

## Recognizing Local People's Perceptions Towards Deforestation in Quezon Province, Philippines

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**Abstract:** This study examines the local people's perception on the issue of deforestation in Quezon province that led to an immense soil erosion last 2005. About 461 householders living near or far from the forest were surveyed. Results of the study showed that the forest is an important resource for the people. The local communities' perception on the use, condition, changes and problems emanating from the forest and their willingness to undertake conservation were found to be significantly different for those living near and far from the resource ( $p < 0.05$ ). The local communities' desire to manage the resource is dependent on how they value their resource.

**Key words:** Deforestation, perception, resource management, willingness, communities, Philippines

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### INTRODUCTION

Forests play important roles in the environment like furnishing us with the basic necessities, providing habitats for a variety of species, helping control and moderate climate and prevent soil erosion and flooding. Despite the benefits that is obtain from forest ecosystems, the clearing of forests and deforestation brought about by human activities have contributed to the continuous decline of the forests in the Philippines. Initially, it has been noted that the Philippine government classified about 15 million ha or 53% of the total land area as forestland however, only 5.70 million ha or 37% of the Philippines that are classified as forestland are actually forest covered (Sheeran, 2006).

Through the years, the Philippines lost a hundred thousands of hectares of forest per year (Lasco, 1998). A number of reasons have been identified to be the underlying cause of the dwindling of the country's forest restheces. Poverty and population pressures have been recognized as the determinants of deforestation.

A study by Dove (1993) has indicated that poverty draws people to exploit the products of the tropical forest, clearing and exploiting it for immediate gains. Studies by Dolisca *et al.* (2007b) and Ehrhardt-Martinez (1998) have presented that the pressures brought about by the

demand for land tenure and the growing population size are some of the identified causal factors of deforestation. According to Geist and Lambin (2002), the demographic, economic and technological policy and institutional and cultural factors all contribute to the underlying driving forces of deforestation. In the Philippines, logging and the demand for agricultural lands through the conversion of forestlands to agriculture have posed the most immediate menace affecting the Philippine forests (Sheeran, 2006).

From different periods across different countries, deforestation remains to be a problem that has received growing attention from the media, the environmentalists, the policy makers and the general public. Deforestation has always been recognized to be fueled by continuous urbanization and rapid population growth. The effects brought about by deforestation have intensely affected the quality of life of those people who continuously depend on these resources and those communities that dwell near these resources.

Conflicting goals of the resources use have made the implementation of most policy choices difficult. Many approaches have been taken to preserve these forest resources. However, there is now a growing need to include the public in the government's decision-making processes, particularly in the protection of the country's forest resources. The incorporation of the perspectives of

the communities on the resources is important as this enables the public to have a sense of ownership and responsibility on the resources involved so that in the long run they would immensely be involved in the management of the resources. Public perceptions and acceptance of the people are recognized to be the main factors for the success of the projects that are geared towards the sustainable management of the environment. It has been recognized that early public involvement is crucial to the success of the projects (Studsrod and Wegge, 1995; Sia Su and Cervantes, 2008). The need to be aware of this issue is necessary as it provides the general public the opportunity to be engaged and to provide the local government a better understanding on the public's view on the issue. This study aims to look into the local people's perceptions towards the forest resources and deforestation, particularly among those communities residing near and far from the resources.

This study likewise aims to determine whether differences in perceptions towards the forest resources and deforestation exist among those living near and far from the resources. Community empowerment is the key to public involvement process. The public needs to be empowered so that they may make an informed choice about their options and be enthused to take part towards the sustainable management of the environment. Although, the process may be time consuming, this research provides an opportunity to inform the public about the resources and the problems associated with the resources.

## **MATERIALS AND METHODS**

The Quezon province was chosen as the study area. The study area is known as one of the largest provinces in the Philippines which is situated at the southeast portion of Metro Manila and is bordered by Aurora, Bulacan, Batangas, Camarines, Laguna and Rizal. Lucban, a town in Quezon province was identified to represent the community living near the forest whereas the other areas of Quezon province that are far from the forest were chosen as the control. A total of 200 households from the community near the forest and 261 households from the community far from the forest were randomly selected by rolling identical pieces of paper with the name of each community and then drawing the names after the pieces of paper were thoroughly mixed. The sampling interval used in this study was the number 4 as determined by drawing a random number between 1 and 10. The interviewers were instructed to select at random one household from the first 4 households and to interview

every 4th household thereafter. A total of 461 households living in the communities near and far from the forest were interviewed for the survey. The structured interview schedule given was divided into two sections. The first section contained the items on the demographic characteristics to get a social profile of the respondents and the second contained questions on the perception and attitudes towards the forest resources, the problem of deforestation and the management of the forests in the province. Pre-testing of the interview schedule was done prior to the actual conduct of the survey. Significant differences in both the communities near and far from the forest resources were determined using the Wilcoxon-Mann-Whitney U-test. Differences between the two communities were significant at  $p < 0.05$ .

The null hypothesis for the test indicated no significant difference in the parameters analyzed between the communities near and far from the resources whereas the alternate hypothesis presented a significant difference in the parameters between the communities near and far from the resources. All statistical analyses were performed using the Statistical Package for Social Sciences software.

## **RESULTS**

A total of 461 (100%) householders living near and far from the forest in Quezon province were interviewed. Most of the householders interviewed were women (59%; men, 41%). The age range of the respondents was from 10-81 years. The mean ( $\pm$ SD) age of the respondents living near the forest in Quezon province was 38 ( $\pm$ 16) years. The mean ( $\pm$ SD) age of the respondents living far from the forest was 33 ( $\pm$ 16) years. About 51% of the householders interviewed were married. A number of respondents (34%) indicated that they were single. Most of the householders (48%) finished high school. About 23% of the householders finished elementary school and 20% finished college.

Only 9% of the householders finished vocational schooling. Most of the householders interviewed stated that they currently have no work (49%) whereas 21% indicated that they are working as laborers. A number of respondents (40%) have monthly incomes ranging from PhP1000-6000 (\$1 = PhP 44; a minimum of \$22.73 and a maximum of \$136.36). Most of the respondents have no monthly income (49%). Respondents included in the study have stayed in their place of residence for  $21.7 \pm 16.8$  years (mean $\pm$ SD). The survey indicated that majority of the local community (99.8%) perceived that the forest is important as it provides their daily needs (9%) whereas 7% stated that the forest provides clean air, 6% stated that it gives better climate, 4% stated that the forest

protects the soil and water systems and 1% stated that it serves as habitats to both plants and animals. Majority (73%) perceived that the forest is important as it provides numerous essential benefits including the maintenance of the life support systems.

The local communities living near and far from the forest recognized that the trees in the forest play an important role in the structure and function of the ecosystem's integrity. Majority (78%) believed that the trees in the forest play an important role in the prevention of flood and land erosion are their source of basic necessities, medicine, livelihood opportunities and serve as habitats for several species. However, with the numerous benefits, the local communities themselves recognized that the condition of the forest has continuously deteriorated.

About 25% of the local communities recognized that the forest is in good condition but 58% signified that the forest is in a bad condition and if people do not act fast these resources may worsen in the future. Respondents were asked if there were changes in the forest since the 2005 landslide that occurred and about 52.5% stated that there were improvements since the 2005 landslide in their area. The respondents signified that people have become conscious of their environment, particularly their forests and are working together to bring about changes to improve the condition of their forests and their environment in general. However, 46.7% of respondents still insisted that since the last landslide there were no sufficient changes that will improve the condition of their forests and their environment.

The respondents (21%) regard that the lack of awareness of the people due to weak public information about the forest issues affecting their area is important evidence on why not enough changes have occurred since the 2005 landslide in their province. Respondents likewise recognized that the problem on deforestation still emanates because of the continuous losses brought about by illegal logging (18%), excessive farming and conversion of forests to agricultural lands (17.6%) and conversion of forests to urban settlements (10%).

Majority of respondents (85%) indicated that the tragedy last 2005 in their province which brought about numerous devastations to property and lives has been attributable to the denudation of the forests due to the continuous illegal logging of trees.

Only 5% of respondents indicated that the tragedy was due to the conversion of the forestlands to industrial developments and 4% indicated that it was due to the conversion of forestlands to urban settlements. About 6% of respondents perceived that the tragedy in 2005 that led to the immense soil erosion resulting to the landslide in

Quezon province was due to all these reasons. Respondents were hesitant of the possible things that may occur aside from the landslides. They perceived that the continuous degradation of the forests would bring harm to the welfare of the general populace and to the integrity of the environment.

Most of respondents (48%) perceived that if there are no concerted efforts towards the rehabilitation and management of their forests, it is most likely that another landslide and flooding will occur in the future. About 18% stated that the degradation of the forests would result to the displacement of both plants and animals as habitats are lost. A number (14%) of respondents stated that these losses will bring about changes to the climate. About 12% of respondents stated that several effects may happen that may continuously affect the people and resources dependent on this ecosystem.

The respondents were asked if they were willing to help in managing the forest resources and majority (95.9%) indicated that they were willing to help. Among those who signified their intention to help the forest restore, most of them (52%) stated that in their own ways, they can help in the reforestation activities of the government or they can participate in tree planting activities within their neighborhoods. About 13% stated that there is a need to create and properly implement laws or ordinances that will safeguard the forests and their inhabitants.

A number (10.4%) of respondents stated that there is a need to create environmental organizations that can provide technical assistance to the local community and provide training to local conservation professionals who will manage the forest reserve. About 7% stated that there is a need for the community to encourage the local government to establish nurseries and reserves which will help alleviate the current condition of their forests.

Although, most of the respondents signified their willingness to participate in the management of the forest reserves, about 90% stated that they want the local government to be responsible for the continuous enhancement and conservation programs of their forests. The rest of the respondents (10%) signified that the conservation programs to be implemented in their area would be better if private organizations would take the responsibility of managing the said resources. Majority of the respondents believed that the best way that the local government could manage the forest resources is to properly enforce the existing laws and ordinances.

The Wilcoxon-Mann-Whitney U-test (Table 1) shows the location grouping variable that those living near the forest had significantly different perceptions to those living far from the forest in terms of getting their resources, condition of the forest, changes occurring in

Table 1: Local communities perceptions towards deforestation in the Quezon province, Philippines

Perceptions	Mann-Whitney (U)	Wilcoxon (W)	p-value
Importance of the forest	26000.0	60191.0	0.381
Trees are beneficial to humans	25939.0	46039.0	0.415
Forests provide the daily subsistence needs	23690.0	43790.0	0.021*
Forests current condition	14445.0	34545.0	0.000*
Forest has changed	17385.0	37485.0	0.000*
Problems in the forested area	198295.0	39929.5	0.000*
Deforestation brings harm to the community	25618.0	45718.0	0.236
Willingness to help to safeguard the forest	25721.5	45821.5	0.438
Willing to undertake conservation efforts	22819.0	42919.0	0.000*

\*p<0.05 is significant

the forest, deforestation bringing problems to the community and the need to undertake conservation programs in a deforested area ( $p<0.05$ ).

## DISCUSSION

This study was cross-sectional in nature and its scope was limited to householders living near and far from the forest in Quezon province. Only community householders living in the Quezon province area of the Philippines were included in the study. The findings of the study showed that most of the householders recognized the importance of the forest and noted that the trees in the forest are beneficial to all as they mainly provide for the day to day subsistence. Results of the study showed that a number of householders perceived the forest to be deteriorating in condition but respondents perceived that the forest has changed for the better since the 2005 tragedy.

The respondents have recognized that even with the changes being undertaken, the forest continues to encounter problems. Results of the study showed that the perception of the householders is shaped by their experiences with the resource in concern. Householders surveyed in the study showed varied perceptions towards the forest resources's condition and if the forest has changed from its state since the last 2005 tragedy. It is likely that the perceptions of the respondents vary due to the fact that the perceptions are influenced by the individual differences (Cai *et al.*, 2009).

Results of the study also showed that majority of the respondents were willing to help out to continually safeguard the forests but only a number of them indicated that they were willing to undertake conservation efforts. There is likely no doubt that the local community whether living near or far from the forest resources was willing to be involved in managing the resources but does not look at conservation as the only resort to safeguard the forest. In a study by Pollnac, it is discussed that how people want their resource managed is mainly based on how they value the resources.

A previous research (Dolisca *et al.*, 2007a) indicated that respondents who tend to value the resources more

because they primarily depend on the resources, believe more on forest conservation efforts as compared with those who are not completely dependent on the resources.

## CONCLUSION

This study showed that the local community recognizes that the forest is an important resources. Results of the study showed that the forest plays an important role in the lives of the local communities as they mainly obtain numerous benefits either as direct or indirect benefits. However, local communities recognize that there are several issues that continue to pose as serious threats to the current condition of the forest resources in the province. With the existing threats emanating, local communities still have a positive perception on the changes that are occurring in their forests. Respondents perceived that there is a need to manage their resources to avoid the possible deterioration of its condition. This study acknowledges that the perceptions of the local communities are shaped by their attitudes, experiences and how they value the resources.

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