

The 2015 Gorkha Earthquake in Nepal Government's Response to the Disaster and Reconstruction Plan

「2015年ネパールゴルカ地震とネパール政府の対応および復興計画」

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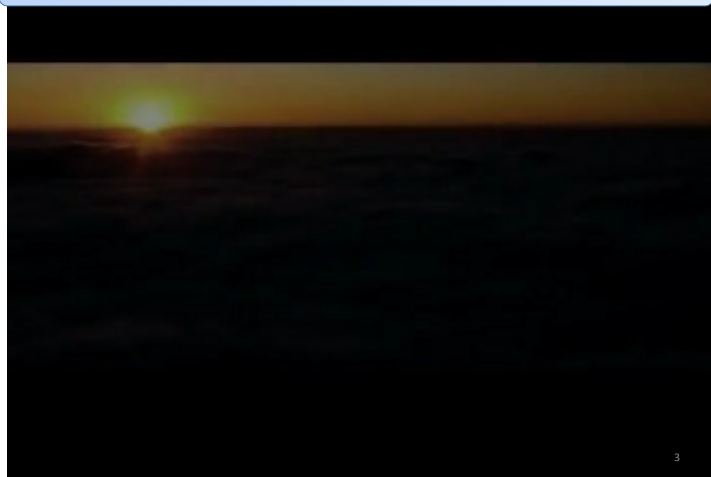
Nepal's Gorkha Earthquake 2015...

Structure of the Presentation (ご報告内容)

- The Short Video, Earthquakes: 2015 April 25 and May 12 (地震紹介ビデオ)
- Nepal's Map, Earthquake Affected Districts and Himalaya Range (ネパール)
- The History of Earthquake in Nepal and Some Images of Collapse
- Gorkha Earthquake and Losses (2015年ネパール地震と被害状況)
- Government Response to Earthquake (政府緊急対応)
- Parliament Response (国会での対応)
- Citizens Response (市民・町民の対応)
- Response from International Community (国際支援団体の対応)
- Reconstruction Plan and Works (復興計画)
- Legal Frame Work to Response Disasters (災害対応法について)
- Institutional Framework (組織ネットワーク)
- Emergency Response Operation Framework (緊急対応計画)
- Lessons Learned (教訓)
- Way Forward (今後の課題)

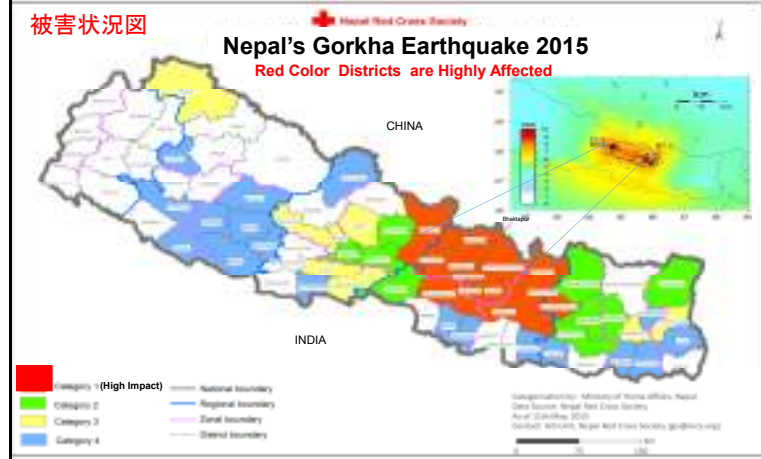
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Nepal's Gorkha Earthquake 2015 : Video Clips, Final



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被害状況図



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THE HIMALAYA: The Regional Setting ヒマラヤ地域とネパールの位置図



Nepal's Gorkha Earthquake 2015...

The History of Earthquakes in Nepal

- Nepal is a Himalayan Country, Located in Eurasian Plate.
- Himalayan Range is Considered Earthquake Prone Zone.
- Nepal is 11th the most Earthquake Prone Country in the World.
- The first recorded Earthquake in Nepal was Year of 1255 and it was about 7.8 Magnitude.
- Since then, about 10 times, 7 to 8 Magnitude Earthquakes happened in Nepal.
- Latest was the Gorkha Earthquake, 2015 April 25 which was 7.6 Magnitude (Nepal's measurement), USG Measurement was 7.8
- Aftershock, 2015 May 12 was also 7.3 Magnitude. Both powerful earthquakes resulted huge human and property losses.
- Previous Mega Earthquake was happened in 1934.
- It was about 8.4 Magnitude had made massive Property Losses and died more than 10 thousand people in that time.
- The 2015 Mega Earthquake in Nepal happened 82 Years after.

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Previous Mega Earthquake, Greater than the Gorkha Earthquake
82 years ago, 8.4 M (1934 January 15, at 2.28 Daytime), Some Images of Damage

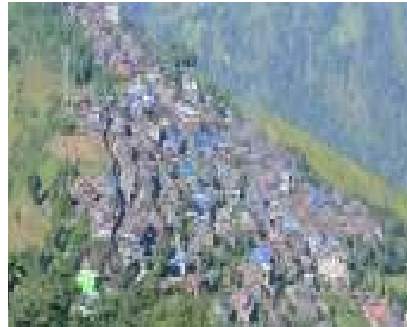
1934年に起きたM8.4の地震



Gorkha- Barpak, the Epicenter of the Earthquake, 2015
on Saturday 25 April, at 11:56 am
2015年ネパール地震 震央: Barpak-Gorkha

Before Earthquake

After Earthquake



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Nepal's Gorkha Earthquake 2015, Collapse of Historical Tower
Before Earthquake Dharahara, Kathmandu After Earthquake



Nepal's Gorkha Earthquake 2015... Impacts (被害データ)

- April 25, M7.6(本震), aftershock M7.3, May 12(最大余震)
- About 15 km depth from the surface. (震源深さ)
- Aftershocks : 400 + (余震発生回数)
- The most affected Districts: 14 out of 75 (被害の大きい郡域)
- Severely affected. 5 (深刻な被害郡域)

Losses of Human Lives and other Properties (人的・資産的被害状況)

- Human Death: 8,962 (死者数)
- Injured: 22,302 (負傷者数)
- Collapsed Private Houses: 7, 73,095 (民家全壊)
- Collapsed Government Buildings: 2687 (政府関係建物全壊)
- Collapsed and Damaged Schools' Classrooms: 32,145 (学校教室数)
- Damaged Public Health Posts: 12,000 (診療所)
- Damaged Micro Hydropower: 239 (小規模水力発電所)
- Collapsed of Historical Places and Archive Sites: 2900 (指定歴史建造物)
- Cattle Causality: 17, 000 (家畜)
- Total Losses of Properties: More than 7 Billion USD (MoHA and PDNA Report).

総被害額: 約70億ドル

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Nepal's Gorkha Earthquake 2015... (政府緊急対応—捜索と救助)
Search and Rescue Operations: Government Response Stage I

- Emergency Meetings of Cabinet and Ministries, Security Forces- Army, Armed Police, Police, Red Cross, and other disaster agencies coordinated by Home Ministry, MoHA. (ネパール政府総務省中心に閣僚、関係省庁、国軍、警察、ネパール赤十字、防災関係機関等の緊急会合)
- Search and Rescue Operations- Security Forces, Red Cross, and Public. Medical Treatment Started by Hospitals. (捜索・救助活動—国軍隊、赤十字隊、医療チーム等)
- Road Blockade Opening and Debris Clearance. (道路再開、がれき撤去など)
- Logistics/Information/Communication Desks were set up at MoHA and all security forces. (緊急サポート、安否情報共有デスク設置)
- Rescue and Treatment directives for District Offices and Local Agencies. (地



Nepal's Gorkha Earthquake 2015... (救援・復旧活動)
Relief and Rehabilitation: Government Response: Stage II

- Medical Treatments for the injured people. Both public and private health institutions. (医療支援—政府と民間医療チーム)
- Relief Materials were distributed from the government, public, security agencies, social org., NGOs and international community. (救援物資—政府、NPOや民間企業、軍・警察、国際支援機関)
- Preliminary Grants Money for died and Injured family. (政府緊急支援金—葬儀、負傷者治療など)
- Food Items, Snacks and Water were provided in individual and common camp. (非常食や水の供給—避難所において)
- Rehabilitation in Temporary Shelter using tents, plastic, and local materials... (一時避難所から政府避難所・テント設置場所への移動等)



Kathmandu
Laparak, Gorkha

活動)

Rehabilitation and Recovery: Government Response- Stage III

- **Clearance of Collapsed** and Damaged structures and sites. (全壊・半壊の建物がれき撤去)
- **Debris Management** of Heritage site with due protection of valuable things. (がれき処理、歴史文化遺産内の重要文化財や宝物保護)
- **Risks Assessment** of Government Buildings, Schools, Private House, Heritage Sites with **Red, Yellow, and Green** Stickers. (政府関係建物、歴史建造物、校舎などの被害状況・リスク評価一赤・黄・緑)
- Continuation of **medical and relief materials distribution**. (医療・救援活動に継続)
- Grants money and materials for **temporary shelters**. (被災者・避難者支援金・救援物資)



Nepal's Gorkha Earthquake 2015... (国会による対応)

Response from the Parliament

- The Parliament adopted **Special Resolution** to expedite rescue, relief and rehabilitation operations. (国会議員会が救助、救援、そして復旧に対する特別指示)
- **Parliamentary Monitoring Special Committee** on Earthquake led by the **Speaker** representing all political parties was formed. (国会において特別監視委員会の設置)
- **Parliamentary Monitoring Sub Committees** were visited Most and Severely Earthquake affected Districts. (特別委員会が被災地視察)
- The new **Law on National Reconstruction Authority, NRA** was passed by the Parliament for expedite the Reconstruction works. (復興を進めるため、国会にて「新国家復興法案」と提出・可決)
- At present, **State Affairs Committee** of the Parliament look at Disaster Issues. After Earthquake, Parliament is planning to make new **Disaster Law** replacing old one. (現在、国会において政府国会総務委員会がその復興状況監視や防災を担当)



Nepal's Gorkha Earthquake 2015... (市民・町民からの対応)

Response from the Citizens

- **Citizens Supports and Engagement** was very much appreciable in Earthquake both in village and city in rescue, relief, and rehabilitation works. (市民・村民の参加が多大)
- **Local People Carry Injured People** to Hospitals. (住民による救助)
- **Citizens Donate** food items, blankets/cloths, money and other relief materials. (市民・村民による支援物資の寄付等)
- **Social and Youth club/wings** were mobilized for debris clearance and building shelters. (地域団体のフル活用)
- **Youth people provided voluntary services** to support the government agencies in rescue and rehabilitation. (若者によるボランティア活動)
- **NRN- Non Residential Nepalese** extended their monetary, medical, relief materials. They came to Nepal to supports earthquake suffers. (海外在住ネパール人による活動・支援)
- **Nepalese within the country and abroad** are also engaged in the Reconstruction Works. (国内外のネパール人も個人的に復興活動に関わっている)



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Nepal's Gorkha Earthquake 2015... (国際支援団体の対応)

Response from International Community: Supports Extended

- **35 Countries, Red Cross, United Nations**, and other International Organizations extended technical, medical, relief materials and monetary assistance.
- The Conference of Donor's Community was held in Kathmandu and The commitment of around **4 Billion USD** for the earthquake reconstructions was made.
- The Government of Japan among others had sent **JDR rescue team**. Foreign Technical teams were engaged difficult rescue operations and air rescue services.
- Japan provided **1 Billion Yen Emergency Grant** to earthquake supports and also made additional pledge for Reconstruction Plan for which we are very much thankful.



1. Japanese Rescue Team in Sankhu, Kathmandu



2. Temporary Hospital in Tents supported by Norway

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Nepal's Gorkha Earthquake 2015...

National and International Rescue, Relief, and Rehabilitation Supports

How We Moved



Nepal's Gorkha, Earthquake, 2015...

Reconstruction Plan: Response Stage-IV

- National Reconstruction Authority, NRA
- **5 Years Plan for Reconstructions**
- Reconstructions Priority -
 1. **Private Houses- within 2 years**
 2. **Schools- within 3 years**
 3. **Health Institutions**
 4. **Heritage Sites**
 5. **Government Buildings-**
 6. **Roads, Drinking Water, and other Infrastructures**
- Government Grant and Soft Loan for Reconstruction of Private Houses.
- Trainings to Construction Workers and Supervision of Constructions. Mandatory to build Private Houses and other Constructions following Construction Codes in city and village to take grants.
- Involvement of Community, Social Organization and Foundation, Private Sector and NGOs in Reconstructions of Earthquake.
- Seeking Financial Supports from Donors and International Community.
- **4.1 Billion USD** Commitment from International community was made and Agreement is made for **2.7 Billion** till the Month of October, 2016.
- Total Cost of Recovery and Reconstructions would more than **10 Billion USD (NRA)**



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Nepal's Gorkha, Earthquake, 2015...

Reconstruction Plan: Response Stage-IV

- **National Reconstruction Authority, NRA** is formed for the Reconstruction works.
- **Private House - Schools - Health Institutions - Heritage Sites - Government Buildings- Roads and Drinking Water Infrastructures** are in priority.
- Earthquake resistance constructions codes are developed and followed.
- **Grant and Soft Loan** is provided to the people who losses their Houses.
- **Mandatory to build Private Houses and other Constructions following Construction Codes** in city and village to take grants.
- **Double Tie-Beams** are Mandatory to build Concrete Structures in cities.
- Standard Size of road is required in city for building House other Constructions.
- Encouraging Community and Social Orgs also in Reconstructions of Earthquake.
- **Trainings to Construction Workers and Supervision of Constructions.**



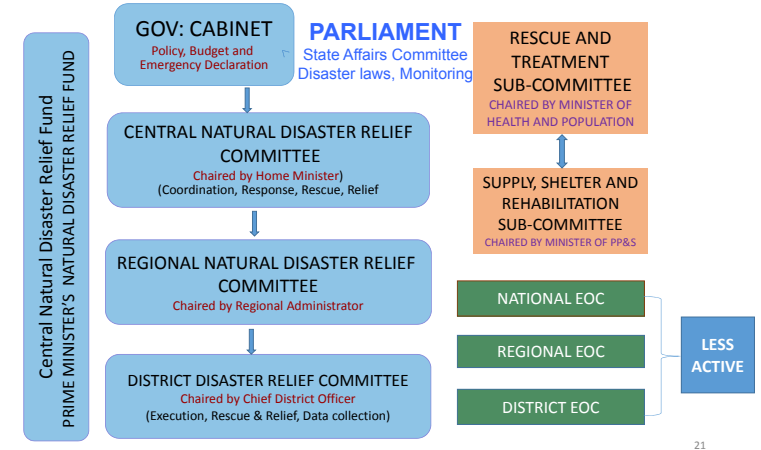
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Legal Framework to Response Disasters in Nepal, before Gorkha Earthquake



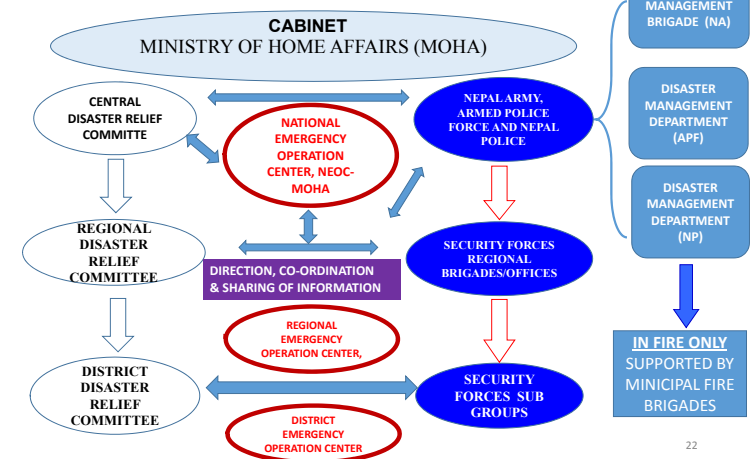
Nepal's Gorkha Earthquake 2015...

Institutional Framework to Response Disasters



Nepal's Gorkha Earthquake 2015...

Emergency Response Operation Framework to Disasters



Nepal's Gorkha Earthquake 2015... Lessons Learned

- **Nepal is in earthquake prone zone, anytime it may occurs.** Previous earthquakes in Nepal were also deadly. We did not give due attention to this kind of Disaster.
- **The country is mountainous** and roads were heavily blocked by landslide in earthquake. Helicopters were only effective means of Air Rescue and Delivery of relief materials. **Helicopters were and are less during earthquake and other disasters.**
- Many rural villages were out of communication, transports, and relief materials.
- **Our constructions are very old and weak.** In village more than **90% house** are built with stones and muds with out Resistance Measures. Therefore, most of the structures in village collapsed.
- In city too, **Building Codes were not followed strictly** before the earth earthquake. Therefore Concrete Structures also collapsed and damaged.
- **Road connections in cities are very narrowed.** Consequently rescue vehicles could not move easily in time. In village roads are narrow trails. Therefore, relief materials and medical facilities could not delivered effectively. Delivery was concentrated in easy access places.
- **People were not prepared for the safety measures during earthquake.** People run and jumped also caused more causality.
- **The Earthquake happened on Saturday in Daytime.** If it was happened in nighttime human casualty would be very much higher. If it was happened in School day casualty of school children would also be higher. **Because large number of Private Houses and Schools Rooms in village were collapsed due to structural weakness and old.**
- Earthquake sufferers were compelled to live in tents and temporary shelter longtime. **Rehabilitation work was delayed with more formalities and Coordination among agencies.**
- Reconstructions of Private Houses, Schools, and Heritages Places and other Constructions delayed due to **delay in formation of Reconstruction Authority.**

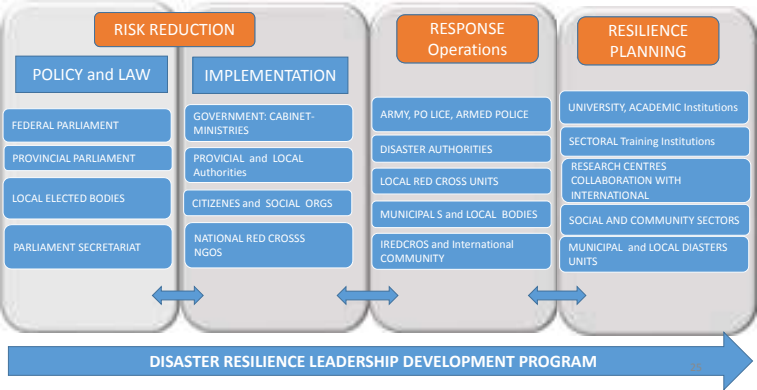
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The Way Forward to Response Disasters

- **Mainstreaming Disasters Risks Reduction, DRR Policies** into development planning and implementation process.
- **Hazard Assessments** of geo-disaster possibilities of whole country.
- **Promoting Disaster Risks Education and Awareness** on geological location of the country at the central, provincial, and local levels.
- **Enhancing national Search and Rescue capacity and Air Rescue capability** with advance tools, technology, and extension of wide range of trainings.
- **Expansion of Roads in Cities and Villages targeting Emergency Rescue** in the time of Earthquakes and other Disasters
- Developing well Coordination among **Government, Security agencies, Local Authority, Citizens, and International Community** in the period of Disasters in the context of Nepal.
- Adequate Storage of **Emergency Relief Materials- Food items, Tents, and Medicines.**
- Linking Disaster Management Policies, Laws, Programs, and Activities to Sustainable Development Goals (2015-2030) following **SENDAI Framework.**
- **Developing well trained central and local Disaster Risks Management Human Resources** in risk reduction and humanitarian response coordination, and resilience planning sectors.
- **Developing Strong Legal and Institutional Framework:** Disaster Risks Management Act, Nepal Red Cross Act and Disaster Management Authority for effective emergency responses and humanitarian assistances for future Earthquakes and other Disasters.
- **Strict Execution of Building Codes** for Private House, Government Buildings, Heritage and other Constructions.

Nepal's Gorkha Earthquake 2015, Way Forward...

BRIDGING THE GAP BETWEEN DISASTER RESPONSES AND RESILIENCE PLANNING
Strengthening risk neutral development activities in line with Sendai Framework for Action on Disaster Risk Reduction (SFDRR 2015-2030 in Nepal).



Nepal's Gorkha Earthquake 2015...

End of the Presentation

Discussion/Comments/Inquiry
Suggestions/Sharing

Nepal's Gorkha Earthquake 2015



Being Recovered
Thank You