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Disaster Risk Reduction Training and Volunteer Management Capacity in the Philippine Higher Education Institutions

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Abstract: The study attempted to ascertain the extent of capability of the higher education institutions (HEIs) as providers of local training and volunteer support on disaster risk reduction and management (DRRM) through the National Service Reserve Corps (NSRC) under the National Service Training Program (NSTP) as mandated by Republic Act (RA) No. 9163 (The NSTP Act of 2001) and RA 10121 (The Philippine Disaster Risk Reduction and Management (PDRRM) Framework Act) and consistent with the Local Government Academy (LGA) Research Engagement and Advocacy Program (REAP) of the Department of Interior and Local Government (DILG) thrust of determining schemes and strategies on DRRM and Climate Change Adaptation (CCA) across the country. This nation-wide survey purported to empirically strengths and weaknesses of the institutions of higher learning in providing baseline data in the formulation of strategic capacity development plan to upscale the operation of the HEI-DRRM training organizations in extending volunteer support to local government units (LGUs). In more specific terms, this investigation sought to address the fundamental research question: How do the NSRC Units as DRRM training organizations operate in terms of: DRR prioritization; risk assessment, monitoring and warning; knowledge and education; underlying risk factors; preparedness and response; evaluation of local-level government initiatives; cross-cutting issues; and administrative concerns? This research endeavored to measure progress in implementing disaster prevention and mitigation measures consistent with the end in view of establishing a national framework for school-based disaster management unit to intensify participation of the higher education institutions (HEIs) through the National Service Reserve Corps (NSRC). A total of 94 public and private HEIs from the different regions of the country were made part of the study. These HEIs are member-institutions of the Philippine Society of NSTP Educators and Implementers, Incorporated (PSNEI), a national network of NSTP and NSRC implementers in the country. In summary, the HEIs across the country registered moderate extent insofar as management capacity along the 7 seven thematic areas are concerned. Further, when responses are grouped into public or private HEIs, there is no significant difference on their extent of management capacities when compared statistically while there is significant difference in the measures when the HEIs are grouped by region. Various emerging and constraining factors were identified alongside with the local training and volunteer support capacities of the two groups of respondents.

Key words: disaster risk reduction training and volunteer management capacity, national service reserve corps, higher educational institutions, Philippines

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1. Introduction

Higher education institution disaster risk reduction significantly form part of the NSTP as embodied in Republic Act (RA) No. 9163 that provides for the basis of the NSRC activities since 2005. Universities and colleges through NSRC offer the opportunity to develop students a continuous source of volunteers for DRR and other related activities and programs. HEIs are also important areas for capacity development for disaster prevention education and safe institutions of higher learning.

However, the Philippine Society of NSTP Educators and Implementers, Incorporated (PSNEI) (2013), the premier national association for NSTP of more than 150 higher education institutions (HEIs), reveals that inclusion of disaster awareness and risk reduction in school programs has been sporadic and perceived as a "burdensome" addition to an already charged curriculum, more so, in far operation of NSRC as training organization and local volunteer support. Among other reasons, this may be attributable to ineffective approaches being used and the lack of clear implementation guidelines.

While there are periodic attempts by some educational institutions in offering DRR training and volunteer support to local government units, there are no common standards upon which these programs are based.

Since the achievement of disaster risk reduction is critical, and can be achieved through capacity development of HEIs as they play quintessential role in disaster education via educational programs such as NSTP and the operation NSRC in particular, it has given impetus for the conduct of this investigation. This study therefore intends to explore whether the NSRCs has operated in the purview of its mandates per RA 9163 and RA 10121.

2. Methodology

2.1 Research Design

Mixed methods approach was used for this study, where both qualitative and quantitative methods were combined. Mixed methods is defined as a procedure for collecting, analyzing and "mixing" both quantitative and qualitative data at some stage of the research process within a single study to understand a research problem more completely (Mamogale citing Maree, 2012).

The researcher deemed it appropriate to use this design as the focus in this endeavor is on coming up with a national baseline study to determine the capacity of NSRC Units in providing training and volunteer support, data of which involved quantitative measure, and further identified success and limiting factors concerning more qualitative responses, the aforementioned method was resorted thereby observing triangulation by instituting multiple data sourcing techniques in establishing the veracity of the results.

In a more exact account, the data were mainly elicited from the respondents through the questionnaire, as the chief data-gathering instrument, and complemented by focus group discussion (FGD) and key informant interview with the NSTP-NSRC implementer-participants.

2.2 Locale of the Study

As this study purports to empirically assess the training capability of the NSRC Units of the HEIs as DRRM Training Organizations as provided for in the Implementing Rules and Regulations of RA 10121 with the end in view determining the strengths and weakness of the institutions in providing baseline data in upscaling the operation of the training organizations and for local volunteer support to LGUs, this investigation will be a

nation-wide survey.

With the HEIs through the NSRC as potential DRRM training organizations in the local levels, the colleges and universities under the auspices of the Philippine Society of NSTP Educators and Implementers, Incorporated (PSNEI) across the regions of the country play a pivotal role insofar as mobilizing volunteers DRRM and CCA are concerned. Hence, gauging the competence of the training organizations is significant in the purview of intensifying the efforts alongside building Climate Change-Proof Philippines via Disaster-Resilient Communities.

According to the Global Climate Risk Index 2013, the Philippines ranked fifth, up from 14th place in 2010, in terms of countries most affected by extreme weather conditions — after Thailand, Cambodia, Pakistan and El Salvador[1].

The Philippines, located in Southeast Asia is one of the world's most disaster-prone countries (IFRC, 2009) and consistently among the top five countries with the highest number of reported disaster events (CRED, 2013) considering its geographical location in the Pacific Ring of Fire and along the typhoon belt.

Many argue that countries like ours are particularly vulnerable to advance impact of climate change due to poverty, weak governance and ecosystem degradation. However, building capacity is becoming a challenge with rapidly changing social, economic and technological drivers, polices and various players involved in disaster management.

The Philippines is among the lower middle-income countries, according to World Bank's country income classification. High risk due to the above hazards can discourage foreign investments in the country and affect long-term economic development.

However, the different regions and their component provinces, municipalities and cities that comprise differ in terms of exposure to hazards, risks and vulnerabilities.

Some parts of the country are more prone to specific hazards than others; some parts are exposed to more hazards than others. In an analysis of natural disaster hotspots by the Hazard Management Unit of World Bank, the Philippines is among the countries where large percentages of population reside in disaster-prone areas.

Many highly populated areas are exposed to multiple hazards; 22.3% of the land area is exposed to three or more hazards and in that area, 36.4% of the population are exposed.

Areas where two or more hazards are prevalent comprise 62.2% of the total area where 73.8% of the population are exposed (World Bank, 2005).

2.2 Population and Sampling

The data relative to the study was extracted primarily from the administrative heads of NSTP in the NSRC-implementing HEIs having position titles as Director, Coordinator, Program Component Coordinator or NSRC Coordinator. Their qualification as focal persons in the implementation of the NSTP non-military program components and the operation of NSRC is the quintessential criteria for their inclusion as respondents in the investigation. In addition to the main inclusion criterion, the researcher intends to concentrate on the members of the Philippine Society of NSTP Educators and Implementers, Incorporated (PSNEI), a national network of around 200 higher and technical-vocational education institutions across the country. This is so because the PSNEI members regularly convene at least two (2) times a year in expression of their commitment to the cause of NSTP which includes the operationalization of NSRC. Hence, they are potential source of relevant data.

The aforementioned served the purpose of ensuring high rate of retrieval of questionnaire and strategic

[1] http://germanwatch.org/en/5696 as retrieved 02/08/2015.

accession of data in view of the time and resource constraints of delving into a study of national scope.

The mode of sampling procedure that the researcher used was purposive sampling as the study is solely for PSNEI members. Sanchez (2002) provides that purposive sampling has no system in selecting the sample and the selection depends upon the situation. The respondents are chosen based on their knowledge of the information denied or needed. It involves the deliberate selection of individuals by the researcher based on certain predefined criteria.

With the criteria as a frame of reference, a total of ninety-four (94) respondents, 43 from private and 51 from public representing 15 regions, were made part of this national survey. It is noteworthy to mention that, out of the 16 regions in the country, only the Autonomous Region for Muslim Mindanao (ARMM) was not represented as there were no participants fielded for the purpose of this study.

The participants coming from the public HEIs accounted for 54.3 percent while the private is at 45.7 percent.

Four regions including Calabarzon (aggrupation of Cavite, Laguna, Batangas, Rizal and Quezon), had 10 or more representatives which are: Cagayan Valley, Bicol and the National Capital Region (NCR).

Regions below 10 representatives are: Ilocos, Central Luzon, Mimaropa (also known as Mindoro, Marinduque, Romblon and Palawan), Western Visayas, CentraVisayas, Easter Visayas, Zamboanga or Western Mindanao Soccsksargen (comprised of South Cotabato, Cotabato, Sultan Kudarat, Sarangani, and General Santos) and Caraga.

The researcher floated the survey-questionnaire to the respondents in national and regional conventions where he facilitated workshops with the assistance of PSNEI regional coordinators.

Furthermore, the data elicited from the respondents through the questionnaire was reinforced with focus group discussion (FGD) and key informant interview with participants consisting of NSTP/NSRC training staff.

The FGD deepened the researcher's understanding of data gathered in the survey while the key informant interviews brought out details that did not emerge from the data-gathering instrument administered.

In like manner, validation and analysis workshops with the respondents were also conducted to ensure that their assessments and experiences were heard throughout the important phases of the study.

2.3 Instrumentation and Data Collection

Data gathered from primary and secondary sources. Primary data was gathered with the aid of questionnaires and interview process. Literature review of relevant sources of information about the research problem and research questions were conducted as secondary data.

The principal data gathering instrument used in this investigation is a researcher-formulated questionnaire. This instrument was based on a cross-section of materials relating to measuring capability of organizations in managing training programs on DRR.

The data obtained from the respondents were carefully analyzed with the purpose of probing into patterns or trends in so far as training and volunteer support capacity of school and community-based DRRM operation is concerned.

The unavailability and absence of a standardized, field-tested survey instrument have prompted the researcher to construct a questionnaire-checklist as the main instrument in data gathering following extensive review of literature particularly that of OCHA's report 2012.

The OCHA Regional Office for the Pacific supports its partners by providing analysis to increase the partner's capacity to coordinate and implement humanitarian action. In order to fulfill these commitments, the

OCHA Regional Office for the Pacific commissioned this analysis of disaster response training.

Derived primarily from the questionnaire used in a study by OCHA, the researcher identified seven (7) thematic areas and a total of thirty-two (32) indicators (also referred to as items), to wit: DRR as Internal Priority (4 indicators); Risk Assessment and Monitoring (3 indicators); Knowledge and Education (3 indicators); Underlying Risk Factors (3 indicators); Preparedness and Response (6 indicators); Local Government Support (5 indicators); and Cross-Cutting Issues (8 indicators)

To ensure that data collected was valid and reliable, a pilot study was conducted ensuring that questionnaire and interview instruments were tested.

According to Maree (2003), validity refers to the extent to which an instrument measures what it is supposed to measure. Reliability is the extent to which a measuring instrument is repeatable and consistent. In qualitative research, validity and reliability are usually referring to research that is credible and trustworthy, where observation, interviews and document analysis lead to trustworthiness as reported by Maree (2010) as reflected in paper of Mamogale (2012). Ensuring the validity and reliability of data collected, the following measures were employed: internal validity was employed where research questionnaires and interview guidelines were assessed and reviewed by experts consisting of the national board members of the Philippine Society of NSTP Educators and Implementers, Inc. representing the different regions in the country and senior staff members of the National NSRC Directorate under the auspices of the Office of the Civil Defense for approval before issued for respondents. It was also ensured that data collected were valid and reliable by ensuring that the questionnaires and interview instruments were tested in the pilot phase held in first quarter of 2014, which consisted of the following 15 NSTP directors/coordinators, the regional directors of PSNEI, 2 CHED Regional education supervisors, 3 program managers of organizations involved in disaster risk reduction and 4 heads of institutions.

To determine the reliability of the researcher-framed instrument, the items were pre-tested to select NSTP directors and coordinators who were not included in the study. Improvements in the questionnaire were also validated. The average rating of the evaluators was 4.9, hence the questionnaire was deemed valid. The suggestions given by the evaluators and the researcher's adviser served as bases for the finalization of the instrument.

2.4 Tools for Data Analysis

The accomplished questionnaires will be collected and the responses will be counted and recorded. The data gathered will be arranged, tabulated, and analyzed in accordance with the stated sub-problems of the study.

As to the extent of capacity of the HEIs along training and volunteer support in the operation of their NSRC Units, the 5-point scale was devised and instituted that served as frame of reference in the assessment to be made by the respondents:

Descriptive statistical treatment was observed to allow analysis and interpretation in this regard. Measure of central tendency using mean was utilized.

In order to ascertain the significant difference on the extent of training and volunteer capacity of HEIs were determined by using the t-test and analysis of variance (ANOVA). In addition, the Pearson Chi-Square was also employed. On-line calculation was resorted to in order to facilitate fast and accurate results. These results were presented in statistical tables with narrative explanations.

To understand qualitative data collected in the study, a descriptive analysis was used which narrated the responses of participants. FGD and informal interviews were used where the interviewer had an opportunity to ask

participants questions, and clarify where there was no clarity. The aim of qualitative interviews is to see the world through the eyes of the participants, as they are valuable sources of information, provided they are used correctly and also provide rich descriptive data that will help the researcher to understand the participants' construction of knowledge and social reality.

Triangulation method was used to analyze data collected through secondary data (literature review) and primary data (interviews and questionnaires) in order to compare results to determine whether they corroborate, are similar or differ. According to Maree (2010), triangulation is a strategy for improving the validity and reliability of research or evaluation of findings. Maree (2010) further states that triangulation is used extensively in quantitative studies for the confirmation and generalization of research findings.

3. Results and Discussions

3.1 Extent of Capacity of the HEIs in the Operation of NSRC on DRR Training and Volunteer Management

By thematic area, the findings are to wit:

DRR as Internal Priority

- The area consists of indicators as: frameworks and structures; planning; financial resources; and human resources.
- The 4 indicators when combined and weighed, posted "moderate" extent.
- Planning as observed to register "high" extent.
- Financial resources had the lowest mean.

Risk Assessment, Monitoring and Warning

- Considered are indicators that includes; disaster risk assessment; early warning systems; and risk management systems
- Mean value for this thematic area is 2.84 (moderate extent)
- The 3 indicators had descriptive equivalents of "moderate".

Knowledge and Education

- The indicators under this theme are: information management exchange (mean=3.21); formal education (training staff) (mean=2.98); and community training (mean=2.67).
- Overall mean us 2.95 which is equivalent to "moderate".
- All indicators are rated "moderate extent" as well.

Underlying Risk Factors

- This theme accounts for; environmental and natural resource management (mean = 3.5); adaptation to climate change (mean = 3.50) and protection of facilities (mean = 3.36).
- The weighted mean for the 3 indicators is 3.45 and is of "high extent".
- Of the thematic areas, underlying factors registered the highest mean.

Preparedness and Response

- Accounted in this area are: disaster preparedness (future risks) (mean = 3.08); disaster response (mean = 3.11); disaster preparedness and response (mean = 3.08); disaster response and recovery (mean = 2.70); emergency resources (mean = 2.71); and coordination and information exchange (mean = 2.84).
- The extent of capacity of the HEIs in this case is of moderate extent (mean = 3.01).

- Measures of mean ranged from 2.70 to 3.11.

Local Government Support

- Factored in are: governance (mean = 3.40); risk assessment monitoring and warning (mean = 3.24); knowledge and education (mean = 3.21); underlying risk factors (mean = 3.07); and preparedness and response (mean = 3.30).
- All except for governance had ratings belonging to adjectival description "moderate".
- When averaged, the weight of the 5 indicators is 3.24.

Cross-Cutting Issues

- Composed of 8 indicators, the area concentrated on: community participation and information (mean = 3.38); actual and fair participation (mean = 2.71); training activities (mean = 3.06); gender (mean = 3.21); gender (resources) (mean = 2.83); cultural sensitivity (diversity) (mean = 2.91); cultural sensitivity (traditional knowledge) (mean = 3.01); and cultural sensitivity (languages) (mean = 2.90).
- The computed mean for the 8 indicators is 3.0 (moderate).
- For this thematic area, the weight of 8 indicators is moderate.

3.2 Differences on the Extent of Capacity of HEIs in the Operation of NSRC on DRR Training and Volunteer Management

When tested statistically, the null hypothesis concerning the difference between public and private higher educations on their extent of capacity in the operation of NSRC on DRR training and volunteer management along the 7 seven thematic themes was accepted at 0.05 significance level. This could be the reason that both public and private HEIs are guided by the same laws and implementing guidelines, on a general note.

On the other hand, results of application of Analysis of Variance (Analysis of Variance) to ascertain the differences in the extent of management capacity of HEIs as per thematic area by region and indicators reveal that the ratings are significantly different which can be attributed to factors like geographical location, poverty threshold level and others.

3.3 Enabling and Constraining Factors in the Context of the Extent of Capacity of HEIs in the Operation of NSRC on DRR Training and Volunteer Management

For the 7 thematic areas, the emerging themes in so far as factors that enables the capacity of the HEIs in the operation of NSRC on DRR training and volunteer management are, but not limited to; strong partnership with government, non-government peoples organizations including other agencies that can be tapped for DRR works like Red Cross, Local DRRM Council, etc. Commitment of NSTP/NSRC personnel; Organization of Volunteers for DRR; Awareness of the laws pertinent to DRR and Climate Change adaptation; Alignment of the Extension Thrust of the Institution and Institutional Policies to DRR and proper coordination of all concerned and stakeholders.

Regarded as "building blocks" are the constraining factors that cut across all the DRR training and volunteer management thematic areas are financial limitations, technical difficulties, time constraints, lukewarm attitude of the Administration, the LGUs' and the community people, lack of research-based initiatives to support DRR training and volunteer mobilization, lack of measure to sustained DRR efforts, etc.

3.4 Strategic Capacity Development Model to Enhance the Extent of Capacity of HEIs in the Operation of NSRC for DRR training and Volunteer Management

With the measures on the extent of capacity of the public and private higher education institutions in the operation of school and/or community-based NSRC Units on training and volunteer-reservists mobilization for local disaster risk reduction as well as enabling the constraining factors, a model for capacity developed to address the multifarious concerns relative in the thematic areas was crafted to guide the HEIs towards disaster-resilient and climate-resistant communities in the different regions in the country.

4. Conclusion

Anchored on the salient findings of this probe, the following conclusions are generated:

Premised on the acceptance of the null hypothesis that there is no significant relationship on the extent of capacity in the operation of National Service Reserve Corps for training and volunteer management for local disaster risk reduction along DRR as internal priority; risk assessment, monitoring and warning; knowledge and education; underlying risk factors; preparedness and response; local-level government initiatives; and cross cutting issues between public and private higher education institutions and among the 15 regions in the country, it can be generalized that the “moderate” extent of management capacity reflects that the role and potentials of the HEIs through their NSRCs have not been optimally realized.

In explication, testing of hypothesis concerning differences as to thematic area by region and indicators that warranted the rejection of the null hypothesis gave valuable insights as variances in specific areas and requirements of DRR. It is therefore generalized that while performance between the types of HEIs is almost generally the same, premium can be placed on elements that affect differences by region and when group by thematic area and indicators, thus, serving as basis for the formulation of capacity development program to enhance NSRC operation.

This indicative of certain constraints that far outweighs the enabling factors, thus, limiting the execution of plans, and policies governing the fulfillment and attainment of the DRR thrusts in transforming vulnerable communities towards disaster and climate-proof future. To this end, it is in order to formulate capacity development model to serve as impetus in making NSRCs and HEIs functional and relevant DRR organizations.

5. Recommendations

Drawing from the findings and conditions, the recommendations are hereby advanced:

1) Widest dissemination of the proposed capacity development model and coursed through the Philippine Society of NSTP Educators and Implementers, Incorporated the Commission on Higher Education and other organizations be made to serve as frame of reference for the higher education institutions and NSTP-NSRC implementers especially in the purview of the “vacuum” brought about by K to12 implementation.
2) Sharing of the findings of the study to the Local Government Academy under the auspices of the Department of Interior and Local Governments and other concerned agencies in aid of legislation for more efficient and productive DRR programs.
3) Conduct of further and parallel studies to bring about more empirical-based inputs and baseline data in the better understanding light of the growing complexities brought about by disasters and climate

change.

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