

JICA's Cooperation for Disaster Risk Reduction with case studies

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The **SENDAI Framework** for Disaster Risk Reduction*

1. **UNDERSTANDING** disaster risk
 - **MINDSET CHANGE** through education and emergency training
 - Enhancement of **PUBLIC AWARENESS**
2. Strengthening disaster **RISK GOVERNANCE** to manage disaster risk
3. **INVESTING** in disaster risk reduction for **RESILIENCE**
4. Enhancing disaster **PREPAREDNESS** for effective response, and
"BUILD BACK BETTER" in recovery, rehabilitation and reconstruction
 - Towards QI (Quality Infrastructure)

*Sendai Framework for Disaster Risk Reduction 2015-2030
New Framework for Disaster Risk Reduction, which was adopted in UN World Conference on
Disaster Risk Reduction in Sendai, Japan, in 2015

1. JICA's Approach

Example for each stage of disaster management cycle



2. Case Studies

- 1. <BHUTAN> Capacity Development of GLOF (Glacial Lake Outburst Flood) and Rainstorm Flood Forecasting and Early Warning**
 - Technical Cooperation
 - 2009 – 2012
- 2. <SRI LANKA> Landslide Mitigation Project**
 - Technical Cooperation x Loan
 - 2013- 2017(Loan), 2014-2018(Technical Cooperation)
- 3. <NEPAL> Recovery and Rehabilitation from Earthquake**
 - Technical Cooperation x Loan x Grant
 - 2015- Ongoing
- 4. <THE PHILIPPINES> Rehabilitation and Recovery from Typhoon Yolanda**
 - Technical Cooperation x Grant
 - 2014- 2016(Technical Cooperation), 2014-2017(Grant)

BHUTAN Capacity Development of GLOF (Glacial Lake Outburst Flood) / Rainstorm Flood Forecasting and Early Warning <Technical Cooperation>

FLOOD

UNDERSTANDING Disaster Risks

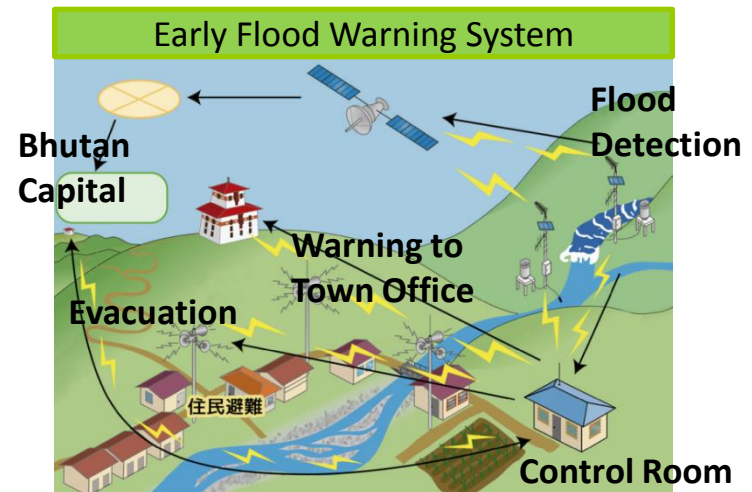
The Study on GLOFs in the Bhutan Himalayas

- Indo-Japanese joint SATREPS Program* by Science and Technology Academia
- 2009-2012

RISK GOVERNANCE and PREPAREDNESS

Capacity Development of Flood Forecasting and Early Warning

- Technical Cooperation
- 2013-2016



* SATREPS Program: Science and Technology Research Partnership for Sustainable Development Program

[http://knowledge.jica.go.jp/km/FSubject0301.nsf/VIEWALL/3958A0A725ABA98549257A7900124F29/\\$FILE/Disaster%20Resilient%20Society_EN.pdf](http://knowledge.jica.go.jp/km/FSubject0301.nsf/VIEWALL/3958A0A725ABA98549257A7900124F29/$FILE/Disaster%20Resilient%20Society_EN.pdf)

http://open_jicareport.jica.go.jp/pdf/12286613.pdf

SRI LANKA Landslide Mitigation Project

<Technical Cooperation x Loan>

LANDSLIDE

RISK GOVERNANCE and RESILIENCE

Landslide Mitigation Project

- Technical Cooperation
- 2014-2018
- Capacity enhancement in investigation, design, construction-supervision and monitor in terms of landslide risk mitigation

Landslide Disaster Protection Project of the National Road Network

- Loan
- 2013-2017
- Slope stabilization along high risk highways and introduction of early warning system

Collapsed Slope



Landslide cutting off a road



Slope management for falling rocks



NEPAL : Recovery and Rehabilitation from Earthquake

<Technical Cooperation x Loan x Grant>

EARTHQUAKE

BUILD BACK BETTER!!

<Housing>

- Emergency housing reconstruction
- New guidelines for building earthquake-resistant houses
- Training for engineers and house owners on safer building skills

<School>

- Emergency school reconstruction with earthquake-resistant design

<Infrastructure>

- Rehabilitation of damaged roads
- Reconstruction of hospitals
- Reconstruction of water transmission system
- Construction of bridges

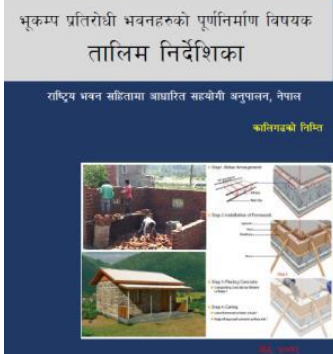
<Livelihood Recovery>

- Technical support for communities affected by the earthquake

Image of reconstructed school



Technical guideline for masons



https://www.jica.go.jp/nepal/english/office/others/c8h0vm00009vyd39-att/brochure_08.pdf
https://www.jica.go.jp/nepal/english/office/topics/c8h0vm0000b7cjnk-att/170426_03.pdf

THE PHILIPPINES Rehabilitation and Recovery from Typhoon Yolanda <Technical Cooperation x Grant>

TYPHOON

BUILD BACK BETTER and RESILIENCE

Technical Cooperation Component

- Advisory services based on “Great East Japan Earthquake” experiences
- QI (Quality Infrastructure) to reduce Disaster Risk

Grant Component

- Comprehensive support for urgent recovery, rehabilitation and reconstruction of damaged area, and for building more resilient society and community

Damage after the Disaster



Reconstructed School with
Resilient Shelter Function



<https://www.jica.go.jp/philippine/english/office/topics/news/170705.html>

also refer to https://www.jica.go.jp/india/office/others/ku57pq000020wb9a-att/quality_infrastructure_seminar.pdf

‘Quality Infrastructure for Quality Growth’

3. JICA's Cooperation in India

1. Natural Disaster Management in the Forest Areas in Uttarakhand (Technical Corporation)

- 2017-2022
- In Collaboration with Loan Project: UK Forest Resources Management Project

2. Capacity Development Project on Highways in Mountainous Regions (Technical Corporation)

- 2016-2021
- In Collaboration with Loan Project: North East Connectivity Improvement Project

3. Training Courses in Japan

- Young Leaders Training Course in Japan - Disaster Reduction Course -
- Comprehensive Disaster Management in Small Islands

Natural Disaster Management in the Forest Areas in Uttarakhand

<Technical Cooperation>

Overall Goal

- Erosion control works for slope disaster management in the forest area are appropriately implemented in UK

Major Outputs

- Technology for erosion control is developed in UK
- Knowledge and technology on erosion control works are disseminated to other states

Erosion control techniques introduced by JICA experts

Damaged slope in a pilot site



Image: Stabilization of unstable natural slope

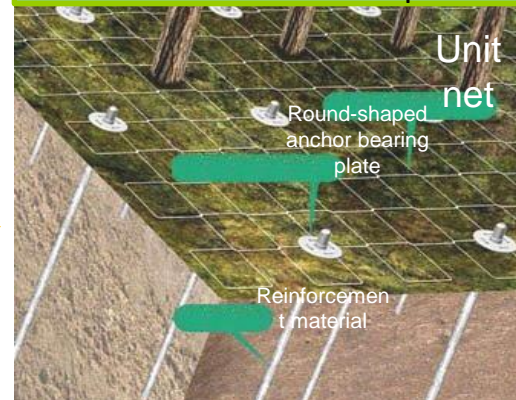


Image: Completed hillside crib work



Enhance the capacity to plan and implement erosion control works for slope disaster management

Natural Disaster Management in the Forest Areas in Uttarakhand

<Technical Cooperation> (Continued)

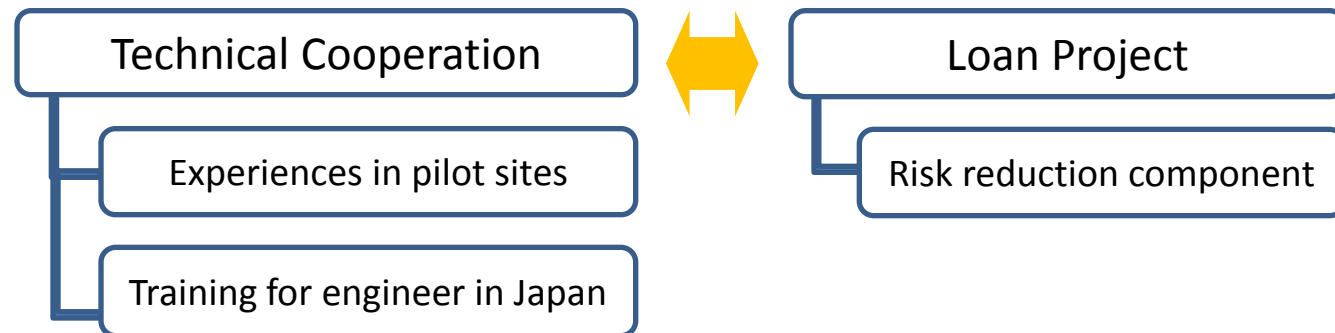
Collaboration with loan project: UK Forest Resources Management Project

e.g. Training for loan project staff through T/C

Skill and know-how from T/C to be utilized in loan project

Loan project includes;

- Construction evacuation shelters
- Supply of emergency goods e.g. blankets, water and LED lamps



<Technical Cooperation>

Overall Goal

Mountainous highways are properly developed and maintained by using guidelines developed by the project

Major Activities

- Technical guidelines will be prepared for mountainous highways, including tunnels, high-pier bridges, earthworks, slope protection etc.
- Technical training programs for Indian engineers by JICA experts

National Highway eroded by river, in West Bengal



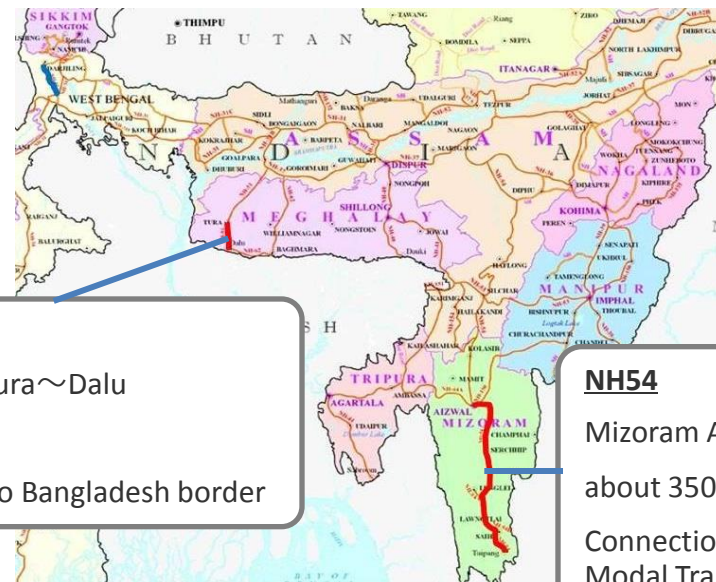
Dangerous overhung in Meghalaya



~Enhancing Connectivity for North-East Region~

A loan project is also going on

North East Connectivity Improvement Project Phase-1



NH51

Meghalaya Tura~Dalu

about 50km

Connection to Bangladesh border

NH54

Mizoram Aizawl~Tuipang

about 350km

Connection to Kaladan Multi Modal Transport Corridor

<https://www.jica.go.jp/india/english/office/topics/press160212.html>

PRESS RELEASE JICA starts technical cooperation in design, development and management of road network in mountainous regions

<https://www.jica.go.jp/oda/project/1500456/field.html>

1. Young Leaders Training Course (Disaster Reduction Course)

- 6 November - 25 November 2017 by JICA Hokkaido, Japan
- 15 participants from various parts of India including NER
- Course on;
 - a) History, experience, social background...etc., regarding disaster in Japan
 - b) Knowledge, skill and advanced system used in Japan

2. Comprehensive Disaster Management in Small Islands

- 14 August – 23 September 2017 by JICA Shikoku and Kochi University, Japan
- 3 participants from Andaman Nicobar Islands
- Focused on disaster risk reduction in small islands

Young Leaders Training

Observing the community disaster risk reduction workshop, Hokkaido, Japan



Disaster Management in Small Islands

Education on disaster in an elementary school in Kochi, Japan



Survey on evacuation route from tsunami, in Kochi, Japan



Japan experiences various disasters

⇒ Know-how and Technology in Japan can be useful in India, too

<https://www.jica.go.jp/shikoku/topics/2017/1010.html>

Thank you!

धन्यवाद



c.f. <http://www.jica.go.jp/india/english/office/about/message.html>
<http://www.jica.go.jp/india/english/office/others/brochures.html>
<http://www.jica.go.jp/india/english/office/others/presentations.html>

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