC, GSMB, MPPA, M/UD&SAD, DFC, M/H&N
1.2	Disseminate information on issues related to sustainable development periodically to provincial and local level political sector (authorities).	Increased awareness on sustainable development issues and reduction of complaints.	Number of complaints received related to environmental degradation(2008)	25% reduction	60% reduction	100%	**M/E&NR,** CEA, DWLC, GS&MB, MPPA, M/UD&SAD, M/LG&PC, PCs, DFC
2.	**Promote behavior of students in support of the sustainable development.**	Environment related skills, knowledge and competencies on sustainable development inculcated in all the schools.	Year 2009	10%	30%	100%	**M/E**

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
	Actions						
2.1	Review the existing curriculum and identify curriculum based principle subject areas (Concept and practices) relating to sustainable development; primary (Grade1-5), secondary (Grade6-11), ALs (Grade12-13).	Environmental related subject areas identified with related subject domain.	Year 2009	15%	35%	100%	**M/E and NIE**
2.2	Identify environmental related components enshrined in the existing syllabi by different curriculum teams.	Subject areas identified.	Year 2009	10%	30%	100%	**M/E and NIE**
2.3	Incorporate identified special subject areas in relation to the environmental education for sustainable development to the current syllabi.	Concepts on Sustainable Development incorporated.	Year 2009	5%	10%	100%	**M/E and NIE**
2.4	Create awareness programmes for training of trainers - National Level and Provincial Level.	Awareness programmes conducted.	Year 2009	10%	20%	100%	**NIE**, M/E, EPDs, M/NB&EID
2.5	Create awareness programmes for principals, teachers, student leaders and parent representatives.	Workshops conducted. Target groups consulted.	Year 2009	5%	20%	100%	**EPDs**
2.6	Adopt a survey to assess level of acquisition of related leaning competencies by students.	Survey completed and reports available.	Year 2009			100%	**EPDs**
3.	**Integrate physical, ecological and other environmental sensitive policies and practices within the school education system.**	Policies institutionalized.	Year 2009	15%	25%	60%	**M/E**

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
	Actions						
3.1	Issue a comprehensive environmental safeguard check list to relevant partners by going through necessary ordinances and acts.	Check lists issued.	Year 2009	10%	30%	100%	**EPDs**, M/E
3.2	Take steps to ensure all educational institutions in the general education system to adhere to predefined environmental safeguard policies and ascertain a learner friendly greener environment at school	Monitoring mechanisms available and Reports of feedback.	Not Available	10%	30%	60%	**M/E**
4.	**Incorporate sustainable development aspects in to the curricular of universities.**	Sustainable development aspects incorporated.	Percentage covered in 2008	40%	100%		**M/E&NR**
	Actions						
4.1	Review the existing curriculum and identify appropriate subject areas that need to be revised incorporating sustainable Development practices and take measures for incorporation.	Curriculum reviewed. Appropriate subject areas identified and sustainable development aspects incorporated.	Existing curriculum covering Sustainable Development issues.	60%	100%		**UGC**, Universities, M/HE
4.2	Identify subject areas which need separate modules to complete Life cycle integration and develop separate modules to ensure adequate coverage.	Subject areas which need separate modules identified. New modules developed.	Existing subject areas & modules available with the life cycle management	60%	100%		**UGC**, Universities, M/HE, M/H&N

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
4.3	Review the outcome of the incorporation by communicating with national policy makers and take necessary actions to update/ validate the curricula.	Gaps identified. Curricula updated/validated.	Available curriculum			100%	**UGC,** Universities, M/E&NR, CEA
5.	**Incorporate sustainable development aspects in the curricula of Technical Colleges.**	Sustainable development aspects incorporated.	Existing curriculum covering sustainable development aspects.	20%	60%	100%	**M/E&NR**
	Actions						
5.1	Identify key subject areas in the curricula of all technical education courses which need integration of sustainable production and consumption practices.	Key subject areas identified.	Available subject area	40%	100%		**M/V&TT**, TVEC, M/E&NR, CEA
5.2	Revise the curricular by integration of sustainable production and consumption practices.	Curricula revised. Progress reports.	Available curricula covering Sustainable Development	40%	100%		**M/V&TT,** TVEC, M/E&NR, CEA
5.3	Develop a system to measure performance of the integration and take actions to revise the curricula as appropriate where necessary.	System developed to measure performance. Feedback reports.	Existing monitoring system		50%	100%	**M/V&TT,** TVEC, CEA

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
6.	**Promote behavioral changes amongst youth towards sustainable production and consumption.**	Best practices adopted Success stories & failures. Increasing demand on environmental friendly products and systems.	Existing behavioral changes/ practices	10%	25%	50%	**M/E&NR**
	Actions						
6.1	Identify and develop user friendly communication models that can be used to acquire skills, knowledge and values that promote behaviors of youth on sustainable production and consumption practices.	Communication models developed to suit different target groups and tested for validity.	Existing media campaigns and vertisements which provide incentives for change behavior.	100%			**National Youth council,** M/YA, M/MM&I, M/CA, CEA, M/E&NR, M/S&T, VC
6.2	Popularize these models among youth and provide access to know-how.	Number of youth/Youth groups contacted/involved.	Existing modules covering sustainable development practices.	100%			**National Youth council**, M/YA, M/MM&I, M/CA, CEA, M/E&NR, VC
6.3	Develop feedback systems to evaluate the effectiveness of the modules and take appropriate actions to meet challenges.	Number of surveys conducted and reports available with feedback.	Existing modules covering sustainable development practices.	40%	100%		**National Youth council,** M/YA, M/MM&I, M/CA,CEA, M/E&NR M/S&T, VC

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
7.	**Promote women to become change agents towards sustainable production and consumption practices.**	Number of Community groups act as change agents. Best practices adopted. Number of Declarations signed. Provinces covered.	Available Practices	1 Province	4 provinces	3 Provinces	**M/E&NR**
	Actions						
7.1	Identify and develop user friendly communication models and provide access to know how and information to promote behavioral changes for sustainable production and consumption patterns at house hold and community level.	User friendly communication models developed. Number of women groups consulted/involved.	Existing communication methods available	100%			**M/CD&WA**, M/E&NR, CEA, Women's Bureau, M/NB&EID
7.2	Popularize these models among women and provide access to know-how.	Number of women groups contacted/involved.	Existing modules	30%	100%		**M/CD&WA,** CEA, Women's Bureau, M/NB&EID
7.3	Develop feedback systems to evaluate the effectiveness of the modules and take appropriate actions to meet challenges.	Number of surveys conducted and reports available with feedback.	Existing modules	20%	50%	100%	**M/CD&WA**, CEA, Women's Bureau, M/NB&EID
8.	**Promote sustainable production & consumption practices amon-gst the general public.**	Best practices adopted. Success stories & failures.	Existing best practices Traditional practices	20%	50%	100%	**M/E&NR**

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
	Actions						
8.1	Identify and develop user friendly communication models that can be used to acquire skills, knowledge and values that promote behaviors of general public on sustainable production and consumption practices.	Communication models developed to suit different target groups and tested for validity.	Existing media campaigns and advertisements which provide incentives for change behavior.	100%			**M/CA**, M/MM&I, CEA, M/E&NR, M/NB&EID
8.2	Popularize these models among general public.	Methodology adopted to popularize the models. Number of dissemination events taken place.	Existing modules	30%	50%	100%	**M/CA**, Pvt. Sector, Banks, M/E&NR
9.	**Disseminate knowledge on Sustainable Development among the private sector and other professional bodies.**	Good practices and lessons learnt.	Available information	50%	100%		**M/E&NR**
	Actions						
9.1	Develop a communication mechanism and access to information on sustainable development issues with best practices.	Communication mechanism established.	Existing mechanism	50%	100%		**M/E&NR,** Pvt. Sector, Banks

	Strategies/Actions	Key Performance Indicators	Targets				Lead Responsible Agency (In Bold)
			Baseline	Short Term 2009 -10	Medium term 2009-13	Long Term 2009 -16	
9.2	Include a component in the Haritha Lanka website to ensure access to information on sustainable development issues related to private sector and professional bodies.	A component included in the website.	Existing System	100%			**M/E&NR**
9.3	Promote private sector and other professional institutions to incorporate sustainable development practices in the economic and social development systems/procedures.	Sustainable development practices incorporated in private sector. Number of green jobs increased.	Existing practices		100%		**M/E&NR,** Pvt. Sector, Banks M/LR&M
10.	**Ensure Environmental concerns are adequately incorporated at the project planning stage of all projects.**	Number of Projects. Area covered.	Available EIA and IEE procedures	30%	100%		**M/F&P**
	Actions						
10.1	Strengthen the existing system of the Department of National Planning to ensure environmental concerns are considered at the initial stage of the project planning.	Appropriate structural changes made.	Existing system		100%		**NPD,** M/F&P
10.2	Introduce Strategic Environmental Assessments (SEA) for major development programmes/Plans/Policies.	Number of Strategic Environmental Assessments (SEA) introduced. Area covered.	Existing programs, Plans & policies	30%	70%		**CEA,** M/E&NR, All the Ministries introduces new policies