Japan International Cooperation Agency

Specification of Website

For

National Designated Authority of Sri Lanka

(Ver.01)

JICA Expert Team

September 15, 2011

Colombo, Sri Lanka

Index

1. Objectives, Policy & Strategy

1-1. Objectives

1) Introduction of Designated National Authority of Sri Lanka
2) Awareness Rising of Clean Development Mechanisms
3) Disclosure as much CDM related data & information as possible
   (Focus on those of Sri Lanka)
4) Promotion of Clean Development Mechanisms in Sri Lanka
5) Promotion of Investment on Clean Development Mechanisms Projects in Sri Lanka

1-2. Policy & Strategies

1) High Quality (Design, Structure and Data & Information)

2) High Usability (Design, Structure)
   - In compliance with *W3C(*1)* Recommendation
   - Utilization of External Cascade Style Sheet (CSS)

3) Popularity
   - Taking Search Engine Optimization into consideration

4) Standardization & Compliance (Copyright etc)
   - Introduction of Rules & Regulations for Website Management
   - Work-Process & Responsibility Visualization
   - Compliance (copyright)

5) Demarcation for the DNA's website
   - Focus on CDM *(other data & information are available at CCD's web-pages)*
   - Focus on basic & necessary information except for those of Sri Lanka *(setting hyperlink to other organization, such as UNFCCC for further data & information)*

**1 W3C ; World Wide Web Consortium*

2. Details of CCD's Existing Website

2-1. Environment

Since Climate Change Division (hereinafter referred as "CCD") has already had its own website at www.climatechange.lk , CCD has made decision to allocate space for web-pages for Designated National Authority (hereinafter referred as "DNA") inside their existing website. Therefore we have to start from checking structure and contents of the CCD's existing website in order to find most suitable location for web-pages for DNA and avoid having duplication of contents in the same website. It is depending on the website owner's policy, however most of the case, it is not preferable to have the same contents to be shown in different pages in the same website. Therefore it is strongly recommended to continue to check the contents in DNA's website and make sure not to have any duplication at any other locations in the same website.

2-2. Site Map of Climate Change Division's existing website

Details are shown as

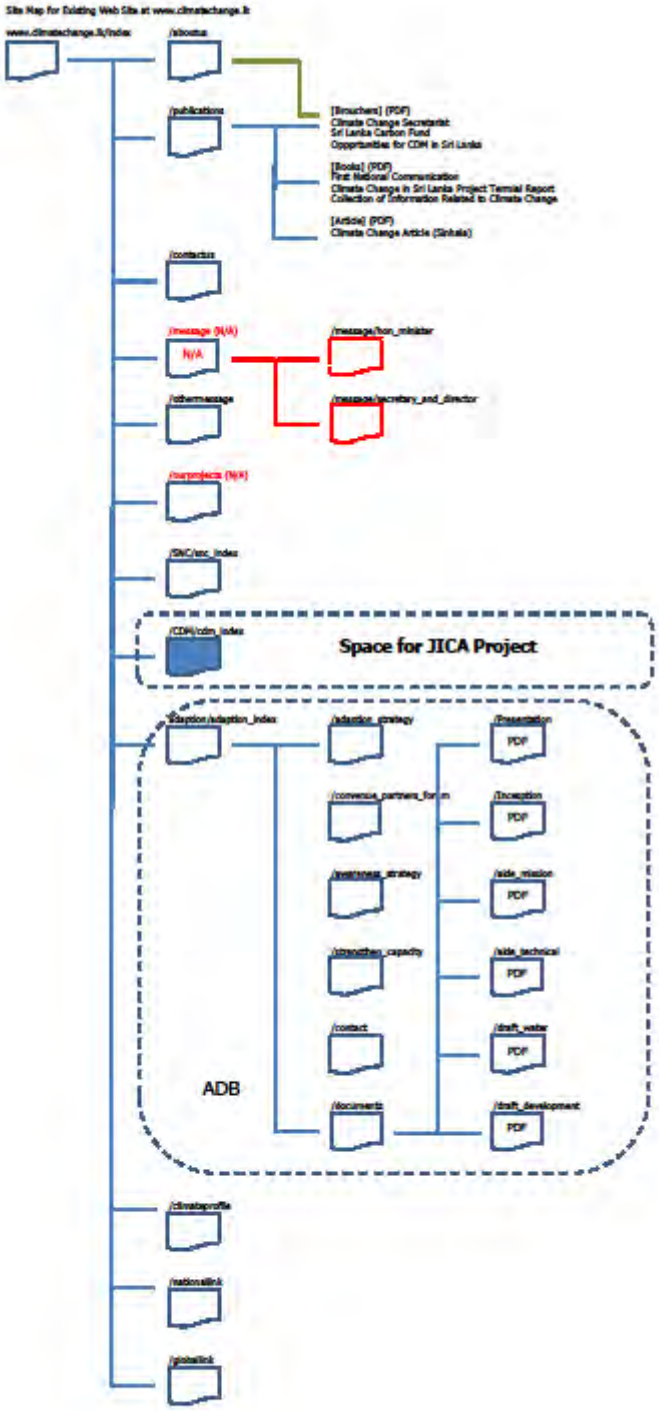
sheet 2-1. Site Map of Climate Change Division's existing website

2-3. Contents of Climate Change Division's existing website

Details are shown as per

sheet 2-2. Content of Climate Change Division's existing website.

Original = CCD Existing P1 (PDF)



Original = CCD Existing P2 (PDF)

Contents of Existing Web Site (Climate Change Secretariat) at www.climatechange.lk/ 1/2 — as of ; April, 2010

Layer	Page	Content		Remarsk
1	home; /css_index.html	about us	Hyper Link	/about_us
		publications	Hyper Link	/publications
		contact us	Hyper Link	/contactus
		Message Hon. Minister	Hyper Link	n/a
		Message from Secretary	Hyper Link	/othermessage
		Message from Director	Hyper Link	/othermessage
		our projects	Hyper Link	n/a
		Second National Communication	Hyper Link	/snc/snc_index
		CDM	Hyper Link	/cdm
		Climate Change Adaption	Hyper Link	/adaption/adaptation_index
		Sri Lanka Climate Profile	Hyper Link	/climate_profile
		Links (National)	Hyper Link	/nationallink
		Links (Glorabl)	Hyper Link	/globallink
		Picture	FIX	Slide Show / 8 pc in total
		Header + Footer	*FIX*	
		Our Vision	FIX	
		Our Mission	FIX	
2	about us; /about_us	Objective of CCS	FIX	
		NACCC	FIX	
		SLCF	FIX	
		Sri Lanka Carbon Fund Page 1 & 2	Hyper Link	/documents/carbon_fund
		Oppprtunities for CDM in Sri Lanka Page 1 & 2	Hyper Link	/document/cdm/
		Header + Footer	*FIX*	
2	publications; /publications	[Brouchers]	FIX	
		Climate Change Secretariat Page 1 & 2	Hyper Link	/document/ccs
		Sri Lanka Carbon Fund Page 1 & 2	Hyper Link	/documents/carbon_fund
		Opportunities for CDM in Sri Lanka Page 1 & 2	Hyper Link	/document/cdm/
		[Books]	FIX	
		First National Communication	Hyper Link	/document/fnc
		Climate Change in Sri Lanka Project Termial Report	Hyper Link	/document/ntr
		Collection of Information Related to Climate Change	Hyper Link	/document/circc
		[Article]	FIX	
		Climate Change Article (Sinhala)	Hyper Link	/document/ccs_s
		Header + Footer	*FIX*	
2	Contact Us	Organization Name	*FIX*	
		Address	*FIX*	
		TEL/FAX	*FIX*	
		E-Mail	*FIX*	
		Web Address	*FIX*	
		Header + Footer	*FIX*	
2	SNC; /SNC/snc_index	SNC		
		TOP	F/B	not active
		Header + Footer	*FIX*	
2	CDM			
		Header + Footer	*FIX*	
2	Adaption; 'adaptation/adaptation_index	[Key Project Components]		
		Develop a National Climate Change Adaptation Strategy	Hyper Link	/document/develop_NCCAS
		Convene a Partners Forum	Hyper Link	/document/convenue_PF
		Formulate Public Information and Awareness Strategy	Hyper Link	/document/formulate_PI
		Strengthen Capacity	Hyper Link	/document/capast
		Download	Hyper Link	/documents
		Contact Us	Hyper Link	/contact_us
		Header + Footer	*FIX*	
2	Sri Lanka Climate Profile; /climate_profile	Geography	FIX	
		Temperature	FIX	
		Monsoon	FIX	
		Reference Map	FIX	7 sheets
		Header + Footer	*FIX*	
2	Message (2)	Secretary		
		Director		
		Picture		2 pc
		Header + Footer		
2	National Link	Link in Sri Lanka		
		Header + Footer		
2	Global Link	Link in the World		
		Header + Footer		

Original = CCD Existing P3 (PDF)

Contents of Existing Web Site (Climate Change Secretariat) 2/2 as of ; April, 2010

Layer	Page	Content		Remarsk
3	Climate Change Secretariat Page 1			
3	Climate Change Secretariat Page 2			PDF
3	Sri Lanka Carbon Fund Page 1			PDF
3	Sri Lanka Carbon Fund Page 2			PDF
3	Opportunity for CDM in Sri Lanka Page 1			PDF
3	Opportunity for CDM in Sri Lanka Page 2			PDF
3	First National Communication			PDF
3	Climate Change in Sri Lanka Project Terminal Report			PDF
3	Collection of Information Related to Climate Change			PDF
3	Climate Change Article (Shinhara)			PDF
3	Download	Strengthen Capacity for Climate Change Adaption	PIX	
		[Download Document]	PIX	
		PPWG/PSC Meeting	Hyper Link	document/powg_psc
		Inception Report - TA7326	Hyper Link	/document/ir_ta7326
		Aide Memoire-Inception Mission 20-24 Dec 2009	Hyper Link	/document/am_im_091220
		Aide Memoire- Technical Mission 29 Mar - 2 Apr 2010	Hyper Link	/document/am_ta_100329
		[Draft Sector Vulnerability Profiles (SVPs)]	PIX	
		Draft Water SVP-May 10	Hyper Link	/document/draft_svp
		Draft Urban Development, Human settlements, Economic	Hyper Link	/document/draft_ud_hs
4	PPWG/PSC Meeting			PDF
4	Inception Report - TA7326			PDF
4	Aide Memoire-Inception Mission 20-24 Dec 2009			PDF
4	Aide Memoire- Technical Mission 29 Mar - 2 Apr 2010			PDF
4	Draft Water SVP-May 10			PDF
4	Draft Urban Development, Human settlements, Economic			PDF

3. Detailed Design for new web-pages

3-1. Structure

1) Basic Concept ;
   - Simple
   - No dead-end pages except for pop-up
2) Details ; as per sheet 3-1. Structure

3-2. Contents

1) Basic Concept ;
   - Focus on CDM related data & information of Sri Lanka
   - All the documents and pictures to be uploaded into web-pages shall be in compliance with International & Domestic laws & regulations *(Documents to be uploaded shall be officially approved by Authority and pictures and/or image to be utilized shall be no copyright or those be approved by copyright Owners)*
2) Details ; as per sheet 3-2. Contents' List

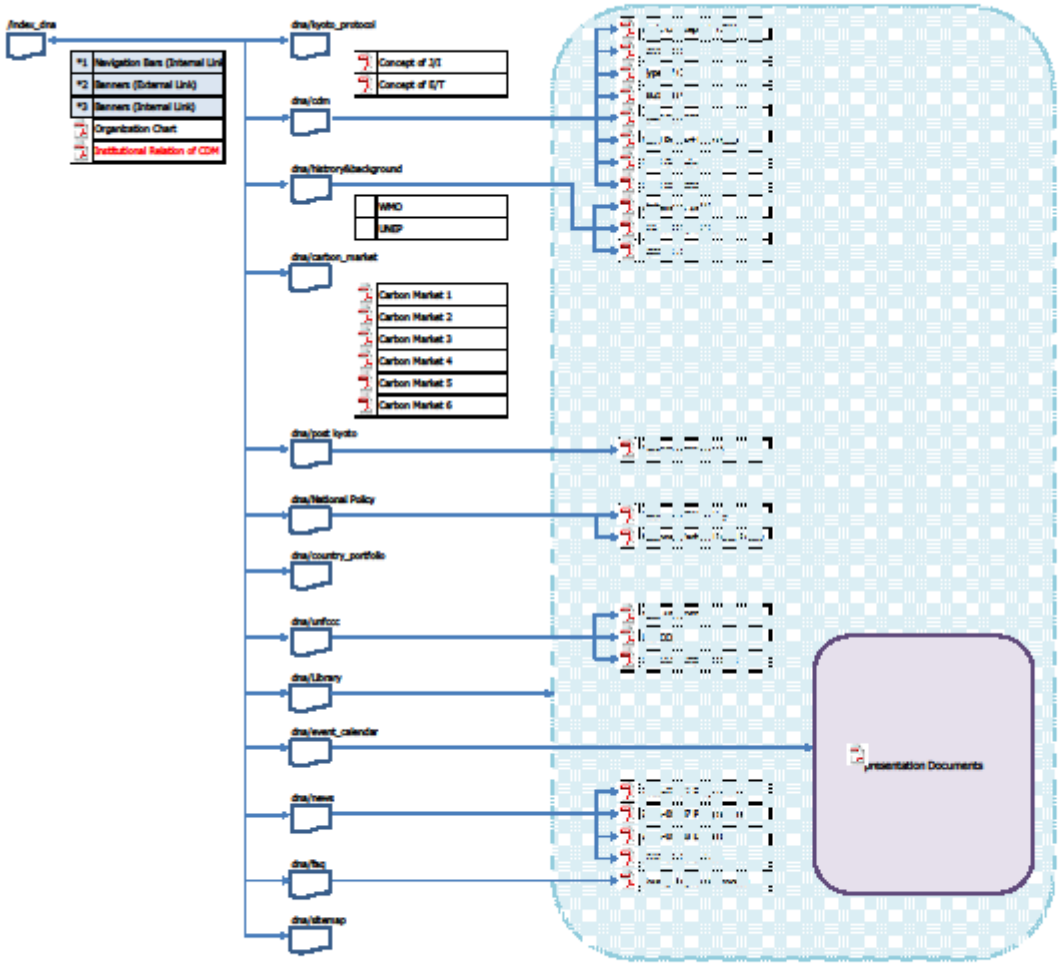
3-3. Function

1) Basic Concept ;
   - Access Counter (Business Version) shall be equipped in website
   - Access Analyzer shall be introduced and utilized for access analysis
   - Any program request to work with ActiveX Control shall not be added
   - Setting Anchor points
2) Details ; as per sheet 3-3. Function List

3-4. Design

1) Basic Concept ;
   - United design for all pages other than html documents.
   - Utilization of Cascade Style Sheet
   - Put Update Info, News & Event Calendar at the top of index page
2) Details ; as per sheet 3-4. Draft design

Original = Web Spec-V01.02_P1 (PDF)



Original = Web Spec-V01.02_P2 (PDF)

Layer	Title	URL	Subject	Contents	Source of Information	Approval	
						by	(a)
1	DNA	/dna_index	Introduction of DNA	Function			
				1) Evaluation & Approval			
				2) Capacity Development for CDM Project Development			
				3) CDM Market Promotion			
			Update Information				
			News				
			Event Calender				
			Organization Chart				
			Institutional Relations of CDM				
			Banner (1) on TOP *1	Climate Change Secretariat			
			Banner (2) Navigation Bar *1				
			Banners (3) Direct Link *1	UNFCCC/IPCC/UNEPRISO/JICA & IGES			
			Banners (4) Internal Link *1	CDM Flow Chart/CDM Project & PIN Form			
2	Kyoto Protocol	/dna/kyoto_protocol	General Information				
			Keywords	UNFCCC		n/a	n/a
				GHG	UNFCCC Website		
				Annex I Parties & committed target	UNFCCC Website		
				Non Annex I Parties	UNFCCC Website		
				Kyoto Mechanisms (J/I, CDM, E/T LULUCF)	UNFCCC Website		
			Joint Implementation / Emission Trading	Clean Development Mechanism	UNFCCC Website		
				Joint Implementation / Emission Trading	UNFCCC Website	n/a	n/a
				LULUCF	UNFCCC Website		
			Pictures	Kyoto-city	Microsoft		
2	CDM	/dna/cdm	General Information				
			Description in the Kyoto Protocol				
			Keyword	CER	UNFCCC Website		
				AAU	UNFCCC Website		
				Removal Unit	UNFCCC Website		
				Baseline Emission	UNFCCC Website		
				Project Emission	UNFCCC Website		
			Institutional Background	COP/MOP	UNFCCC Website		
				CDM Executive Board	UNFCCC Website		
				Methodology Panel	UNFCCC Website		
				Afforestation/Reforestation Working Group	UNFCCC Website		
				Small Scale CDM Working Group	UNFCCC Website		
				Registration and Issuance Team	UNFCCC Website		
				CDM Accreditation Panel	UNFCCC Website		
			CDM project Development		UNFCCC Website		
			Type of CDM project		UNFCCC Website		
2	History & Background	/dna/history	History & Background				
			Progress of Sri Lanka				
			Pictures				
2	Carbon Market	/dna/carbon_market	Carbon Market				
			Demands & Supply for Carbon Credit				
			Carbon Credit Pricing Factors in the Market				
2	Post Kyoto	/dna/post_k	General Information				
			New Mechanisms				
			MRV				
			Pictures				
2	National Policy	/dna/national_policy	Mahindra Chintana				
			Haritha Lanka				
			National Environmental Policy				
			National CDM Policy (Draft)				
			Other Related Documents		General Environmental Authority		
2	Country Portfolio	/dna/country_portfolio	Country Portfolio	Outline of the Country	Census of Central Bank (2010)		
				GHG Emission & Absorption by GHG type	2nd National Communication		
				GHG Emission & Absorption by Sector	2nd National Communication		
			National Flag				

Original = Web Spec-V01.02_P3 (PDF)

Layer	Title	URL	Subject	Contents	Source of Information	Approval	
						by	on
1	UNFCCC	/dna/unfccc	General Information				
			COP/MOP				
			Organization				
			UNFCCC Website	http://cdm.unfccc.int/index.html			
1	Data & Information	/dna/data_info	DNA Related	Organization Chart			
				Institutional Relation for CDM project			
			CDM Projects in Sri Lanka	CDM Projects in Details (Name, Status & Others)			
				CDM Flowchart in Sri Lanka			
				PIN Form			
			Policies & Action Plans of Sri Lanka	National CDM Policy (Draft)			
				Action Plan on CDM			
				National Carbon Finance			
				National Carbon Finance Strategy			
			Presentation Document at Seminars & Workshops				
1	Event Calendar	/dna/news	Event Calendar			n/a	n/a
2	News	/dna/news	News			n/a	n/a
			Pictures	Pictures taken by CCD staff		n/a	n/a
2	FAQ	/dna/faq	Frequent Asked Questions	FAQs...			
2	Site Map	/dna/sitemap	sitemap			n/a	n/a

Original = Web Spec-V01.02_P4 (PDF)

Layer	Title	URL	Subject	Contents	Source of Information	Approval	
						by	on
3	CDM Chart in Sri Lanka	/data/CDM%20Development%20Chart%20II_110727.pdf					
3	CDM Projects in Sri Lanka	http://www.climatechange.lk/DNA/Registered_Projects.htm					
3	PIN Form	/data/PIN%20format.doc					
3	Documentary Requirement						
3	Host Country Approval Process	/data/host_country_approval.pdf					
3	Organization Chart	/images/ORG_Chart.jpg	Organization Chart of DNA	Organization Chart of DNA	DNA		
3	Institutional Relation	/images/OB-Structure.jpg	Contents	National Approved Criteria & Procedure	DNA		
3	Concept of J/I	/images/JI.png	Concept of Joint Implementation		Lecture of JICA Expert		
3	Concept of E/T	/images/ET.png	Concept of Emission Trading		Lecture of JICA Expert		
3	Basic Concept of CDM	/data/Basic_Concept_CDM.pdf	Basic Concept of CDM	Introduction of CDM	UNFCCC		
3	Governance	/data/CDM_Governance_01.pdf	Governance for CDM	Introduction of institution for governing CDM	UNFCCC		
3	Type of CDM	/data/CDM_Type.pdf	Type of CDM	Introduction of various types of CDM	UNFCCC		
3	EB21 Report Annex21	/data/EB21_ANNEX21.pdf			UNFCCC		
3	EB47 Report Annex29	/data/EB47_ANNEX29.pdf			UNFCCC		
3	CDM Project Database	/data/CDM_Database.pdf		CDM Project Database as of Sep 01, 2011	IGES/UNFCCC		
3	CDM Guidebook	n/a	CDM Guidebook				
3	CDM Broucheur	n/a	CDM Broucheur				
3	Statement 1985	/data/Statement%20by%20the%20UNEP%20on%20Villach_1985.pdf		Statement issued at International Conference			
3	Agenda 21	/data/Agenda_21.pdf					
3	Carbon Market 1	/images/CARBON_MARKET_1.pdf		Introduction of Carbon Market 1	World Bank		
3	Carbon Market 2	/images/CARBON_MARKET_2.pdf		Introduction of Carbon Market 2			
3	Carbon Market 3	/images/Carbon%20Credit%20Price%20Index.jpg		Introduction of Carbon Market 3			
3	Carbon Market 4	/images/Breakdown%20of%20CER%20supply.jpg		Introduction of Carbon Market 4			
3	Carbon Market 5	/images/Demand%20&%20Supply%20of%20Carbon%20Credit.jpg		Introduction of Carbon Market 5			
3	Carbon Market 6	/images/Breakdown%20of%20CER%20supply.jpg		Introduction of Carbon Market 6			
3	Cancun Agreement						
3	National CDM Policy	/data/260209_National_Policy_CDM(Draft).pdf	National CDM Policy				
3	National Carbon Finance	n/a	National Carbon Finance				
3	National Carbon Finance Starattegy		National Carbon Finance Starattegy				
3	II Implementation Article 6	/data/IISC_15_CP7.pdf	II Implementation Article 6				
3	UNFCCC	/data/UNFCCC_Original.pdf	UNFCCC	Original Document of UNFCCC (1992)	UNFCCC		
3	Presentation Documents	/data	Presentation Documents at Seminar / Workshop		JICA Expert		
	Exam & Answer	/data	Examination & Answer	from JICA project	JICA Expert		
	News						

Legend :
Descriptions in Blue Word(s) : Content(s) & Topic(s) with High Priority
Descriptions with Pink Color in Back. : Content(s) & Topic(s) in details shall be continued to discuss
Description with Blue Color in Back : Frame shall be continued to consider
Description with Green Color in Back : existing & consider to utilize as it is

Original = Web Spec-V01.02_P4 (PDF)

Sheet 3-3. Function List in Web Page(s)

No		Page Title	Link	Remarks	Type	Target	Comment
1		**Menu Bar**					
	1	Home-CCD	I/L	http://www.climatechange.lk/ccs_index.html	html	blank	
	2	DNA	I/L	http://www.climatechange.lk/DNA/index_dna.html	html	main	
	3	Kyoto Protocol	I/L	http://www.climatechange.lk/DNA/kyoto_protocol.html	html	main	
	4	CDM	I/L	http://www.climatechange.lk/DNA/cdm.html	html	main	
	5	History&Background	I/L	http://www.climatechange.lk/DNA/history&background.html	html	main	
	6	Carbon Market	I/L	http://www.climatechange.lk/DNA/carbon_market.html	html	main	
	7	Post Kyoto	I/L	http://www.climatechange.lk/DNA/post_kyoto.html	html	main	
	8	National Policy	I/L	n/a	html	main	
	9	Country Portfolio	I/L	http://www.climatechange.lk/DNA/country_portfolio.html	html	main	
	10	UNFCCC	I/L	http://www.climatechange.lk/DNA/unfccc.html	html	main	
	11	Library	I/L	http://www.climatechange.lk/DNA/library.html	html	main	
	12	Event Calendar	I/L	http://www.climatechange.lk/DNA/event_calendar.html	html	main	
	13	News	I/L	http://www.climatechange.lk/DNA/news.html	html	main	
	14	FAQs	I/L	http://www.climatechange.lk/DNA/faq.html	html	main	
	15	Site Map	I/L	http://www.climatechange.lk/DNA/faq.html	html	main	
2		**Banner I**					
	1	UNFCCC	E/L	http://unfccc.int/2860.php	php	blank	
	2	IPCC	E/L	http://www.ipcc.ch/	html	blank	
	3	UNEPRISO	E/L	http://uneprisoe.org/	html	blank	
	4	JICA	E/L	http://www.jica.go.jp/english/	html	blank	
	5	IGES	E/L	http://www.iges.or.jp/en/cdm/report_kyoto.html	html	blank	
3		**Banner II**					
	1	CDM Flowchart	I/L	http://www.climatechange.lk/DNA/data/CDM%20Develpment%20Chart%20I_110727.pdf	pdf	blank	
	2	CDM Projects in Sri Lanka	I/L	http://www.climatechange.lk/DNA/Registered_Projects.htm	pdf	blank	
	3	PIN Form	I/L	http://www.climatechange.lk/DNA/data/PIN%20format.doc	doc	blank	
4		**Others**					
	1	Other Internal Links (1)	I/L		html	main	
	2	Other Internal Links (2)	I/L		all	blank	
	3	Other External Links	E/L		all	blank	
	4	Anchor	I/L		n/a	Self	
	5	Access Counter	n/a		JS	n/a	DNA page

Sheet 3-4. Draft Design (css_dna.css)

```
@charset "utf-8";
/* CSS Document */

<meta? Words_decoration>
.title1
  {font: bold 20px Verdana, Arial, Helvetica, sans-serif; color: #000099;}

.title2 {font: 15px Verdana, Arial, Helvetica, sans-serif; color: #000099;}

.title3 {font: bold 15px Verdana, Arial, Helvetica, sans-serif; color: #000099;}

.title4 {font: 12px Verdana, Arial, Helvetica, sans-serif; color: #000099;}

.text1 {font: 12px Verdana, Arial, Helvetica, sans-serif; color: #000000;
          padding-left: 3px; padding-right: 3px;}

.text2 {font: italic 12px Verdana, Arial, Helvetica, sans-serif; color: #666666;}

<meta?Staructural Design>
p.header {background: url(climate_change_top.jpg) center; height: 120px;
            width: 938px; border: 1px solid #000000;}

p.menu {font: 12px "Times New Roman", Times, serif; color: #FFFFFF;
            background: #FFFFFF; width: 120px; border-right: 0px none
            #000099; border-bottom: none #000099; border-left: 1px none
            #000099; border-top-style: none; border-top-color: #000099;
            position: absolute; left: 8px; top: 126px; height: 30px;}

p.menu a {color: #FFFFFF; background: #000099; display: block;
            border-bottom: 1px solid #000099; border-top-style: solid;
            border-right-style: solid; border-left-style: solid; border-top-color:
            #000099; border-right-color: #000099; border-left-color: #000099;
            padding-left: 2px; font: 11px/1.5em Verdana, Arial, Helvetica,
            sans-serif; width: 122px; height: 25px;}
```

```
p.menu ahover {background: #FF0000;}

.img_float_l {clear: both; float: left; margin-right: 8px; margin-bottom: 10px;
              margin-left: 8px;}

.img_float_r {float: right; padding-right: 10px; padding-bottom: 10px;
              padding-left: 10px; margin-left: 5px; margin-bottom: 5px;}

.table_float_l {float: left; margin-right: 5px; margin-bottom: 5px; margin-left:
              5px;}

.table_float_r {float: right; margin-right: 5px; margin-bottom: 5px;
              margin-left: 5px;}
```

4. Architecture

4-1. Hardware for Website Creation

1) Computer ; ASUS Notebook of CCD

2) Authoring Application ; Dreamweaver CS3 (Non Licenced*1)

4-2. Source/Data Management

1) Original Source ; ASUS Notebook of CCD

2) Backup Data ; External Hardware (Personal Own)

4-3. Network

1) Mail / FTP Server

Provider Name	Lanka E-Works Private Limited
TEL/FAX	+94-11 2788394 / +94-11 2791203
E-Mail	info@lankaeworks.com
URL	http://lankaworks.com/
Capacity	200MB
Contract	A year basis / auto extension
FTP Username	climatec *2
FTP Password	pass*&^ *2
Mail Server Username	info@climatechange.lk
Mail Server Password	Abc123

2) Hardware (Network Devices available at LAN)

- ADSL Modem Router

Manufacturer Name	U.S. Robotics
Model Name	U.S. Robotics Wireless *MAX*g ADSL Gateway
Vender Name	Lanka E-Works Private Limited
TEL / FAX	+94 11 278 83 94 / +94 11 279 12 03
E-Mail	
Date Purchased	2008
Location	192.168.1.1
User Name	Admin
Password	Admin123

3) Internet Accessibility

- Domain

Domain Name	@climatechange.lk
NIC Name	Moratuwa University
TEL/FAX	+94-11 4216061 / +94-11 4219124
E-Mail	hostmaster@nic.lk
URL	http://www.nic.lk
Contract	A year basis / auto extension

- Internet Service Provider (ISP)

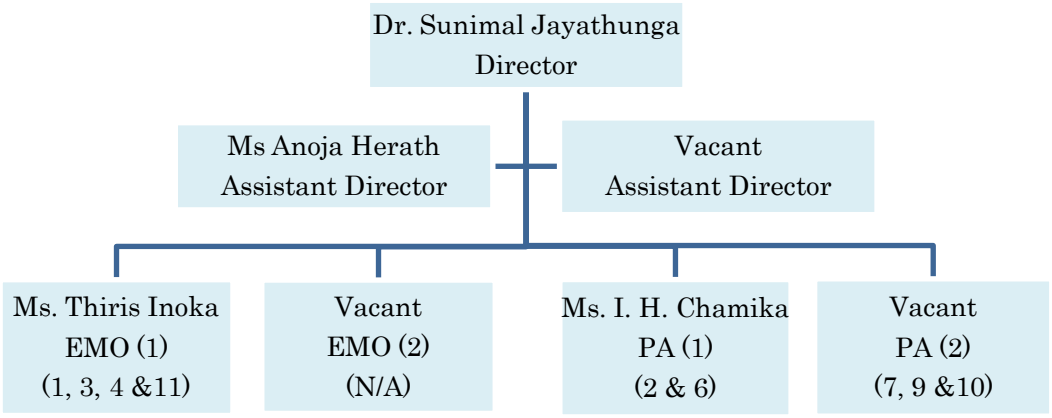
ISP Name	Sri Lanka Telecom (SLT)
TEL/FAX	Sri Lanka Telecom, Lotus Road, P.O.Box 503, Colombo 1, Sri Lanka. +94-11-2329711
E-Mail	pr@slt.lk / info@sltnet.lk
URL	http://www.slt.lk/
Connection Speed	512Kbps/ 2048 Kbps
Line No.	0112883481
Username	
Password	

1 ; strongly recommended to be improved at soonest possible.

2: strongly recommended to be kept as conficential.

5. Creation, Operation & Maintenance

5-1. CCD's Organization Chart



Responsibility

1. Review & Up Date the CDM policy, strategy and Action Plan in Sri Lanka
2. Liaise with the CDM Executive Board of the UNFCCC and submit necessary information
3. Oversee the Sri Lanka Carbon Fund and facilitate CDM activities in Sri Lanka
4. To carry out the function of DNA of Sri Lanka
5. Assess mitigation options and grant DNA approval for CDM project
6. To evaluate PIN and PDD of CDM projects
7. To identify and promote potential CDM projects in Sri Lanka
8. To identify potential buyers in Sri Lanka
9. To conduct training & awareness programs on CDM
10. To promote and cooperate for the research, development, demonstration, deployment, transfer and diffusion of new and existing technologies for CDM
11. To maintain an inventory and depository data base on research findings in relation to climate change mitigation

5-2. Creation

There is no permanent staff, who takes responsible for IT, working for CCD, while CCD employs Mr. Aurasha as temporary staff in charge of networking and website management and even website creation. As a result Project Implementation Force for DNA's web-pages creation is going to be set up as follows ;

1) Organization

Activities	Responsible Persons from CCD	JICA
Policy & Decision Maker	Director & Assist. Director	
Planning, Contents Selection (Wording, Images & Pictures)	EMO(1), PA(1) & PA(2)	Target 5
Technical Support for Creation (Design, Function, Authoring)	Mr. Aurasha	Target 5
Project Management	EMO(1), PA(1) & PA(2)	Target 5
Advisory (Contents)		All Experts

2) Authoring Application

We have selected "Dreamweaver CS3" as only the authoring application, as Mr. Aurasha gets used to the application for website creation.

5-3. Operation

1) Organization

	Party and/or Person
Responsible Person	Management Staff
Implementation	PA (1) and/or PA (2)
Technical Support	IT

2) Scope of Works

(1) Periodical Update

(2) Corresponding with Visitors who contact DNA by E-Mail (info@climatechange.lk)

3) Operation Flowchart & Manual

As per sheet 5-1. Operation Flowchart for web-pages operation

5-4. Maintenance

1) Organization

	Party and/or Person
Responsible Person	Management Staff
Implementation	PA (1) and/or PA (2)
Technical Support	IT

2) Scope of Works

(1) Web-pages

- Periodical check of hyperlinks
- Periodical check of CCD's website (for avoiding contents duplication)

(2) Network

(2)-1. Hardware

Clean up all devices (connecting points, electric adaptor)

Check the Condition

(2)-2. Accessibility

Username & Password Control

(2)-3. Up-date Information

New Products/ Technologies

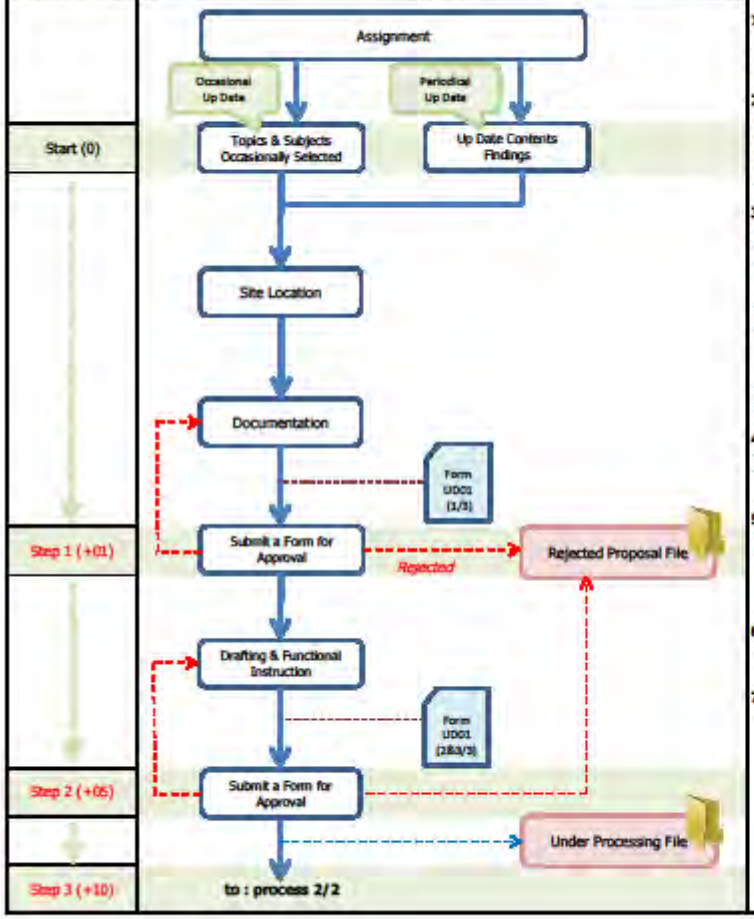
Security

3) Operation Flowchart & Manual

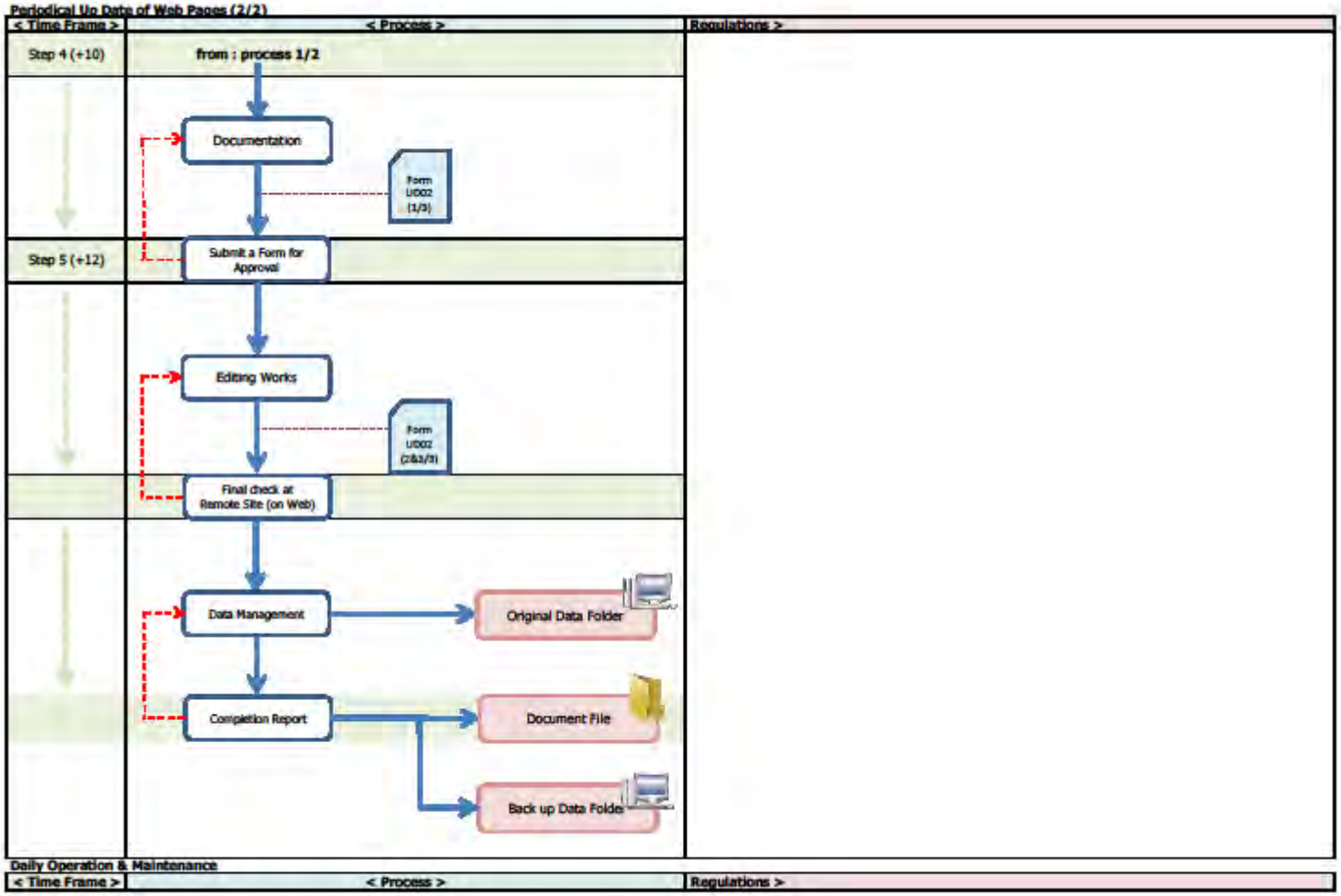
As per sheet 5-2. Operation Flowchart for web-pages operation

Original = Operation Manual P1 (PDF)

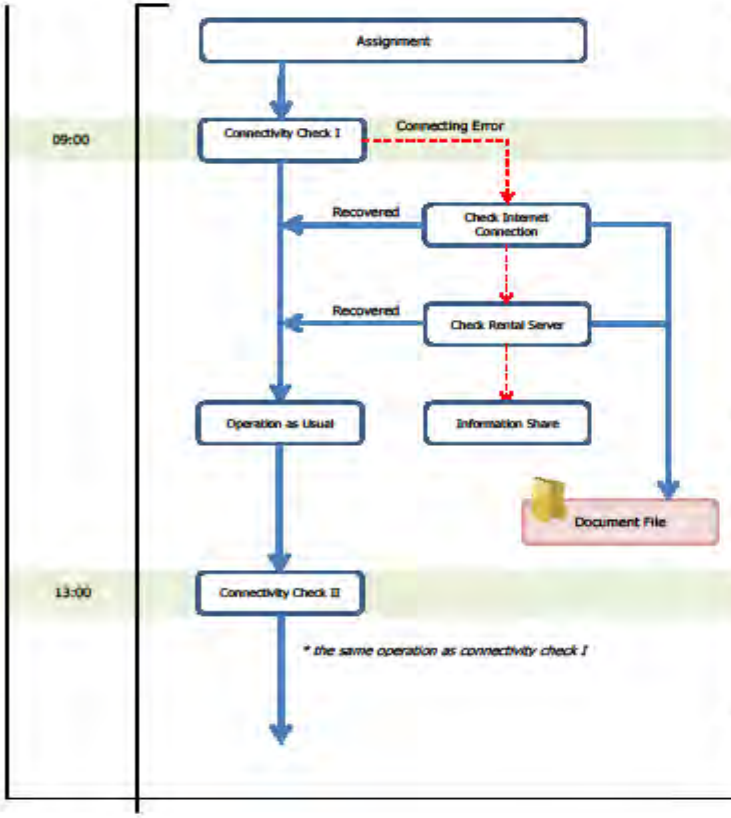
Periodical Up Date of Web Pages (1/2)

< Time Frame >	< Process >	< Rules & Regulations >
Start (0) Step 1 (+01) Step 2 (+05) Step 3 (+10)		**1. Assignment** 1.1 Assignment of the "Web Page Up Date Operation" shall be made by Authorized Person in written. 1.2 Assignment shall be noticed to all the parties concerns. 1.3 Assignment shall cover both person in charge and person responsible for checking **2. General** 2.1 Process for "Web Page Up Date" operation is as per center of this page. 2.2 Time Frame for "Web Page Up Date" operation is as per left of this page. 2.3 Rules & Regulations for "Web Page Up Date" operation is as per this column. 2.4 Nobody, other than Authorized person can change / revise / amend this manual. 2.5 Changes, Amendment, Revisions, if any, shall be notified to all the parties concerns **3. Subject(s) & Topic(s) selection and Up Date Contents Findings** 3.1 Frequency of the periodical up date shall be once a month basis. 3.2 "Updating Website" shall be set up as one of the agenda in the monthly meeting. 3.3 Person in Charge for each subject(s) & topic(s) shall report 1) whether they have any subject(s) and/or topic(s) to be proposed for updating or not 2) If there are, then present headlines of subject(s) and/or topic(s) 3.4 Subject(s) and/or Topic(s) shall be up-loaded in short time, not neccessry to wait for the meeting. 3.5 Subject(s) & Topic(s) to be up loaded shall be suitable for DOA's web site in terms of ; 1) useful 2) fairness 3) not duplication of any contents in Climate Change Division's website 3.6 Source of Information and/or Data. as reference. are as per attacehd sheet () 3.7 Communication Log for Copy Right shall be attached with Form UD01 **4. Documentation (Form UD01 1/3)** 4.1 Source of Information and/or Data. as reference. are as per attacehd sheet () 4.2 Communication Log for Copy Right shall be attached with Form UD01 **5. Documentation (Form UD01 2&3/3)** 5.1 Sentence and/or Wording shall not be a copy of others 5.2 Contents with Functional Instruction shall be given by this form (Form UD01) 1) Ornamental Factor & Functional Instruction shall be given in accordance with attached sheet () 2) Contents shall be given to IT section shall be Electric Data **6. Document Control** **7. Monitoring** Monitoring for operation described in this chart shall be conducted by the Management

Original = Operation Manual P2 (PDF)



Original = Operation Manual P3 (PDF)



1. Assignment
1.1 Assignment of the "Web Page Up Date" shall be made by Authorized Person in written.
1.2 Assignment shall be noticed to all the parties concerns.
1.3 Assignment shall cover both person in charge and person responsible for checking

2. General
2.1 Process for "Web Page Up Date" operation is as per center of this page.
2.2 Time Frame for "Web Page Up Date" operation is as per left of this page.
2.3 Rules & Regulations for "Web Page Up Date" operation is as per this column.
2.4 Nobody, other than Authorized person can change / revise / amend this manual.
2.5 Changes, Amendment, Revisions, if any, shall be notified to all the parties concerns

3. Connectivity Check
3.1 Assigned Responsible Person for the operation shall check connectivity to web site twice a day or at 09:00 and 13:30 o'clock
3.2 For the case any problem found in connectivity, then
1) check internet connection, including infrastructure, hardware and application (web browser)
2) for the case of getting recovery from the problem, then go to "operation as usual", unless otherwise
3) contact to rental server operator and check the situation
4) for the case getting immediate recovery, then go to "operation as usual", unless otherwise
5) report to the Authorized Person and share the information in CCS including ;
(1) there are some problems for visiting website
(2) the reasons are at
(3) when it is expected to recover for browsing
3.3 All problem(s) are recommended to file and keep at office for further consideration
1) Maintain / Modify / Upgrade Infrastruce, Hardware(s) and Application(s)
2) Vender Selection

4. Document Control
4.1 All reports made from the chart left shall be kept in good order.
4.2 All documents shall be kept in good condition for a certain period

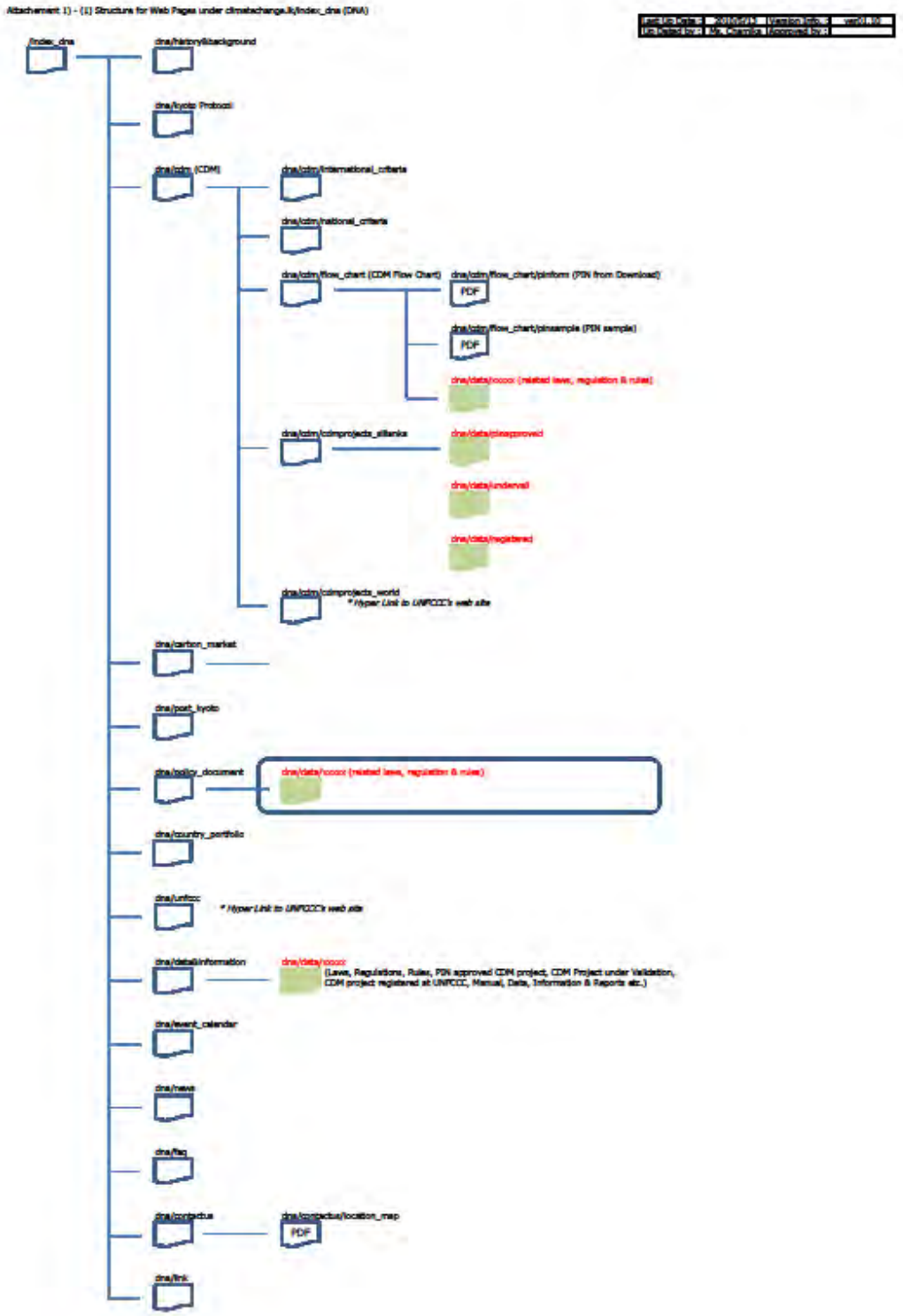
5. Monitoring
Monitoring for operation described in this chart shall be conducted by the Management

6. Hardware Maintenance
6.1 Check condition of all hardwares in office
6.2 Collect latest information, especially security related

7. Analysis
Analyze Webpage Access at www.climatechange.lk/cpanel
1) Username & Password are as follows ;
(1) User Name : climatec
(2) Password : Pass*8^
2) Points to be checked and analyzed are as follows ;
(1) Access by hours / Days
(2) Access by ISP
(3) Access by pages
(4) Assume figures of visiters

8. Further Development of Website
Based on the analysis made above, further development and modification of website will be requested.

Attachment 1. Specification of CCD's web-pages



Attachement 1) - (2) Specification of Web Page(s) subject to final confirmation & approval (1/3)

Layer	Title	URL	Contents	Attribution	Action	Operation		Remarks
1	DNA	/dna	History & Background	Menu Bar (Frame 2)	L-Click	move to	/dna/history	Source : dna/menu
			Kyoto Protocol	Menu Bar (Frame 2)	L-Click	move to	/dna/k_protocol	Source : dna/menu
			CDM	Menu Bar (Frame 2)	L-Click	move to	/dna/cdm	Source : dna/menu
			Carbon Market	Menu Bar (Frame 2)	L-Click	move to	/dna/carbon_market	Source : dna/menu
			Post Kyoto	Menu Bar (Frame 2)	L-Click	move to	/dna/post_k	Source : dna/menu
			National Policy	Menu Bar (Frame 2)	L-Click	move to	/dna/national_policy	Source : dna/menu
			Country Portfolio	Menu Bar (Frame 2)	L-Click	move to	/dna/country_portfolio	Source : dna/menu
			UNFCC	Menu Bar (Frame 2)	L-Click	move to	/dna/unfccc	Source : dna/menu
			Data & Information	Menu Bar (Frame 2)	L-Click	move to	/dna/data_info	Source : dna/menu
			Event Calender	Menu Bar (Frame 2)	L-Click	move to	/dna/event_calendar	Source : dna/menu
			News	Menu Bar (Frame 2)	L-Click	move to	/dna/news	Source : dna/menu
			FAQ	Menu Bar (Frame 2)	L-Click	move to	/dna/faq	Source : dna/menu
			About us	Menu Bar (Frame 2)	L-Click	move to	/dna/about_us	Source : dna/menu
			Link & Useful Contact	Menu Bar (Frame 2)	L-Click	move to	dna/link	
			DNA *	Menu Bar (Frame 2)	L-Click	move to	/dna	Source : dna/menu
			Back to Home (CDS Top Page)	Menu Bar (Frame 2)	L-Click	move to	/climatechange.lk	Source : dna/menu
			Logo	FIX	n/a	n/a		
			Up Date Information	Frame 3				Source : /dna/up_date, Frame Set = XXX
			Latest News	Frame 4				Source : /dna/news, Frame Set = XXX
			Event Calender	Frame 5				Source : dna/event_calendar, Frame Set = XXX
			Introduction of DNA Inc. Ministries					
			Banner					
			Banner (1) for Direct Link to Key Info.		L-Click	move to		
			Banner (2) for Direct Link to Key Info.		L-Click	move to		
			Banner (3)		L-Click	move to		
			Banner (4)		L-Click	move to		
2	History & Background	/dna/history	Background in the World	FIX				*CONSIDER TO ADD H-LINK WITH KEY WORDS
			Progress of Sri Lanka	FIX				
			MENU BAR	Frame 2				Source : dna/menu
			Logo	FIX				
			Pictures	FIX				
2	Kyoto Protocol	/dna/k_protocol	General Information	FIX				*CONSIDER TO ADD H-LINK WITH KEY WORDS
			Kyoto Mechanisms (J/I, CDM, E/T)	FIX				*CONSIDER TO ADD H-LINK WITH KEY WORDS
			MENU BAR	Frame 2				Source : dna/menu
			Logo	FIX				
			Pictures	FIX				
2	CDM	/dna/cdm	General Information	FIX				
			International Criteria	FIX				
			National Criteria	FIX				
			Guideline	FIX	L-Click	Open New	/data/guideline	
			Small Scale CDM	FIX				
			Programmatic CDM	FIX				
			Flow Chart CDM Development	FIX				
			UNFCCC registered Projects (World)		L-Click	Open New	Hyper Link to UNFCC's	
		/dna/cdm	Logo	FIX				
			Pictures	FIX				
2	Carbon Market	/dna/carbon_market	Market in the World (AAU & Emission)	FIX				
			Emission Reduction by Method (RMU,N/T	FIX				
			Emission Trading	FIX				
			National Registry System	FIX				
			Potential Buyer(s)	FIX				
			Procurement Source(s)	FIX				
			Market Trend	FIX				
			Key Notes for Emission Trading	FIX				
			Logo	FIX				
			Pictures	FIX				

Attachement 1) - (3) Specificarion of Web Page(s) subject to final confirmation & approval (2/3)

Layer	Title	URI	Contents	Attribution	Action	Operation		Remarks
2	Post Kyoto * Fact & Information only	/dna/post_k	General Information	FIX				
			Pictures	FIX				
			Logo	FIX				
2	National Policy	/dna/national_policy	General Information	FIX				
			National Policy, Regulation, Gazette(1)		L-Click	open New		
			National Policy, Regulation, Gazette(2)		L-Click	open New		
			National Policy, Regulation, Gazette(3)		L-Click	open New		
			National Policy, Regulation, Gazette(4)		L-Click	open New		
			Pictures	FIX				
			Logo	FIX				
2	Country Portfolio	/dna/country_portfolio		FIX				
			Pictures	FIX				
			Logo	FIX				
2	UNFCCC	/dna/unfccc	General Information	FIX				* Hyper Link to UNFCCC's Website
			Pictures	FIX				
			Logo	FIX				
2	Data & Information	/dna/data_info	Data & Information (1)					
			Data & Information (2)					
			Data & Information (3)					
			Data & Information (4)					
			Manual (1)					
			Manual (2)					
			Manual (3)					
			Report (1)					
			Report (2)					
			Pictures	FIX				
			Logo	FIX				
2	Event Calendar	/dna/news		FIX				
			Pictures	FIX				
			Logo	FIX				
2	News	/dna/news		FIX				
			Pictures	FIX				
			Logo	FIX				
2	FAQ	/dna/faq		FIX				
			Pictures	FIX				
			Logo	FIX				
2	Contact Us	/dna/about_us	Organization Name					
			Address					
			TEL/FAX					
			E-MAIL					
			Working Day & Office Hours					
			Organization Chart					
			Introduction of member of staff					
			Pictures	FIX				
			LOCATION MAP & ACCESS					
			Pictures	FIX				
			Logo	FIX				
2	Link & Useful Contact	/dna/link						
			Pictures					
			Logo					
2	Up Date Information	/dna/log	Log					
			Pictures	FIX				
			Logo	FIX				

Attachement 1) - (4). Specification of Web Page(s) subject to final confirmation & approval (3/3)

Layer	Title	URI	Contents	Attribution	Action	Operation		Remarks
3	International Criteria	/dna/cdm/inter_criteria	Contents	FIX				
			Pictures	FIX				
			Logo	FIX				
3	National Criteria	dna/cdm/national_criteria	Contents	FIX				
			Pictures	FIX				
			Logo	FIX				
3	Flow Chart	dna/cdm/flow_chart	Contents	FIX				
			PIN Form (Download)		L-Click	open New	/data/pin_form	
			PIN Sample		L-Click	move to	/data/pin_sample	
			Pictures	FIX				
			Logo	FIX				
3	CDM Projects in Sri Lanka	dna/cdm/projects_lk	Contents	FIX				
			PIN approved projects		L-Click	move to	/data/pin_approved	
			Project under Validation (Sri Lanka)		L-Click	move to	/data/undervali	
			UNFCCC registered Projects (Sri Lanka)		L-Click	move to	/data/registered_lk	
			Pictures	FIX				
			Logo	FIX				

Legend :
Descriptions in Blue Word(s) : Content(s) & Topic(s) with High Priority
Descriptions with Pink Color in Back : Content(s) & Topic(s) in details shall be continued to discuss
Description with Blue Color in Back : Frame shall be continued to consider
Description with Green Color in Back : existing & consider to utilize as it is

Attachement 1) - (5) Content in Web Page(s) subject to final confirmation & approval (1/3)

Layer	Title	URL	Subject	Contents	Source of Information	Up Load			Responsible Person	
						Initial	Second	Onward		
1	DNA	/dna	Introduction of DNA inc. Hitigation			2010/06	-	x	Ms. Inoka	***
			Pictures			2010/06	-	x	Ms. Inoka	**
			Banner (1) for Direct Link to Key Info.			2010/06	-	x		
			Banner (2) for Direct Link to Key Info.			2010/06	-	x		
			Banner (3)			2010/06	-	x		
			Banner (4)			2010/06		x		
2	History & Background	/dna/history	History & Background					x	Ms. Chamika	
			Progress of Sri Lanka					x	Ms. Chamika	
			Pictures					x	Ms. Chamika	
2	Kyoto Protocol	/dna/k_protocol	General Information			2010/06	-	x	Ms. Deepani	
			Kyoto Mechanisms (JI, CDM, E/T)			2010/06	-	x	Ms. Deepani	***
			Pictures			2010/06	-	x	Ms. Deepani	
2	CDM	/dna/cdm	General Information			2010/06	-	x	Ms. Deepani	
			Small Scale CDM			2010/06	-	x	Ms. Deepani	
			Programmatic CDM			2010/06	-	x	Ms. Deepani	
			Flow Chart CDM Development			2010/06		x	Ms. Deepani	
			CDM Guideline	from Activities in Target 4 (PDF)	from Activities in Target 4	2011/04	2011/07	x		
			CDM Statistics (World)	http://cdm.unfccc.int/Statistics/Index.html		2010/06		x	Takagi	***
			Pictures			2010/06		x		
2	Carbon Market	/dna/carbon_market	Market in the World (AAU & Emission)					x		
			Emission Reduction by Method (RMU,N/T)					x		
			Emission Trading					x		
			National Registry System					x		
			Potential Buyer(s)					x		
			Procurement Source(s)					x		
			Market Trend							
			Key Notes for Emission Trading					x		
			Pictures					x		
2	Post Kyoto * Fact & Information only	/dna/post_k	General Information						Ms. Chamika	
			Pictures							
2	National Policy	/dna/national_policy	General Information			2010/06			Ms. Inoka	***
			National Policy (Draft)			2010/06			Ms. Inoka	***
			National Policy (Public Comments)			2010/06			Ms. Inoka	**
			National Carbon Finance Strategy of Sri Lanka			2010/06			Ms. Inoka	**
			National Strategy for Implementation of policy			n/a				
			Action Plan for Implemantation of Strategy			n/a				
			Environment Impact Assessment		Central Environmental Authority	Jun-10				
			National Policy, Regulation, Gazette(s)			2010/06			Ms. Inoka	**
			Pictures			2010/06				
2	Country Portfolio	/dna/country_portfolio								
			Pictures							

Attachement 1) - (6) Content in Web Page(s) subject to final confirmation & approval (2/3)

Layer	Title	URL	Subject	Contents	Source of Information	Up Load			Responsible Person	
						Initial	Second	Onward		
2	UNFCCC	/dna/unfccc	General Information						Ms. Chamika	
			UNFCCC Website	http://cdm.unfccc.int/index.html						
			Pictures							
2	Data & Information	/dna/data_info	Data & Information (1)			2010/06				**
			Data & Information (2)			2010/06				
			Data & Information (3)			2010/06				
			Data & Information (4)			2010/06				
			Manual (1)			2010/06				
			Manual (2)			2010/06				
			Manual (3)			2010/06				
			Annual Report (1)			2010/06			Ms. Chamika	**
			Annual Report (2)			2010/06			Ms. Chamika	**
			National Policy (Draft)			2010/06			Ms. Inoka	**
			National Policy (Public Comments)			2010/06			Ms. Inoka	**
			National Carbon Finance Strategy of Sri Lanka			2010/06			Ms. Inoka	**
			National Strategy for Implementation of policy			n/a			Ms. Inoka	**
			Action Plan for Implementation of Strategy			n/a			Ms. Inoka	**
			Environment Impact Assessment		Central Environmental Authority	2010/06			Ms. Inoka	**
			National Policy, Regulation, Gazettes			2010/06			Ms. Inoka	**
			Guidelines		from Activities in Target 4	2011/04	2011/7		Ms. Chamika	**
			Pictures			2010/06				
2	Event Calendar	/dna/news	Event Calendar			2010/06			Ms. Deepani	
			Pictures			2010/06			Ms. Deepani	
2	News	/dna/news	News			2010/06			All	
			Pictures			2010/06				
2	FAQ	/dna/faq	Frequent Asked Questions			2010/06			Ms. Deepani	
			Pictures			2010/06			Ms. Deepani	
2	About Us	/dna/about_us	Organization Name			2010/06			Ms. Inoka	***
			Address			2010/06			Ms. Inoka	***
			TEL/FAX			2010/06			Ms. Inoka	***
			E-Mail			2010/06			Ms. Inoka	***
			Working Day & Office Hours			2010/06			Ms. Inoka	***
			Organization Chart			2010/06			Ms. Inoka	***
			Introduction of members of staff			2010/06			Ms. Inoka	***
			Pictures			2010/06			Ms. Inoka	***
			LOCATION MAP & ACCESS			2010/06			Ms. Inoka	***
			Pictures			2010/06			Ms. Inoka	**
2	Link & Useful Contact	/dna/link							All	
			Pictures							
2	Up Date Information	/dna/log	Log			2010/06			Mr. Aurasha	
			Pictures			/2010/06				

Attachement 1) - (7) Content in Web Page(s) subject to final confirmation & approval (3/3)

Layer	Title	URL	Subject	Contents	Source of Information	Up Load			Responsible Person	
						Initial	Second	Onward		
3	International Criteria	/dna/cdm/inter_criteria	Contents						Ms. Chamika	
			Pictures							
3	National Criteria	dna/cdm/national_criteria	Contents	National Approved Criteria & Procedure	from Activities in Target 3	2010/09			Ms. Chamika	
			Pictures							
3	Flow Chart	dna/cdm/flow_chart	Contents			2010/06			Ms. Chamika	
			PIN Form (Download)			2010/06			Ms. Chamika	***
			PIN Sample			2010/06			Ms. Chamika	***
			Pictures			2010/06				
3	CDM Projects in Sri Lanka	dna/cdm/projects_lk	Contents							
			PIN approved projects		from Activities in Target 3				Ms. Inoka	***
			Project under Validation (Sri Lanka)		from Activities in Target 3				Ms. Inoka	***
			UNFCCC registered Projects (Sri Lanka)		from Activities in Target 3				Ms. Inoka	***
			Pictures							

Legend :
Descriptions in Blue Word(s) : Content(s) & Topic(s) with High Priority
Descriptions with Pink Color in Back : Content(s) & Topic(s) in details shall be continued to discuss
Description with Blue Color in Back : Frame shall be continued to consider
Description with Green Color in Back : existing is consider to utilize as it is

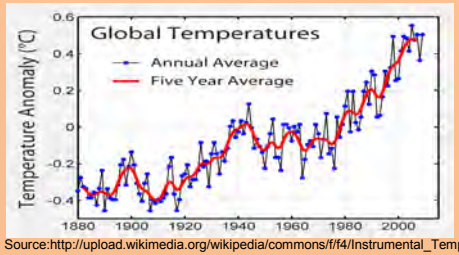
GUIDE TO MITIGATION

Occurrences / intensity of natural disasters have magnified, thus loss of human life, financial loss, and/or environmental damages are intensified.

How such a tragedy came about

Climate across the earth is changing. Increasing temperatures, changing weather patterns, rising sea level, and increasing frequency of natural disasters such as floods, hurricanes, and tornados are some of the manifestation of the climate change.

As shown in the graph below, an increasing trend in global temperature is clearly evident.



Source:http://upload.wikimedia.org/wikipedia/commons/f/f4/Instrumental_Temperature_Record.png

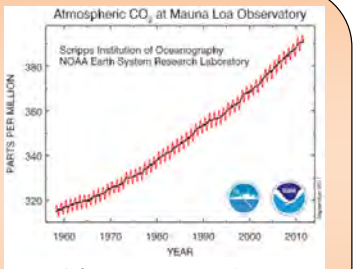
Increasing temperatures are causing the melting of ice layers, polar caps and glaciers, and the weather patterns to change, which in turn, are causing some parts of the world to experience intensive rains causing floods while other area experiences longer droughts. Computer models under simulation shows that these disasters are going to be more frequent.

Reasons for global warming

Solar energy received from Sun is reflected back to space. However, the greenhouses (GHGs) in the atmosphere trap part of the energy released from the surface and reflect it back to earth. This is a natural process which keeps the earth warm and helps accommodate life forms as we know it.

Even though GHGs are essential to life on earth, too much of them can threaten the present eco-system.

Ever since the industrial revolution took place in 18th century, human activities – like burning fossil fuels, industrial activities, and slash-and-burning of rainforest, put increasingly more GHGs into the atmosphere, resulting more solar energy to be trapped and thus heating the earth's surface.



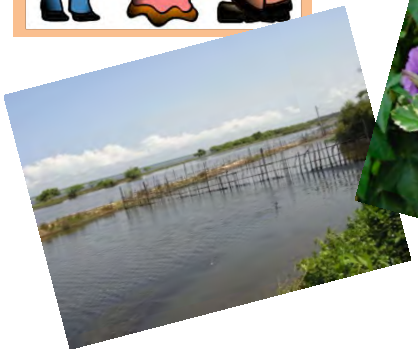
Trend of CO_2 concentration since late 1950s

Source:
http://www.esrl.noaa.gov/gmd/ccgg/trends/

Actions taken against global warming

To address the Climate Change Issues the United Nation and governments around the world formed two institutions, namely the **Intergovernmental Panel on Climate Change (IPCC)** and the **United Nations Framework Convention on Climate Change (UNFCCC)**.

The IPCC acts as a leading international scientific body which assess and review the scientific, technical and socio-economic information relating to climate changes, while the UNFCCC was formed to develop appropriate actions to reduce global warming and to cope with inevitable global temperature increase. Accordingly in 1997 UNFCCC formed the **Kyoto Protocol**, a treaty which set out the binding targets for industrialised countries to GHG reductions. Under this protocol, three GHG reducing mechanisms -- Emission Trading, Joint Implementation (JI), and Clean Development Mechanism (CDM), were introduced. Although the Protocol's first commitment period began in 2008 and end in 2012, with the experience gained in the developing this concept and implementing the protocol UNFCCC, is planning to develop other forms of international treaties and global measures to continue GHG mitigation activities, including NAMA (Nationally Appropriate Mitigation Action).



Climate Change in Sri Lanka

Climate change can already be felt in Sri Lanka in the form of increasing temperatures, changing weather patterns, and rising sea-levels.

Intensive rainfall causing floods and longer drought periods are now becoming a common occurrence in Sri Lanka. The recent floods have caused severe devastation and destroyed large areas of agricultural land, property and killed livestock. Due to destruction of paddies and vegetable fields, Sri Lanka encountered a foods shortage. Heavy rains have also induced landslides and ruined several thousand houses. These destructions affected millions of people.

GHG inventory in Sri Lanka

GHG is a collective term given to gasses which absolves and releases infrared radiation in the atmosphere. In climate change arena, 6 gasses; i.e. CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6, are targeted for control as they are the major contributor of the human induced climate change. (In Sri Lanka, only CO_2, CH_4, and N_2O are targeted as the other gases rarely present in the country.)
GHG released from and removed in Sri Lanka in the year 2000 is shown below. As you can see, energy sector is, by far, major source of CO_2 emissions, but agriculture and waste also account non- negligible amount of GHG emissions.

Aggregate inventory of GHG emissions and removals (2000)

Sector	CO_2 Gg	CO_2 Removals Gg	CH_4 Gg	CH_4 Gg CO_2 Eq	N_20 Gg	N_20 Gg CO_2 Eq	Total GgEq Net
Energy	12,410		41.4	869	0.8	263	13,584.2
Industrial processes	493						493.0
Agriculture	0		185.1	3,885	2.6	841	4,913.7
Land use change and forestry	2,120	-13,214	1.7	36			-11,056.3
Waste			96.8	2,033			2,129.8
Total	15,023	-13,214	325.0	6,823	3.4	1,104	10,064.4

Source: Second national communication on climate change by Ministry of Environment, November 2010

Climate change impact on Sri Lanka

Various studies have shown that Climate Change will impact Sri Lanka in three ways: 1) increasing temperatures, 2) changing rainfall patterns, and 3) rising sea levels.

According to a projection made by the Department of Meteorology, the country's mean temperature is likely to increase by about 0.4°C and 0.9 °C over the baseline (1961-1990) by the year 2025 and 2050, respectively. Likewise, Sri Lanka is likely to receive higher rainfall; however, it will be erratic with periods of intense rainfall and prolonged drought period during the dry seasons. This will affect Sri Lanka in several ways such as flooding, contamination and pollution of water flows and resources, agriculture production, and increased frequency of landslides. [i]

The global sea level rise will also affect Sri Lanka. The current sea level rise is about 1.4 cm per annum. By about 2050 it is projected that the sea level rise will be about 0.2 meters and which will cause a shoreline to retreat by about 10 m.[ii]

Agriculture

Needless to say, rice production is the main crop and the staple food of Sri Lanka. However, the increasing temperatures can adversely affect this rice production. Similarly tea plantations may also be affected by the increasing temperature as the cooler climate areas which are essential for growth of high quality tea could become warmer than current level. This will impact Sri Lankan economy as tea plantation sector is a major foreign exchange earner of the country.

Agricultural area along the coastline will also be affect by the climate change in the form of rising sea level.
When weather pattern is concerned, changing precipitation patterns -- rainfall will be erratic with periods of high and intense rainfall and prolonged drought period during the dry periods -- and sifting climate zones may become in reality.

Biodiversity

Sri Lanka has unique and highly vulnerable ecosystem as the island has long been isolated from surrounding environment. Thus, changing climate induces alien species to easily invade into Sri Lankan ecosystem. In addition, rise in sea level will result in increase salinity, sea erosion and inundation, which of course, adversely affect coastal and freshwater ecosystem.

Human Health

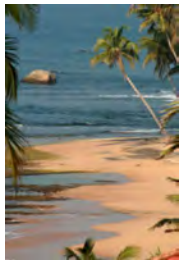
As quality water will be affected by the rising sea levels, the challenges in ensuring access to safe drinking water will aggravate. This situation can further contaminate and pollute water resources and at the same time cause more frequent occurrences and spread of food water borne diseases such as dysentery, diarrhea, and typhoid. The stagnant and polluted water along with increase in temperatures will also cause vector-borne diseases such as malaria, filariasis, chikungunya, dengue, Japanese encephalitis.

Actions Sri Lanka Government has taken to tackle global warming?

Sri Lanka Government has realized the importance of contributing to the global efforts to reduce global warming and taking adaptation measures to minimize the adverse effects arising out of global warming. Some of the key actions taken by SL government in this regard are;

- Formulating **National Policies** to actively encourage mitigation and adaptation. These involve incorporating environment protection, mitigation, and adaption concepts. Some of the key policies for combating global warming are:

Policies	Date
• National Policy on CDM	
• National Environment Policy 2003	
• National Climate Change Policy	



- Establishment of **National Action Plan** Haritha Lanka Program, for Sustainable Development which includes short, medium and long term targets scanning the period 2009-2016. The main thrust areas covered under those programs are Clean Air-everywhere, Saving the Fauna, Flora and Ecosystem, Meeting the Challenges of Climate Change, wise use of Coastal Belt and Sea Around, responsible use of Land Resources, Doing Away a with the Dumps, Water for all and Always, Green Cities for Health and Prosperity, Greening the industries knowledge of Civil rights. Another action plan directly related to climate change is:

Policies	Date
• National Climate Change Adaptation Strategy for Sri Lanka 2011-2016	Nov 2010

- **Establishment and development of Institutions** such as climate change secretariat and Sustainable Energy Authority to develop renewable energy and energy efficiencies projects and activities to enable the government implement policy and contribute to the mitigation and adaptation efforts. As mitigation action SEA is engaged in promoting ESCOs, energy labeling schemes, Energy efficient building , energy management schemes, energy reporting and benchmarking.

- Further, through SEA the government has taken the following **initiatives** to promote investments in Renewable Energy Projects.

  - 10% of the energy required to be NCRE by 2015,
  - *Introduce four medium scale hydro plants*
  - *Introduction of LNG based CCGT plants*
  - Demand side management to increase the use of CFL bulbs which is expected to bring about a reduction of 114 …tCGo2

- Through **adoption of Kyoto Protocol** in 2002 Sri Lankan has also committed to participate in CDM. This process has encourages Sri Lankan investors to develop GHG mitigation projects and generate foreign currency earnings. This has enabled Sri Lankan an opportunity to investments in renewable energy technology and project and to benefit by transfer of technology in the energy sector.

- Other **co-benefits** derived out of mitigation actions in Sri Lanka are reducing air pollution, Reduce dependency on fossil fuel and thus import of oil, Better conservation methods, Better land use, Increased productivity in the agriculture production, Lower health expenditure, Resilience to natural disaster

Mitigation actions taken in Sri Lanka

Climate Change Division (CCD) of Ministry of Environment (MOE), as Designated National Authority (DNA) of Kyoto Protocol, has promoting various mitigation actions under Clean Development Mechanism (CDM). Sri Lanka has already 7 registered projects under UNFCCC and various other projects are underway.

Registered	Title	Parties	Methodology	Reductions*
30 Oct 05	Magal Ganga Small Hydropower Project	Netherlands	AMS-I.D. ver. 5	34,179
28 Mar 09	Coconut shell charcoaling and power generation at Badalgama, Sri Lanka	Japan	AMS-III.K. ver. 3 AMS-I.D. ver. 13	43,265
24 Aug 10	Adavikanda, Kuruwita Division Mini Hydro Power Project	Japan	AMS-I.D. ver. 13	13,484
30 Oct 05	Small Hydropower Projects at Alupola and Badulu Oya.	Netherlands	AMS-I.D. ver. 5	25,109
26 Oct 09	10 MW Biomass Power Generation Project - Tokyo Cement, Trincomalee	Japan	AMS-I.D. ver. 13	43,800
30 Oct 05	Hapugastenne and Hulu Ganga Small Hydropower Projects	Netherlands	AMS-I.D. ver. 5	44,842
11 Dec 06	Sanquhar and Delta Small Hydro Power Projects	Switzerland	AMS-I.D. ver. 9	5,489

* Estimated emission reductions in metric tonnes of CO_2 equivalent per annum (as stated by the project participants)
Source: http://cdm.unfccc.int/Projects/projsearch.html

Renewable Energy (Mini-hydro) Adavikanda, Kuruwita Division Mini Hydro Power Project	Amount of CO_2 Reduced
	13,484 ton / yr

Company Name : Alternate Power Systems (Pvt.) Ltd.
Location : Kuruwita Division, Rathnapura District
Sector : Energy (renewable - / non-renewable sources)
Products : Generation of Electricity
GHG Emission Reduction by : Hydropower Technology

About Adavikanda Mini Hydro Power Project

Alternate Power Systems (Pvt.) Ltd. is constructing a run-of-river 6.5 MW mini hydro power plant in Sri Lanka. The project activity involves generation of electricity from a small-scale hydropower plant and supply of power generated to the Sri Lankan national utility grid which is Ceylon Electricity Board. The proposed project is expected to generate electricity of 19.93 GWh /year at a PLF of 35%. As 50.6% of the country's power requirement came from Thermal Energy in 2006, operation of this small hydropower plant will result in a displacement of electricity from thermal power stations. The project is run of the river type; hence minimal storage is required at the weir.

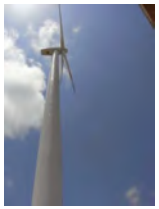
Renewable Energy (Biomass: Saw Dust & Glicidia) Hayleys Mgt Knitting Mills PLC	Amount of CO_2 Reduced
	25,600 ton / yr

Company Name : Hayleys MGT Knitting Mills PLC.
Location : Narthupana Estate, Neboda
Sector : Manufacturing
Products : Knitted fabric
GHG Emission Reduction by : Biomass boiler

About the GHG Emission Reduction Measure

The company has successfully reduced the CO_2 emissions by switching two oil furnaces to a biomass burning boiler in September 2010. The boilers are used for generation of dry saturated steam for the process requirements of fabric dyeing machines. Approximately 75-80 MT per day of biomass (woodchips/saw dust) is used. Gliicidia is also used as secondary fuels.

Renewable Energy (Wind Power) Mampuri Wind Power Project	Amount of CO_2 Reduced
	18,771 ton / yr



Company Name : Senok Wind Power (Private) Limited
Location : Mampuri, North Western Province
Sector : Energy
Products : Generation of Electricity
GHG Emission Reduction by : Wind power

About Mampuri Wind Power Project

Mampuri Wind Power Project is located in the general are of the Mampuri village in the North Western Province. It uses the wind energy potential in the North West Coastal belt of Sri Lanka to produce a total of 10MW using eight wind turbines, each rated at 1.25MW. The power plant generates 27.638GWh per year, on the basis of long-term average wind speed at the location. Electricity produced is sold to Ceylon Electricity Board through a dedicated transmission line.

Renewable Energy (Biomass: Saw dust) Lalan Rubber (Pvt) Ltd - Biyagama Free Industrial Zone	Amount of CO_2 Reduced
	N/A ton / yr

Company Name : Mapa Lalan (Pvt) Ltd
Location : Biyagama Free Industrial Zone
Sector : Manufacturing
Products : Rubber gloves (for household use)
GHG Emission Reduction by : Biomass boiler

About the Project

Lalan Rubber (Pvt) Ltd is a premier manufacturer and exporter of gloves from Sri Lanka. The company commenced operations in the mid 1940's and grew steadily and moved in to the production of centrifuged latex and manufacturing of gloves during the mid 1980's. The company has successfully reduced the CO2 emissions by switching two oil furnaces to a biomass burning boiler in September 2010. With this project, the company is seeking Voluntary Emission Reduction (VER) credit – a type of carbon credit outside of legally binding framework to assure financial benefit.

What can you do to help to reduce GHG emissions, thus lessen the global warming?

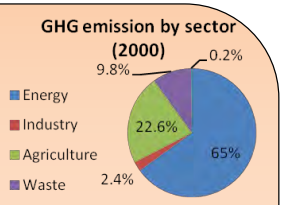
There are several ways to know the environmental load that your activity causes. One of them is called 'carbon footprint' in which you see how much burden your activity produced in the form of CO_2 emission. By knowing the amount of CO_2 a person is emitting in his/her everyday life, he/she can understand how he/she can contribute to reducing the emissions. There are two approaches to use the carbon footprint:

1) Understand the source of GHG emission like CO_2 in individual, institutional, and corporate activities, and
2) Indicate and visualize the carbon footprint for their products (sometimes called carbon labeling).

By calculating your carbon footprint and/or selecting products that show less carbon footprint, you can assess and contribute to reduce the GHG emissions.

As graph shown right indicates, the energy sector is the biggest contributor of GHG emissions in Sri Lanka. Main source of the GHG from energy sector is though burning fossil fuels to generate electricity. In other words, reducing electricity consumption will directly contribute to the reduction of CO_2 emission you cause in your everyday life.

Following list is some of simple example that how you can reduce the GHG emission in your daily life, including not only how you can save electricity but other easily attainable efforts too.



Source: P58, Ministry of Environment Second National Communication on Climate Change

< In the living room>
- Replace regular light bulb with a Compact Fluorescent Light (CFL) bulb, and turn it off when you are not in the room.
- Do not over cool with the air conditioning. Clean/replace filters regularly.
- Turn off TV when you are not watching, preferably using main switch.
- Choose appliances and other electronic devices that use energy efficiently, and use energy efficiency features of PC and other electronic devices.
- -- Switch to green energy

<In the kitchen>
- Avoid opening refrigerator unnecessary, and do not keep the refrigerator door open for prolonged time. Do not put too much food and defrost regularly.
- Use your own bag when going for grocery shopping, refuse plastic bags at grocery store.
- Buy organic food

<Transportation>
- Use public transportation, rather than individual cars. If you own a car, tune up regularly.

National Designated Authority of Sri Lanka
Climate Change Secretariat
Ministry of Environment
1st Floor, No. 980/4 A, Wickramasinghe Place
Ethul Kotte, Sri Lanka.

TEL: + 94 (0) 112-883481 FAX: + 94 (0) 114-206109
http://www.climatechange.lk/DNA/
E-mail: info@climatechange.lk

[i] Ministry of Environment, Second National Communication on Climate Change
[ii] Sector Vulnerability Profile: Biodiversity and Ecosystem Services

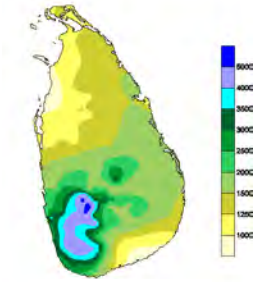
Some Photos: Athula Disanayaka

GUIDE to CDM In Sri Lanka

Sri Lanka at Glance

Geography:

Sri Lanka is an island in the Indian Ocean, located to the south of Indian Subcontinent, sprawling over the area of 65,525 Sq. km. It lies between 6 - 10 degree north latitude and between 80 - 82 degree east longitudes. It has a maximum length of 432 km (Devundara to Point Peduru) and maximum breadth 224 km (Colombo - Sangamankanda). Sri Lanka with its tear-dropped shape is dominated by the astonishingly varied features of topography, making it one of the most scenic places in the world. Three zones can be divided by its distinguished elevation: the central highland, the plains, and the coastal belt.



Annual Rainfall (mm)

Climate:

The Climate of Sri Lanka is dominated by topographical features of the country and the Southwest and Northeast monsoons regional scale wind regimes. The Climate experienced during 12 months period in Sri Lanka can be characterized in to 4 climate seasons as follows:

1. March - April:	First Inter-monsoon Season
2. May – September	Southwest monsoon season
3. October – November:	Second Inter-monsoon season
4. December – February:	Northeast Monsoon season

What are the actions taken against global warming?

In International Community:

The **Intergovernmental Panel on Climate Change (IPCC)** was established in November 1988 by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts.

United Nations Framework Convention on Climate Change (UNFCCC) is an International environmental treaty proposed at United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro on June 1992 with ultimate object of stabilization of greenhouse gas concentrations in the atmosphere and open for signature on May 9, 1992. UNFCCC was entered into force on March 21, 1994, and there are 194 parties ratified UNFCCC as of May 2011. The parties agreed to recognize "common but differentiated responsibilities" with concept of the developed/industrialized countries, who are listed in Annex I, shall take much more responsibilities for reducing greenhouse gas.

In Sri Lanka:

Sri Lanka is committed to act responsibly in international community, especially in tackling global warming issues. Accordingly, the Government ratified the UNFCCC in November 1993, and designated the Ministry of Environment as „**Designated National Authority (DNA)**" of Sri Lanka for the **Clean Development Mechanism (CDM)** scheme under Kyoto Protocol.

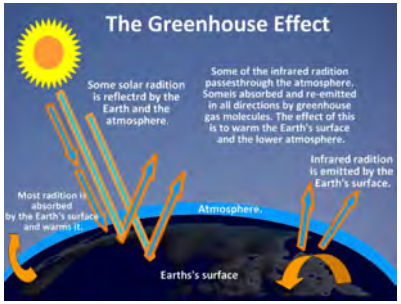
Meanwhile, the Government has developed and implemented various national policies and strategies to achieve sustainable and environmentally sounds development.

Some of the key national policies and strategies are as follows

Mahinda Chintana – Vision for the Future Towards a new Sri Lanka	Set out a national development framework and strategies by sectors	Date
National Environmental Policy	Aims to promote the sound management of the environment.	2003
Haritha (Green) Lanka Programme	Action plan set up under Mahinda Chintana to achieve sustainable social and economic development.	2008
National Policy on Clean Development Mechanism (draft)	Develop/establish necessary framework to participate CDM activities.	

Climate Change and Sri Lanka

Greenhouse Gasses (GHGs):



GHGs are those of gasses that absorbs and emit infrared radiation in the atmosphere. Although the presence of those GHGs keep earth"s surface warm enough to sustains the life forms as we see today, too much of them cause increase in temperature, i.e. global warming. The human induced change in chemical composition of atmosphere began in mid-18th century where industrial revolution occurred. The changes are confirmed by report published by IPPC that "most of the observed increase in globally averaged temperatures since the mid-20th century is very likely (greater than 90% probability) due to the observed increase in anthropogenic greenhouse gas concentrations."

Climate Change in Sri Lanka:

Climate change can already be felt in Sri Lanka, in the form of increasing temperatures, changing weather patterns, and rising sea-levels. A computer model run by Ministry of Meteorology has predicted that these trends will accelerate further in the future, and intensive rains or prolonged drought may become common occurrence, which leads to destroying agricultural land, damaging property and killing livestock.

GHG inventory in Sri Lanka

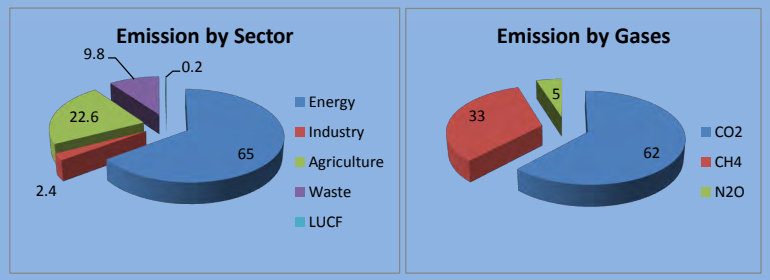
Greenhouse gasses released from and removed in Sri Lanka in 2000 is shown below. As you can see, energy sector is, by far, major source of CO_2 emissions, but agriculture and waste also account non- negligible amount of GHG emissions.

Aggregate inventory of GHG emissions and removals

Sector	**CO_2** Gg	**CO_2 Removals** Gg	**CH_4** Gg CO_2Eq	**N_20** Gg CO_2Eq	**Total** GgEq Net
Energy	12,409.42		866.67	251.10	13,527.19
Industrial processes	492.40				492.40
Agriculture			3,888.15	812.20	4,700.35
Land use change and forestry	10.34		35.07		45.41
Waste			2,033.22		2033.22
Total-Emissions	12,912.16		6,823.11	1,063.30	20,798.57
LUCF-Removal		-6,253.99			-6,253.99
Total –net	12,912.16	-6,253.99	6,823.11	1,063.30	14,544.58

Source: Second national communication on climate change by Ministry of Environment, November 2010

GHG emission in Sri Lanka for the year 2000.



Source: Dec. 2010, Ministry of Environment, Second National Communications

How Sri Lankan Government tackling against global warming

Sri Lanka Government has realized the importance of contributing to the global efforts to reduce global warming and taking adaptation measures to minimize the adverse effects arising out of global warming. Some of the key actions taken by SL government in this regard are;

- Formulating **National Policies** to actively encourage mitigation and adaptation. These involve incorporating environment protection, mitigation, and adaption concepts. Some of the key policies for combating global warming are:

Policies	Date
• National Policy on CDM	Mar. 2011
• National Environment Policy 2003	2003
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- Establishment of **National Action Plan** Haritha Lanka Program, for Sustainable Development which includes short, medium and long term targets scanning the period 2009-2016. The main thrust areas covered under those programs are Clean Air-everywhere, Saving the Fauna, Flora and Ecosystem, Meeting the Challenges of Climate Change, wise use of Coastal Belt and Sea Around, responsible use of

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- Further, through SEA the government has taken the following **initiatives** to promote investments in Renewable Energy Projects.

  - 10% of the energy required to be NCRE by 2015,
  - *Introduce four medium scale hydro plants*
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- Through **adoption of Kyoto Protocol** in 2002 Sri Lankan has also committed to participate in CDM. This process has encourages Sri Lankan investors to develop GHG mitigation projects and generate foreign currency earnings. This has enabled Sri Lankan an opportunity to investments in renewable energy technology and project and to benefit by transfer of technology in the energy sector.

- Other **co-benefits** derived out of mitigation actions in Sri Lanka are reducing air pollution, Reduce dependency on fossil fuel and thus import of oil, Better conservation methods, Better land use, Increased productivity in the agriculture production, Lower health expenditure, Resilience to natural disaster

Climate Change Secretariat, Ministry of Environment

Climate Change Division (CCD):

Ministry of Environment (MOE) has been determined as Designated National Authority (DNA) of Kyoto Protocol. As a working body of DNA, Climate Change Division (CCD) of MOE performs, 1) Evaluation & Approval of CDM project, 2) Capacity Development foe CDM Project Development and 3) CDM Market. Details each of these tasks are given below.

1) Evaluation & Approval
   (1) Adaptation of International Criteria
   (2) Development of National Criteria
   (3) Establish Guidelines for the CDM Project Development
   (4) Establish National Procedure for Evaluation & Approval of CDM Project(s)
2) Capacity Development for CDM Project Development
   (1) To identify and formulate project(s)
   (2) To definite Baseline
   (3) To quantify Emission Reduction(s)
   (4) To monitor project(s)" performance
3) CDM Market Promotion
   (1) Developing portfolio that contains reliable information and data
   (2) Providing technical input for identification, formulation and development of CDM project(s) & baseline of the CDM project in Sri Lanka
   (3) Providing carbon market information
   (4) Supporting generation of cost effective CERs with maximum quantity

CDM Development in Sri Lanka:

A proponent for the CDM project in Sri Lanka should look into the following **Critearia** if his/her project comply with one or more conditions shown below:

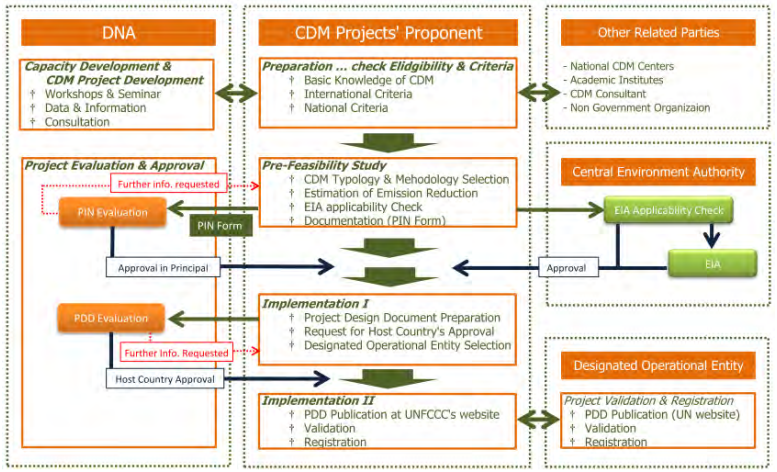
<u>Economical Criteria</u>
- Improving quality of life
- Alleviation of poverty
- Improvement of equity

<u>Social Criteria:</u>
- Participation of the Community

<u>Technological Criteria</u>
- Transfer of appropriate technology include know-how and method

<u>Environmental Criteria</u>
- Conservation of natural resources
- Sustainable use of land
- Contribution to the GHG reduction

Procedure for CDM in Sri Lanka can be surmised as below.



Introduction of Mitigation Actions in Sri Lanka

Sri Lanka has already 7 registered projects under UNFCCC and various other projects are underway. Following the list of registered project, some of the representative mitigation projects in Sri Lanka are shown.

Registered	Title	Parties	Methodology	Reductions *
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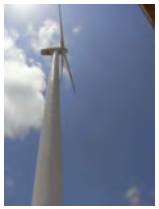

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Company Name : Mapa Lalan (Pvt) Ltd
Location : Biyagama Free Industrial Zone
Sector : Manufacturing
Products : Rubber gloves (for household use)
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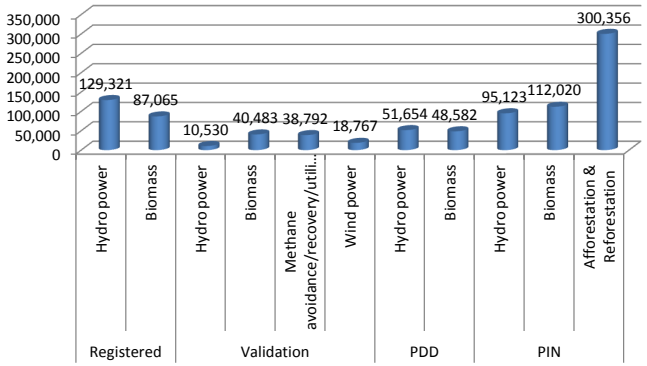
Future Perspective for CDM Projects

Sri Lanka holds excellent potential for future GHG reduction projects. Currently 50 projects are listed in CCD"s database as existing/potential CDM projects. Out of them, PDD has been submitted for 21 projects (expect already registered project), of which 12 of them are under validation. Furthermore, 20 projects are in PIN stage.
As for CER, existing 7 registered CDM projects are expected to yield 216,386 tons of CER while totals 209,077 tons of CO2 reduction is expected for projects in PDD stage.



Expected amount of CER by Maturity and Type of Project

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