



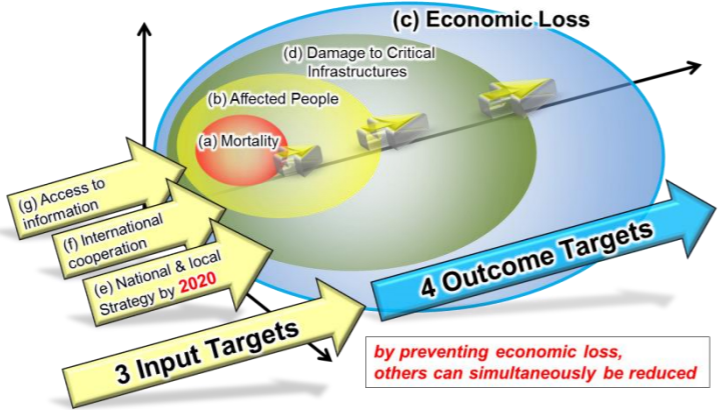
# Roadmap for Disaster Risk Reduction ~ Safe and Resilient Sri Lanka ~



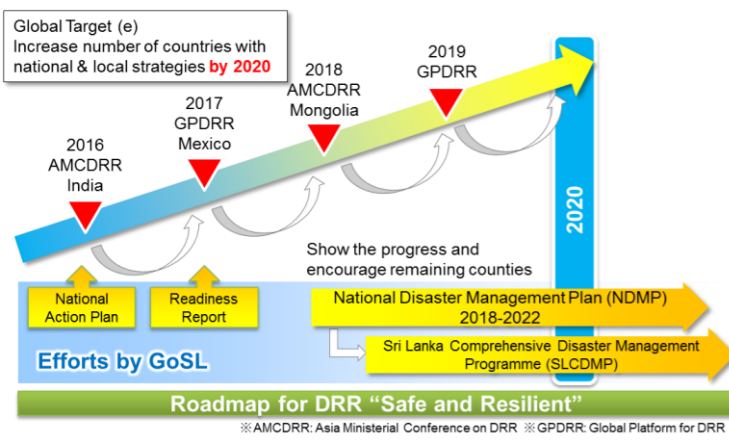
## Logical Structure of 7 Global Targets in the Sendai Framework for DRR 2015-2030

The Sendai Framework sets 7 Global Targets which will be achieved by the efforts of each state. These Targets are categorized into 3 "Input Targets" and 4 "Outcome Targets".

Generally, by investing countermeasures for "Reduce Economic Loss", other 3 outcome targets "Mortality, Affected People and Damage to Critical Infrastructures" can simultaneously be reduced. For the countries' economical growth which align with Sustainable Development Goals (SDGs), the Target "Reduce the Economic Loss" is the most important target among the 7 Targets.



## Establishment of Local DRR Strategy in Line with NDMP as the Primary Task by 2020



Target year of the "Global Target (e): National and Local DRR Strategies" is set as 2020, while the other Targets are due in 2030.

In Sri Lanka, National Disaster Management Plan (NDMP) 2018-2022 is now under preparation by MDM, followed by preparation of local DRR Plans in line with NDMP. Considering the Global Target (e), Districts with high risk of disaster may need be prioritized for local DRR planning by 2020.

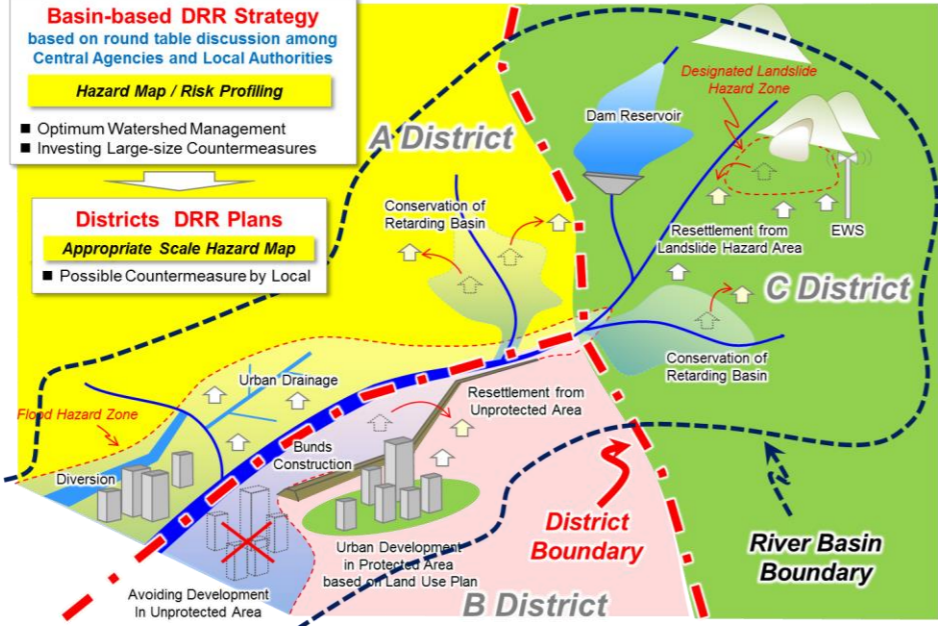
MDM shall take the lead in this process, in coordination with concerned agencies, and monitor the progress in line with the international monitoring mechanism of the Sendai Framework.

## Practical Local DRR Plan in Line with Basin-based DRR Strategy

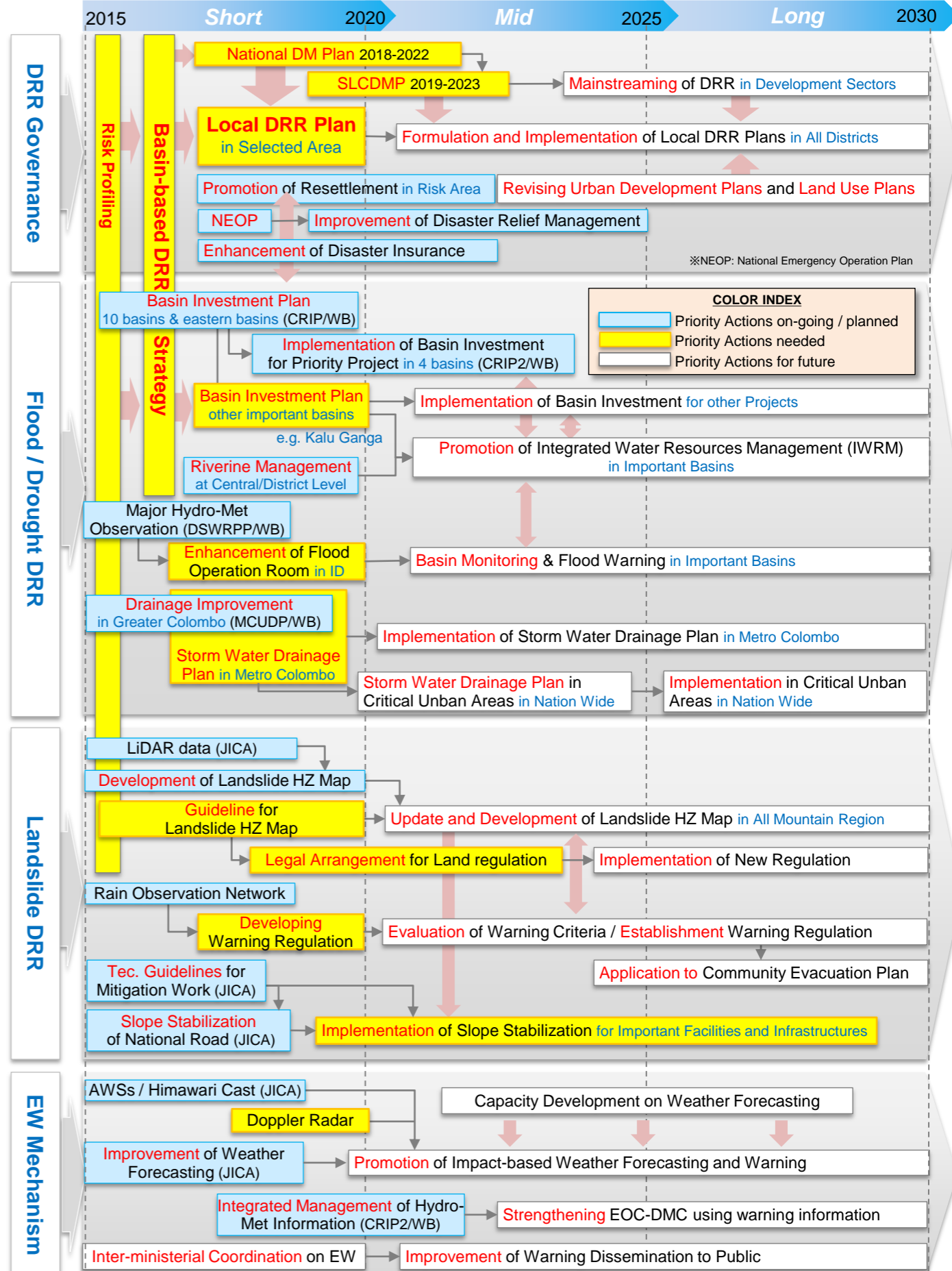
Disaster, particularly flood which is the most critical disaster in Sri Lanka, often occurs beyond administrative boundary, and it is difficult to develop practical Local DRR Plans by individual Districts and DS Divisions. Consequently, development of basin-based DRR Strategy with basin-wide risk profiling, under the initiative of the concerned national agencies, is essential for practical Local DRR Plan.

With appropriate scale hazard map, Basin-based DRR Strategy should be developed including structural and non-structural countermeasures. Local DRR Plans are to be formulated based on the Basin-based DRR Strategy.

In case there are already residents in a high-risk area, it should be assessed as "existing risks" and appropriate measures, including resettlement, may need to be examined.



## Priority Actions



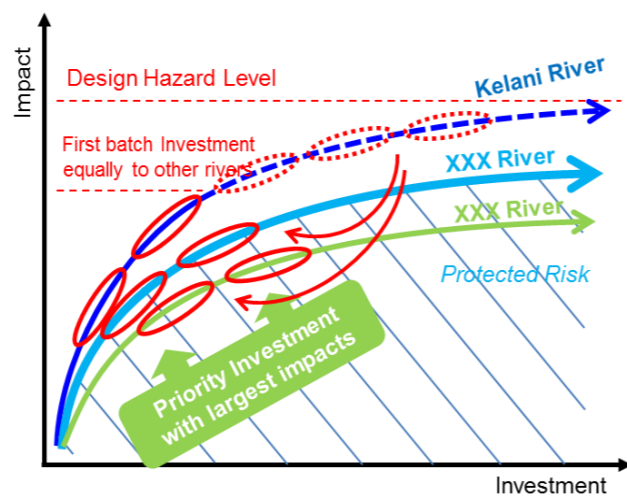
\*Priority actions only for main disasters are indicated. The other shall be considered as needed.

# Principles of Disaster Risk Reduction in Sri Lanka

## FLOOD: Well-balanced DRR investment among important river basins

In DRR countermeasures, the impact of initial investment is relatively high, but the effectiveness curve gradually flattens as the investment accumulates.

Meanwhile, there are numerous flood-prone rivers of various scale in Sri Lanka, which cause constant human and economic losses. Instead of focusing on DRR investment to a single river basin which flooded recently, it is important to make simultaneous and balanced allocation of investment among other important basins as well, in the sense of **wise and well-balanced DRR investment** which is essential for steady development of Sri Lanka.

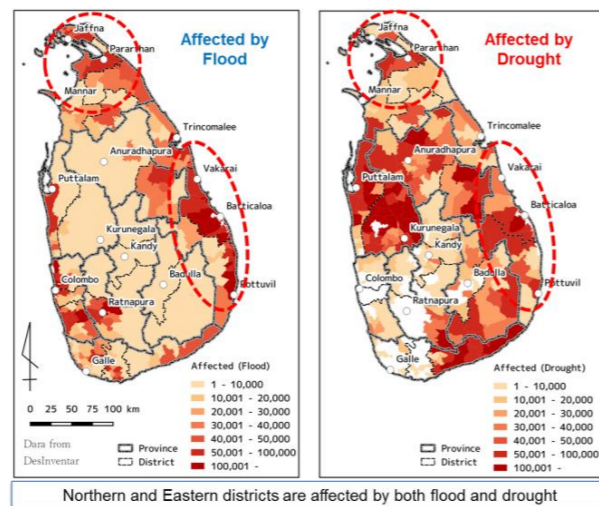


## DROUGHT: DRR in the context of Integrated Water Resource Management

Flood risk reduction should always be considered together with the issue of water resources development, including ground water monitoring and management, from a viewpoint of **Integrated Water Resources Management (IWRM)**.

Following should be incorporated in IWRM, contributing to drought and flood risk reduction:

- Evaluation of drought risk in terms of water balance for river basins
- Water resources development to mitigate drought according to basin investment plan
- Improvement of coordinated operation of reservoirs based on proper monitoring system



## LANDSLIDE: Efficient investment and prioritization on landslide DRR



Landslide is one of the most serious disasters, causing many deaths and catastrophic impact on rural economy.

The principles of landslide DRR are summarized as follows:

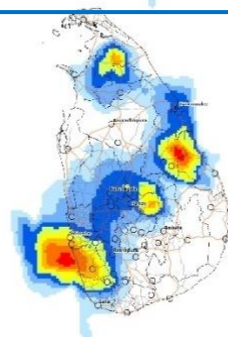
- In rural area, non-structural measures (risk assessment, land regulation and early warning) are practical approaches.
- Structural measures should be focused on important public facilities and transportation networks.
- These structural and non-structural measures should be prioritized based on proper investment plan.

## EARLY WARNING: Mechanism under Inter-Agency Coordination

Early Warning (EW) Mechanism should be well-coordinated among the central agencies under initiative of MDM. Decision making for evacuation should be discussed involving Districts and DS Division.

Following countermeasures are considered:

- Real-time rainfall data utilizing two Doppler Radars to improve weather forecasting
- Development of flood forecasting and warning in important river basins
- Improvement of landslide warning criteria and regulation



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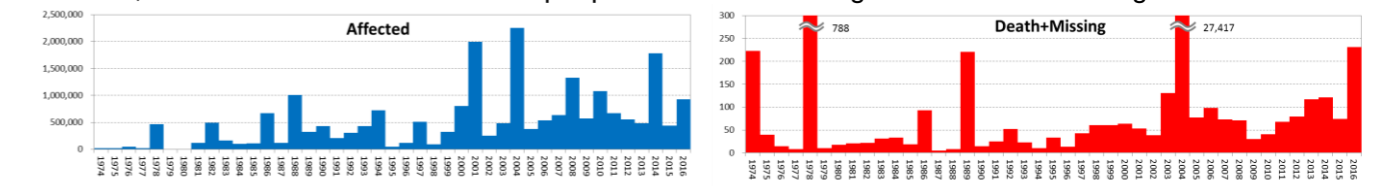
As of May 16, 2017

Ministry of Disaster Management, in cooperation with: Japan International Cooperation Agency (JICA)

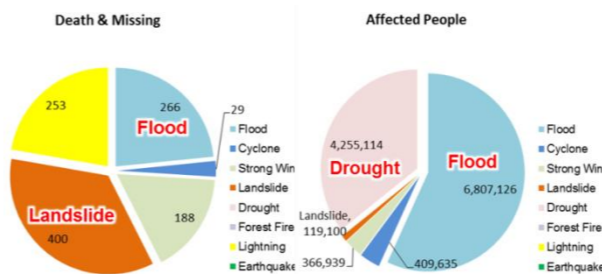
## Disaster Risks in Sri Lanka

### Disaster victims are increasing in recent years.

After the tsunami attack by the Sumatra Earthquake in 2004, the Government of Sri Lanka has been strengthening Disaster Risk Reduction (DRR) institutions in national and local levels such as establishment of **Ministry of Disaster Management (MDM)** under enforcement of **Disaster Management Act (2005)**. However, the number of disaster affected people and death/missing seem to be increasing.



### Flood, landslide and drought are the critical disaster types in Sri Lanka.



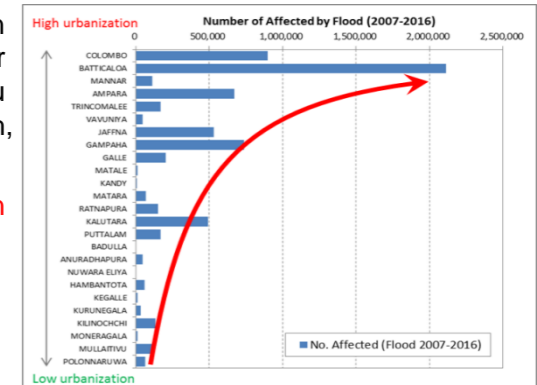
“Flood” is the most frequent disaster in Sri Lanka in recent decades. It brings damages in vast geographical areas, accounting for high percentages in death/missing and affected population. On the other hand, “Landslide” causes a large number of death/missing despite its relatively limited geographical effect, as observed upon the disasters in 2014 and 2016. “Drought” also accounts for high percentages in affected people following “Flood”. These 3 types of disaster are critical in Sri Lanka.

### Flood victims have been increasing by urbanization.

In Sri Lanka, urbanization and population growth have been accelerating in Colombo Metropolitan area within Kelani River basin, as well as neighboring Districts in such as Attanugalu, Kalu and Bolgoda basins. The urbanized Districts in the East and North, such as Batticaloa, are also frequently affected by flood.

The number of affected population by flood has drastically been increasing, in comparison to the general population growth.

|                             | 1998-2004         | 2009-2015         | Increase (%)  |
|-----------------------------|-------------------|-------------------|---------------|
| Population                  | 18,797,257 (2001) | 20,359,439 (2012) | +8.3%         |
| Number of affected by flood | 3,030,348         | 4,370,001         | <b>+44.2%</b> |



### Non- “Risk-Sensitive Development” creates “New Risk”, causing more damage.

The Sendai Framework for Disaster Risk Reduction 2015-2030 highlights the importance of “Reducing Existing Risk” and “Prevent Creating New Risk”. In Sri Lanka, most of traditional villages are located on hill side, while flood plains have been utilized as paddy fields that naturally retard flood during heavy rainfall. However, urbanized housing development has intruded into the flood-prone areas without appropriate land use plans. This process creates “new risk” which Government regulation and/or land use plan can prevent.

To prevent creating “new risk” and avoid consequent damages from disaster, urban development process should consider disaster risk of the area and reflect it in appropriate preventive measures, including resettlement from existing risk area and restriction of new settlement.

