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## THE COMPLIANCE OF TUGUEGARAO CITY IN THE DISASTER RISK REDUCTION MANAGEMENT LAW

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**Abstract:** *The purpose of this study is to assess the compliance of Tuguegarao City in the Philippine Disaster Risk Reduction and Management Act. The Disaster Risk Reduction and Management Act is a statutory act enacted by the senate and House of Representatives of the Philippines in Congress to uphold people's constitutional right to life and property by addressing the root causes of vulnerabilities to disasters. In the study, we utilized the descriptive method, where the respondents are the staff of the Disaster Risk Reduction and Management of Tuguegarao City. Among the plans, programs and activities of Tuguegarao City Disaster Risk Reduction and Management, it was found that they did not comply on the said Updated zoning ordinance and Institutionalize Disaster Risk Reduction and Management Office. This study utilized a secondary data from the City risk Reduction management Council. The researchers after thorough analysis of the gathered data came to conclude that the level of compliance of Tuguegarao City Disaster Risk Reduction and Management Council are relatively capable to prevent and mitigate the possible effects of*



*calamities, to be prepared for the possible harmful effects, to responsive enough in times of calamity, and to recover and rehabilitate after the calamities had stuck the City. The City shall continuously implement their existing plans, programs, and activities accompanied by efficient and effective implementation with proper fund allocation.*

## **INTRODUCTION**

Natural disasters happen in every part of the world. No place from earth is free from this kind of disaster. It includes typhoons, earthquake, floods, landslide, wildfires, volcanic eruption, which can even destroy hundreds, millions of lives and even billion pesos of properties that can occur in the society or community in such period of time. Though we can already foresee the disaster coming with the use of technology, sometimes the things happened unexpectedly can lead to great physical injuries or loss of lives. We live in this world where we are facing different kinds of catastrophe. We can't even assume if we are safe or not. There's always the presence of danger in every surroundings, most especially in our nature which they call it the "revenge of nature". What we did to our environment will always come back to us.

Natural disasters are causes of different reason like soil erosion, seismic activity, tectonic movements, air pressure, and ocean currents. The root cause of the natural disaster that occurs on earth can be attributed to the imbalanced created in our environment. It is also a fact that, we cannot blame anyone because this is just one of the few reasons. There is no way that we can prevent this kind of situation but what is in our hand is to be prepared for these.

In the Philippines, we are struggling every year to fight such natural calamities like typhoons and flash floods that often resulted to failure and bring a high average of death and destruction to mankind. Philippines is considered as one of the top countries which experience a highly hazard in terms of risk and disaster. Because of warm oceans, the Philippines face the western pacific without much else in the way to take the force of storms before the make landfall because of Warm Ocean. Costal home may also be the reason why Philippines prone to disasters, many people's lives near in the river or on low lying in the coastal island of the Philippines areas that can cause loss of lives and properties. Based on the United Nation's 2012 World Risk Index, the Philippines is the third country most at risk



to disaster. This threat of a disaster happening anywhere and anytime does not go away. Thus people must constantly be on alert.

Several types of calamities ravage our country every year. Making up at least 50% of annual disasters that strike the Philippines, typhoons and storms surpass all other calamities in number of victims in related flooding and landslide brought about these tropical cyclones. Volcanic eruption and earthquakes are not as regular and frequent but these are equally devastating to the affected communities. Tsunamis, drought, tornados and few natural calamities also affect the Philippines regularly. Filipino families must brace for any disaster that comes. It is only in being prepared that we may be able to save ourselves.

September 26 2009, typhoon Ondoy hit Philippines and dumped one month's rainfall in Metro Manila in less than 24 hours. Along with flooding along other river system, 80 percent of the National Capital Region became flooded and became 25 nearby provinces were flooded. In Metro Manila alone, 20 feet (6.1 m) of dirty water forced people to evacuate their homes. On the 30<sup>th</sup> of September, at least 450,000 inhabitants had been displaced, with at last 380,000 forced into makeshift shelters. Two hundred forty six people were reported dead. A state of calamity was declared by President Gloria Macapagal-Arroyo, and a task force was set up to rescue the inhabitants, however the government was force to admit that resources were in short supply, and called for world assistance. After all, good efforts have been made to make the drainage system better for the whole city by fixing sewers together with the new trademarked "Red Sidewalks".

On October 19, 2016, Category 4 Typhoon Haima (locally named Lawin) hit Cagayan province. The storm left a broad path of debris, causing flooding and landslides, and damaging about 46,000 houses. Authorities have confirmed eight fatalities and approximately 159,000 people remain displaced (38,000 people are staying inside evacuation centres and 121,000 people outside of evacuation centres). The Government is leading the humanitarian response and has declined an offer of international assistance.

At least 1.5 million people were negatively affected by Typhoons Sarika and Haima, mainly concentrated in Ilocos Region, Cagayan Valley, Central Luzon and CAR. Most of the people were still living in temporary shelters and relying on humanitarian support and critically dependent on agriculture for their livelihoods and many are vulnerable to food insecurity.



More than 170 000 farmers were affected. The affected farmers would receive appropriate and timely agricultural assistance, including rice and maize seeds for planting of the 2016/17 secondary season crops, irrigation tools, fertilizers for rice and maize crops, as well as, equipment for planting and harvesting, together with the provision of storage facilities.

According to the 5<sup>th</sup> Annual Natural Risk Atlas of the Mapiecroft, the Philippines extreme exposure to a myriad of natural hazards is reflected by the inclusion of 8 of the country cities and one of this is Tuguegarao City which is top (2) among the ten most at risk globally. Tuguegarao is one of the most vulnerable areas in the whole Cagayan Valley Region during wet season because it is mapped as a flood prone area and a catch basin of the waters from the different tributaries in the mountains surrounding the region. Yearly, the city's constituents, especially the farmer and those living near the river banks, suffer so much due to flashfloods.

The Senate and the House of Representatives passed R.A 101211 which is known as the "Philippine Disaster Risk Reduction Management Act of 2010." Under Section 2 of the law, the purpose of enacting such law is constitutional rights of the people- the right to live and right to property that is cause by the vulnerabilities disasters including climate change. It laid down the basis for the paradigm shift from just disaster preparedness and response to Disaster Risk Reduction and Management (DRRM).

The promotion and development of the National Disaster Risk Reduction and Management Plan (NDRMP) aims to strengthen the capacity of the National Government Units (LGU's, together with partners stakeholders, to build the disaster resilience of communities, and to institutionalize arrangement and measure for reducing disaster risk, including projected climate risk, and enhancing disaster preparedness and response capabilities at all levels. They shall provide the identification of hazards, vulnerabilities and risk to the managed at the national level.

The NDRRMC adheres to the principle of good governance within the context of poverty alleviation and environmental protection. It is about partnership and working together- engaging the participation of CSOs, the private sector and volunteers in the government's DRRM programs towards complementation of resources and effective delivery of the government of the citizenry.



Disaster risk reduction is a practice in which it reduces the disaster risks through systematic efforts in analyzing and reduces the factor brought by disasters. Reducing exposure of hazards, lessening vulnerability of people and property, wise management of land and environment and improving preparedness and early warning for adverse event are all example of disaster risk reduction.

As of now, with respect to the initiative of the government to address the issue of disaster preparedness throughout the country, the project NOAH or the Nationwide Operational Assessment of Hazards of the Department of Science and Technology is launched. It is the national government's newest project designed to serve as sentinel that will address the serious challenges brought by extreme hazard events. The said project aims to give local government units; private companies and individual's information that can help them make informed decisions in times of disasters.

## **STATEMENT OF THE PROBLEM**

This study aimed to evaluate the compliance of Tuguegarao City on the implementation of R.A. 101211 or known as the Philippine Disaster Risk Reduction and Management Act of 2010. Specifically, this study sought to answer the following questions:

1. What is the level of Compliance of Tuguegarao City Disaster Risk Reduction and Management Council in terms of:
  - 1.1 Prevention and Mitigation
  - 1.2. Preparedness
  - 1.3 Response
  - 1.4 Recovery and Rehabilitation
2. What are the facilities and equipment of Tuguegarao City Disaster Risk Reduction and Management Council used in times of disaster?
3. Are the facilities and equipment of Tuguegarao City Disaster Risk Reduction and Management enough to respond in times of disaster?
4. How does the rescue and relief operations of Tuguegarao City Risk Reduction and Management take action or respond in times of disaster in terms of:
  - 4.1 Responsiveness
  - 4.2 Resources



## RESULTS AND DISCUSSIONS

**Table 1 Compliance of Tuguegarao City Disaster Risk Reduction and Management Council**

Variables	Complied	Not Complied
1. Prevention and Mitigation		
1.1. Availability of Maps	✓	
1.2. Risk Assessment	✓	
1.3. Updated Zoning Ordinance		✓
1.4. Funds appropriated for mitigation process	✓	
1.5. Early Warning System	✓	
1.6. Environmental Ordinance	✓	
1.7. Environmental Programs	✓	
2. Preparedness		
2.1. DRRMC Organization	✓	
2.2. Institutionalize DRRMO		✓
2.3. Capacity Development of Personnel	✓	
2.4. Operational Center Manned on 24-hrs basis	✓	
2.5. Stock Piling	✓	
2.6. Contingency Plan	✓	
2.7. Sectoral Plans	✓	
2.8. Trainings	✓	
3. Response		
3.1. Standard Operating Procedures	✓	
3.2. Executive Order on Force Evacuation	✓	
4. Recovery and Rehabilitation		
4.1. Participation of multi stakeholders in planning implementation and monitoring of mitigating projects	✓	

Under Table 1, these are the variables showing the compliance of the Tuguegarao City Disaster Risk Reduction and Management Council in terms of Prevention and Mitigation, Preparedness, Response, Recovery and Rehabilitation. Under the Prevention and Mitigation, the Disaster Risk Reduction and Management Council complied with the Availability of Maps in terms of hazard and Vulnerability, Risk Assessment, Funds appropriated and utilized for mitigation process, early warning system and Environmental Programs.

The Disaster Risk Reduction and Management Council of Tuguegarao City preparedness also complied with the Disaster Risk Reduction and Management Council Organization, Capacity Development of Personnel, Operation Center Manned on 24-hr basis, stock piling, contingency plan, sectoral plans and trainings.



Under Response of Disaster Risk Reduction and Management Council of Tuguegarao City, they complied with Standard Operating Procedure and Executive Order on force evacuation. The Recovery and Rehabilitation was complied by the Tuguegarao City Disaster Risk Reduction and Management Council in terms of Participation of Multi stakeholders in planning, implementation and monitoring of mitigating projects.

The Disaster Risk Reduction and Management Council did not comply in the said Updated Zoning Ordinance because the last update zoning ordinance was on the year 2002. The zoning ordinance was implemented in the year 2000 and was updated the next year. The Institutionalize Disaster Risk Reduction and Management Office which is located at Carig Tuguegarao City was not complied with because they did not follow the joint memorandum circular no. 2014-1 wherein they must have two permanent City Disaster Risk Reduction and Management Office. They only have one permanent office and the other is a temporary Disaster Risk Reduction and Management emergency operations center thus the Disaster Risk Reduction and Management Officer head and staffs are responsible for: (1) administration and training; (2) research and planning; and (3) operations and warning, because they have a Temporary Disaster Risk Reduction and Management Emergency Operation Center. Here, Tuguegarao City lacks 2 permanent head staff positions.

2. The facilities and equipment of Tuguegarao City Disaster risk reduction and management used in case of calamities.

3. Availability of Facilities and equipment of Tuguegarao City Disaster Risk Reduction and Management Council in times of disaster.

**Table 2 The following are the identified and designated evacuation sites per barangay:**

Evacuation centers	Name of Barangay
Tuguegarao east central school	Barangays 1,5,6,9 and 10
Tuguegarao north central school	Barangays 11, 12, caritacentro
Linao north school	Barangays Linao East, West, and Norte
Atulayan elementary school	Barangay Atulayan and Anafunan
Cattagamanpardo, Mamba Gymnasium	Barangay cataggaman Pardo
Libag Elementary School	Barangay Gosi Sur and Norte
Pallua Gymnasium	Barangay pallua Sur and Norte
People's Gymnasium	For Massive Evacuation
Peoples Emergency Hospital	In all barangays

Evacuation center is the urgent immediate or escape of the people away from an area that contains an imminent threat, an ongoing threat or hazard to lives or property. One of the



recovery and rehabilitation activities of the City Government Tuguegarao through the City Disaster Risk Reduction and Management Office is to identify a safe and secured evacuation centers for the citizens who are adversely affected by disasters such as typhoons, floods, earthquakes and other analogous incidents. In which case, there is a need to designate the evacuations centers of each barangay to avoid confusion and crowding of the public during emergency situations.

It concludes that the City of Tuguegarao has enough evacuation centers since most of the identified evacuation centers are schools, where in all classrooms are used for such purpose in times of calamities and the Peoples gymnasium for massive center.

In Hospitals, the City of Tuguegarao has Peoples Emergency Hospital as the identified infirmary to respond to the needs during calamities however, it is not enough to accommodate the residents of Tuguegarao City who are affected by the disaster. According to the head research of CDRRMO, the Peoples Emergency Hospital which is located at Luna Tuguegarao City, Cagayan, is the only one that can be used in times of calamities because it is owned by the Government.

**Table 3 Equipment utilized by the Tuguegarao City Disaster Risk Reduction and Management Office during calamities**

EQUIPMENT VARIABLES	QTY	UNIT	DESCRIPTION
MOTOR VEHICLE EQUIPMENT	1	Unit	Rebuilt Multi Cab
	2	Units	Air-Cooled Generator Set
	3	Units	Water Pump
	1	Unit	Hilux 2x4 Pick-Up Color Silver
	1	Unit	Hilux 2x4 Pick-Up Color Red
	1	Unit	Ford Ranger 4x4 Pick-Up Color White
	1	Unit	Foton Rescue Ambulance
	1	Unit	Toyota Hi-Ace Rescue Ambulance
	1	Unit	Polyethylene Motor Boat
	1	Unit	Rescue Wrecker Truck
	1	Unit	Hilux 4x2 Pick-up Truck Color Silver
	1	Unit	Foton Rescue Ambulance
	1	Unit	Rubber Boat Trailer
	TRAINING EQUIPMENT	6	Sets
30		Pieces	Safety Rubber Puzzle Matting
1		Unit	Projector with Screen
2		Units	Sound System
1		Unit	Digital Camera Nikon
2		Units	SLR Camera



<b>COMMUNICATION GADGET EQUIPMENT</b>	49	Units	Megaphones
	1	Unit	Alarm System
	2	Sets	Drone Camera
	2	Sets	Go Pro Hero 5 Action Camera
	2	Units	Radio Repeater System
	1	Unit	Digital Camera Nikon
	13	Units	Cellphones
	2	Units	Voice Recorder
	23	Units	Handheld Radio: KENWOOD TK 2000
	2	Units	Base Radio
	4	Units	Mobile Phone
<b>RESCUE PERSONAL PROTECTIVE GADGETS/EQUIPMENT</b>	2	Sets	Generator with Search Light
	1	Unit	Generator 18 KVA
	7	Units	Search Light
	4	Units	Mini Chainsaw
	1	Set	Spreader & Cutter Combination Tool
	1	Set	High Pressure Lifting Bag/ 8 Bar
	1	Set	Medical Tent
	1	Set	Rescue Path
	2	Pairs	Extrication Path
	10	Pieces	Over All Wet Suit
	45	Pieces	Life Vest
	45	Pieces	Safety Helmet
	14	Units	Rechargeable Flashlight
	45	Pieces	Rescue whistle
	45	Pairs	Raincoat
	45	Pairs	Water rescue boots/shoes
	3	Sets	First aid kit (Complete Set)
	19	Pieces	Sleeping bag
	11	Sets	Mask Snorkel
	1	Piece	Kendrick's Extrication Device
1	Unit	Wheel Chair	
2	Units	Chainsaw	
100	Units	Rechargeable Flashlight	

Equipment is one of the important things which the Disaster Risk Reduction and Management Council must comply. It is used to reduce vulnerability to disaster, to mitigate the impacts of a disaster or to respond more efficiently in an emergency.

The graph above shows the number of equipment used by the rescuers during calamities. According to the interview conducted, the availability and capacity of the equipment used by the rescuers is enough to respond and it is complete during calamities. The graph shows



the kinds of equipment, its quantity showing its unit or sets and the description of the equipment.

#### **4. Rescue and relief operations of CITY DISASTER RISK REDUCTION AND MANAGEMENT take action or response in times of disaster in terms of:**

##### **4.1. RESPONSIVENESS**

Rescuer is a person who rescues someone from harm or danger. They are trained in technical rescue, diver rescue etc.

During calamities, rescuers are being deployed in their designated area of responsibility/operational area by the CDRRM. Their operational area consists of technical rescue service and medical operation service. In technical rescue service they are composed of technical personnel to facilitate in the technical rescue such as water search and rescue, fire rescue service and search and retrieval service and in medical operation service they are composed of emergency medical personnel to facilitate in rendering basic health care service in the community. Rescuers are being deployed in search and operation when initiated by the LGU through the CITY DISASTER RISK REDUCTION AND MANAGEMENT OFFICE. They also perform their responsibility in a 24/7 basis, same with the rescue volunteers.

The Disaster Risk Reduction and Management Council complied with the requirement for rescuer wherein they are ready to respond when disaster comes.

##### **4.2. RESOURCES**

During Disaster, it is required to use resources to be able to respond in reducing or lessening the impacts of calamities. Under the supplies, provided by some people, schools or academe who donate some food and clothing for the victims. There are areas provided in every barangay use as an evacuation center and a hospital which facilitates the needs of the victims. The equipment used by the personnel of Disaster Risk Reduction and Management Office is adequate and is enough.

The Disaster Risk Reduction and Management Council of Tuguegarao City shown by the study is complied hence it is prepared in the responding to the needs of the public during calamities.



## **SUMMARY OF THE FINDINGS**

After all the relevant data were properly recorded and interpreted, the researchers found that in terms of prevention and mitigation, the hazard and Vulnerability maps are available. In risk assessment, it has been identified the possible at risk when calamities happen. In zoning ordinance it was found that there is none yet updated zoning ordinance. In subject to utilized mitigation funds, it was found out that there is a budget prior to the mitigation plans. In Early Warning System it was identified that the DOST R02 has the duty to give early warning to the communities. In environmental programs, it was found out that they were implemented to prevent and lessen bad effects of a disaster.

In terms of preparedness, it was found out that there is a Functional Local Disaster Risk Reduction and Management of Tuguegarao City. In Institutionalizing a DRRMO, it was found that there is only one permanent DRRMO and the other is only temporary. In capacity development of personnel, they attended seminars and trainings.

In operation center manned on 24-hr basis it was found out that they activate it before the onset of a calamity. In stockpiling there are available Stores capable of catering the needs of the city when needs arises. In Contingency Planning, there is available Contingency planning but the Tuguegarao city focus only on flooding, in which the Tuguegarao City is moderate-highly susceptible to floods but is not yet approved by the City Council. In Sectoral arrangements, the agencies are arranged and organize to better response to emergency. In training, the Rescuers have undergone series of training for them to enhance their capacity to rescue.

In terms of response, it was found out that in standard operating procedures that there is a step by step instruction to carry out by the DRRM and its personnel's and in executive order on force evacuation it was found out that there is an executive order on force evacuation when a disaster or emergency has been declared or danger of loss of life is imminent and conditions exist that critically imperil endanger lives.

In terms of recovery and rehabilitation, in participation of multi-stakeholders in planning, implementation and monitoring of mitigating projects it was found out that the Disaster Risk Reduction and Management Council coordinate with DENR to come up with an action plan and they also coordinate with the MGB, DOST-PAGASAB and OCD to identify the vulnerable areas and the possible at risk.



With regard to the availability and capacity of their facilities to respond to the needs of the people in terms of evacuation centers, there are available evacuation centers and it is enough to respond during calamities. As regards to hospitals, the Peoples Emergency hospital responds to the calamities.

On the availability and capacity of the equipment of Tuguegarao City to respond the needs of the people in times of calamities in terms of light equipment and heavy equipment, it is enough to respond which the number is indicated in the graph shows in Chapter 4.

The availability of the rescuers and the volunteers were also enough in which they are deployed in their designated area of responsibility/operational area by the City Disaster Risk Reduction Management and they perform their duties in 24/7 basis. In resources, it was found that under the supplies, there are some people, schools or academe who donate some food and clothing for the victims of disaster, every barangays are given facilities to be used in their respective evacuation center and temporary hospitals. The equipment used by the personnel of Disaster Risk Reduction and Management Office is adequate to respond to the needs of the people of the people in times of calamities..

## **CONCLUSION**

Based on the aforesaid findings, the researchers conclude that the level of compliance of Tuguegarao City in Philippine Disaster Risk Reduction and Management law with regards to prevention and mitigation they comply on their plans, programs and activities which is the availability of maps, risk assessment, funds appropriated and utilized for mitigation process, early warning system and environmental programs but not in updated zoning ordinance. With regards to response, they comply on their plans, programs and activities which is the DRRMC organization, capacity development of personnel, operation center manned on 24-hr basis, stockpiling, sectoral plan, and contingency plan and trainings but they did not comply in institutionalizing of DRRMO. With regards to response they comply on their plans, programs and projects which are the Standard Operating Procedures and Executive order on force evacuation. The availability and capacity to respond to the needs of the people in times of calamity with regards to light equipment such as generator with search light, mini chain saw, medical tent and other light equipment as well as the heavy equipment such as rescue ambulance, rescue wrecker truck, rubber boat trailer and other heavy equipment are



absolutely available and capacitated. The DRRM has enough rescuers and volunteer to employ in times of rescue and reliefs same with their resources.

## **RECOMMENDATIONS**

On the onset of conclusion, these recommendations were being formulated:

1. Update the zoning ordinance.
2. Implementation of the mandatory positions of Disaster Risk Reduction and Management Office.
3. The rescuers and volunteers shall undergo additional trainings to increase their capabilities to help their citizens during disasters.
4. The City Government of Tuguegarao shall provide additional facilities especially in hospitals since it is not enough;
5. The City shall continuously implement their existing plans, programs and activities accompanied by efficient and effective implementation with proper fund allocation.
6. Additional budget shall be allocated to the City's Disaster Risk Reduction and Management in order to purchase additional equipment to be used in times of calamities

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