Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 218 (2016) 85 – 94

Procedia
Social and Behavioral Sciences

11th International Conference of The International Institute for Infrastructure Resilience and Reconstruction (I3R2)
: Complex Disasters and Disaster Risk Management

Analyze on Effect and Building Regulation in Northern Thailand's Earthquake, May 2014: Chiangmai's Residents Risk Perception and Response to Earthquake.

Sararit Titaya, Ph.D.[a*]

[a] *Lecturer, Faculty of Architecture, Chiang Mai University, 239 Huaykaew Rd ,Sutep, Muang District ,50200,Chiang Mai, Thailand*

Abstract

After 05th May 2014, a magnitude of 6.3 struck Chiangrai province, where locate at northern part of Thailand. It was the strongest earthquake ever recorded occurs in the country, according to National Disaster Warning Center. This earthquake caused damage to buildings, houses, schools and historical buildings and creating many problems for resident's life and so far, are continue rising fear to the residents who live in risk zone (10 provinces in North and plus Bangkok: Kanchanaburi, Chiang Rai, Chiang Mai, Tak, Nan, Phayao, Phrae, Lampang, Lamphun and Mae Hong Son) what should we plan if future quakes from 7 active-fault lines in North are active in stronger shakes. This study would like to 1.Summarize the policy and building regulations. 2. Analyze response and resident's perception in earthquake situation of May 2015 .According to Ministerial Regulation B.E. 2550, The law stipulated that Thailand's tall buildings (15 meters or higher) must be built to withstand more than magnitude 6 and tall building constructed after 2007 have to follow on Earthquake Resistant Design of Structures to able to the stand up to 7 magnitude, So the building are safer from earthquake damage compare to buildings in another areas. Nevertheless this regulation not cover to individual households where most of residents living and also not cover many type of public building such as temple or not enforce the building that built before 2007 to be earthquake resist. The situations are still risk for future damage, too.

Peer-review under responsibility of Dept of Transportation Engineering, University of Seoul.

Keywords: Disaster resilience, Disaster Policy; Northern Thailand Earthquake; Evacuation, Risk perception

1. Introduction

Disaster resilience in Thailand has received much attention in recent years due to the increase number and intensity of disasters in country. According to the "Chiang-Rai earthquake" on 5 May 2014 or "Northern Thailand earthquake" It was the strongest earthquake ever recorded occur in-land according to report of National Disaster Warning Center, it caused damage to housing, Infrastructure, schools and historical building. The effected of earthquake and 274 aftershocks cause residents in risk zone unsecured (10 provinces in North and plus Bangkok: 1.Kanchanaburi, 2.Chiang Rai, 3.Chiang Mai, 4.Tak, 5.Nan, 6.Phayao, 7.Phrae, 8.Lampang, 9.Lamphun and 10.Mae Hong Son).In this risk zone locate of 7 active fault, although the northern part of Thailand can be safe from Tsunami but the effect of earthquake such as building collapse can be danger. Disasters can be reduced if residents are well informed and motivated towards a culture of disaster prevention and resilience [1] Even though, the building regulations in Thailand are trying to update the issue and cover more density of earthquake and extend to cover more types of building. However we found that residents in Northern Thailand still have weak understanding in disaster emergency preparedness and response.

*Corresponding author. Tel.: +66-93-127-0659
E-mail address: titayas@outlook.com

Peer-review under responsibility of Dept of Transportation Engineering, University of Seoul.
doi:10.1016/j.sbspro.2016.04.012

When resilience to natural hazard refer to the action to protect live, livelihood and infrastructure from destruction and possibility to restore and after natural hazard has occurred, The lack preparation and wrong response can delay evacuation process and might lead negative effected to life.This paper aims to 1.Summarize the policy and building regulation 2. Analyze response and resident's perception in earthquake situation .The paper collected information from 243 residents by questioning about their choices of evacuation and measure their understanding in building regulation and risk perception. Turn out that residents have less response to emergency situation and also low-understanding about safety in disaster situation despite to detail that they don't even know information about their own house. Even though the building regulations are more improved but it not achieve to most of residents.

2. Methodology

This research method are 1.An interview with local residents 2.Literature review about building regulations, emergency advice and disaster policy of Thailand and 3.questionnaire survey to 243 respondents (March-April 2015). The questionnaire use safety guideline for residents that provide by government, Department of public works and town & country planning, the questionnaire evaluated the knowledge and understanding in safety steps of residents in emergency situation .The target group are residents who experienced earthquake and live in Chiangmai province, the highest population in Northern Thailand. This province has 1.68 million populations and being central of Education, business, finance and real-estate of northern Thailand. So in case of big disaster occur the loss and damage can effect widely here. These studies explore, from residents view about risk perception, evacuated decision and then measured residents understanding in Earthquakes emergency situation. The criteria to evaluated residents knowledge are by checklist from Thai's government disaster safety guide, did residents follow or known the guide or not.

3. Background

3.1 Disaster management in Thailand

Disasters management is different according to scale of disaster events .Hazard scale was device in to 4 levels .The highest level is level 4 Prime minister of Thailand are in charge of direct command. In level 3 Ministry of interior will responsibility cooperate and support disaster warning to residents from warning organization. Level 2 is province level in this level province mayor are in charge under the decision from province disaster committee (and cooperate with DDPM's province) Level 1 is local level the district mayor in charge direct with chief of sub district.

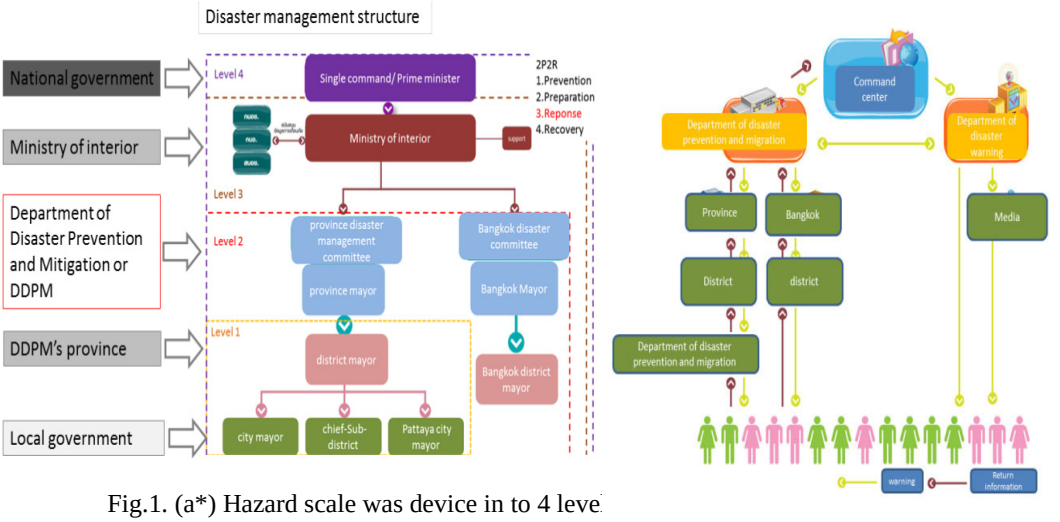

Fig.1. (a*) Hazard scale was device in to 4 leve

**Credit: The USGS Earthquake Hazards Program [2]