Lessons Learned From Landslide Disaster Recovery in Hakha Town, and How to Strengthen Resilience

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Hakha before landslide

Source: Google earth
Hakha landslide in 2015 (generally)

~ 5 meters slides

~ 40 meters slides

Source: Google earth
**Hakha and Post-disaster scenario**

Fig. Hakha town and surrounded connection roads (image from google earth 2016)
Unprecedented landslides
Awakening CALL for all Chins around the world

- What just happened?
- Why?
- How can we not be that again?
the government reported that 20,449 people were affected. Data from CCERR (Chin Committee for Emergency Relief and Rehabilitation) updated as of 14th November 2015 estimated that number to be as high as 54,537 people.
Why Chin State is more vulnerable than other part of the country?
Most impacts to
• Built Environment
  (Buildings and Infrastructure)
• Social life
• Economic
• Livelihoods
• Resources
1. Government Development Policies for the whole country (Limited time, Limited Budget, Limited Quality)

Leading unqualified Finished Projects
Unfinished development Works - Connection Roads between Towns and Villages (landslide in slope Terrain)
Failed Roads and Drainage System (connecting roads between towns)
Failed Roads and Drainage System (Myo haung block, Hakha Town)
Failed Roads and Drainage System (connecting roads between towns)
2. Unplanned Town Planning (new settlement without proper streets)
new settlement without proper streets and planning
2. Unexpected Rainfall – Climate change - Deforestation / vegetation cover / green awareness
3. Poverty and lack of knowledge to get assistance in construction by Experts and Professionals
4. Construction methods – lack of Structural Awareness and rules and regulations
5. Awareness of Topography of the land

- No record of Disaster hazard zoning map
- No awareness in Mitigation of Soil Erosion

Example of Mitigation of Soil Erosion
6. Social-cultural issues

Church-based relief and rehabilitation works and Local people and aid committees have limited experience in responding to emergencies.

Churches and Public buildings as IDPs Camp
Churches and Public buildings as IDPs Camp
Construction of Temporary Shelter
6. Relocation Area

Government Policies – Limited time, Planned without assuming local topography
Imported Designs – not adaptable with slope terrain
Prefabricated Imported Materials – Panelized in factory and assemble in site
To strengthen **RESILIENCE** of the community,

- Short term
- Long term
For Short Term Resilience

- Repairing the damaged
- Reconstruction of affected area
- Rebuilding
- Reconsidering the ongoing projects
For Long Term Resilience

1. Government Rules and Regulation for Development Projects
Time frame
Monitoring
Technical supports
Technical supports
2. Geological Solutions – such as hazard zoning map from Experts

Comments and Helps from Myanmar Geosciences Society (sources: individual’s Facebook page)
Fig. Landslide Hazard Zonation Map of Hakha Area (Source: Rain triggered Landslide hazard Zonation Mapping in Soft Rock Mountainous Region: a case study in Chin State, Myanmar by Kyawswar Myint Thein, Asian Institute of Technology 2016)
3. Agricultural Research on cultivation and green cover

Deep, extensive and penetrating root system

One year old: 3.3m deep

Vetiver zizanioides

Outside the box

Vetiver nemorals
Fig. Vetiver Grass plantation
(Collaboration of Chin state Government, Australia Chin Relief Committee and Myanmar Vetiver network)
4. Enhance the rules and regulations of construction in local building practices
5. Capacity Building

- Emergency relief and recovery
- Preparedness/ Mitigation plans
- Construction/ House design workmanship
Thank you

Hlawn Tin Cuai