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Exploring Local Coastal Recreational Tourism as a Potential Strategy to Support Changing Agriculture in the Typhoon-Prone Small Island of San Miguel, Tabaco, Albay, Bicol Region

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Abstract

This paper explores the potential of recreational tourism capitalizing on coastal environmental assets as a livelihood strategy to support changing agriculture and catalyze agro-tourism in the typhoon-prone small island of San Miguel, Tabaco, Albay. The changes in agro-ecology, the farming system and existing livelihoods in San Miguel island (SMI) were first characterized using participatory resource appraisal (PRA) tools. In addition, relevant socio-economic data were obtained from respondents' households in San Miguel Island. Then, the potential for coastal recreational tourism on the island was determined through a survey of city residents in Tabaco City following a two-stage probability sampling. A structured questionnaire was used to gather hypothetical information on visit patterns, recreation preferences and travel expenses. A CVM survey following a double-bounded dichotomous choice WTP question format was used on one half of the respondents to determine the economic value associated with promoting the conservation of the positive externalities arising from the coastal environmental assets used for tourism. The data were analyzed using bivariate probit. Results of PCRA showed that anthropogenic activities and climate change impacted the agro-ecology and cropping patterns in SMI resulting in livelihood diversification and the emergence of beach tourism. The exploratory study on the potential of coastal recreational tourism in SMI as a livelihood strategy for adapting to the impacts of climate change confirmed the presence of a local market for the development of nature-based coastal tourism. The diversification of livelihood in agriculture has resulted in the emergence of agro-based enterprises that set the tone for initiating agro-tourism in SMI. The majority (98%) of city residents were willing to visit SMI, favored swimming, beach roaming and relaxation activities and required only PhP398 to travel to the island. Key agro-tourism assets identified such as karagomoi production and mat making, organic upland farming, vegetable farming, abaca plantation-handicraft-making and coconut production-coco-wine processing provide overlapping opportunities for on and off farm direct marketing, and agricultural entertainment and education activities. Integrating these activates with miniscule farms can supplement the minimal farming or fishing income and enhance the coastal recreational tourism experience. Findings on visit patterns, recreational preferences, and travel costs of prospective recreational tourists highly support and complement agro-tourism potential in SMI. Given the intertwined connection between the coastal environmental and the agricultural environment, the viability of recreational coastal tourism in SMI also indicates the feasibility of its agro-tourism. The local residents are each willing to pay PhP110.12 for the continued experience of the positive externalities arising from the marine protected area. The aggregated amount of PhP163 million represents the economic value of protecting MPA as background tourism elements (BTE) that provide the main tourism attraction to initially draw tourists to SMI. This paper advances the challenge in harnessing the potential for developing a more synergistic relationship between MPA-based tourism and agro-tourism in SMI. Strategies to satisfy both immediate and future priorities associated with the goals of increasing resiliency and rural development by linking agriculture and coastal recreational tourism in SMI were enumerated and discussed.

Key words: Coastal Tourism, Agro-tourism, Marine Protected Area, SMI-Lagonoy Gulf

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Introduction

Given that the connection between agricultural and coastal environments are commonly intertwined, the use of the marine environment, its fisheries, coral reefs and sea grass beds, mangroves and wetlands is now referred to as agro-tourism and is currently a new approach to tourism and agriculture in some small island states, e.g. in the Caribbean. In the Eastern Bicol Region, the dominant feature of numerous islands and thousands of kilometers of beautiful coastal shores amidst an agricultural landscape predispose it to coastal tourism and classic 3S (sun, sea and sand). The location of San Miguel Island (SMI) in the eastern Pacific side of the Bicol Region makes it vulnerable to the continuous influence of the Kuroshio Current. The regular occurrence of typhoons in the area, particularly around Catanduanes is commonly attributed to the ocean-weather dynamics of this current system, also known as the Equatorial Current. This perturbation and the changing weather patterns have major implications for agricultural productivity.

San Miguel island has a land area of approximately 44.08 square kilometers. This island is characterized by a mountainous and slightly rolling landscape and plains. It is also home to the marine protected area (MPA) located in barangay Sagurong. There are six barangays in the island, comprised of 2,423 households and a total population of 13,484. The sole island of the city of Tabaco, it is located at the east coast of Tabaco Bay and South of Lagonoy Gulf. From the city port, the island can be reached by motorized boat in 20 minutes. Tabaco City is located in the southernmost part of Luzon (Fig. 1). This city of 123,513 people consists of 24,850 households spread out in 47 barangays. Of these barangays, 21 are categorized as *'poblacion'*, 15 are uplands, eight are lowlands and five are island barangays.

This study argues that developing local recreational tourism in the coastal assets and maintaining their positive externalities and non-market services can diversify the agro-based livelihood of upland farmers in a small island, catalyze agro-tourism and enhance local adaptive capacity to the impacts of climate change, e.g. typhoons. Yet in SMI, the potential of coastal recreational tourism as a connected and complementary engine of growth with agro-tourism has never been considered. Even more so, the positive externalities and environmental services generated by coastal assets are not internalized by market instruments nor by policy mechanisms that help it to respond to preferences for rural settings by local tourists in the present or future that could result in lost opportunities for providing jobs, income, and a more sustainable and diverse environment.

This paper explores the potential of recreational tourism, looking at the use of environmental assets as

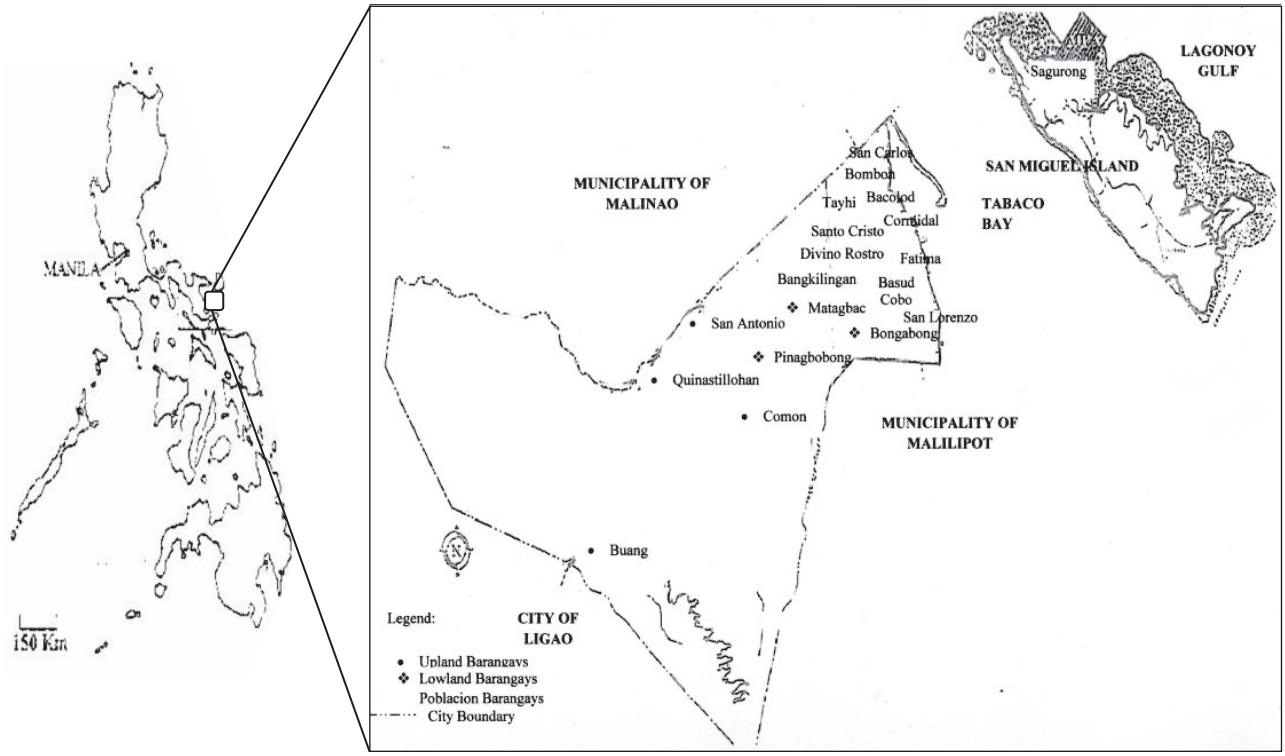

Fig. 1. Location of Tabaco City mainland and San Miguel Island showing the Sagurong Marine Protected Area (Source: Tabaco City Planning and Development Office, Note: The city map is not drawn to scale).

a livelihood strategy to support changing agriculture in the typhoon-prone small island of San Miguel, Tabaco, Albay. It is structured as follows: first, the changes in agro-ecology and land use arising from anthropogenic activities and typhoon-induced stress are described; second, the potential of local recreational tourism on the island's coastal environmental assets as a livelihood strategy is explored; third, the willingness of local tourists to pay for the environmental services and positive externalities is estimated; and fourth, evidence of livelihood diversification in the agricultural sector and its characteristics are discussed in the context of their prospects for agro-tourism. Policy implications and recommendations conclude this paper.

Methodology

In this study, the changes in agro-ecology, the farming system and existing livelihoods in SMI were first characterized using participatory resource appraisal (PRA) involving key informants in the island such as barangay officials, farmers, fishers, teachers, local entrepreneurs, women and other interested parties. The PRA tools used included resource mapping, historical timelines, key informant interview and focus group discussion. In addition, relevant socio-economic data were obtained from a random sample of 1,035 respondents that constitutes 40% of the total households in San Miguel Island. Following that, the potential of coastal recreational tourism in the island was determined through a survey of city residents in the mainland of Tabaco City. A structured questionnaire was introduced to 1000 respondents following two-stage probability sampling. In the first sampling stage, twenty samples of city villages comprising 50 percent of the total number of villages in the city were randomly selected and stratified into upland, lowland and urban villages. The second sampling stage randomly assigned the names of 1000 residents in the selected village as respondents. Each village was assigned a total of 50 respondents. The respondents were asked questions related to whether they were willing to visit the MPA in SMI for recreational purposes. Hypothetical questions on visit patterns, recreation preferences and travel expenses were asked of respondents while showing them a colorful brochure depicting the beaches, coral reefs, sea grass beds and clear water in the area. Socio-demographic information was also obtained from the respondents. The same questionnaire also asked respondents whether they were willing to pay for the area's conservation. Only one half of the set of respondents or 25 per village totaling 500 were chosen for this question. The information was elicited using a contingent valuation (CVM) scenario using a colorful brochure depicting both the pristine state of the coral reefs and sea grass bed with abundant fish and the projected worst possible state of the island if no funds were available to sustain them. The double-bounded dichotomous choice WTP questions were adopted and consisted of five sets of bid options i.e. 5-20-1; 20-50-5; 50-100-20; 100-600-50, and 500-1000-100 pesos. The bid set consisted of an initial bid and second bid values that were higher and lower than the initial bid. The higher bid value was offered if the response to the initial bid was yes, and the lower bid was offered if the response to the initial bid was no. The mean WTP was calculated using bivariate probit.

Results

Agro-Ecological Changes in SMI Arising from Anthropogenic Activities and Climate Change

PRA activities conducted with stakeholders revealed that the agro-ecosystem on the island underwent a cycle of transformation that started from a condition of abundance in its pristine condition and changing with a shift in agriculture until production diminished and new areas were explored. This can be traced back to early settlers that introduced new species and consequently altered the natural vegetative cover on the island. For example, in the 1900s, the island was forested, however from the 1930s and 1940s, a significant portion of the forest was converted for agricultural purposes. The conversion process began with slash and burn farming. Starting with the slash and burn farming system, plantation based farms were introduced with coconut, abaca and sugar cane as the common base crops. The introduction of corn farming and the expansion of cattle ranching in the 1960s further reduced the remaining forest cover. The implementation of the comprehensive Agrarian Reform Program led to the distribution of significant portions of the former hacienda to tenants who later opted to plant corn and root crops. Such conditions in the late 1980s paved the way for increased land fragmentation, increased cropping intensity and hastening the demise of the remaining forest cover. The changes in the physical environment vis–á-vis the ecosystem are manifested in the plant-succession pattern of natural forest growth to agriculture system characterized by diversified and specialized cropping patterns dominated by root crops, corn and rice, and recently to land development in near shore areas and the emergence of beach tourism (Table 1).

The occurrence of strong typhoons in the 1970s severely damaged the coconuts, abaca plantations and

Table 1. Changes in land use in San Miguel island.

Time	Land Use
1900	Forest
1930	Forest and Agriculture
1940	Forest and Agriculture
1970	Agriculture
1980	Agriculture
1990	Agriculture
2000	Land development in near shores and Tourism

other crops. Changes were created in the biophysical conditions of the upland ecosystem. Recently the emergence of rain-fed rice farms in some areas, small scale vegetable farms and the proliferation of Karagomoi plantations providing raw materials for mat-making indicate attempts for diversification in agriculture to increase resiliency (Table 2).

Table 2. Changes in Crops and Farming Systems in SMI.

Time	Evolution in Crops and Farming System
1930-1950	Forest Abaca Coconut Sugarcane
1960	Coconut Corn
1970	Root crops
1980	Corn
1990-2008	Proliferation of root crops Karagomoi farming Upland rice farming Backyard vegetable farming

Exploring Local Coastal Recreational Tourism as Potential Strategy to Diversify Agriculture Livelihood in SMI

With the exposure of the island to the eastern Pacific seaboard, it is expected that the island's agro-ecology will experience further perturbation caused by naturally induced climate related disasters and by anthropogenic activities of the people trying to survive on the island. In this context, sustainable tourism such as nature-based and agro-tourism, are seen as key adaptation strategies to diversify agriculture, spread risks and strengthen resiliency. Considering that the coastal environmental assets, i.e. marine protected areas, provide a strong base and appeal for visitation to the island, the study explored the potential for tourism livelihood in SMI in this context. The following section details the viability of such an option.

Hypothetical Visit Information

The potential of establishing recreational tourism in SMI was evident in the overall response of city residents. The majority (91.8%) of the respondents expressed a willingness to visit the island. In terms of hypothetical visitation patterns, more than one half (61% or 559 people) of respondents intended to visit the marine area once a year; at least 27%, or 247 respondents, intended to visit twice a year, and around 2%, or 17-18 persons, wanted to visit for four or five times a year, with less than 1% (3, 2, and 1 person) intending to visit for six, nine and ten days respectively. However, at least 1.4 % (or 13) intended to visit for 12 days. Asked as to what months of the year the respondents would most likely visit, the month of May received the highest response (49.5% or 636), followed by April at 31% (or 401) and March at 11.9% (or 153). The rest of the months can be considered as a lean season except for October with 1.63% (or 21) and December with 1.94% (or 25 persons) (Table 3).

The potential visitors are in their middle forties and most have barely completed high school education, have resided in the city for 38 years, with a monthly personal income of PhP 4,471, and a household income of PhP 9,083. Almost three fourths (69 %) have occupations, while at least one fourth have relatives in SMI.

Table 3. Hypothetical Visit Information of the Respondents.

Visit Information	No of response	%
Willingness to Visit SMI (no of response=995)		
Not willing	82	8
Willing	913	92
No. of Intended Visits Per Year (no of response=920)		
Once a year	559	60.76
2 x a year	247	26.85
3 x a year	60	6.52
4 x a year	17	1.85
5 x a year	18	1.96
6 x a year	3	0.33
9 x year	1	0.11
10 x a year	2	0.22
12 x a year	13	1.41
Months of Year Intending to Visit (no of response =1285)		
Jan	7	0.5
Feb	3	0.2
Mar	153	11.9
Apr	401	31.2
May	636	49.5
Jun	20	1.6
Jul	6	0.5
Aug	3	0.2
Sep	6	0.5
Oct	21	1.6
Nov	4	0.3
Dec	25	1.9

Hypothetical Recreational Preference

In regard to recreational preference, the four top recreational activities chosen were swimming, beach roaming, relaxation and beach picnics. Of these, close to one half of the respondents expressed a preference for swimming, while both beach roaming and relaxation received a similar preference response of 20%. More than one half (61%) of the respondents expressed an intention to visit SMI in a given year, while 20% expressed an intention to stay for at least one day and one night. Of those that expressed an interest in staying for more than one day, more than one half, or 61%, preferred to stay in a beach resort, while 25% expressed a preference for staying with relatives (Table 4).

Table 4. Respondents' hypothetical recreational preference information.

Recreational Preference Information	No. of response	%
Recreational Preference (no of response=1000)		
Boating	38	3.8
Relaxation	179	17.9
Beach Roaming	182	18.2
Beach picnic	138	13.8
Snorkeling	20	2
Scuba diving	14	1.4
Swimming	425	42.5
Others	4	0.4
Number of days intending to Stay (no of response n=931)		
1 day	617	66
1 day with overnight	185	20
2 days	78	8
more than 2 days	51	5
Preferred Accommodation (n=563)		
Camping	53.00	9.41
Beach Resort	343.00	60.92
Relatives	139.00	24.69
Homestay	23.00	4.09
Other	5.00	0.89

Hypothetical Travel and Cost Information

The average travel distance from the residents' city dwellings to San Miguel island is estimated at 9.4 kilometers. This takes an average of 45 minutes ride involving land and sea routes. An average of 4.5 persons will be travelling with the respondents to the site. The hypothetical individual total travel cost was estimated at an average of PhP 398.09 per person per visit. Of this, it is projected that an average of PhP 294.33 per day will be spent on accommodation costs, and PhP 103.76 (PhP 51.87 one way trip) for transport costs. The average projected cost of travel per person per visit was calculated at PhP 28.63. This value was reckoned from the average of 1.5 hours travel time back and forth from home to the island, and for a monthly income of PhP 4580, the equivalent to PhP 153 per day or 19.09 per day on a eight-hour labor basis (Table 5).

Table 5. Hypothetical Travel and Cost Information.

Parameters	Value
Average Travel Distance (km)	9.4
Average Travel Time (minutes)	45
Average Estimated Cost of Transportation (A)	103.76 (51.88, one way)
Average Estimated Cost of Accommodation (B)	294.33
Average Opportunity Cost of Labor (C)	28.63
Average Estimated Total Travel Cost (A+B+C)	426.72
Average Cost of Boat Fare	11.84
Average Cost of PUV Fare	14.78
Average Cost for gasoline expenses (If using own boat)	14.17
Average cost of gasoline (If using own car)	11.43
Average number of persons joining travel	
Average cost for Camping accommodations	19.60
Average cost for Beach Resort accommodation	205.26
Average cost for Relatives accommodation	53.76
Average cost for Homestay accommodation	4.77
Average cost for Other accommodation form	15.54

Willingness to Pay for the Existence of Positive Externalities Associated with Conservation of Coastal Environmental Asset

Local tourists or city residents are willing to pay (WTP) an average of PhP 110.2 monthly for the existence of positive externalities associated with conservation of coastal assets or MPA in SMI. City residents with higher household incomes, who have a higher level of awareness of what an MPA is all about, and who have gone to SMI are more likely willing to pay an extra amount of money to promote protection activities in the MPA that create positive environmental externalities. With a total of 123,513 households in the mainland city, the conservation benefits of the coastal assets translate to PhP 163.3 million per year (Table 6).

Table 6. Respondents Total Willingness to Pay for the Existence of Tourism Asset.

Total City Households	Parametric Mean WTP (PhP)/month	Adjusted Value of AggregatedWTP/ Year (PhP)
123,513	110.2	163.3 million

Livelihood Diversification as Adaptation Strategy and Agro-tourism Assets

Agriculture is still the dominant economic sector

in the island (44 % of the households) followed by fisheries (27%). The distribution of annual income across income source category and the number of households is presented in Table 7. It can be seen that in general the annual income from farming is low, while those that combine farming with other income earning activities are relatively higher, indicating the need for supplemental income earning opportunities. Participatory resource assessment affirmed that climate-change induced disasters e.g. floods and drought, destroy agricultural crops

Table 7. Annual income across categories of income sources and livelihood activities in SMI.

Income Source*	No. of HH	%	Annual Income		
			Min	Max	Mean
Farm	475	28.91	2,000	20,000	19,538
Farm +	29	1.77	1,000	64,800	27,972
Fish	300	18.26	3,750	270,000	43,764
Mat making	188	11.44	800	56,000	6,204
Mat making+	4	0.24	2,000	20,000	8,250
Services	489	29.76	2,000	504,000	41,529
Professionals	54	3.29	11,400	600,000	116,959
Businesses	54	3.29	1,500	288,000	51,325
Supported/pension	22	1.34	6,000	48,000	22,114
Total	1643	100			

* Services include laborer, contract worker, helper, barangay worker, etc.; Professionals include teacher, police, seaman etc. Businesses are fish broker, with sari-sari store and buy and sell.

Table 8. Livelihood Activities in SMI.

Livelihood Activities	Farming	Fishing	Processing	Services	Trading
Rice and corn production	1				
Vegetable production	1				
Root crops production	1				
Copra production	1				
Poultry and swine raising	1				
Abaca fiber production	1				
Seaweed farming	1				
Fishpond	1				
Crablet gathering		1			
Spear fishing		1			
Offshore fishing		1			
Hook and line fishing		1			
Gleaning		1			
Bangus fry gathering		1			
Coco wine making			1		
Handicraft making			1		
Nipa-shingle-making			1		
Anahaw shingle-making			1		
Peanut butter production			1		
Mat-making			1		
Padas (siganidfry fishpaste)			1		
Sea cucumber drying			1		
Hollow block making			1		
Coco lumber trading					1
Small scale sand quarrying					1
Fruit vending					1
Sari sari store					1
Engine repair				1	
Transport banca				1	
Boat making				1	
Total*	8 (27%)	6 (20%)	9 (30%)	3 (10%)	4 (13%)

*values in parenthesis are percent

and reduce fish catches on the island.

In response to the impact of typhoons on agriculture, most households combine several activities to support themselves and spread risks. Diversification in livelihood is evident in the emerging activities focused on household level processing of raw materials and value adding as conscious adaptations to both the decreasing productivity of agricultural resources and the impact of climate change (Table 8). The dominance of these livelihood options augurs well for the development of agro-tourism in SMI catalyzed by coastal recreational tourism.

Assessed below are major livelihood activities currently found in SMI. They offer potential agro-tourism activities both on and off farms including overlapping but generally distinguishable categories under direct marketing, agro-entertainment and education:

- Karagomoi production and mat-making. Most households maintain patches of *karagomoi*, which grows naturally in the area. The karagomoi plantations supply the raw material for the thriving mat-making cottage industry in the island. This livelihood offers on-farm agro-entertainment featuring unique experiences harvesting the indigenous plant and the traditional mat-making process done mostly by household members. Off-farm direct marketing activities would include the community farmers' market showcasing woven katagomoi mat products.
- Upland farming. Corn and rain-fed rice crops mainly grown in the uplands offer tourists on-farm direct marketing activities such as u-pick and community farmer markets showcasing freshly harvested corn and milled organic rice. Smallholder farms of root crops such as taro, sweet potato, banana, cassava, peanut and yam features ethic foods from the island. Emancipated tenants grow them with a minimum or absence of inorganic pesticides and fertilizers, providing cheaper and healthier food alternatives. Agro-entertainment activities would include on-farm participation in planting and harvesting as well as petting zoos highlighting tourist interaction with farm animals, for example, feeding and riding carabaos. It also offers potential off-farm agro-entertainment that includes carabao racing, organic rice festivals and a traditional aeromechanics fair showcasing plows, tractors, and other equipment. Establishing nature trails and an agricultural museum featuring the area's history and farming relics constitute the potential educational activites.
- Smallscale vegetable farming showcases winged beans, eggplant, gourds, squash, gabi, "pechay" and "kangkong" on a year-round basis. They offer direct marketing activities showcasing on-farm u-pick and cooked vegetable tasting and off-farm community farmers' market. Agricultural entertainment activities would include hot cooked island vegetable festivals, and school tours would also be included among potential educational activities
- Abaca fiber production and handicraft. Abaca, which thrives in patches of secondary growth forest, offers off-farm direct marketing activities such as establishing community handicraft markets showcasing abaca bags, wallets and souvenir items. On-farm agro-entertainment activities would showcase adventure treks under the cool, shaded maze of abaca trees while observing the indigenous abaca stripping technology done by an expert "*hag-ot*" or stripper man done on-site. The peculiar details of the basic stripping structure, called *tolduk*, and composed of a *nipa* hut and a stripping device, showcases Filipino ingenuity amidst unfavorable economic conditions by being constructed with virtually zero equipment except the sharp bolo as stripper and the tensile strength of abaca fibers for fixing and holding the structure together. Handcrafted bags and wallets made from abaca fibers and bark by household members offering valuable fashion products as souvenir items to tourists in a community handicraft fair or establishing abaca product museum constitute viable off-farm agro-entertainment activities.
- Coco farm and coconut wine making. Island trekking by a carabao-powered sleigh along the coconut tree lined sloping topography of the island while watching the copra-making process constitute on-farm agro-entertainment activities. On-farm direct marketing activities would include showcasing tasting of processed coconut by-products such as coconut wine or selling them as excellent souvenir items.

Discussion and Conclusion

This paper demonstrated the presence of a local market for the development of nature-based coastal tourism in SMI as a livelihood strategy to adapt to the impacts of climate change. Given the porous boundaries between coastal-based and agriculture-based activities in a small island setting, the viability for local recreational costal tourism also spells feasibility for agro-tourism in SMI.

The diversification of livelihood in agriculture resulting in the emergence of agro-based enterprises that feature value added activities such as food processing, handicraft making and services sets the tone for initiating

agro-tourism in SMI. The miniscule farms in the area may integrate all three categories by directly marketing farm produce, providing agriculture related entertainment such as corn mazes and petting zoos, and education to supplement farming or fishing incomes and enhancing the coastal recreational tourism experiences of prospective guests. Equally important are background tourism elements (BTE) that are not directly commoditized, i.e., the beachscape and landscape. In an island, part of the pleasure of visiting the farms may well be the drive through the beaches and seascapes on the way that in most cases are enjoyed without visiting a farm. BTEs are an important class of resources to which the concept of a common pool resource (CPR) is applicable. Also known as tourism commons, e.g. MPAs and agricultural landscapes are public goods whose nature makes them experience problems of overuse, lack of investment incentive, and of mismanagement (Briassoulis, 2002). Because they are identical to the tourism product—the tragedy of the tourism commons—are simultaneously the tragedy of the tourism product. It is interesting to note that local residents are each willing to pay PhP 110.12 monthly for the continued experience of the positive externalities arising from the marine protected area. The aggregated value that represents the economic value of the tourism asset's conservation benefits equivalent to PhP 163 million a year provides the economic justification for the local government unit of Tabaco city to invest in resource management and tourism - both nature and agro-tourism - in the island. A similar estimate of the economic value of positive externalities from the agro-tourism landscape in SMI should be made available in the future to incentivize policy-makers to aggressively invest for the restoration and enhancement of agricultural landscapes in SMI degraded by climate change and changing land uses and a cropping system which have developed as adaptation measures. They can also be used as a basis for establishing a user fee system for sustainably financing the management of these coastal marine and agricultural BTEs.

There are a number of reasons to believe that the potential customer demand for coastal recreational tourism could support and complement agro-tourism. For one, the cost of travel to San Miguel Island is relatively cheap and the travel time is short. Secondly, the preference of local visitors for swimming, beach roaming and relaxation jibes well with a number of direct marketing and agro-entertainment activities identified with existing livelihood activities such as corn and vegetable U-pick, abaca maze and traditional stripping exhibit, carabao rides under coconut palms and coco-wine tasting, and abaca craft and karagomoi mat off-farm stores. Several studies affirmed the positive and significant association of ecotourism with agricultural tourism (Catalino and Lizardo, 2004), supporting the thesis advanced in this paper that the MPA assets in the island determine the island's appeal for recreational tourism, which also serve as a precursor for agro-tourism. This highlights the viability of nature-based agro-tourism as a livelihood strategy to adapt to the impact of climate change in SMI. Nature-based agro-tourism is defined in this paper as a segment of rural tourism sometimes referred to as ecotourism, which seeks to attract visitors to a working farm or any agricultural, horticultural or agribusiness operation to enjoy, be educated or be involved in activities, The challenge therefore lies in harnessing the potential for developing a more synergistic relationship between MPA-based tourism and agro-tourism.

Agro-tourism represents an important option to satisfy both immediate and future priorities associated with the goals of increasing resiliency and rural development by linking agriculture and coastal recreational tourism in SMI. An initial strategy to develop agro-tourism in the short-term in the SMI should consider the need for safer and regular sea transportation facilities for agro-coastal recreational tourists and effective collaboration with tour operators to promote this emerging tourist market by the local government of San Miguel Island and Tabaco City. Because tourism brings the customer to the commodity, once coastal recreational tourism has started, aggressive support of agriculture enterprise and production coupled with capacity development should constitute the medium term strategy. The development of an institutional framework for resource and tourism governance and establishing a user fee system to promote stakeholder-ship and sustainability would constitute the long -term strategy.

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