การขับเคลื่อนจิตอาสาเพื่อบรรเทาสาธารณภัยจากผลกระทบภัยพิบัติทางธรรมชาติ กรณีศึกษาป่าชายเลน จังหวัดสมุทรปราการ

Voluntary Contribution Mechanism to Mitigate Effects of Natural Disasters : A Case Study of a Mangrove Forest in Samut Prakan, Thailand

รองศาสตราจารย์ พ.ต.อ. ดร.ชัชนันท์ ลีระเติมพงษ์[1]

Assoc. Prof. Pol.Col.Chatchanun Leeratermpong, Ph.D.[2]

บทคัดย่อ

การวิจัยเรื่อง การขับเคลื่อนจิตอาสาเพื่อบรรเทาสาธารณภัยจากผลกระทบภัยพิบัติทางธรรมชาติ กรณีศึกษาป่าชายเลน จังหวัดสมุทรปราการ มีวัตถุประสงค์เพื่อสร้างองค์ความรู้ และสร้างระดับความเชื่อมั่นให้แก่นักเรียนนายร้อยตำรวจให้มีจิตอาสาเพื่อบรรเทาสาธารณภัยจากผลกระทบภัยพิบัติทางธรรมชาติ เพื่อสร้างความตระหนักและความรู้ ตลอดจนสร้างทัศนคติแก่ประชาชนในเรื่องการป้องกันและบรรเทาสาธารณภัยจากภัยพิบัติทางธรรมชาติร่วมกับเจ้าหน้าที่ตำรวจในพื้นที่ป่าชายเลน ทั้งนี้ได้ดำเนินการวิจัยเชิงปริมาณโดยเก็บข้อมูลจากนักเรียนนายร้อยตำรวจที่มีความสมัครใจเข้าร่วมดำเนินกิจกรรม จำนวน 80 นาย ผลการวิจัย พบว่า นักเรียนนายร้อยตำรวจที่เข้ารับการอบรมจากวิทยากรมีผลการทดสอบความพึงพอใจอยู่ในระดับมากที่สุด และมีความตระหนักในเรื่องภาวะโลกร้อน (Global Warming) ทำให้เกิดจิตอาสาที่จะช่วยเหลือผู้อื่นและรับผิดชอบต่อสังคมด้วยความยินดีและเต็มใจ มีแรงจูงใจที่จะรวบรวมอาสาสมัครเพื่อลงพื้นที่ปฏิบัติการช่วยเหลือและบรรเทาสาธารณภัยแก่ผู้ประสบภัย และมุ่งมั่นที่จะฟื้นฟูธรรมชาติอย่างต่อเนื่อง

คำสำคัญ : จิตอาสา, บรรเทาสาธารณภัย. ภัยพิบัติ, เจ้าหน้าที่ตำรวจ

[1] อาจารย์ประจำคณะตำรวจศาสตร์ โรงเรียนนายร้อยตำรวจ

[2] Lecture at Department of Police Science, Royal Police Cadet Academy

E-mail : pui.rpca@gmail.com

Abstract

This study aimed to build a body of knowledge of natural disaster prevention and mitigation, to empower the police cadet voluntary group to use the knowledge to raise awareness to the public, and to develop an attitude of disaster prevention and mitigation in corporation with the local police force. A quantitative research method was employed in the study. Data was collected from 80 police cadets who took part in volunteering activities. The findings revealed that satisfaction was highest amongst the participants where awareness of global warming was greatly evident. The participants were willing to volunteer and engage in taking up social responsibility. They were also motivated to assemble volunteers to help with the field disaster relief efforts and determined to continually restore natural resources.

Keywords : volunteer, mitigation. Disaster, police officer

Introduction

At present, disasters have a tendency to occur continually and be more complex because of climate change, population growth, deterioration of natural resources, and rapid rural-urban migration. As a result, more population lives in dense cities with higher risk of disasters either from natural disasters such as floods, storms, and droughts or man-made disasters such as fires, accidents, and chemical spillage which cause significant property damage, loss of life, and environment issues.

Coastal erosion has been a challenge for Thailand. The severely eroded shoreline was found along the northern tip of the Gulf of Thailand coastline from the Bang Prakong river mouth to the Mae Klong river mouth, where the erosion has progressed at a rate of 35 metres per year. So far, a net

loss of the land area is 18,594 rai or about 29.75 square kilometres. In some areas, more than a kilometre length of land eroded into the sea. As a result, the villagers have been evacuated from the areas for more than 4-5 times. Land subsidence and sea level rise will intensify the erosion to a rate of 6 5 metre per year. In the next 20 years, it is forecasted that 47,875 rai or about 76.60 square kilometres will be eroded. An important cause of coastal erosion is a decrease of mangrove forests. Mangrove forests are not only vital to coastal ecosystems but they also protect the coastline from waves and storm surges.

The disaster cycle suggests that disasters tend to be more frequent, intense, and complex. Several developing countries have adjusted their national development strategies which aim to reduce disaster losses to a minimum. The strategies focus on sustainable development where disaster management has been shifted from relief and response measures to mitigation and preparedness measures.

Thailand's Royal Police Cadet Academy is an educational institution which plays an important role in raising awareness of social issues to their students. The institution has played a significant role in disaster relief in areas affected by increasingly intense, frequent, and complex natural disasters. Such disasters have been intensified by climate change, population growth, and deterioration of natural resources, particularly, a decrease of mangrove forests. The Royal Police Cadet Academy has integrated disaster management into the curriculum to prepare their students to be able to cope with disasters before they graduate. A proactive approach has been introduced aiming for disaster prevention and mitigation. The approach allows students to deal with steps in the disaster cycle including preparedness which is the

first step in the disaster cycle prior to disaster's occurrence, emergency response which is operated once a disaster occurs, and rehabilitation and reconstruction following the relief phase.

Many police cadets had taken part in volunteering activities such as a community development programme, a community sports project, and a toilet construction and improved sanitation project. These activities were well received. However, this type of activities could only manage to achieve a basic level of social development awareness and public health improvement. A voluntary contribution mechanism to mitigate effects of natural disasters project anticipated that environmental changes including the uncertainty of climate change in the future would result in geological, hydrological, and meteorological natural disasters. Therefore, police cadets had to be equipped with knowledge of disaster management and be able to take appropriate actions when a disaster occurs. They also needed to have awareness about possible disasters in different regions of Thailand to be better prepared and to assure best assistance to victims of disasters.

Bang Pu mangrove forest in Samut Prakan was used to carry out the voluntary contribution mechanism to mitigate effects of natural disasters project as the area had been ecologically damaged by global warming, sea level rise, and higher sea temperatures threatening the extinction of many plant and animal species as well as causing coral bleaching which were found both in the Gulf of Thailand and in the Andaman Sea. Moreover, industrial pollution and rapid expansion of the city had destroyed 70% of the mangrove forest. Each year, 10 rai of the mangrove forest was destroyed. At present, only a tenth of the mangrove forest or 50 rai survive. The excavation of a channel which was 200 metres wide and 20 metres deep from Chao

Phraya River to Chonburi Province in 1987 to support the country's economy also had an impact on the mangrove forest in the area. The channel was oriented in a diagonal direction, which changed the direction of the waves making them more powerful. At the same time, volumes of sand from the channel bed had to be removed regularly to maintain the path. The removal of the sand had changed the composition of the sediment on the Bang Pu seafloor from mud to sandy mud. As a result, the Avicennia alba plants, which are commonly found in the area and grow well in muddy soil, struggle to survive in this sandy soil. Bang Pu mangrove forest, consequently, was chosen as a case study to provide the police cadets with awareness raising activities in mangrove forest conservation, to provide an understanding of disaster mitigation from global warming, and to encourage the participants to volunteer. The project included field visits to the local communities in order to educate people in the communities through various activities and to raise awareness of mangrove restoration and the benefits of mangrove forests in protecting the coastline from the erosive impacts of ocean waves and storm surges, providing nursery habitat for many species of fish, preventing pollutants from contaminating the coast, serving as recreational grounds, providing wood for construction materials, bringing back prosperity to the local areas, and being used as a nature education centre (Daily News, 9th March 2008).

Research Objectives

1. To build a body of knowledge and to empower the police cadet volunteers to mitigate effects of natural disasters in the case of the mangrove forest in Samut Prakan.

2. To raise awareness, build knowledge, and develop an attitude of disaster prevention and mitigation in corporation with the local police force in the mangrove forest area.

Research Methodology

Document research and action research were employed in this research. Data was collected from two groups of participants: 1) 80 first year police cadets 2) 50 campaign leaders from Tam Bon Bang Pu, Muang Samut Prakan District, Sumut Prakan Province. The statistical tools including frequency, percentage, and standard deviation were used to analyse the questionnaire. The research method was explained through a series of events and activities. Then, a research report was prepared to present to the research committee. Advice and suggestions from the committee was included in the report editing process. A complete research report was published and submitted to the university and other relevant agencies.

Literature Review

A mangrove ecological system consists of salt-tolerant trees which grow in harsh coastal conditions. A mangrove forest serves as nurseries for many aquatic animals. Mangroves are buffers between the land and the sea. A mangrove forest consists of many different species of trees and animals. A mangrove forest slows the movement of tidal waters increasing high organic content in the sediments. (Division of Public Health and Environment, Bang Pu Municipality, 2013)

A mangrove forest is natural protection which reduces the intensity of tsunami and the damage to the coastline, communities, and people living

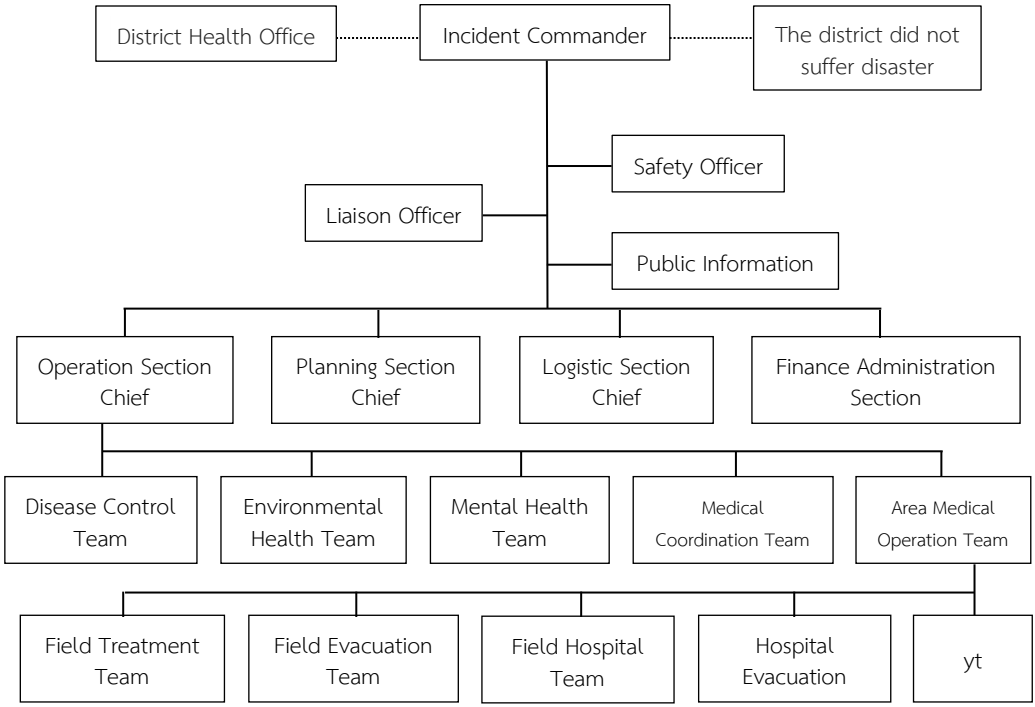
in the area. A mangrove forest consists of tropical coastal vegetation. They can be found in coastal areas, the mouths of large rivers, sheltered bays, lagoons, islands, and marshes. In Thailand, mangroves are commonly found along the coast of the south, east and central regions (Butri, 2011).

A mangrove forest consists of deciduous trees which grow between the land and the marine coastal systems. They thrive in the tidal areas and muddy conditions. The vegetation in the mangrove forests is drought resistant. The plants are able to thrive in salt water, strong sunlight, and strong winds. Mangrove trees have a high rate of dehydration. Therefore, they develop aerial or air-breathing roots and prop roots providing support in the soft and unstable mud. A mangrove forest comprises various species of trees, shrubs, climbers, and seaweeds. Some of the commonly found plants are Rhizophora mucronata, Avicennia officinalis, Ceriops tagal Sonneratia caseolaris, Sonneratia ovata, Xylocarpus granatum.

A mangrove forest provides habitat to many animal species including aquatic animals, mammals, reptiles, amphibians, birds, insects as well as some unique species like mudskippers and fiddler crabs. The highly diverse ecological system of a mangrove forest made it one of the three most valuable coastal ecological systems in the world providing a source of oxygen to human beings and animals, habitats of aquatic animals, amphibians, and birds, nursery grounds for animals, food, timber and wood for construction material and for fuel, and medicine. A mangrove forest also acts as filters preventing waste and pollutants from contaminating the sea. It protects the shoreline from waves and winds. Mangrove trees and root structures help reduce erosion. They also reduce the intensity of tsunami. When six provinces on the Andaman coast of Thailand were hit by a tsunami

on the 26th December 2004, it caused severe damage to the infrastructure, houses, and buildings in the communities. However, it was reported that less than 10% of the mangrove forests was severely damaged. Mangrove vegetation, especially the Rhizophora has strong root structures which are efficient at absorbing the wave energy from the tsunami.

Flowchart for Coordinated disaster map and order. The details are as follows.



Participation in flood disaster management is tangible. The details are as follows

1. Mechanism of Action : Pushed by two subcommittees, the Monitoring Sub-Committee And the Subcommittee on Disaster. It has plans with the World Health Organization The Emergency Medical Institute is a major disaster plan.

2. Support Follow-up: include research funding for disasters. It is under testing tools and media.

3. Fast Moving Team Training: Placing Networks Into Every Area Academic.

4. Support: Workshop with Ministry of Public Health Meteorological Department Department of Disaster Prevention and Mitigation.

5. Training in emergency medicine with Department of Disaster Prevention and Foreign Affairs By training and executives. Disaster Preparedness Plans: Together with civil and international agencies.

The enhanced greenhouse effect and El Nino contribute to a more constantly changing earth atmosphere resulting in an increased number and severity of natural disasters. Disaster mitigation and support for victims of disasters, therefore, requires proactive measures and systematic cooperation with other relevant agencies. Steps of disaster management consist of (Burapha University,2012) 1) mitigation to reduce the effects of disasters and preparedness prior to disaster occurrence 2) emergency response during disaster occurrence 3) and rehabilitation and recovery of the infrastructure and resources following disaster occurrence.

It is observed that a disaster management process in Thailand still needs improvement in many aspects (The Secretariat of Civil Defence, 2004 D, page 5).

1. As for the economic aspect, the government policies for boosting industrial and agricultural exports resulted in acceleration in economic growth measures which involved adopting modern technology, chemicals, and hazardous substances in the manufacturing process. This increased risks of residues and transported isolated intermediates.

2. As for the social aspect, the national economic development plan could not support the growing population. As a result, the society faced with social problems which affected both physical and mental health of the citizens. Family relationships deteriorated. Social and economic demands led to forest encroachment. Meanwhile, many people moved to the city to find employment creating a rapid urban sprawl and cities being over crowded.

3. As for the environmental aspect, climate change and the incongruence between economic and social development had a direct impact on the environment in Thailand causing ecological imbalance which led to more frequent and intense natural disasters and accidents, for example, flash floods, floods, storms, landslides, earthquakes, building collapses, droughts, wildfires, fires, cold temperatures, transportation accidents, hazardous materials and substances, pandemics originated from animals, insect and pest infestations. These had a big impact on quality of life of the population.

4. As for the management aspect, improvement was required in planning from the policy framework, implementing the plan, formulating alternatives, assigning appropriate budget, evaluating the achievement of the plan, providing human resource development, and incorporating appropriate technology to the implementation of the plan as well as providing an

appropriate governmental structure to coordinate and support other relevant agencies under resource constraints.

This study was aware of the loss and damage from disasters and payed a particular attention to disaster mitigation by scrutinising and setting up guidelines in order to mitigate disasters and reduce the intensity of damage to life and property of the citizens and government agencies. After the occurrence of the disaster, rehabilitation of the victims of disasters as well as restoration and reconstruction of houses, temples, archaeological sites, and buildings must be carried out.

A disaster mitigation measure used in this study focused on the preparedness step. Police cadets played a role in educating people who lived in the mangrove forest area to have more understanding of disasters and to be able to prepare themselves, with a support from the police force and the province disaster relief team, when a disaster occurred. A proactive approach was used in the disaster management plan to prevent and reduce the impact of disasters, respond to disasters, and restore the affected area to its previous state. The disaster mitigation guidelines and activities were in line with the National Government Organisation Act, BE 2550 (2007), the Four-Year National Action Plan, the Budget Act, and the Budget Management Statute, BE 2548 (2005). At present, Bang Pu mangrove forest in Samut Prakan have shrunk to 700 rai or 1.12 square kilometres because of mangrove forest encroachment as a result of social and economic demands. This study was aware of importance of mangrove forests. Therefore, a tree planting activity to restore Bang Pu mangrove forest was organised in the hope that the forest would continue to bring a natural protection to the coastal communities. The activity was well attended by the police cadets, people

from the local community of Tambon Bang Pu, and local volunteers, together with government agencies, representatives from the private sector, and NGOs who work in the area and in other parts of Thailand. The participants willingly worked together to protect the remaining mangrove forest and restore the lost one.

Research findings

The police cadets attended a training programme run by professional trainers of disaster prevention and mitigation. After the training, the participants completed an evaluation on general knowledge, empowerment evaluation, and opinions on successful factors in managing disaster mitigation.

The findings show that 50 participants were female and 30 were male. Regarding the general knowledge of global warming, the participants were found having a very high level of knowledge with the highest score of 79 and a level of empowerment at 4.76 with standard deviation at 0.96. In particular, the participants believed that the preparedness step to prevent disasters was the most important element of natural disaster mitigation with a level of empowerment at 4.98 and standard deviation at 0.97. Regarding the opinions on successful factors in managing disaster mitigation, the participants believed that the government agencies, private sector, the society, and its citizens must have awareness in cooperative preparedness for natural disasters at the highest level of 4.97 with standard deviation at 1.01. Participants' satisfaction of the project was at the highest level of 4.99 with standard deviation at 0.19.

After taking part in the activities, the police cadets were found having awareness of global warming and importance of natural resources

conservation to prevent natural disasters. The participants showed their willingness and cooperation with local people in attending the tree planting activity which was organised to promote mangrove forest restoration in order to protect the shoreline erosion from waves and storm surges.

After the training, a handbook on preparation and support for victims of disasters was published. The handbook entails how to cooperate with other relevant agencies and steps of disaster relief and mitigation of disasters from global warming such as floods, droughts, wildfires, landslides, as earthquakes. Information from past disasters was gathered to use as case studies to prepare a disaster management plan in order to assist and support the victims of disasters in other areas.

The police cadets taking part in the project were able to raise awareness of people in the local area to have a better understanding in disaster prevention and mitigation and to put it forward as an urgent agenda. The project promoted volunteering and a positive contribution to the society as well as aiming to continually restore natural resources. The project also promoted social responsibility and determination to create a positive impact to the general public in areas other than their job duties. The activities also motivated volunteers to contribute their time, money and energy to offer a hands-on support to victims of natural disasters while the activities made the volunteers feel happy and proud in return.

In taking part in volunteering activities in Tambon Bang Pu, Samut Prakan, the police cadets had an opportunity to discuss and share ideas and opinions regarding disaster prevention and mitigation with people in the local area. The dialogue brought a positive relationship, solidarity, and friendship. The participants were determined to develop a body of

knowledge and continue to promote volunteering activities. They were also highly enthusiastic about being in action in the tree planting activity. The participants were fully aware of the important role in disaster mitigation and support for people in the local area.

The police cadets understood the importance of knowledge about disasters and how to be prepared for disasters and how to support victims of disasters with full capacity. They were also fully aware of the importance of disaster mitigation. A training to practice approach which was a proactive approach was used to equip students with practical knowledge before they graduate and work as a police officer in the field.

Suggestions

The horizon of voluntary contribution mechanism could be broadened. The programme should be based on developing knowledge, empowerment, awareness, and a positive attitude to the police cadets to be able to provide a hands-on support to the citizens in building a better understanding of disaster mitigation. Training and activities with the local people should be done more frequently and in a longer period. A long-term plan has to be discussed. Moreover, a training session of disaster prevention and mitigation should be available to people in the community and the wider community. This should also include knowledge of global warming and its effects such as floods, droughts, wildfires, landslides, and earthquakes.

If this study is to be further developed, more field visits should be included. The training sessions can also be developed as part of a module in the Royal Police Cadet Academy's curriculum in order to produce

graduates with a volunteer spirit who can distribute knowledge to the citizens to have a better understanding of disaster prevention, preparation, and support. Disaster prevention and mitigation can also be promoted through school activities or school clubs led by teachers. The activities should aim at promoting a volunteer spirit among students. The activities should also focus on teamwork which can be emphasised through taking part in various activities. It is hoped that students will develop positive characteristics of being generous, making a contribution to the community, sharing, having solidarity, and being diligent.

A relationship building activity between teachers and students is recommended. A volunteering activity can promote a good relationship and develop skills. Teachers with a volunteer spirit can be a role model for students. They can be a good influence on students to develop morals, ethics, social conscience, idealism, and social responsibility. It is also hoped that students will learn to be a giver, not just a receiver, and become selfless. There should be more volunteering activities in the recovery effort following natural disasters for the benefits of the communities.

Additionally, Buddhist doctrines such as Sangahavatthu four (generosity, kind speech, service offering, and consistent behaviour), the four paths of accomplishment (will, effort, dedication, and reasoning) and the four sublime states of mind (kindness, compassion, sympathy, and equanimity) can be embedded in the activities to improve students' behaviours. Integrated lessons between classroom learning and volunteering activities are recommended. Integrative learning will help students connect classroom knowledge and skills. They can apply skills and practices in various settings. They will learn to make appropriate judgement and have social

responsibility. By embedding volunteering in the curriculum, students will be able to develop leadership skills through practical experiences and to apply the knowledge in their future careers. Their skills and contributions will benefit the wider community in building a peaceful and safe society.

เอกสารอ้างอิง

ภาษาไทย

กระทรวงพัฒนาสังคมและความมั่นคงของมนุษย์.(2547). วาระแห่งชาติการให้และการอาสาช่วยเหลือสังคม. กรุงเทพฯ : สำนักงานคณะกรรมการส่งเสริมการจัดการสวัสดิการสังคมแห่งชาติ.

กองสาธารณสุขและสิ่งแวดล้อม เทศบาลตำบลบางปู. (2556). พื้นที่ป่าชายเลนตำบลบางปู อำเภอบางปู จังหวัดสมุทรปราการ. ศูนย์ศึกษาธรรมชาติ สถานตากอากาศบางปู กองอำนวยการสถานพักผ่อน กรมพลาธิการทหารบก ถนนสุขุมวิท ตำบลบางปู อำเภอเมืองสมุทรปราการ จังหวัดสมุทรปราการ.

ฉัตรวรัญ องคสิงห์. (2550). อาสาสมัครสาธารณสุข ; ศักยภาพและบทบาทในบริบทสังคมไทยที่เปลี่ยนแปลงไป. สถาบันวิจัยระบบสาธารณสุข.

ณัฐณิชากร ศรีบริบูรณ์.(2550). การพัฒนาโมเดลเชิงสาเหตุของจิตอาสาของนักเรียนมัธยมศึกษาตอนปลายในโรงเรียนสังกัดสำนักงานคณะกรรมการศึกษาขั้นพื้นฐาน. วิทยานิพนธ์ครุศาสตร์มหาบัณฑิต. บัณฑิตวิทยาลัย มหาวิทยาลัยมหาจุฬาลงกรณราชวิทยาลัย. หน้า 142-144.

พรพรหม พรรคพวก. (2550). ปัจจัยบางประการที่ส่งผลต่อจิตสาธารณะของนักเรียนช่วงชั้นที่ 4 ในสหวิทยาเขตกรุงเทพตะวันออก กรุงเทพมหานคร. ปริญญานิพนธ์ กศ.ม. (การวิจัยและสถิติทางการศึกษา). กรุงเทพฯ : บัณฑิตวิทยาลัย มหาวิทยาลัยศรีนครินทรวิโรฒ. หน้า 82.

พระราชบัญญัติป้องกันภัยฝ่ายพลเรือน.(2547). วัฏจักรการบริหารจัดการสาธารณภัย (Disaster Managemet Cycle). สำนักเลขาธิการป้องกันภัยฝ่ายพลเรือน. ง, หน้า 5.

ภูมิธรรม เวชยชัย และสุรัสวดี หุ่นพยนต์. (2521). ปัญหาการดำเนินงานของหน่วยงานอาสาสมัครในประเทศไทย. กรุงเทพฯ : สำนักงานบัณฑิตอาสาสมัครมหาวิทยาลัยธรรมศาสตร์.

พยัคฆ์น้อย. (2551). 5 ปี ปิดตำนานชายทะเลบางปู ร่องน้ำลึกทำป่าชายเลนหด. หนังสือพิมพ์เดลินิวส์ : คอลัมน์ มองรอบทิศ(มีนาคม), หน้า 10.

เยาวดี รางชัยกุล วิบูลย์ศรี. (2551). การประเมินโครงการ : แนวคิดและแนวปฏิบัติ. อ้างอิงจากรูปแบบการประเมินของ ราล์พ ดับบลิว ไทเลอร์(Ralph W. Tyler), (1930).,กรุงเทพฯ : สำนักพิมพ์แห่งจุฬาลงกรณมหาวิทยาลัย.

รัตนะ บัวสน. (2536). การประเมินผลโครงการ การวิจัยเชิงประเมิน. บริษัทคอมแพคท์พริ้นต์ จำกัด : กรุงเทพฯ.

รุ่งทิวา จันทรวิชิต. (2554). แรงจูงใจในการปฏิบัติงานของอาสาสมัครป้องกันภัยฝ่ายพลเรือน ของเทศบาลตำบลขุนทะเล อำเภอเมืองสุราษฎร์ธานี จังหวัดสุราษฎร์ธานี. หลักสูตรรัฐประศาสนศาสตรมหาบัณฑิต มหาวิทยาลัยสุโขทัยธรรมาธิราช.

วลัยรัตน์ ยิ่งดำนุ่น. (2554). การศึกษาผลสัมฤทธิ์ของโครงการจิตอาสา : กรณีศึกษานักเรียนชั้นมัธยมศึกษาตอนปลาย โรงเรียนบางมดวิทยา “สีสุกหวาดจวนอุปถัมภ์”. วิทยานิพนธ์หลักสูตรปริญญาพุทธศาสตรมหาบัณฑิต สาขาวิชาพระพุทธศาสนา บัณฑิตวิทยาลัย มหาวิทยาลัยมหาจุฬาลงกรณราชวิทยาลัย.

ศุภรัตน์ รัตนมุขย์. (2544). บัณฑิตอาสาสมัคร : ทางเลือกของการพัฒนาจิตสำนึกทางสังคม. วารสารคณะกรรมการแห่งชาติว่าด้วยการศึกษาฯ สหประชาชาติ (มกราคม-มีนาคม), หน้า 33-37.

สกุณา บัณฑุรัตน์, สุภาวดี อินนุพัฒน์ และอภิรัฐ คำวัง. (2550). รายงานการวิจัยเรื่องแนวคิด รูปแบบและวิธีการของการพัฒนาจิตสำนึกอาสาสมัครใน

มหาวิทยาลัยธรรมศาสตร์ : กรณีศึกษาการจัดกิจกรรมของสำนักบัณฑิตอาสาสมัคร. สำนักบัณฑิตศึกษา มหาวิทยาลัยธรรมศาสตร์.

สุโขทัยธรรมาธิราช, มหาวิทยาลัย. (2544). การจัดการบรรเทาสาธารณภัย, พิมพ์ครั้งที่ 1 กรุงเทพมหานคร : สำนักพิมพ์มหาวิทยาลัยสุโขทัยธรรมาธิราช.

เสถียร สีชื่น. (2556). จิตคำนึงถึงส่วนรวมร่วมกันของชุมชนป่าตรง. วิทยานิพนธ์ หลักสูตรศิลปศาสตรมหาบัณฑิต (การบริหารการพัฒนาสังคม) คณะพัฒนาสังคมและสิ่งแวดล้อม สถาบันบัณฑิตพัฒนบริหารศาสตร์ (นิด้า).

หน่วยวิจัยภัยพิบัติทางธรรมชาติ ภาควิชาวิศวกรรมโยธา คณะวิศวกรรมศาสตร์. มหาวิทลัยเชียงใหม่, (2555). คู่มือรับสถานการณ์น้ำท่วม, พิมพ์ครั้งที่ 2 (ฉบับปรับปรุง) เชียงใหม่ : วนิดาการพิมพ์.

อนุรักษ์ ปัญญานุวัฒน์.(2549). เอกสารประกอบการสอนระดับบัณฑิตศึกษา. เรื่องแนวคิดการประเมินโครงการ.มหาวิทยาลัยเชียงใหม่.

อธิกสิทธิ์ วิเศษกลิ่น. (2555). การศึกษาปัญหาและอุปสรรคในการดำเนินการป้องกันภัยแล้ง ในเขตพื้นที่ ตำบลบ้านวัง อำเภอโนนไทย จังหวัดนครราชสีมา. วิทยานิพนธ์หลักสูตรวิศวกรรมศาสตรมหาบัณฑิต การบริหารงานก่อสร้างและสาธารณูปโภค สาขาวิชาวิศวกรรมโยธา สำนักวิชาวิศวกรรมศาสตร์ มหาวิทยาลัยเทคโนโลยีสุรนารี.

<u>ภาษาอังกฤษ</u>

Alberts, Ellison Margaret. 1995. The Social Responsibility of the Vaal Triangle Technikon With Special Reference to Student Involvement (A frikaans Text, South A frica). Masters Abstracts International. 33 (June): 777.

Bryant, James Allen,. 2004. A Noble Discontent: The Experiences and Perceptionof Seven Pre-service Teachers in an Experimental Course Designed to Examine the Relationship Between Social Consciousness

and Education. Dissertation Abstracts International. 64 (February): 2831-A.

Carthon, Adrienne Coltte. 2007. Popular Culture and African-Americans' (Literary) Social Consciousness. Dissertation Abstracts International. 67(March): unpaged. Grune& Stratton.

Champagne, Louise Desmarais. 2007. Physical Education Teachers as Allies to Aboriginal Students: Dimensions of Social Consciousness. Masters Abstracts International. 45 (June): unpaged.

Corporate Social Responsibility Strategy 2010-2013". Metropolitan Police. Retrieved MPA November 2010, [Online] Available www.met.police.uk /about/documents/csr_strategy.pdf [9 Feb 2015]

Cooper, Jay Richardson. 2002. Social Responsibility and Types of Service Learning: A Comparison of Curricular Service. Dissertation Abstracts International. 63 (December): 2155-A.

Kraft, F.N. 1992. Nurturing Social Consciousness Through Church Education. Dissertation Abstracts International. 53 (November): 1465-A.

Marks, Helen Marie. 1994. The Effect of Participation in School-sponsored Community Service Programs on Student Attitudes Toward Social Responsibility. Dissertation Abstracts International. 55 (October): 926-A.

McElveen, Georgiary Bledsoe. 2007. My Hand, O God, I Offer Three : Religious Social consciousness and Cooperative Power in the Methopolitan St Louis Gospel Music Center, 1930-1963. Doctoral dissertation, Duke University.

McCarthy,and Corbin.2003. The Power of Service-Learning. Principal, January /February: 52 – 54

McGee, Christy D. 1994. Development of Social Responsibility and Student Ownership of the Educational Process: The Eighth Attribute Critical to Kentucky Education Reform Act Primary Program. Dissertation Abstracts International. 55 (August): 281-A.

West, Michael; Sanches, John J.; McNutt,Stephen R. “Periodically Triggered Seismicity at Mount Wrangell, Alaska, After the Sumatra Earthquake.” Science. Vol.308, No.5725,1144-1146. May 20,2005.