ENVIRONMENTAL AND SOCIOECONOMIC IMPACTS OF UGONG ROCK ADVENTURES, BARANGAY TAGABINET, PUERTO PRINCESA CITY

Ronald Edilberto A. Ona*, Agustin R. Miraflores, Jr., Maria Rosario Aynon A. Gonzales

Palawan State University, Puerto Princesa, Philippines

ABSTRACT

This study covers a qualitative appraisal of the environmental and socioeconomic impacts of Ugong Rock Adventure (URA) to the community and tourism site using household and key informant interviews; focus group discussions; reconnaissance survey and case history. Using a Before and After Scenario, community perception regarding environmental and socioeconomic impacts of URA was determined. Socioeconomic profiles of Barangay Tagabinet respondents and URA visitors were also compiled and analyzed to better understand the success and impact to the community and the people. Results showed that community members perceived a much improved socioeconomic status during and after URA operations compared with their earlier life before URA. In terms of environmental impacts, results showed a general perception of improvement in environmental quality during and after operations of URA compared with earlier conditions before the URA's operations.

Keywords: Ugong Rock Adventures; environmental and socioeconomic impacts

1. INTRODUCTION

Due to the increasing need to rebuild, enhance, and utilize the natural and cultural resource base of the country, the capacity of local people needs to be strengthened and redirected, particularly in the aspect of ecotourism development. This can be done by closely examining the community capacity and potentials. "Community Based Sustainable Tourism (CBST) is a form of sustainable tourism within a given natural and/or cultural area where community participation, conservation and management of biodiversity, respect for culture and indigenous knowledge systems and practices, environmental education and ethics, as well as economic benefits are fostered and pursued for the enrichment of host communities and satisfaction of visitors" (First National Ecotourism Congress, 1999).

The Ugong Rock Adventures (URA) CBST project is located in Barangay Tagabinet, Puerto Princesa City, about 65 kilometers northwest of the city center (Figure 1). The barangay has a land area of 3,602.5 hectares (ha) or about 1.41% of the total land area of the city. The land forms are built up of 315.7 ha with a flat terrain (0 – 3%), 222.3 ha with gentle terrain (3 – 8%), 436.1 ha on a moderate terrain (8 – 18%), 786.2 ha on rugged (18

– 36%) terrain, and the steep and broken terrain comprise 555 ha. The residential area is 44.51 ha while the area intended for agriculture is 317.25 ha. The barangay also hosts about 12 ha of mangrove forests. Portions of the Babuyan watershed, the largest watershed in the city, form part of the barangay's terrestrial forests. The potable water in the study area is supplied by two units of level I water facilities (Socio Economic and Physical Profile of Puerto Princesa City, 2007).

The project's relative success was rather surprising considering the experimental nature of the project and its unfamiliar location compared to the established and world-class

ecotourism sites in Palawan namely the Puerto Princesa Underground River (PPUR) and the Tubbataha Reef Natural Marine Park (TRNMP). At present, URA serves as an alternative and/or complimentary ecotourism site to the Puerto Princesa Underground River (PPUR).

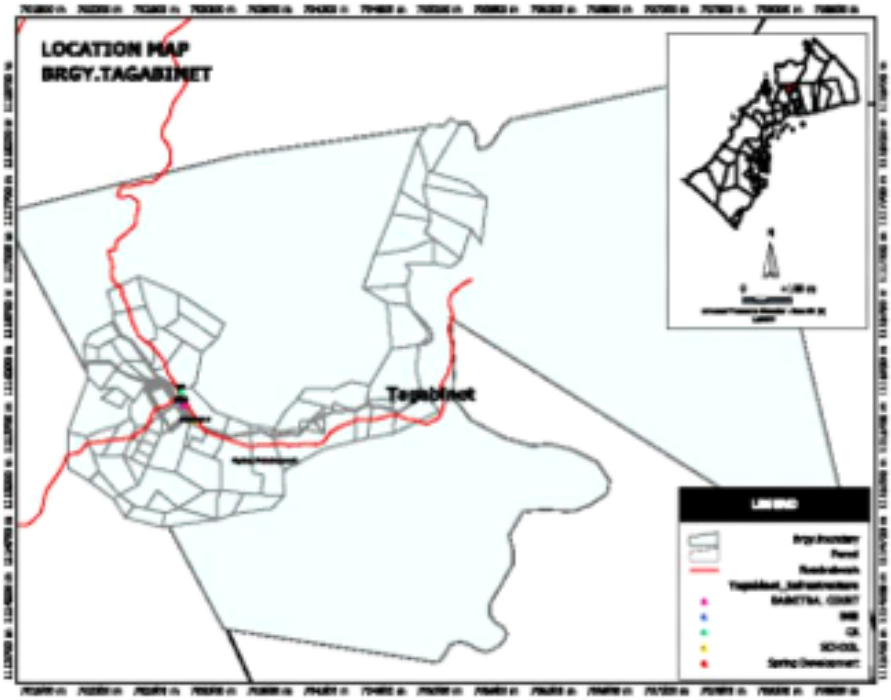

Figure 1. Map of Barangay Tagabinet, Puerto Princesa City
Source: City Planning Office of Puerto Princesa, 2012

To replicate the success of this CBST project in other areas of Palawan, there is a need to closely examine and document the different processes and events starting from project conceptualization up to its present operational status. However, the lack of documents and records regarding the URA project hampers the development of socioeconomic models and development of conceptual frameworks for a similar CBST project. Such models will enable economists, ecotourism experts, environmentalists, and other concerned sectors to come up with an empirically-validated methodology that can be used by local communities and local government units (LGUs) in developing ecotourism products from identified potential ecotourism sites. While URA is now self-sustaining and has high potential for commercial development, there is scant information, especially documentary records available on the processes and events that led to its establishment and eventual operation. This socioeconomic and environmental impact case study on URA hopes to provide a record of the events that this CBST project has achieved in the short span of time that it has been operating.

2. CONCEPTUAL FRAMEWORK

In assessing the environmental and socio-economic impacts of URA ecotourism site, the Before and After Study framework was used (Figure 2). The socioeconomic and environmental conditions of the study before the URA operations were gathered and analyzed and were compared to the status during the operations of URA CBST project.

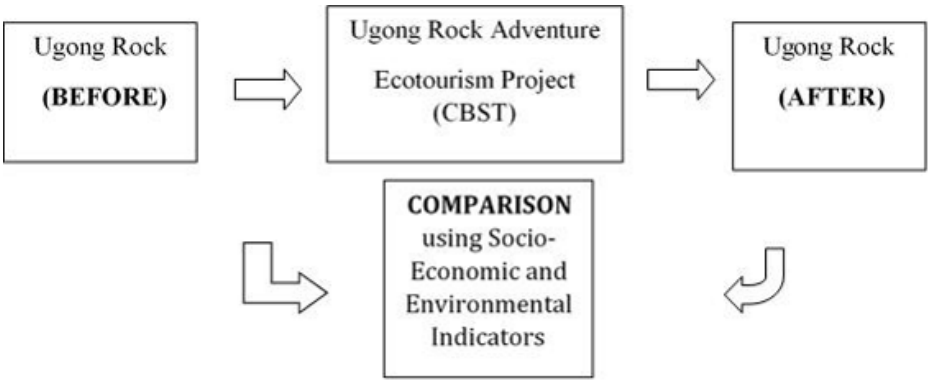

Figure 2. Before and After Study Method to measure the Value of the Socio-Economic Costs of Mining, Source: Bayan Academy, 2013

3. MATERIALS AND METHOD

In order to assess the environmental and socioeconomic impact of the Ugong Rock Adventure CBST to the Tagabinet Ugong Rock Service Cooperative (TURSCO) members and local community of Barangay Tagabinet, a before and after study was conducted using community perception survey along with an in-depth case history of TURSCO. Secondary data was used to establish baseline information as well as to determine data gaps. Primary data collection methods used include Focus Group Discussion (FGD), Household Interviews (HHI) and Key Informant Interviews (KII).

A total of 22 member beneficiaries and 24 non-member beneficiaries were randomly selected as household respondents while seven respondents were selected as key informants. Meanwhile, members of the URA board were selected for the FGDs. The key informants were project officers/board members of URA, barangay officials, city tourism officials, and selected stakeholders who were non-beneficiaries but with businesses that benefit from the project. In addition, visitor survey was also conducted. Secondary reference materials were used to supplement the HHI and KII results. FGDs were done to validate the results of the survey.

A stakeholders validation was done on April 05, 2014 at Ugong Rock Adventures to validate initial findings and analysis as well as to gather comments and suggestions from the stakeholders regarding the initial report. Validated results were included in the final report.

4. RESULTS AND DISCUSSION

4.1 Community Socioeconomic Status Before URA

Prior to the operation of URA, the people in the study area largely depended on the environment for their means of living. More than half (47. 8%) of the sampled households derived their primary income from slash and burn farming or kaingin. About 10.1% earned a living from owning a sari-sari store while an equal percentage earned income through employment. Respondents who made a living by means of acquired trade skills such as tailors, construction workers, laundrywomen, nipa shingle weavers, and blacksmiths came in least numbers. Majority (60.9%) of the respondents claimed that their annual household income was less than PhP 45, 000 and only four households earned more than PhP 156, 000

in a year. The highest annual income reported was at PhP 264,000 while the least was only PhP 8,000. The mean annual income of the household members is PhP 57,756.52 and the median is PhP 34,200. This implies that more than half of the sampled households earned less than PhP 2,850 a month. The sample households were asked to classify their family's economic status as to being below poverty level or within/above the poverty threshold before the operations of URA. Before the operations of URA, exactly 50% of the sampled household respondents rated their households at poverty threshold, nearly half (47.8%) rated their households at below poverty threshold, and only 2.2% considered themselves to be above poverty threshold.

In terms of housing, residential houses in the study area before the operations of URA have roofs that are mostly made of light to strong materials (i.e nipa and/or galvanized iron [GI] sheet), bamboo or wood/shutter windows; floors made of dirt, wood, cement, or bamboo; and sawali, wood, or concrete walls. Since most houses use a combination of strong and light materials, they can be described as semi-permanent. Using a progressive ranking system where scores are given for materials used (temporary to light to strong) with 1 as lowest and 3 as highest which are then aggregated as an indicator of material style of life. The results show that most (71.7%) households have a low material style of life. Ownership to their residential dwelling units and the lots where dwelling units stood were likewise taken into consideration. It is indicated that before the operation of URA, 56.5% of the respondents owned their houses and 52.2% owned their residential lots. These data increased significantly to 82.6% for residential houses and 71.7% for residential lots during the operation of URA. This implies that the respondents recognize the value of having their own shelter/land and consider it as a worthy investment. It further suggests that URA has financially enabled beneficiaries of the project to afford house and land ownership.

4.2 Community Socioeconomic Status After URA

The livelihood occupations of the sampled household respondents during the operation of URA were also taken into account. About a third (26 or 30.6%) of the respondents identified their employment in URA as their households' primary occupation. Three respondents who are non-members of TURSCO reported their part-time employment in URA as their secondary source of income. This confirms that there are a number of non-members who also work at the URA on a part-time basis, particularly during peak season for guest arrivals. About 11.7% of respondents who happen to be non-members still identified kaingin farming as their source of livelihood. However, many of those who used to engage in kaingin farming prior to the operation of URA shifted to banana/coconut/vegetable farming, lowland rice farming, and livestock raising as their secondary source of income.

During the operations of URA, the sampled households incurred an average increment of 129.8% or PhP 3,603,920 compared to their incomes prior to the operation of URA. Almost three-fourths (73.9%) of households surveyed reported an increase in their annual household income, a fifth (21.7%) indicated that it remained the same, and 4.4% reported a decrease. Although the least earned income of households during the operations of URA remained the same when compared to its income before the resort operated, the highest income of the surveyed household rose from PhP 264,000 (before the operation of URA) to PhP 832,800 (during the current state of operations of URA). The levels of income accordingly increased as a result of increased earnings as compared to their incomes before the operations of URA. There are about 65.2% of the sampled households that earn not more than PhP 123,999 while 21.7% earn at least PhP 124,000 during the current state of operations of the resort and the rest of the household respondents earn not less than PhP

242,000 annually. Comparatively, the mean of income of the current state of operations of URA is 132.84% greater prior to the operation of the resort. In addition, the median of incomes now is PhP 144,000 which indicates that more than half of the households earn greater incomes than the mean income. By and large, the economic status of the respondents during the current state of operations of URA improved. Results indicate that there is a 6.5% increase among respondents who consider their economic status at above poverty threshold. Some 69.6% of the respondents also reported their economic status at poverty threshold after URA began to operate compared to the 50% who said they had the same economic status before URA operated. There were also fewer respondents (21.7%) who claimed to be below poverty threshold during the current state of operation of URA.

Dwelling units of the respondents during the URA operations improved in terms of the materials used before the operations of URA. Half of the respondents now live in their houses made from the combination of light and strong materials while the rest have houses made of strong materials except for one respondent who lived in a shanty. The improvement can be attributed to the benefits URA provides to the community. Aggregate scores for sampled households' material style of life during the operations of URA also improved if compared with figures before the operations of URA as shown in the increase of households with high (37%) and very high (37%) material styles of life (Figure 18) and in the decrease of households with low (50%) and very low (2.2%) material style of life. This indicates that the households were able to afford improvements in terms of the materials used for the construction/repairs of their houses during the operations of URA.

4.3 Community Perception of Environmental Status of URA Site

Four major habitats were assessed, namely: mangrove forests, rivers, springs, and forest ecosystems. The selected habitats were evaluated in terms of its physical condition. Using a 5-point scoring scale, the physical condition of the mangrove forests was perceived to have improved from 3.93 to 4.28. This suggests that lesser pressure is imposed by the people to the ecosystem. This further indicates that mangrove cutting or harvesting which has been identified as one of the means of livelihood before has been lessened. Mangrove timber is used as fuel for cooking, house material, and charcoal.

In general, rivers were perceived to have improved in physical condition. Among the four habitats evaluated, it showed the most improvement from 4.05 to 4.44. It is the main source of irrigation water in the community. It likewise provides freshwater fishes. The main threat to this ecosystem is tree cutting and/or logging which was observed before the introduction of URA. Solid waste was also mentioned as a threat to the physical condition of the rivers. Few (8.7%) respondents reported mining or aggregates quarrying as another threat to the rivers.

Springs which provide the potable water for the barangay folks are perceived to have no significant change in physical condition. This means that the water production from underground sources did not vary compared to its condition before the URA.

The terrestrial forests of the study area form part of the Babuyan River watershed. Data revealed that forests at the higher elevations remained intact. However, lower levels are already secondary forests planted with Albizzia (A. falcate), Mahogany (Swietenea macrophylla), rubber trees, cashew (Anacardium occidentale), jackfruit, guyabano, and banana. The respondents rated the forests to have no substantial change between the two time frames and with a perceived condition of good (4.28 -4.39). Again, the most cited

threat of the terrestrial forests is tree cutting and/or logging. This suggests that cooking fuel/charcoal is mainly sourced from planted trees. The plant species and its perceived population were also determined. KIIs and HHIs reveal the following to be present in the study area. The respondents were asked to compare the population of the wild plants found within the Barangay. Around 4 for every 10 individuals believed that there are more wild plants now compared to the situation before the operations of URA while 1 out of every 10 respondents claimed that the floral population remained the same.

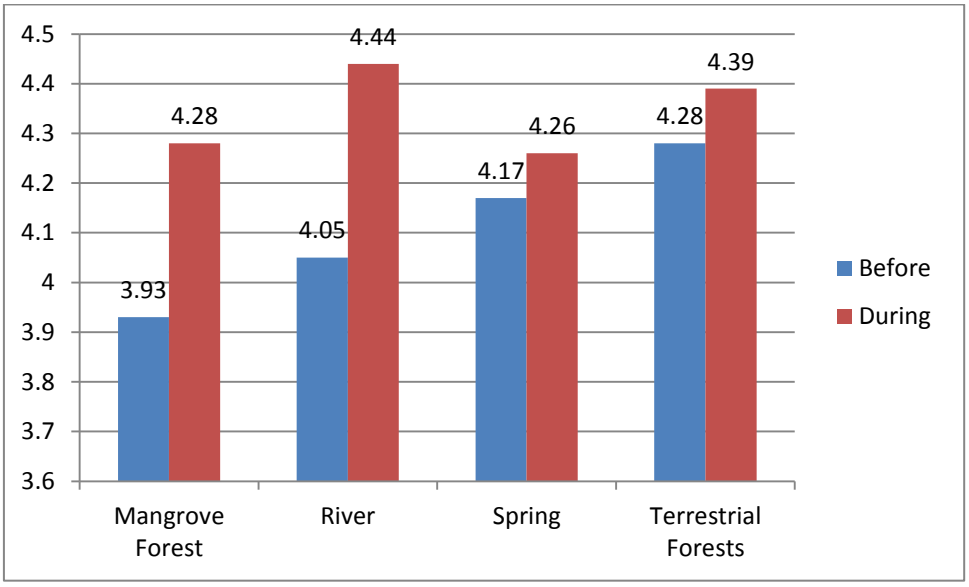

Figure 3: Perceived Conditions of Selected Habitats Before and During the Current State of Operations of URA, Barangay Tagabinet, Puerto Princesa City, January 2014; Perceived condition of habitats were scored: 1 = very bad; 2 = bad; 3 = neither good nor bad; 4 = good; 5 = very good

Using a 5-point scoring scale, the physical condition of the mangrove forests was perceived to have improved from 3.93 to 4.28. This suggests that lesser pressure is imposed by the people to the ecosystem. This further indicates that mangrove cutting or harvesting which has been identified as one of the means of livelihood before has been lessened. Mangrove timber is used as fuel for cooking, house material, and charcoal.

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The Socio Economic and Physical Profile 2007 Report of the City of Puerto Princesa states that the City is home to 135 species within 63 families and 19 orders. Avian species are the most diverse with 94 species followed by mammals which account to 23 species, amphibians' recorded 11 species while reptiles have 7 species. On the observed or perceived wild animals during the operations of URA, the respondents answered that there are no substantial changes in the species composition. However, the population (number) was affected by human activity (Table 1).

Table 1: Comparative populations of wild animals found in the study area before and during the URA Operations, Barangay Tagabinet, Puerto Princesa City ,January 2014, n=46

Perceived Population Status	Frequency	%
Greater before the operations of URA	23	50.0
Greater during the operations of URA	12	26.1
No change	5	10.9
Don't Know/Missing Information	6	13
Total	46	100

In terms of community perception on the potential changes in key environmental quality indicators brought about by URA, a 5-point scoring scale was adapted. The scoring scale: 5 = much better; 4 = better; 3 = neither better nor worse; 2 = worse; and, 1 = much worse. In general, results show that all key environmental elements (sea, rivers, potable water, soil, and air) were not adversely affected by the operations of URA and have in fact, improved if not the same as before (Figure 4).

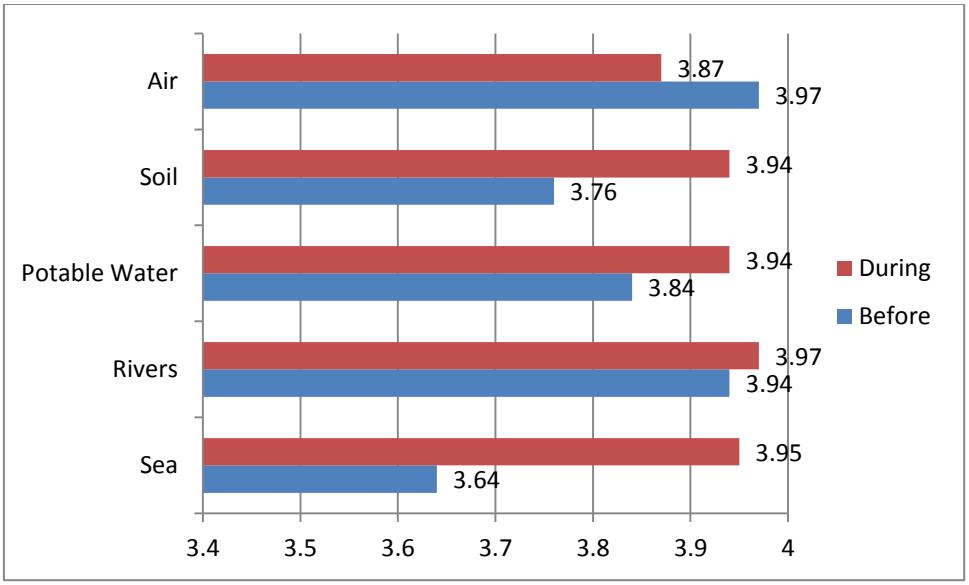

Figure 4. Perceived Changes in the Key Elements of the Environment of the Respondents, Tagabinet, Puerto Princesa City, January 2014, n=46

5. CONCLUSION

Based on results of this study, it can be concluded that the perceived socioeconomic status of community members generally improved and most members attributed the improved socioeconomic status to the benefits they received as members of the TURSCO, the cooperative in charge of Ugong Rock Adventures. In terms of environmental impacts to Ugong Rock site and its adjacent area, impact of URA operations were perceived as positive. While not explicitly stated by the community, the study revealed that the reduction of livelihood-related activities which are considered highly extractive and destructive contributed significantly to the perceived improvement in environmental conditions of Ugong Rock and vicinity.

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