

Mining or Tourism: The Development Preference of Settlers Along Pagatban River in Negros Oriental, Philippines

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ABSTRACT

This paper examines the development preference of settlers surveyed along the upstream, midstream, and downstream sections of Pagatban River in Negros Oriental in central Philippines. The majority of 120 respondents, equally distributed along the three sections of the river, are against the restoration of mining but are in favor of tourism development considering the ecological costs and economic benefits they have to bear with and enjoy, respectively. Specifically, the data show that the number of respondents who do not prefer the restoration of mining is highest among downstream households while the number of those who do not prefer tourism development is highest among upstream households. The midstream respondents generally prefer both development projects. The chi-square test proves significant differences in the development preferences of respondents across settlements along the river. There are also significant differences in tourism preference according to the sex of the respondents, and in mining preference according to farm access, and monthly income of their households. The significant differences in household farm access and income relative to their locations further explain why economic and geographic variations result in divided preference for mining. Given that tourism development is preferred over restoration of mining, how the former's benefits can be enjoyed across settlements should be looked into and planned with genuine community participation.

Keywords: Development preference, human settlements, tourism development, restoration of mining, Pagatban River, Negros Oriental, Philippines

Mining is considered a major development option of the Philippine government despite the poor state of most past and current mining sites in the country. This development option was already evident even during the incumbency of President Fidel V. Ramos with the passage of Republic Act 7942 or the Mining Act of 1995 which favors the utilization of the country's mineral resources to achieve economic growth (see Lusterio-Rico & Layador, 2009; Republic of the Philippines, 1995; Wetzlmaier, 2012). Amidst the call for the total ban on mining, the administration of former President Gloria Macapagal-Arroyo likewise pursued the Mining Act of 1995 but promoted responsible mining in order to appease environmental activists. The administration of President Benigno Aquino III at present also sees the same development value of the mining industry but calls for a full and strict implementation of environmental standards in mining activities as stated in Section 2 of Executive Order 79 (Republic of the Philippines, 2012).

In Negros Oriental, a copper mining company called the Construction and Development Corporation in the Philippines (CDCP) situated in Maglinao, Basay started its operations in 1979 but was closed down in 1983 allegedly due to financial problems (Vigar, Motton, & Taylor, 2011). This particular mining site clearly illustrates the positive and negative features of the industry. The company had brought instant economic gains to Basay and its neighboring city, Bayawan, but also had left serious negative environmental impacts, specifically to Pagatban River situated near the mining site. Pagatban River serves as the natural boundary of Basay and Bayawan.

Anecdotal reports of elderly settlers and former mine workers revealed that mine tailings and other waste materials had been formed and hardened like a thick muddy substrate on the riverbed especially between the midstream and downstream sections. Experts also noted that the past drastic changes in the biophysical and chemical composition of the river brought about by the mining operation destroyed all living creatures including the Philippine crocodile (*Crocodylus mindorensis*) which was no longer sighted after 1999 (Bucol, Carumbana, & Averia, 2011; van Weerd, 2010).

Water pollution in Pagatban River was evident. The presence of high levels of heavy metals at the height of mining and even after it ended had affected the health and productivity of nearby coral reefs and mangrove communities (Lowrie et al., 1981, cited in Alcala, n.d.). Moreover, the Insular Lumber Company (ILCO), which also operated until 1979 in the same mountain range where the CDCP mine was located, had earlier contributed to the deterioration of Pagatban River due to

the deforestation in its upstream section and the subsequent soil erosion that contributed to the siltation of the midstream and downstream sections (ARCBC, n.d.). Although the recent study of Guino-o, Alcala, and Basa (2011) have confirmed the improving water quality of the river after two decades, the problems brought by soil erosion, flooding, and pollution are still felt by various settlers along the riverbanks, specifically those located in the areas previously used as mining sites. However, more serious potential environmental threats may emerge due to existing applications to restore mining in Maglinao, as well as the ongoing small mining activities in the same areas.

This circumstance raises a relevant research question on how the local people react to the impending restoration of mining given their past experiences with CDCP, the present quality of Pagatban River, and the economic or livelihood opportunities available to them. Considering also the growing popularity of nature tourism sites in Basay and Bayawan, what do the local people really prefer? Are they really for the development project that is ecologically appropriate and economically sustainable?

Although no tourism establishments are found along Pagatban River itself, those operating in nearby coastal barangays or along the national highway served as references for doing comparisons with mining operations. The local people are already aware of the positive and negative consequences of mining, and they are likewise familiar with what tourism infrastructure and activities mean. There are also promotional efforts from the local governments of Basay and Bayawan to invest in tourism for community development as provided by Republic Act No. 9593 or the Tourism Act of 2009 (Republic of the Philippines, 2009).

With the current state of mining and tourism in and out of the research community, it is hypothesized that significant differences exist in the development preference of respondents from households located in different sections of the river. Because of their proximity to the mining sites, the upstream respondents are hypothesized to prefer the restoration of mining in contrast to the midstream and downstream respondents who prefer the development of tourism. The sex of the respondents, migration history, access to farmlands, and household income are likewise hypothesized to differentiate their development preferences. Thus, this paper intends to show that the geographic variations of households expose them to different economic opportunities and threats which finally determine their development preferences.

THEORETICAL CONSIDERATIONS

Mining and nature tourism are perceived as opposites and are not generally favored to operate in the same place. Although there are mining and nature tourism destinations that are located close to each other, the two industries usually perform better economically when they operate geographically apart (Huang, Zhou, & Ali, 2011). They are similarly perceived to be controversial and are resisted by environmental activists, conservation scientists, and critical anthropologists because of their features that are drastic not only to the environment but also to the indigenous people and their culture (Bloodworth, Scott, & McEvoy, 2009; Lusterio-Rico & Layador, 2009; Vargas-Sánchez, Porrás-Bueno, & de los Ángeles Plaza-Mejía, 2011; Wetzlmaier, 2012). The animosity of ordinary people toward either industry must have been influenced by the negative images being projected in newspapers, television, and other forms of mass media.

There is no question about the potential of the mining industry to generate significant economic benefits. What really matters is its capability to minimize its negative impacts while seriously contributing to the development of its host communities in a more sustainable manner (Ivanova & Rolfe, 2011). This expectation requires some balancing acts on the part of mining managers because the solutions may be easy to conceptualize but difficult to implement due to the complexity of the public involved and affected by the mining industry (Craynon, Sarver, & Robertson, 2013). This public refers to individuals or groups differentiated by multiple roles and diverse interests that need to be cautiously managed to avoid creating new problems inimical to other development options or projects in certain communities.

But upholding particular interests and welfare is not always easy because prioritizing one group over the other may be a source of tension in the host community or even within the management group of the mining company. Esteves (2008) observed that mining managers are more disposed to meet specific operational objectives and maximize the profits of shareholders. In other words, mining managers are viewed to be less committed to pursue social development objectives and comply with legal requirements for mining operations that are particularly related to the environment. Moreover, the dislocation of indigenous peoples from their ancestral domains due to mining (Huang et al., 2011; Lusterio-Rico & Layador, 2009; Wetzlmaier, 2012) has earned the industry the reputation as anti-people.

The association of mining, whether large- or small-scale, with profit maximization adds to its negative image and heightens the resistance of local people to mining

proposals. The people, particularly those who belong to households located far away from the mining site and who are not directly employed by the mining company but are badly affected by the pollution that the mining company has created, may be apprehensive about whether or not these mining proposals will really benefit them. In contrast, the more economically depressed households located near the mining site may be more positively disposed toward the mining industry because they perceive it to have the potential to bring immediate economic gains amidst the decreasing productivity of their farms or the unavailability of other ways of earning money in the community.

Mined areas, however, if properly rehabilitated or restored, have some saving qualities that benefit local communities. According to Bloodworth, Scott, and McEvoy (2009), mined areas “provide suitable mosaics and reverse habitat fragmentation” and “create secure sites for biodiversity to develop (p. 321).” This suggests that responsible mining is not totally antithetical to nature conservation if mitigating steps identified before mining operations begin are seriously implemented and accidental damage done within and outside the mining sites are immediately addressed.

If the mining revenues of the government that are invested in livelihood opportunities have driven people away from exploiting the environment (e.g., firewood and charcoal trading, slash and burn farming), the mining industry does not only help reduce poverty but also indirectly conserves biodiversity (Huang et al., 2011). The mining industry can also support nature tourism projects as part of corporate social responsibility programs that will benefit host communities affected by mining operations. A study has shown how a mining company successfully provided significant infrastructures to the local tourism industry and assisted in the development of indigenous tourism (Bultjens et al., 2010).

It cannot be denied, however, that tourism can become as destructive as irresponsible mining if the former is not seriously regulated. Tourism activities and infrastructures have the potential to alter and destroy the environment and indigenous culture when these are insensibly turned into commodities for profit (e.g., Buzinde, Kalavar, & Melubo, 2014). On a positive note, experts also believe that tourism can actually bring substantial income to poor communities if the local people can participate in its design, development, and operation (Huang et al., 2011). This is the goal behind community-based tourism which prioritizes the welfare of local people because of their inherent right to benefit from their own natural resources rather than to be dominated by outside investors (e.g., Litka, 2013; Stone & Stone, 2011).

The anticipated negative impacts or uncertainty of outcomes contribute to the ambivalence of a community towards the introduction or existence of tourism (Choi & Murray, 2010; Schofield, 2011) as observed in the divided support the industry enjoys from the host community. Although people calculate the perceived benefits and costs of tourism as a basis to decide whether or not to support it, Schofield (2011) further explained that it is the anticipated negative environmental consequences of tourism rather than its immediate positive economic or social impacts that significantly determine the host community's preferences.

Also, it is worth finding out if the local people's preference for tourism depends on their settlement area relative to the tourism site or activities. A generalization cannot be made that because local people reside in the same community as the tourism site, they can also be one of those who are against or in favor of tourism development. Deery, Jago, and Fredline (2012) found that the factors internal to the individual and family, such as personal characteristics and values, political preferences, length of time as residents in the tourism area, dependence on tourism, distance of residence from the tourism site, and attachment to the tourism site, significantly influenced preference for tourism.

On the other hand, the behaviors of tourists (Vargas-Sánchez et al., 2011) and of private tourism brokers¹ who manage the business of bringing in and serving the recreational needs or desires of tourists for visiting a place (Miller & Auyong, 1998) likewise determine the preference of the community for tourism. Specifically, the unacceptable behaviors of tourists and tourism brokers may cause the local people to be completely against the introduction or operation of tourism. The assessment of Ivanova and Rolfe (2011) showing that the development option of residents in mining communities can be influenced by household income, gender, and age of the respondents, and the number and age of their children may be true also in the case of tourism development because of its economic implications to households where it currently takes place. In addition, the differential attachment of local people to their communities, for example in terms of the numbers of years as residents, results in the variable perception on the impact of tourism (Choi & Murray, 2010).

In general, the related studies show that a community is not monolithic but is composed of individuals driven by diverse interests or of households with complex characteristics. They further demonstrate how the heterogeneity of people within the community influences their preference for certain development projects. Development preference is not only determined by the economic and environmental

consequences that people anticipate but also by the calculated costs and benefits made available to them. Whatever is the people's preference is likewise influenced by their domestic roles and responsibilities, household needs and resources, and the proximity of their communities to the impacts of certain development projects.

METHODS

The data used for analysis in this paper are part of a bigger study on the diversity in human settlements and activities along Pagatban River in the southwestern part of Negros Oriental in central Philippines (Oracion, 2011). The river stretches a length of 15.81 kilometers and has a width ranging from 63 meters to 78 meters (Guino-o et al., 2011). Basay is on the western side of Pagatban River, while Bayawan is on the eastern side (see Figure 1). The municipality of Basay, being a former *barangay* (the smallest political unit in the Philippines) of Bayawan, has a population of 24,913 and measures only about 162 km². Bayawan, which became a city in 2000, is 699 km² in size with a population of 114,074 (National Statistics Office, 2010). The barangays included in the study are as follows: Maglinao (upstream), Olandao (midstream), and Actin (downstream) in Basay; and Tayawan (upstream), San Miguel (midstream), and Pagatban (downstream) in Bayawan. This distribution corresponds with the major goal of testing the hypothesis that development preference is spatially or geographically influenced.

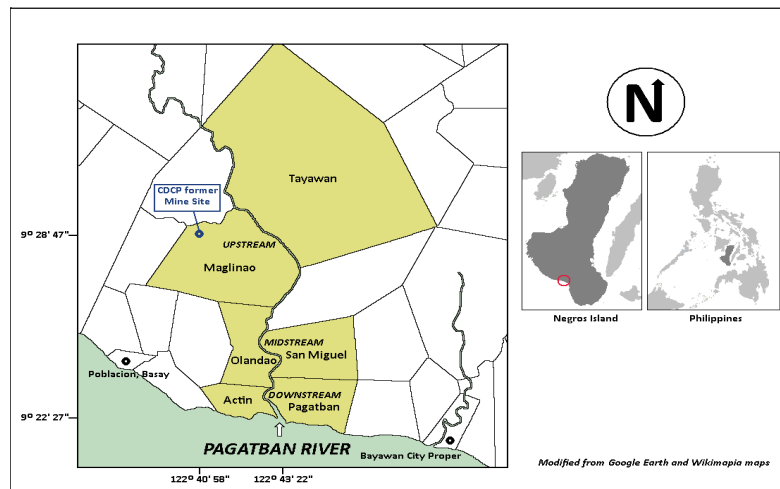


Figure 1. The relative location of upstream, midstream, and downstream settlements surveyed along Pagatban River (Map courtesy of Roy Olsen D. de Leon).

The western side of Pagatban River is more favorable to human settlements and this explains why the majority of households in the survey are from Basay. In the absence of a list of households along Pagatban River that is supposedly useful to determine the sampling design and procedure, a purposive sample of 40 households per cluster or a total of 120 households for all clusters is considered. Because the spatial distribution of households is widely dispersed, the households included in this study are only those located within one kilometer from both sides of the riverbanks. This is based on the criterion that only households that directly make use of the river and are affected by the water quality have to be included. But prior to the household survey, an ocular visit of the study sites was conducted to decide on the sampling design. Permission and endorsement from the local government officials and barangay leaders for the conduct of the study was sought before the actual fieldwork began.

Six public school teachers who are assigned to or are residents in these communities were hired as interviewers because of their familiarity with the terrain and the local people. They were first oriented and trained on how to conduct this household survey and were particularly instructed to interview only those belonging to households within the identified cluster and distance from the river. Part of the research ethics they had to observe was to give anyone the right to refuse an interview if they did not want to participate in the study after they had been informed of its purpose. None of the respondents, however, were reported to have refused because they knew the teachers and were convinced of the significance of the study.

Either the husband or the wife of a household was interviewed—whichever was available or whoever agreed to be the respondent. Almost 65 percent of the respondents were females, especially in the upstream and midstream areas, because the survey was done during the day when most of the husbands were away at work. It was only in the downstream households where the majority of respondents were husbands.

The data were statistically analyzed and presented using percentage distribution, standard deviation, and mean, while chi-square was employed to test the hypotheses on the significant difference between the development preference across settlements and the demographic and economic characteristics of the respondents and their households. But given the sampling limitation, the conclusions in this paper may be meaningful only in those settlements surveyed unless similarities in conditions exist elsewhere.

RESULTS AND DISCUSSION

Characteristics of Respondents and Households

On the average, the respondents with spouses or partners have an average of four children (4.46), but those in the upstream ($M = 4.50, SD = 2.68$) and midstream ($M = 4.63, SD = 2.85$) sections of the river have more children compared with the downstream couples ($M = 4.25, SD = 2.44$). It likewise follows that those in the upstream section have bigger household sizes, which includes members who are not children of the couple, compared with those in the downstream section. Specifically, the average number of members of upstream households is 6.08 ($SD = 2.39$) which is the highest compared with those of midstream ($M = 5.45, SD = 2.44$) and downstream ($M = 5.15, SD = 2.95$) households. This implies that the sustenance needs and the amount demanded of natural resources by upstream households are greater than that of the midstream and downstream households.

In general, there are more male (54.45%) than female (45.55%) members in all the clusters of households surveyed, and the most number of household members for both sexes fall between 10 and 14 years old. Overall, those who belong to age group 0-19 years old constitute about 54% of the total household members (355 out of 663). The high proportion of household members within this age group suggests that the population along Pagatban River is young. The population has potential to increase significantly if there are no deliberate attempts among couples, especially among those in upstream households, to regulate their fertility behavior and to change their attitudes toward having more children.

Migration Pattern

On the average, all the households at the time of the survey have been residing in their respective communities for almost 19 years: the upstream households for almost 15 years, the downstream households for almost 22 years, and midstream households for almost 20 years (see Table 1). Although the majority of households (69.16%) have not transferred residence from the time the couple got married, more spatial movement was experienced by the majority of midstream households (52.5%) as compared with those in the downstream (25%) and upstream (12.5%) sections of the river. As a whole, there is a significant difference, at an alpha level of .05, in the percentage of households that have transferred residence, $\chi^2 (2, N = 120) = 15.3, p < .001$.

Among those that have migrated, the midstream households have transferred a little more frequently relative to the upstream and downstream households. This is perhaps because the upstream area is formerly within the mining concession and some restrictions on human settlement must have been imposed particularly in areas where there were actual mining activities.

Generally, migration among some of the households is more internal, which means that the movement is within the same political and geographic area rather than from other communities. The majority of households that have transferred residences moved from places within the same *sitios* or clusters of households (29.73%) and barangays (24.32%) of Basay and Bayawan to where they are currently residing. Movement of households, therefore, is more localized. Only about 22% come from another town or city of Negros Oriental, almost 19% hail from another region, and 5% originate from another province (see Table 1). Comparatively, the movement of upstream households is more internal compared with the other households currently residing in the midstream and downstream sections of the river.

Table 1. Residency and Transfer of Residence

Parameters	Upstream	Midstream	Downstream	All Sites
Number of years as residents				
Mean	14.55	19.60	21.53	18.56
Standard deviation	10.54	13.44	13.34	12.75
If had transferred residence				
Had transferred (%)	5 (12.50)	21 (52.50)	11 (27.50)	37 (30.84)
Had not transferred (%)	35 (87.50)	19 (47.50)	29 (72.50)	83 (69.16)
Mean number of times had transferred	1.40	1.52	1.40	1.44
Previous Places of Residence				
Within same barangay (%)	3 (60.00)	6 (28.57)	2 (18.18)	11 (29.73)
Barangay of same town or city (%)	1 (20.00)	4 (19.05)	4 (36.36)	9 (24.32)
Town or city of the province (%)	1 (20.00)	7 (33.33)	-	8 (21.62)
Another region (%)	-	3 (14.29)	4 (36.36)	7 (18.92)
Another province (%)	-	1 (4.76)	1 (9.10)	2 (5.41)

Although not the majority of the responses, what tops the reasons for migration of household is more economic or due to the nature and place of work (35.13%), and this is true for all households in the different sections of the river. Other reasons are personal and relational, like the desire to be closer to the family of a spouse or

in-laws or to get away from them because of some misunderstandings. There are also those who avoided conflict with neighbors and those who looked for land on which to build houses of their own. Other reasons are environmental, such as to avoid the floods and water pollution.

Household Income

The majority of households of the respondents consider farming as their major source of income, but this is more the domain of the male (52.44%) rather than the female (18.9%) members. The proportion of male members who are farmers, however, is highest among upstream households (91.11%), followed by midstream households (59.68%). Only 14% of the male members of downstream households are farmers, but 61% are fishers because the households are located close to the seashore. Meanwhile, 26.77% of female members, mostly from the midstream section of the river, are employed as domestic helpers.

Trading through buying and selling of farm products which requires enough capital is reported only by households from the downstream section of the river. Charcoal-making has become a major source of livelihood among upstream households. Upstream households make use of different types of wood while midstream households use coconut shells to make charcoal. Because of limited livelihood opportunities, there may be a possible increase in the number of upstream households that will turn to charcoal making; this will expose the remaining forest in this section of the river to more destruction. The data show that upstream households have the least diversity of employment compared with households in the lower section of the river.

Given the nature of livelihoods available to them, 61% of all households have a monthly average net income of Php 2,000 and below. This is the average monthly net income level for 77.5% of upstream households, 70% of those in the midstream, and 35% of downstream households. The difference in household income distribution across sites is statistically significant, at an alpha level of .05, with the downstream households showing higher income $X^2 (3, N = 116) = 18.4, p < .001$. Using the means in comparing household income further show that the downstream households, with Php 3,746 mean income, earned 40% more than the mean of the combined income of the upstream (Php 1,660) and midstream (Php 1,468) households (see Table 2). The downstream households have more dispersed monthly income compared with the upstream and midstream households based on the standard

deviations. The differential mean income suggests that the downstream households have better and diverse economic opportunities and are relatively more economically secure compared with the other households.

Table 2. Monthly Mean Net Income of Households

Income Bracket	Upstream (%)	Midstream (%)	Downstream (%)	Total (%)
2,000 and below	31 (77.50)	28 (70.00)	14 (35.00)	73 (60.83)
2,001-4,000	7 (17.50)	6 (15.00)	11 (27.50)	24 (20.00)
4,001 and above	2 (5.00)	3 (7.50)	14 (35.00)	19 (15.83)
No answer		3 (7.50)	1 (2.50)	4 (3.34)
Total	40 (100.00)	40 (100.00)	40 (100.00)	120 (100.00)
Mean (Php)	1,660.00	1,468.00	3,746.00	2,291.33
Standard Deviation	1,606.51	1,421.70	2,909.95	2,308.82

Farm Access

As a measure of farm access, the majority (67.5%) of all households cultivated a farm during the period of the study. Of the households that were cultivating a farm, 92.5% were upstream households, 87.5% were from the midstream, and 22.5% were from the downstream section of the river. The difference across sites is statistically significant at an alpha level of .05, $X^2 (2, N = 120) = 55.6, p < .001$. This is consonant with the finding that the majority of the upstream household members are into farming while the lower sections are into fishing and other nonfarm-based related economic activities. While only a few downstream households cultivate a farm, their mean farm size of 1.42 hectares is comparable with that of upstream households with farm access ($M=1.44$ ha). The midstream households with farm access have the smallest mean ($M=0.91$ ha) and the majority of them do not personally own their farms.

Thirty-seven percent of all the respondents who are into farming inherited the land from their parents. Specifically, about 67% of the downstream households inherited their farms while almost 46% of the upstream households bought their farms. In the case of the midstream households, more than half (51.43%) of them are allowed free use of the land by the owner, hence, the majority are not landowners as compared with those households at both ends of the river. Twenty-three percent of the midstream households are tenants as compared with the other two types of households. The farm access data suggests the need of midstream households to

look for more and better livelihood sources and to grab whatever opportunities may be available to them. Thus, the restoration of mining or the introduction of tourism are welcome developments which the midstream households may equally embrace.

Location and Development Preferences

As mentioned earlier, there are proposals to restore large-scale operations, as well as to continue existing small-scale mining activities, in the abandoned mine site in Maglinao. The said site is among the target of applications pending at the Mines and Geosciences Bureau of the Department of Environment and Natural Resources (DENR) as of September 30, 2012 (Mines and Geosciences Bureau, 2012). However, when asked whether they prefer the restoration of mining or not, 26.67% of all households said they prefer it. Looking at the percentage distribution of preference and nonpreference for mining within household types, the highest percentage of those that prefer mining can be seen among midstream households (42.5%), followed by upstream households (27.5%), and downstream households (10%).

The chi-square test further shows that the preference for mining is significantly different, at alpha .05 level, across locations of the residences of the respondents along the river. The downstream respondents are generally more against mining than the respondents in the midstream and upstream sections of the river. This disposition is not only due to their distance from the mine site where they can derive direct or indirect economic benefits but also to the detrimental effects of mining in the past that they have seen, if not experienced. The fear of experiencing the same negative results is what Schofield (2011) described as “anticipated negative consequences” that can influence development preference of a community.

On the other hand, 63% of the respondents across settlements are in favor of the development and promotion of Pagatban River for tourism activities such as the building of resorts with swimming pools, river boating with decorated rafts, and rock climbing, among others. Looking at the percentage distribution of preference or nonpreference for tourism development within household types, the highest percentage of preference is among midstream households (87.18%), followed by the downstream (72.5%), and the upstream (60%). The preference for tourism of some local people or settlers along the river is indicative of their willingness to be involved in the business. They can become boatmen, guides, and haulers, and can do

other related tasks needed by adventurous tourists or backpackers. This is the “role shift” of locals to service providers or tourism brokers as described in the tourism system model which looks at tourism as a sociocultural process (Miller & Auyong, 1998). This model is found to be applicable in the Philippine context (Oracion, 2001).

Interestingly, it is midstream respondents that account for the highest number of respondents who prefer the restoration of mining, which suggests their desperate need for more livelihood sources as earlier hinted given their limited access to employment opportunities and farm lands. It is noted, however, that among midstream respondents, the number of those who prefer tourism development (34 households) is twice that of those who are for mining (17 households). This implies that for midstream households, tourism development is more acceptable compared with the restoration of mining even if both can provide livelihood opportunities.

Table 3. Development Preference According to Household Location

Development Preference	Upstream (%)	Midstream (%)	Downstream (%)	Total (%)
<i>Restoration of Mining</i>				
Preferred	11 (27.50)	17 (42.50)	4 (10.00)	32 (26.67)
Not preferred	29 (72.50)	23 (57.50)	36 (90.00)	88 (73.33)
Total	40 (100.00)	40 (100.00)	40 (100.00)	120 (100.00)
Chi-square = 10.82, df = 2, p = 0.004				
<i>Tourism Development</i>				
Preferred	24 (60.00)	34 (87.18)	29 (72.50)	87 (63.31)
Not preferred	16 (40.00)	5 (12.82)	11 (27.50)	32 (26.89)
Total	40 (100.00)	39 (100.00)	40 (100.00)	119 (100.00)
Chi-square = 7.43, df = 2, p = 0.024				

Note: Missing data explains why the total of respondents from midstream households under tourism development preference does not equal 120.

Tourism development is also preferred by the majority of the upstream respondents (60%) although most of those against it also come from this section of the river (40%) as compared to those in the downstream (27.5%) and midstream (12.82%) sections. The chi-square test also statistically shows that the respondents' preference for tourism development is significantly different, at alpha .05 level, across sites. Specifically, more respondents from the lower sections of the river tend to prefer tourism development than those from the upper settlements.

Factors Influencing Development Preferences

Location can influence the distribution of and access to economic resources and subsequently the development preferences of local people, but such assumption is seemingly environmentally too deterministic or simplistic. There must be something in the location of households and of the characteristics of the respondents that could help explain further the difference in their development preferences. Thus, the preference either for the restoration of mining or tourism development is also examined if this is significantly different, at alpha .05 level, when the respondents are further categorized according to their sex, migration history, farm access, and household income.

The chi-square tests show that there is a significant difference in the respondents' preference for the restoration of mining when they are categorized according to farm access and household income while their preference for tourism development is significantly different when this is compared considering the sex of the respondents (see Table 4). Specifically, the data show that more male than female

Table 4. Demographic and Economic Variables and Development Preferences

Variables	Restoration of Mining			Tourism Development		
	Favor (%)	Against (%)	Total (%)	Favor (%)	Against (%)	Total (%)
Sex						
Male	9 (21.43)	33 (78.57)	42 (100.00)	37 (88.10)	5 (11.90)	42 (100.00)
Female	23 (29.49)	55 (70.51)	78 (100.00)	50 (64.94)	27 (35.06)	77 (100.00)
Total	32 (26.67)	88 (73.33)	120 (100.00)	87 (73.11)	32 (26.89)	119 (100.00)
	Chi-square= 0.907, df= 2, $p= 0.341$			Chi-square = 7.415, df= 2, $p= 0.006$		
Migration						
Had	13 (34.21)	25 (65.79)	38 (100.00)	29 (78.38)	8 (21.62)	37 (100.00)
Had not	19 (23.17)	63 (76.83)	82 (100.00)	58 (70.73)	24 (29.27)	82 (100.00)
Total	32 (26.67)	88 (73.33)	120 (100.00)	87 (73.10)	32 (26.89)	119 (100.00)
	Chi-square= 3.64, df= 2, $p= 0.056$			Chi-square= 0.759, df= 2, $p= 0.384$		
Income						
$\leq 2,000$	26 (32.91)	53 (67.09)	79 (100.00)	54 (69.23)	24 (30.77)	78 (100.00)
$\geq 2,001$	6 (15.00)	34 (85.00)	40 (100.00)	32 (80.00)	8 (20.00)	40 (100.00)
Total	32 (26.89)	87 (73.11)	119 (100.00)	86 (72.88)	32 (27.12)	118 (100.00)
	Chi-square= 4.33, df= 2, $p= 0.037$			Chi-square= 1.55, df= 2, $p= 0.213$		
Farm Access						
Yes	28 (34.57)	53 (65.43)	81 (100.00)	57 (71.25)	23 (28.75)	80 (100.00)
No	4 (10.26)	35 (89.74)	39 (100.00)	30 (76.92)	9 (23.08)	39 (100.00)
Total	32 (26.67)	88 (73.33)	120 (100.00)	87 (73.11)	32 (26.89)	119 (100.00)
	Chi-square= 7.956, df= 2, $p= 0.005$			Chi-square= 0.430, df= 2, $p= 0.512$		

Note: Missing data explains why in some cells the total of respondents does not equal 120.

respondents prefer tourism development due to the perceived economic benefits this can offer to the former being the major household economic providers.

Meanwhile, the respondents whose households are not cultivating farms and have monthly net household income of Php 2,001 and above are against the restoration of mining. These households, in particular the downstream ones, do not appreciate mining's economic benefits because they have other livelihood sources aside from farming and fishing. This is in comparison with households, particularly those located in midstream and upstream sections, that are more into farming but are not satisfied with their production. In contrast, there is no significant difference in the respondents' preference for the restoration of mining when they are categorized according to the migration history of their households as compared with their household economic condition. This is due to the fact that not all household migration decisions are linked to economic reasons. The details of the contrasting reasons of households in the different sections of the river with regard to their development preferences are elaborated in the succeeding sections.

Reasons for Mining Preference

Twenty-six of the 32 respondents (81.25%) who prefer the restoration of mining do so because of the employment opportunities it can offer. This constitutes almost 91% of the reasons cited by the upstream respondents although this is also on top of the reasons of the midstream (76.47%) and downstream (75%) respondents. Those who are more entrepreneurial perceived a greater opportunity to sell their farm products as more people will converge or settle around the mine site, as what happened about three decades ago. This is also mentioned by a few of the midstream and upstream respondents whose households reside closer to the mining site. But other midstream respondents admitted that they cannot do anything about the reopening of the mine if the government really pursues it.

Meanwhile, 77 out of the 88 respondents (87.5%) who are against the restoration of mining do so because they anticipate the destruction of the river system from the accumulation of mine tailings that already happened in the past. In fact, all of the 29 respondents from the upstream households who are against the reopening of the mine have personally observed or learned from elderly residents how the mine destroyed the river. The same reason is true to the downstream (94.44%) and midstream (60.87%) respondents whose fishing activities have been disrupted during the past operations. It is not only that they do not enjoy direct employment

benefits from the mine because of their distance from the site, but also because they fear that their farm animals may be harmed by the polluted river and may be exposed to flash flooding and overflowing of water during typhoons and heavy rains. Siltation is another cause of fear mentioned. Also, 12 destructive flooding episodes are reported to have happened a year prior to the study.

Table 5. Reasons for Mining Preference

Reasons Cited	Upstream (%)	Midstream (%)	Downstream (%)	Total (%)
Favor				
Provides employment opportunities	10 (90.91)	13 (76.47)	3 (75.00)	26 (81.25)
Opportunity to sell farm products	1 (9.09)	2 (11.76)		3 (9.38)
If granted by the government to operate		2 (11.76)		2 (6.25)
Gain knowledge about mining operation			1 (25.00)	1 (3.12)
Total	11 (100.00)	17 (99.99)*	4 (100.00)	32 (100.00)
Against				
Damage to the river due to mine tailings	29 (100.00)	14 (60.87)	34 (94.44)	77 (87.50)
River pollution will harm farm animals	7 (30.43)	1 (2.78)		8 (9.09)
Mining site is far from the community		1 (4.35)	1 (2.78)	2 (2.27)
No reasons provided		1 (4.35)		1 (1.14)
Total	29 (100.00)	23 (100.00)	36 (100.00)	88 (100.00)

*Round-off error

Reasons for Tourism Preference

Two major themes are evident among the reasons why tourism development is preferred over mining. Forty-two of the 87 respondents (48.28%) who are in favor of tourism development expect the site to be developed in terms of infrastructure and to become known so as to draw more people to come, see, and experience the place. Site development is foremost among the reasons cited by the upstream respondents (70.83%) for preferring tourism development. This is an indirect statement of the need to improve features of their community that may be unattractive at present due to the negative effects of mining and logging activities.

Meanwhile, 41% of all the respondents believe that tourism development can be a source of employment—meaning additional income for the local people—which is also a major justification used by the national government in promoting tourism in

the country. The positive economic impact of tourism is a reason shared by almost 59% of the downstream respondents; this percentage is higher compared with the midstream and upstream respondents. The upstream group may not have foreseen a better economic opportunity with the tourism business because this will be more concentrated downstream or in the coastal area. A few of the respondents are in favor of tourism development because they see this as an opportunity to interact with tourists and also as a way to prevent illegal fishing which is one of the regulations to be imposed to make the river attractive.

Seven of the 32 respondents (21.87%) who are against tourism development, particularly from upstream households, express that only a few people will benefit from it. They further comment that tourists are noisy people and that they can disturb the tranquility of the place. A few of the downstream respondents also share the fear of upstream respondents that tourism activities may ruin the place due to the construction of some buildings for tourists. They fear that these structures will eventually disturb the natural features of the river.

Moreover, the midstream and downstream respondents are apprehensive about the possible restrictions against fishing or transporting and other activities within and along the river by the local residents which may be considered eyesores to tourism. Others simply do not agree with tourism development because they are not very familiar with it or because they believe that the river is not that attractive a place for tourism activities. Fears of being relocated as well as the introduction of crocodiles into the river for tourism also created anti-tourism development sentiment. These are all the respondents' anticipated negative social and physical consequences of tourism which are likewise evident in negative reactions of some respondents to the restoration of mining. But the anticipated negative impacts of tourism are perceived to be lesser than that of mining which makes the former more preferred by the respondents across settlements along Pagatban River.

CONCLUSION

This paper validates the observation of several authors regarding how the perceived economic benefits and anticipated negative impacts of particular development projects such as mining and tourism influence the development preference of local communities. A particular preference, however, is not uniformly shared even among geographically linked communities such as those settled along the different sections of a single river. This kind of data is relevant in community development work and cannot just be overlooked. Local people have varying conditions, experiences, and

Table 6. Reasons for Tourism Preference

Reasons Cited	Upstream (%)	Midstream (%)	Downstream (%)	Total (%)
Favor				
More people will come when developed	17 (70.83)	14 (41.19)	11 (37.93)	42 (48.28)
Provides work, market, and new income	6 (25.00)	13 (38.23)	17 (58.62)	36 (41.37)
Opens interaction with foreign tourists		5 (14.71)		5 (5.75)
Provided it is well-managed and beneficial	1 (4.17)	1 (2.94)		2 (2.30)
Illegal fishing will be stopped			1 (3.45)	1 (1.15)
The idea is likable for good reasons		1 (2.94)		1 (1.15)
Total	24 (100.00)	34 (100.00)	29 (100.00)	87 (100.00)
Against				
Only few people will be benefited	6 (37.50)		1 (9.09)	7 (21.87)
Tourists are noisy to cause disturbance	6 (37.50)			6 (18.75)
Some developments destroy the river	3 (18.75)		3 (27.27)	6 (18.75)
Restrictions on fishing and transporting		2 (40.00)	1 (9.09)	3 (9.38)
No knowledge about tourism	1 (6.25)	1 (20.00)	1 (9.09)	3 (9.38)
Just do not like the idea		2 (40.00)	1 (9.09)	3 (9.38)
Nothing to develop to interest tourists			2 (18.18)	2 (6.25)
Houses may be relocated elsewhere			1 (9.09)	1 (3.12)
Crocodiles maybe cultured in the river			1 (9.09)	1 (3.12)
Total	16 (100.00)	5 (100.00)	11 (99.99)	32 (100.00)

opportunities that influence how they make sense of the environment around them. But an individual or a community is still framed by the basic economic formula that if the perceived benefits are higher than the anticipated negative impacts, then the preference either for mining or tourism will be higher. The opposite scenario is also true.

Therefore, this paper concludes that the majority of the respondents prefer tourism development over the restoration of mining primarily due to the negative environmental consequences of the latter despite the significant economic benefits it can also offer. Moreover, the location of households along Pagatban River that differentiates them in terms of socioeconomic conditions and exposure to real and

imagined opportunities or threats associated with mining and tourism influences the respondents' development preference. Midstream households equally prefer mining and tourism as compared with the upstream and downstream households that tend to prefer mining and tourism, respectively. Also, the halfway location of midstream households to the development sites makes them optimistic or opportunistic to all possibilities.

Finally, with the general acceptance of tourism as an appropriate development option among the settlements along Pagatban River, it is recommended that another study be conducted to look into and seriously plan, with genuine community participation, how the direct and indirect tourism benefits can be enjoyed across settlements. Several studies have shown that river ecosystem and history have great tourism potential that are opportunities for investment of local government units not only for recreation and adventure tourism but also for educational tourism that can offer experiences that may enhance environmental and cultural awareness (Funck, 2010).

ACKNOWLEDGMENT

The research project which is the source of data for this paper was made possible with the financial support of the Commission on Higher Education (CHED). The comments and suggestions of anonymous reviewers that helped in improving the content and presentation of this paper are also appreciated. The ideas expressed here, however, are those of the author and do not necessarily reflect the views of CHED as well as of Silliman University.

ENDNOTES

- ¹ Tourism brokers are categorized into the private sector brokers who are directly engaged in the tourism business for profit and the public sector brokers who represent those in the government who have the authority to ensure order in tourism operations and compliance of tourism-related regulations. Locals are residents of the tourism routes and destinations who are not directly deriving income from tourism but are negatively affected by it. Meanwhile, tourists are people who travel for pleasure to a destination with a desire to return home. A shift in the positions and roles of these components is possible when opportunities are not only available but also profitable (Miller & Auyong, 1998).

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