Disaster Risk Reduction in Sri Lanka

By

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Presentation at EGM, Fukuoka, Japan

16 - 17 November 2015

Sri Lanka: Country Overview

Physical Features & Climate

Total Area	: 65,610km^2
Land Area	: 62,705km^2
Inland waters	: 2,905km^2

Population & Vital Statistics

Mid Year population (2014)	: 20.67Mn.
Population Density	: 330 (per km^2)
Urban Population	: 15.1%
Rural Population	: 84.9%
Infant Mortality rate (2010)	: 9.9 per 1,000 live births
Dependency Ratio (2014)	: 49.5%
Average Household Size (2013)	: 3.9 persons
Expectation of life at birth	: 74.3%
Literacy Rate (2013)	: 92.5 (Female – 93.5; Male – 91.6)
Human Development Index	: Rank 73rd place among 187 countries

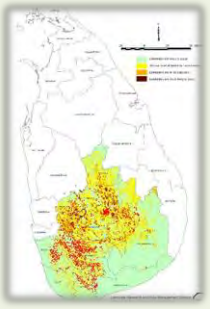
Economic Indicators

Per capita income	: 3,625 US$
Gross Domestic Product (GDP)	: 7.4 %
Sectoral Composition of GDP	: Agriculture (11.9); Industry (28.7); Services (59.3)
Inflation Rate	: 1.7%

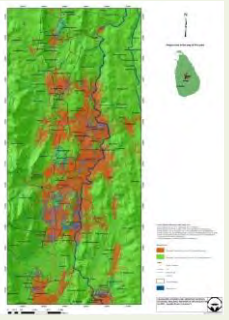
Source:. CBSL, 2014

Potential disaster risk areas

Landslide Prone areas



Land subsidence areas

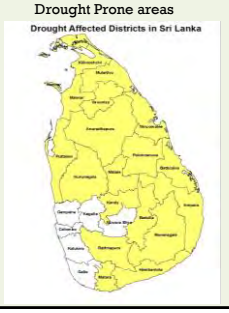


Flood Prone areas during South west Monsoon (May – Sep)

Flood Prone areas during North East Monsoon (Dec – Feb)

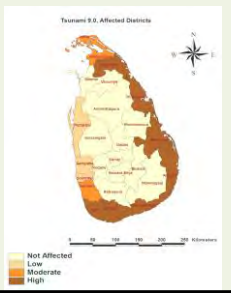
Problematic Soils -

Drought Prone areas



Tropical Cyclones

Tsunami Affected Coastal Areas

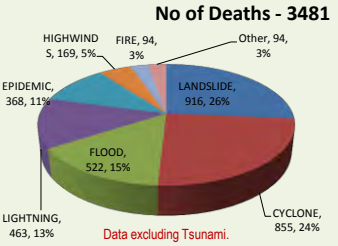


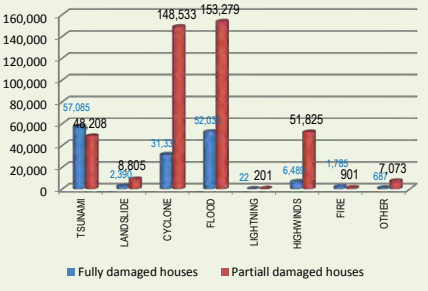
Experiences of disasters

Cumulative total of disasters occurred in Sri Lanka (1974 – 2014)

Type of Disaster	Deaths	Injured	Missing	Affected	House Damages	
					Fully	Partially
TSUNAMI	30,959	19,611	1,908	1,076,240	57,085	48,208
LANDSLIDE	916	311	77	132,922	2,390	8,805
CYCLONE	855	600	21	1,691,175	31,331	148,533
FLOOD	522	299	22	13,143,839	52,035	153,279
LIGHTNING	463	417	3	1,755	22	201
EPIDEMIC	368	0	0	588,799	0	0
HIGH-WINDS	169	489	45	525,612	6,489	51,825
FIRE	94	351	0	14,547	1,785	901
DROUGHT	0	0	0	15,456,672	0	0
OTHER	94	238	15	16,227,768	687	7073
Total	**34,440**	**22,316**	**2,091**	**48,859,329**	**151,824**	**418,825**

Source: www.desinventar.lk database.





Recent Landslides in Sri Lanka

- **Recent Meeriabedda Landslide, Koslanda, Badulla District**
- **Date of occurrence - 29th October 2014**
- **No of houses destroyed - 63**
- **No of deaths reported – 37**
- **Length of debris Flow – 1 km**

- Rilpola Landslide, Badulla District
- Date of occurrence - 26th December 2014
- No of houses destroyed - 06
- No of deaths reported – 13
- Length of debris Flow – 500 m

Landslide affected estate housing

Landslide Investigation Data during the period from 2014-10-30 to 2015-10-30

Serial No	District	Number of Investigated vulnerable & resettlements sites		Risk Levels and no of houses in investigated sites			No of families evacuated
		Landslide vulnerable areas	Resettlement Sites	High risk	Medium risk	Low risk	
				Families	Families	Families	
Total		6886	481	5248	5726	840	4936

Actions taken so far

- Investigations on potential landslides
- Development of hazard map since 1986
- Monitoring, awareness and early warning systems
- Mainstreaming Disaster Impact Assessment (DIA)into development process
- System to control haphazard construction
- Implementation of well-planned mitigation projects
- Resettlement of affected communities

Further actions

- Development of risk profiles and risk maps
- Installing site specific early warning systems
- Continuation of well-planned mitigation projects
- Promoting disaster resilient village concept
- Facilitate together with relevant authorities, the resettlement of families living in identified high landslide risk locations,
- Declare such high landslide risk locations as 'Landslide Hazardous Areas' and maintain them as reservations.
- Re-examine other vulnerable locations to identify resettlement and mitigation
- Strengthening capacity necessary for monitoring, awareness and mitigation

Challenges in building disaster resilience

Policy:
- Although, National Disaster Management Policy (NDMP) is available, legal framework is inadequate to implement the NDMP holistically. Other National policies such as National Physical planning policy, National Climate Change policy, National Housing Policy, National Land Use policies are available, but lack in coordination and integration among policies .

Planning:
- Risk information is not adequately considered in program and project planning.
- Absence of risk information and risk assessments for some of the potential hazards
- Key economic development sectors are not adequately considered the risk in their planning

Systems:
- The DRR administrative systems are centralized in general
- Decentralization of roles and responsibilities to address the DRR concerns are not established
- Prevailing most systems are reactive rather than proactive

Technology:
- Inadequate access to new and innovative technology for DRR activities
- Adoption of new technology for DRR activities is not swift
- Absence of comprehensive DRR Research & Development framework
- Limitations in data availability and technical expertise. i.e. such as climate downscaling and modeling capabilities

Knowledge:
- Inadequate access to new knowledge for DRR
- Absence of mechanisms to transfer the knowledge on DRR

Capacity:
- Insufficient capacity to conduct risk assessments
- Inadequate capacity of the human resources to implement DRR actions using new technologies
- Insufficient exposure to foreign training and exchange programs

Potential areas for collaboration and partnership with Japan

- **Access to new and advanced Technology for DRR:**
  - Technology transfer on structural Landslide & Flood mitigation
  - Synthetic Aperture Radar (SAR) Images for landslide hazard Mapping
  - Hazard resilient housing construction technology
  - Space based technology for disaster risk reduction and response; Real time data sharing during disasters for response planning
  - End to end early warning systems, especially for Landslide prone areas
- **Knowledge transferring on:**
  - Landslide and Flood Risk Assessments
  - Landslide risk reduction (Structural)
  - Integration of risk into sector development planning processes
  - Build partnerships with Japanese Universities and academia to conduct and initiate researched studies on DRR & CCA
  - Conduct joint Research Symposium on DRR and CCA annually or bi-annually
- **Capacity building on:**
  - Landslide and Flood Risk Assessments
  - Landslide & flood Risk Modelling
  - Cost Benefit and Cost Effective analysis for Landslide mitigation and other infrastructure projects

Ongoing collaboration and partnership with Japan

- **Under Japan International Cooperation Agency (JICA)**
  - Mitigation of three (3) potential landslides in the hilly region of Sri Lanka on Technical Cooperation Project
  - Unstable slope stabilization of major highways in central highland in Sri Lanka