



RESEARCH ARTICLE

NONESCOST MANGROVE ECO-TECHNO TOURISM AND RESEARCH CENTER: A HIGHER
EDUCATION INSTITUTION INNOVATION AND TRANSFORMATION (HIT) PLAN

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ARTICLE INFO

Article History:

Received 08th March, 2018
Received in revised form
22nd April, 2018
Accepted 29th May, 2018
Published online 30th June, 2018

Key words:

Mangroves,
Tourism, Eco-Tourism,
Community-Based Ecotourism.

ABSTRACT

Mangroves have been widely optimized by the ASEAN countries to effect community economic development through tourism activities that provided economic sustainability of the local communities. However, the benefits that the mangroves ecosystem gives is misconstrued by the local community as merely an economic endeavor or as means of livelihood. Hence, the College is faced with a challenge of improving the quality of lives of the local communities making use of its vast hectares of mangroves resources while preserving the environment. Ideally, while the College is raising its banner of becoming an acknowledge school of excellence in science, technology and innovation in the region it shall likewise pull upward, if not in the same level, the economic status or lives of its immediate local communities. Therefore, it is necessary that strategic development programs, projects and activities with focus on commodity or product-based researches shall be carefully planned, designed and implemented to ensure optimum utilization of human, physical and financial resources. Planning, installing and implementing a more focus and rigorous policies in this aspect is necessary to attain research and extension outcomes in the perspective of the local communities. The ultimate mission is to improve the quality of life of the local communities and graduates through convergence of instruction, research, extension and production with the active support of the administration. Thus, this seeks to; establish sustainable livelihood programs/projects for the local community, promote conservation and sustainable management of fishery habitat-the mangrove ecosystem and increase ecotourism activities with the involvement or collaboration of the College, LGUs, DENR, BFAR, Foreign and Local Tourists, Parents, Alumni, Students and the Local Community. Essentially monitoring and evaluation of these programs, projects and activities ensures relevance, efficiency, effectiveness and inclusivity that ascertains organizational outcomes and of the NONESCOST mission-vision. Towards this, the following innovative solutions are proposed; One Tourist One Mangrove Policy (Adopt a Mangrove Approach Program), Rationalization of Faculty Loads, Students Scholarship Programs, Fishery and Agriculture Livelihood PAPs, Pabalubong Center, Boating and Floating Restaurant in the Mangrove Area, Modified Ecotourism PAPs, and Product or Commodity-Based Research and Extension PAPs.

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Citation: Samson M. Lausa, 2018. Nonescost Mangrove Eco-Techno Tourism and Research Center: A Higher Education Institution Innovation and Transformation (HIT) Plan", *International Journal of Current Research*, 10, (06), 70430-70460.

INTRODUCTION

Mangroves are extraordinary ecosystems, located at the interface of land and sea that offer a considerable array of ecosystem goods and services. They are vital for food security and protection of coastal communities; they provide a wide diversity of forest products, nurseries for aquatic species, fishing grounds, carbon sequestration, and important natural coastal defenses that mitigate the impact of erosion and storm action (Kainuma, Spalding, and Collins, 2010). Mangroves have been widely optimized by the ASEAN countries to effect community economic development through tourism activities that provided economic sustainability of the local communities. Tourism is the world's largest industry. It accounts for more than 10% of total employment, 11% of global GDP and total tourist trips are predicted to increase to 1.6 billion by 2020. As such it has a major increasing impact on both people and nature.

Effects can be negative as well as positive. Inappropriate tourism development and practice can degrade habitats and landscapes, deplete natural resources, and generate waste and pollution. In contrast, responsible tourism can help to produce awareness of and support for conservation and local culture, and create economic opportunities for countries and communities (WWF International, 2001). The attractive appearance of ecotourism in late 1980 was treated as a panacea to all tourism-related problems in the destination areas. Its popularity claimed to be associated with the; a) general search for natural attractions during a holiday, b) eagerness to achieve sustainable development by any means, c) potential employment opportunities in natural areas, and d) shift towards planning in protected areas. By commonality, ecotourism indicates components of natural-based, educational and sustainable management that includes economic, social, cultural and ethical issues (Blamey 2001; Orams, 2001, as cited by Diamantis, 2012). As a guiding conceptual principle, however, ecotourism is said to be that which occurs in natural settings (protected and non-protected) with an attempt to increase benefits to the economy, society, and environment

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DOI: <https://doi.org/10.24941/ijcr.29987.06.2018>

through sustainable educational practices from locals to tourists and vice versa (Diamantis, 2012). So far, the UN General Assembly has accepted sustainable tourism as part of the agenda in the 21st century. Ecotourism is seen as a means of reducing poverty that will hasten the fulfillment of the UN's Millennium Development goals. The updating of the National Ecotourism Strategy (NES) is very timely as it responds to the recent call of the United Nations under a resolution entitled "Promotion of ecotourism for poverty eradication and environment protection", for member countries to include in its plan and programs the development of ecotourism (National Ecotourism Strategy and Action Plan 2013-2022). The Philippines and the Filipino people have a significant role to play in the implementation of this UN directive and therefore, must be committed and ready to do its share. While the National Ecotourism Strategy 2013-2022 provides the road map to the Philippines' quest to gain a competitive chunk of the ecotourism market, Filipinos shall ensure that ecotourism activities will not only conserve biodiversity, but it will also help the local communities to have another source of income without going into unsustainable resources extraction activities. The participatory approach of the HIT Plan strongly supports the thrust of NES and the mandate of Department of Environment and Natural Resources (DENR) and will be a central point in ensuring that our very own local tourists—Negrenses, will be the first to enjoy the natural beauty of Sagay (Old Sagay) and learn about the value of conserving these natural resources. The long-term viability of this program will be nurtured through the strong partnership with the DENR, BFAR, LGU Sagay Tourism Office and other Stakeholders.

NONESCOST Challenges and its Context

The Western Visayas Region (Region VI): The Western Visayas is located in the central part of the Philippines and lies between two large bodies of water—the Visayan and Sibuyan Seas. It is the fourth most populated region in the country having an annual population growth rate of 1.35 percent (2000-2007), way below the country's annual growth rate of 2.04 percent for the same period. It is composed of the provinces of Aklan, Antique, Capiz, Guimaras, Iloilo and Negros Occidental. Region VI is the third largest regional economy in the country, the biggest outside Luzon, and the fastest growing economy among the Visayas regions. Its share of GDP was recorded at 7.3 and 7.6 percent in 2008 and 2009, respectively. With its fertile plains, rich inland and marine resources, and scenic natural attractions and impressive cultural and historical heritage, Western Visayas is known as the country's primary food provider and leading tourist destination in the country. However, despite the significant economic gains of the region, poverty situation remains practically unchanged during the past decade. The improved quality of life in the Western Visayas remains as the ultimate goal in regional development efforts. This will be manifested by an empowered people and a globally-competitive economy. Hence, the development vision for the region is; "The Western Visayas is home to an empowered and happy people who are protective of their rights, proud of their culture, and committed stewards of their heritage and natural resources. It is a region thriving on innovation and excellence in a globally-competitive and diversified agri-based, tourism-led economy". (Regional Development Plan, 2011-2016).

The Negros Province: Negros Island was originally called "Buglas," an old native word that is thought to mean "cut-off." It is believed that Negros was once part of a greater mass of land but was cut off either by what geologist call a continental drift or by rising waters during the so-called glacial age. Among its earliest inhabitants were dark-skinned natives belonging to the Negrito ethnic group with their unique culture. Thus the Spaniards called the land "Negros" after the black natives whom they saw when they first came to the island in April 1565. Negros Occidental is located on the western side of Negros Island, the fourth largest island in the Philippines with a total land area of 792,607 hectares. The province is approximately 375 kilometers long from north to south. It is bounded by the Visayan Sea in the north, Panay Gulf on the west. Tañon Strait and Negros Oriental province on the east and Sulu Sea on the South. Negros is volcanic, making its soil ideal for agriculture. Sugar is central to the evolution of the Negrense culture. The affluence and the prosperity that the industry brought to the province nourished a charming, genteel, sometimes lavish spirit that sets the Negrense apart from his Ilonggo kinsman. Negrense is regarded as affectionate, generous, fun loving people who enjoy the finer things in life. As a labor force, however, Negrenses are highly motivated, educated, skilled, trainable and entrepreneurial individuals. Negros Occidental is rich in structures and buildings that are remnants of a once wealthy lifestyle. The Palacio Episcopal (1930), San Sebastian Cathedral (1876) and the Capitol Building (1931), are familiar landmarks. "An empowered and healthy Negrense in a globally-competitive, ecologically balanced and peaceful Negros Occidental under-responsive and accountable governance," is the vision of the Province of Negros Occidental (<http://www.negros-occ.gov.ph/about-negros-occidental/people-culture-and-arts>, accessed December 04, 2016).

The Sagay City: Sagay City was formerly known as Arguelles. It was founded by Teniente Francisco Rodriguez and Basilio Cordova on 1860 at the mouth of the Bulanon River. Later, by order of the Spanish governor, the town was transferred to Pueblo de Magallanes (now known as Old Sagay) to honor Fernando Magallanes. It was in 1906 that the name of the city was changed into Sagay. It was taken from the semi-spherical shell called "SIGAY," which can be found in the area. Sagay is a third class city of Negros Occidental recorded in 2010 a Hiligaynon/Ilonggo/Cebuano/English speaking population of 140,740 where 89.10% are Roman Catholics and a land area of 33,034 hectares. It is the 68th City of the Philippines by virtue of Republic Act 8192 with 25 barangays and is approximately 84 kilometers from Bacolod City the capital of Negros Occidental. Sagay City is located along the north eastern coast of Negros Island appears to be like an ice cream cone and has the largest marine reserve (Sagay Marine Reserve) in the Philippines, covering an area of 32,000 hectares established in 1999. The upland of Sagay usually experiences cooler temperatures and higher rainfall, especially during the northeast monsoon (from December to February) while there is no distinct dry season, although there is less rain between March to May. Sagay has five major river systems—Himoga-an, Bulanon, Pacul, Hamticon, and Tan-ao and two protected areas—a portion of the Northern Negros Natural Park which measures 1,293.40 hectares and the Sagay Marine Reserve (SMR), that measures 32,000 hectares. Major industries include sugar production, fishery, livestock and farming.

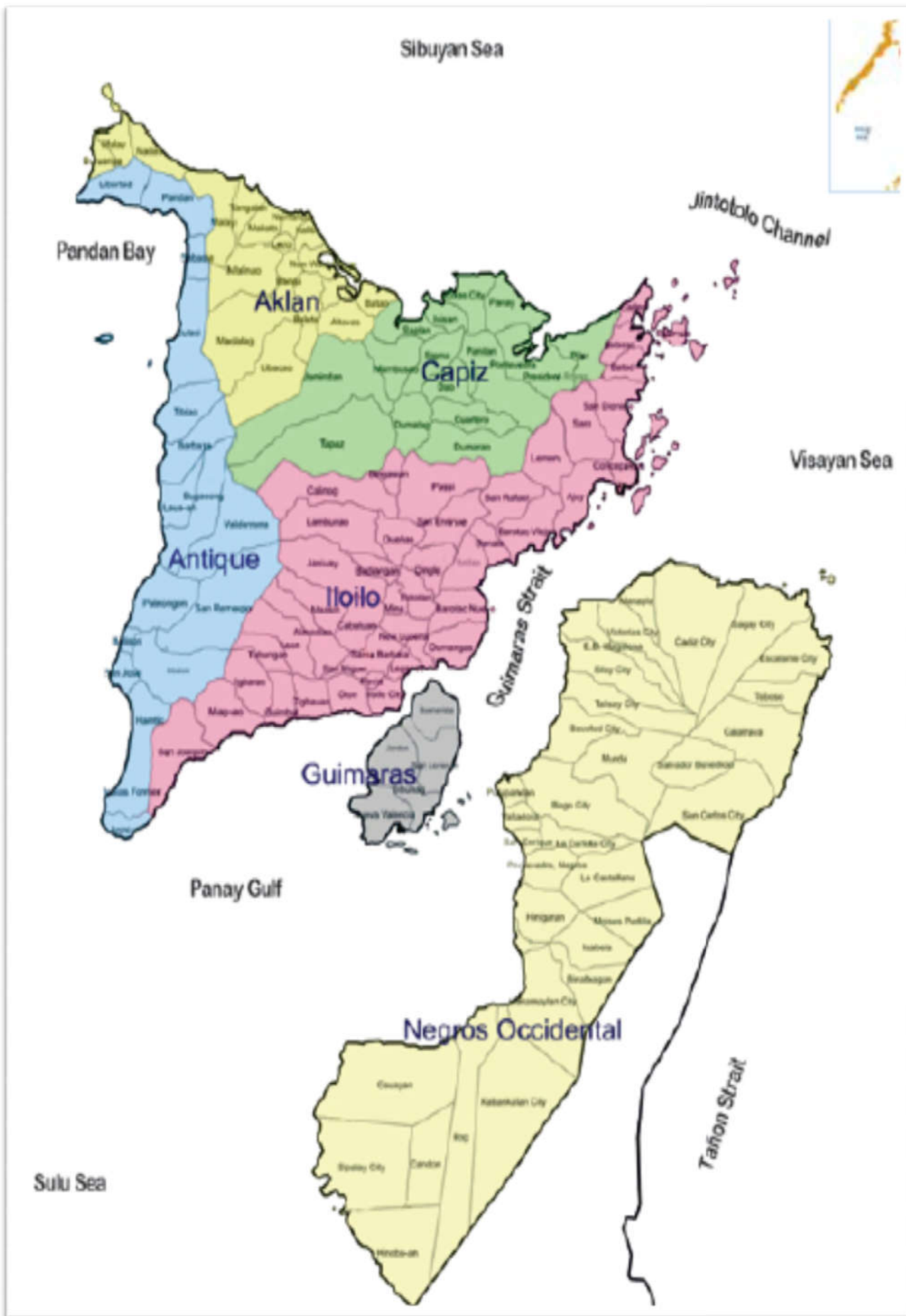


Figure 1. The Western Visayas Map (Region VI)



Figure 2. Map of Negros Occidental



Figure 3. Map of Sagay City

Tourism over the last three years has been slowly developing, as more people are being organized and capacitated by the local government on various skills related to the provision of services to visitors. Today, Sagay City is positioning itself as a model city with a thriving tourism industry that supports both private investors and communities that are actively participating in its growth and development. By 2020, Sagay will be the center for sustainable, industrial, cultural and eco-tourism development in Negros as it provide equal access to livelihood and employment opportunities (<http://philippinescities.com/sagay-city-negros-occidental/>, accessed December 04, 2016).

The NONESCOST Profile: The Northern Negros State College of Science and Technology (NONESCOST) is a state college created in 1998 through Republic Act No. 8448, authored by Congressman Alfredo G. Maranon, Jr. It started as a Barangay High School and later was made a Branch of the Iloilo State of College of Fisheries (ISCOF). It has four campuses, namely: Old Sagay (Main), Escalante City, Cadiz City, and Calatrava – Laga-an. The college has 48 teaching and 23 non-teaching permanent personnel, 170 contracts of service faculty, 65 job orders and 17 clinical instructors handling the average of 4,050 trending enrollment every semester (NONESCOST Roadmap and HR Plan 2020). It has graduate and undergraduate academic programs in the fields of education, arts and sciences, agriculture, fishery, information technology, criminology, nursing, and HRM. Over the last 18 years, the college commitment toward producing high-quality graduates and relevant research and extension activities and programs has been enduring. It is likewise evident that the efforts of the college to respond to changes within and outside its environment have increased tremendously.

The trend towards globalization has brought about changing and growing demands of industries. This trend placed increasing pressure on the college to continually adjust to these changes while maintaining its competitiveness and relevance. Thus, in response to these developments, the college come up with a roadmap that served as a guide as it repositions itself into becoming more competitive and responsive to the needs of its stakeholders. The preparation of the college strategic plan 2020 followed a very comprehensive process and was basically participatory in nature. As such, ideas and concerns of the college constituency and external stakeholders primary in the plan formulation process. Among the major activities conducted was a series of stakeholders' consultation workshops carried out in the four campuses of NONESCOST, a departmental strategic planning and an institutional strategic planning represented by the various stakeholders of the college. The conduct of the stakeholders' consultations provided an avenue where problems, issues, and concerns of these stakeholders encouraging. Given the extent of stakeholders' participation in the strategic planning process, the strategic plan 2020 is an actual embodiment of the aspirations of the constituency for the college and a reflection of the deep commitment to achieve its vision. Further, regular year-end evaluation of the Strategic Plan was conducted to ensure its attainment where appropriate revisions were done for suitability and adaptability to changing educational landscape. Hence, the strategic direction of the college for the next four (4) years is transcribed in this context.

Vision 2020: Acknowledged School of Excellence in Science, Technology and Innovation in the Region (ASESTIR) as it

transforms to be the State University of Northern Negros (SUN Negros).

Mission: Transform the lives of people by providing quality instruction, technology-generating-researches, poverty-alleviating extension services and sustainable entrepreneurial opportunities. Likewise, it is guided with its Core Values as CARES which stands for; C-Creativity and Innovation—from the study of history to analyzing voting trends and from developing co-curricular programs to streamlining administrative functions, the NONESCOST community is determined to be exemplars of innovation and creativity; A-Accountability and Openness-shared governance ensures that all members of the College family have an opportunity to participate in and take responsibility for its course. A continued commitment to openness and accountability is critical to the College success; R-Respect—the NONESCOST family acts as individuals and as a community with respect for diversity and for the best in human potential; E-Excellence—every part of the institution and every member of College community shall strive for excellence – faculty excellence, educational excellence, excellence in research and extension, and staff excellence; and S-Service—NONESCOST shares the common purpose of serving students, one another, and the people and the nation. Figure 5 illustrates the Synergy of the development vision and agenda of the region, the province, the city and the College which is actually anchored to the national development vision and agenda.

The Challenge: While the Roadmap envisions where NONESCOST should be in the future and how it is doing towards its stakeholders—the community, the College is still faced with the challenge of whether it improves the quality of life of the people through the provision of its academic and non-academic programs and services. The truth that it did well along with other or in all areas is still driven backward that it neither provide substantial evidence that it achieve its organizational outcomes nor an indicator of the attainment of its mission. Ideally, while the College is raising its banner of becoming an acknowledge school of excellence in science, technology, and innovation in the region it shall likewise pull upward, if not in the same level, the economic status or the lives of its immediate local communities. Such that, the quality of the academic and non-academic services the College provides is reflective of the quality of life the communities have. On the other hand, the 19.84 hectares of twenty-four (24) species mangroves area owned by the College under Presidential Proclamation No. 83, dated March 11, 1987 remain under-utilized to serve the local community due to absence of a very strategic development plan that will efficiently manage the mangrove resources to effect a positive social and economic change in the area. Research and extension functions of the college shall be enlivened to serve its purpose to the college and the stakeholders efficiently and to live with its ideals, value, and role in progress, growth and development of a community, in particular, and the nation in general. Hence, it is, therefore, necessary that strategic development programs, projects, and activities with the focus on commodity or product-based researches shall be carefully planned, designed and implemented to ensure optimum utilization of human, physical and financial resources. While a dynamic and functional extension program, projects and activities are in placed that consummate the transfer, adoption, and utilization of these commodity/product-based research outputs.

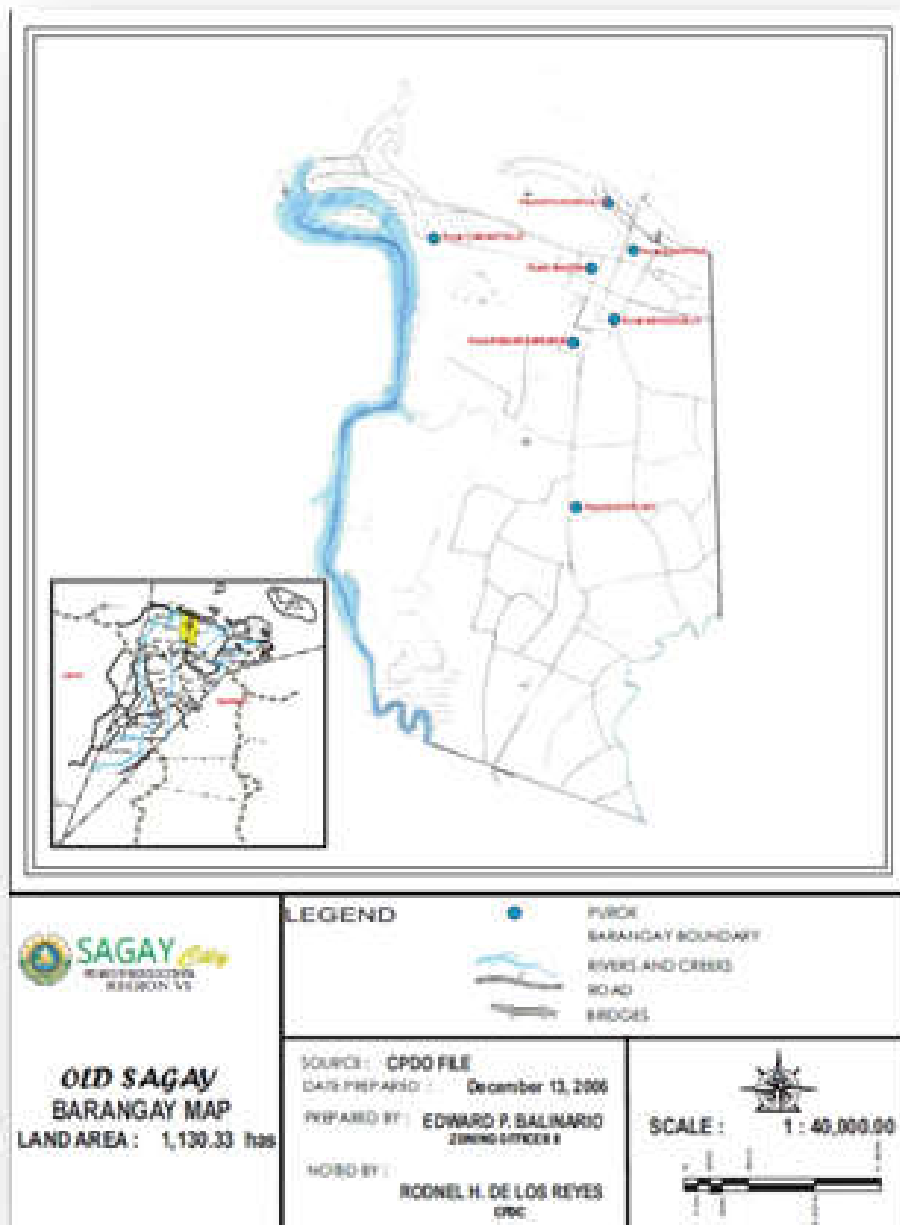


Figure 4. Map of Brgy. Old Sagay

A more focus and rigorous policies in this aspect shall be essentially planned, installed and implemented to attain research and extension outcomes in the perspective of the local communities. The College should re-think and re-energize itself and its stakeholders to bring to life the culture of Accountability and Corporate Social Responsibility (CSR). Thus, a very comprehensive community-based livelihood programs through eco-techno tourism, research and extension projects and activities shall be crafted and operationalized that will ensure social and economic impact to the communities while preserving and conserving the natural resources. The College Mangroves' Area shall therefore be utilized as community-based ecotourism centre of Barangay Old Sagay and part of the tourism loop of the City of Sagay. Community-based tourism is community driven where community members living close to the tourism facility has the opportunity for control.

While it is true that community participation results in better decisions, since decisions that involve the whole community members are likely to be acceptable to them, it is, however, necessary that there must be some policies and legislations from the College and its collaborators/partners and the Government to enable the local community actively gets involved in the process. Sagay City Tourism Master Plan articulated Old Sagay as the second top priority area in tourism development of Sagay City based on the assessment it has conducted from attributes such as; base product, accessibility, safety and security, stakeholders, nature of the experience, facilities, amenities and infrastructure and control mechanisms. Old Sagay is where the famous Museo Sang Bata Sa Negros is found and also the jump-off point to Carbin Reef and Molocaboc Island. Hence, the HIT Plan project is essentially viable and sustainable as this will certainly be part of the tourism loop of the City of Sagay where all tourists pass

through as the jump-off point. This indicates therefore that partnership or collaboration shall be forged between the college and the city of Sagay and among other partner/collaborators to provide shared management and responsibility. Moreover, the perception survey commissioned by the City of Sagay showed that 92% of the residents of Sagay welcome tourism while 96% welcome tourism development in their respective locality. Indeed, the receptiveness of the community effective of the communities of Sagay City on ecotourism is evident. Therefore, a more focus opportunity or priority development plan of the area for growth and development shall be given more attention.

Review of Related Literature: This chapter presents related research and case studies on mangroves' management, tourism and ecotourism published and unpublished both local and international.

On Community-Based Ecotourism Development: Community-based ecotourism may be referred to as tourism in which a large number of local people are involved in providing services to tourists and the tourism industry, and in which local people have meaningful ownership, power and participation in the various tourism and related enterprises. In Ghana, community-based ecotourism projects (CBEPs) started in 1995 as collaboration among the Nature Conservation and Research Centre (NCRC), Ghana Tourist Board, and 14 local communities in Brong-Ahafo Region. The destination communities set up tourism management committees (TMCs) with local stakeholders to coordinate CBEPs activities at each of the project sites. NCRC coordinated and implemented the ecotourism projects while GTB marketed the ecotourism destinations. In the Region, community tourism sites provide opportunities for eco-tourism activities such as fauna and flora viewing, scientific research and outdoor recreational activity like hiking. They also offer camping sites and tourists' accommodation to improve the local economy (Kwazulu-Natal Tourism Authority, as cited by Thomas, 2013).

The stakeholders in community-based ecotourism are organizations, individuals, and institutions directly or indirectly involved in development, operation and management of community-based ecotourism projects. The organizations include governmental agencies such as research institutions, non-governmental institutions, local people, traditional authorities, and tourists. Stakeholders' interest in community-based ecotourism can affect the outcome of tourism development. In fact, tourism is complex and dynamic, with linkages and independencies and therefore requires multiple stakeholders with diverse and divergent views and values. Stakeholders assume collective responsibilities for the on-going directions and success of any ecotourism establishment (Gray, 1989, as cited by Manu, Isaac, Kuuder, and Conrad, 2012). Community-based ecotourism helps improve the standard of living for example through increased disposable income of individuals. Besides these, there is an underlying concept of development of community-based ecotourism which is the empowerment of local people. In particular, the idea of empowerment of host communities can be divided into four different categories: economic, psychological, social and political. In economics, ecotourism generates long-term benefits that are distributed equitably within the host communities and can be used for the constant improvement of the community's infrastructure. Moreover, ecotourism can contribute to the psychological empowerment of the local

people by enhancing their sense of self-esteem and by cultivating pride for their cultural and natural heritage. This happens because ecotourism reveals to the public the value of host community regarding natural beauty or cultural uniqueness. Also, ecotourism may strengthen social bonds within the community by promoting cooperation among its members. Finally, ecotourism brings about political empowerment, since it creates a forum for the expression of people's voices concerning issues of local development (Scheyvens, 1999, as cited by Manu, Isaac, Kuuder, and Conrad, 2012). Wearing and Neil (1999) stated that the more obvious reason to initiate an ecotourism project is to maximize the benefits of tourism, specifically: (a) additional revenue to the local business and other services; (b) increased market for local products; (c) employment of local labour and expertise; (d) source of funding for the protection of and enhancement or maintenance of natural attractions and symbols of cultural heritage; and (e) heightened community awareness of the value of local indigenous culture and natural environment. Benefits to the local business are, and its communities are the major reason for undertaking community-based ecotourism. It is also one of the outcomes desired by all stakeholders in community-based ecotourism (cited by Manu, Isaac, Kuuder, and Conrad, 2012).

On Tourism Innovation and Sustainability: The Tanzania's tourism industry is well positioned to tap the opportunities for inclusive growth and development if one invests on the sustainability of its natural resources and promote the innovation systems. Of critical importance in the development of tourism in Tanzania is the need to focus on the local content strategies to address the rampant poverty. There is a need for systems and innovative analyses to identify opportunities for inclusive and sustainable tourism development.

Hence, to promote social diversity, especially gender equity and youth advancement, activities in ecotourism program are set within the following development process; a) capacity-building in research and training on innovation and sustainability of tourism resources for inclusive development, b) develop and implement curriculum for Master and PhD programmes in Tourism and Hospitality Management, c) linkage and collaboration between colleges and universities in one hand and between college and the industry or other agencies on the other for outreach, d) set up the multidisciplinary research centre in tourism, e) strengthen the University's publication record by organizing and participating in both international and local conferences for dissemination of quality research output and conduct short trainings on scientific writing skills for academic members of staff (Anderson and Mossberg, 2015). In the global change perspective, the popularity of coastal tourism and the development of mass tourism would promote the tourist and manager to realize the necessity of sustainable tourism (European Commission 2000, as cited by Fang and Dakui, 2014). The sustainability of the planning and management could motivate the sustainable social-economic development and environmental protection (Orhon, et al. 2007, as cited by Fang and Dakui, 2014). According to the World Tourism Organization (WTO) in 1996, sustainable tourism can satisfy the demand of contemporary tourists and the local area, satisfy the protection and can strengthen the future development opportunities. Sustainable tourism development can be considered as the dominant mean of all resource management,

in order to realize the economic, social and aesthetic needs, meanwhile maintaining cultural integrity, key ecological process, biological diversity and life support systems (Shah et al., 2002, as cited by Fang and Dakui, 2014). Sustainable tourism needs to meet three principles: improving the quality of host community life; offering high-quality tourist experiences; and maintaining the environmental quality of the destination (Ding and Pigram, 1995, as cited by Fang and Dakui, 2014). Sustainable tourism and resource protection are of mutual influence and interdependence (see Figure 1). Sustainable resource exploitation and management is the foundation of sustainable tourism. Sustainable tourism would not consume other renewable energy except for the tourist transportation. Community resources, such as traditional culture, specialty shops, and recreational facilities are the resource base of tourism. Tourism could promote the cyclic generation of traditional natural resources and could supply financial incentives for natural and cultural protection. Tourism can significantly promote understanding between people and the global consciousness (Mowforth and Munt, 1998, as cited by Fang and Dakui, 2014). Sustainability is not possible as long as the expansion of capital enlarges the ranks of the poor and impedes their access to the resources needed for mere survival. Ecotourism is widely believed to be the perfect economic activity to promote both sustainability and development. Sustainable development has become a powerful and controversial theme, creating seemingly impossible goals for policy makers and development practitioners. Sustainability, as applied to tourism, means the use of tourist resources so that they are not consumed, depleted or polluted in such a way as to be unavailable for use by future generations of tourists. Sustainability is an integral part of ecotourism, which holds the promise of fairness to the future generation. It necessitates the consideration of four different types of sustainability. These are; economic, environmental, social and cultural sustainability (Weiss, E.B., 1989).

On Environmental, Socio-cultural and Economic Effects of Ecotourism: Tourism has long been considered as a potential means for socio-economic development and regeneration of rural areas, in particular, those affected by the decline of traditional agrarian activities. Tourism development was seen by all those involved as having the potential to utilize local natural resources to diversify the local economy and tourism can be a powerful tool for successful economic development on a local and national scale (Horn and Tahi, 2009; Ecotourism Australia, 2008, as cited by Kiper, Ozdemir, and Saglam, 2011). Ecotourism potentially provides a sustainable approach to development. It is not only a powerful social and economic force but also a factor in the physical environment as well. It has the power to improve the environment, provide funds for conservation, and preserve culture and history, to set sustainable use limits and to protect natural attractions (Okeck, 2009). Ecotourism is a form of natural resource-based tourism that is educational, low-impact, non-consumptive, and locally oriented: local people must control the industry and receive the bulk of the benefits to ensure sustainable development (D'Angelo et al., 2010). Ecotourism comes with a promise to promote responsible travel to natural areas, to make a positive contribution to environmental conservation and to enhance the well-being of local communities (Angelica et al., 2010); therefore, ecotourism focuses on the local culture of a particular region (area) as well as the natural beauty, the geological structure, the natural vegetation and the fauna (Masberg and Morales, 1999), and is a tourism type which

includes the subjects of conservation of natural areas, education, economic gain, qualified tourism and participation of local people (Benzer et al., 2011, as cited by Kiper, Ozdemir, and Saglam, 2011).

On Guidelines for Community-Based Ecotourism Development: Ecotourism is used simply to identify a form of tourism where the motivation of visitors and the sales pitch to them centers on the observation of nature. This broad sector of the market is called "nature tourism." True ecotourism requires a proactive approach that seeks to mitigate the negative and enhance the positive impacts of nature tourism. The International Ecotourism Society stresses ecotourism as responsible travel to natural areas that conserves the environment and sustains the well-being of local people. This implies that there should be a recognition of and positive support for, the conservation of natural resources both by suppliers and consumers and a fundamental social dimension to ecotourism. A form of ecotourism where the local community has substantial control over and involvement in its, development and management and a major proportion of the benefits remain within the community. How the community is defined will depend on the social and institutional structures in the area concerned, but this implies some collective responsibility and approval by representative bodies.

Ecotourism is no panacea. It is important not to exaggerate the opportunities and benefits it can bring. Careful planning and improved knowledge are needed. Ecotourism and responsible tourism should be part of wider sustainable development strategies, whether at a community or an international level. The WWF International is taking action to reduce negative impacts and to encourage responsible tourism that enhances not only the quality of life but also natural and cultural resources in destinations. WWF's Tourism Position Statement (WWF International 2001) states that WWF and the tourism industry should share a common goal: the long-term preservation of the natural environment that recognizes developmental, environmental and social aims of tourism. WWF believes that tourism should be environmentally sustainable, economically viable and socially equitable. As a conservation organization, WWF's interest centers on how ecotourism can best assist its mission to conserve nature and ecological processes. WWF believes that engaging and facilitating the activities of local communities are an essential part of this, hence a focus on community-based ecotourism. Through this emphasis, WWF supports the general principles of social equity, cultural integrity, and poverty-reducing policies that guide many development programs. Hence, guidelines were set to provide a reference point for field project staff and to encourage consistent approach.

These twelve guidelines grouped into four sections that relate to different stages of community-based ecotourism initiatives that highlight some practical considerations for community-based ecotourism. These are;

Considering whether ecotourism is an appropriate option

- Considering the potential conservation gain-there needs to be a clear understanding of the relationship between local communities and conservation, and this might be improved through their involvement in ecotourism.



Figure 5. The Synergy of the Development Vision and Agenda of the region, the province, the city and the College



Figure 6. The value and principle model of sustainable tourism (Hall, et.al., 1997)

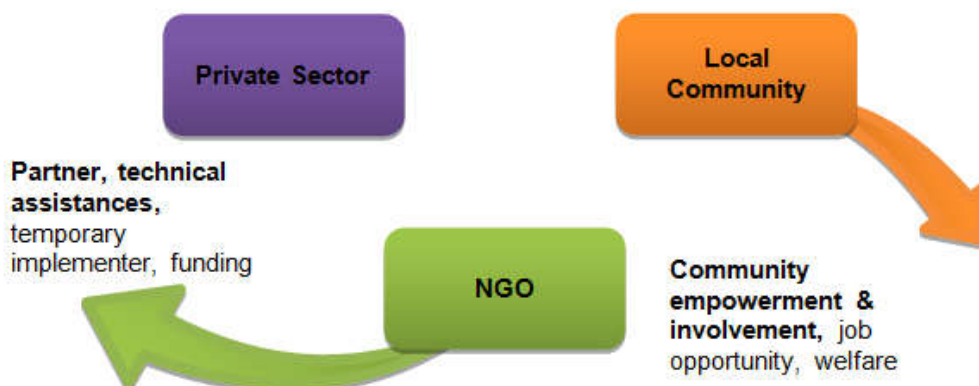


Figure 7. Scheme for Developing Ecotourism Indonesia

- Checking the preconditions for ecotourism-the suitability of the local area should be verified, and fundamental preconditions met before pursuing community-based ecotourism.
- Adopting an integrated approach-community-based ecotourism should occur in the context of other options and programs for conservation, sustainable development, and responsible tourism.
- Planning ecotourism with communities and other stakeholders
- Finding the best way to involve the community-effective structures is required to enable the community to influence, manage and benefit from ecotourism development and practice.
- Working together on an agreed strategy-close consultation with the community and other stakeholders should lead to an agreed vision and strategy for ecotourism, which has environmental, social and economic aims and attainable objectives.
- Ensuring environmental and culture integrity-the level and type of tourism planned and developed must be appropriate for the area's natural resources and cultural heritage and consistent with the community's wishes and expectations.

Developing viable community-based ecotourism projects

- Ensuring market realism and effective promotion-ecotourism projects must be based on an understanding of market demand and consumer expectations and how to place the product offer effectively in the marketplace.
- Putting forward quality products all community-based ecotourism products should provide a high quality of visitor experience and be subject to a rigorous business plan.

Strengthening benefits to the community and the environment

- Managing impacts-specific steps should be taken within the community to minimize the environmental impact and maximize the local benefit of ecotourism.
- Providing technical support communities will require on-going access to advice and support in the development, management and marketing of responsible, good quality ecotourism products.
- Obtaining the support of visitors and tour operators-ecotourism experiences should raise awareness of conservation and community issues among visitors and tour operators and include mechanisms for enlisting their help.
- Monitoring performance and ensuring continuity-ecotourism projects should be designed and managed for long-term viability and success.

On Ecotourism: Concept and Development: Ecotourism in Indonesia defined as, activities of responsible traveling in entire areas or in areas which are named according to the role of nature. The purposes of such activities are; to enjoy natural beauty, involving education, understanding, and supports conservation, and as well as increasing the income of the local

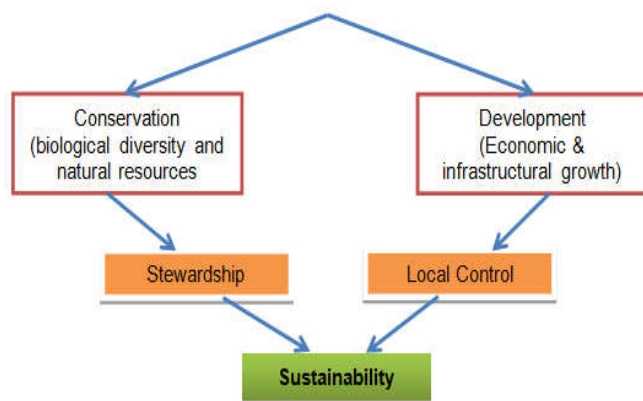
communities. Figure 2 below is the scheme used for developing ecotourism in Indonesia. Hence, sustainability must encompass the natural, social, economic and cultural environment and therefore must institute the importance of ecotourism for Indonesia as (Nirwandar, 2016).

- to generate jobs and revenue, thus providing and incentive for preserving natural areas,
- to raise public awareness of the many products and services provided by natural ecosystems and biological resources and respect for traditional knowledge and practices, and
- to reconcile economic and environmental concerns and give practical meaning to sustainable development.

Ecotourism which interchangeably known as nature-based tourism is a fraction of international tourism. It is the fastest growing segment of the global tourism industry that promotes less or non-destructive and non-consumptive use of nature. Ecotourism, as a result, appeared as an environmentally caring and responsible travel to outstanding and exceptionally pristine places and sites or areas with the identity of their own. It is a win-win development strategy designed for underdeveloped areas. The key considerations of ecotourism value the natural environment, respect for host culture and the local quality of life. The history of international tourism is evident of mass tourism. Tourism as a binding activity has been booming since 1950. In 1950, the international arrival was 25 million. The international arrivals worldwide increased to nearly 70 million in 1960 that grew further to 160 million in 1970. In 1980, the international arrivals totalled over 280 million and rose to over 563 million by 1995. Between 1950 and 1999 the number of international arrivals shows an evolution from a mere 25 million to the current 664 million, corresponding to an average growth rate of 7 percent. For the year 2000 World Tourism Organization (WTO) projected worldwide tourist arrivals of around 702 million and over 1 billion by 2010. In 2001, the global international arrivals amounted to more than 700 million. According to WTO study, "Tourism: 2020 Vision" predicts that 1.5 billion tourists will be visiting foreign countries annually by the year 2020, spending more than \$2 trillion or \$5 billion every day (WTO Publications, 2000). This mass movement of tourist flow threatened the quality of the natural environment. Therefore, to overcome the shortcomings of mass tourism, a dynamic model of tourism development i.e. ecotourism with nature as a principle objective came into existence. The model of ecotourism is considered as environmentally sustainable and socio-economically viable phenomenon (Frangialli, 1993).

According to Adventure Travel Society (1995), ecotourism is "environmentally responsible travel to experience the natural and cultural areas of a region while learning about and promoting conservation and economically contributing to local communities." Ecotourism is a buzzword, and it embraced "environment-friendly," "community friendly," and "market friendly tourism." It implied that ecotourism requires a judicious balance between the interests of hosts, visitors and the tourism industry (Hall, 1995). According to the World Travel and Tourism Council (WTTC) President, Mr. Geoffrey Lipman ecotourism is a market segment and as an environmentally conscientious practice. According to Lindbergh and Mckercher ecotourism is tourism and recreation that is both nature-based and sustainable.

The emphasis is on the three features that can describe ecotourism; (a) location and consumer motivation: it reflected the desire and requirements of the people i.e. what they wanted the activity to be? This aspect incorporated environmental, experimental, socio-cultural and economic dimensions; (b) minimizing the negative impacts: this aspect minimized the ecological and cultural impacts while maximizing positive economic impacts. It aimed at achieving the sustainability; and (c) critical evaluation of ecotourism: ecotourism has two components i.e. the nature-which is descriptive and sustainability-which is prescriptive (Lindbergh and Mckercher, 1997). Ecotourism has been considered as a tool/strategy for sustainable development. This point of view claimed that ecotourism not only protects the environment but contributes to socio-economic development and strives to sustainability. Components of ecotourism can be explained using the model presented in Figure 3. According to this model local participation, preservation of natural areas and revenue generation are integral components of ecotourism. This concept stresses on environmental education with the twin objective of conservation and development to achieve overall sustainability.



Source: Boo, E., Ecotourism: Potentials and Pitfalls, Vol.1, 1990 (WWF)

Figure 8. Components of Ecotourism

On Destination Management Organization (DMO) Model:

DMO is management of tourism destination which is structured and synergized innovatively and systematically to contain functions of coordinating, planning, implementation and control of destination organization by means of network, information and technology which are integrated with the community participation, associations, industries, academicians, and government that share the same objectives, process and mutual interests in order to enhance management quality, volume of tourists visit, length of stay, tourists' expenditures as well as benefits for local community. Generally, DMO operational phases include; planning, implementation, controlling and monitoring, marketing, and funding. Hence, DMO carries the principles of 1) participatory-involving local community with the other stakeholders including central and local government as well as entrepreneurs on planning, implementation, and decision-making of DMO establishment and development, 2) integration-integrating functions of economy, marketing, coordinating, building community's identity and representative, 3) collaborative-collaboration on eliminate conflicts and gathering aspirations or interests of the stakeholders to participate and share their roles, benefits and responsibility of

tourism management, and 4) sustainability-continuous improvement by implementing the principles of economically feasible, environmentally viable, socially acceptable and technologically appropriate.

The scope of DMO intervention shall, therefore, include the following;

- strengthening the stakeholders,
- institutional/management strengthening,
- strengthening marketing and communication,
- strengthening crisis and risk management,
- strengthening ecology, social and economic impacts,
- basic strengthening,
- capacity building,
- resources management
- strengthening system, network, and interconnectivity,
- strengthening facilities and accessibility, and
- strengthening services.

On Role of Ecotourism in Sustainable Development:

Ecotourism is a sub-component of the field of sustainable tourism. Ecotourism is perceived potential as an effective tool for sustainable development is the main reason why developing countries are now embracing it and including it in their economic development and conservation strategies. Ecotourism helps in community development by providing the alternate source of livelihood to the local community which is more sustainable. Its aim is to conserve resources, especially biological diversity, and maintain sustainable use of resources which bring ecological experience to travellers, conserve the ecological environment and gain economic benefit. Ecotourism helps involving local community for the conservation of the ecology and biodiversity of the area that biodiversity in return provides the economic incentives to the local community. Eco-tourism contributes to preservation of biodiversity; sustains the well-being of local people; involves responsible action on the part of tourist and the tourism industry; promotes small and medium tourism enterprises; requires lowest possible consumption of natural resources; stresses local participation, ownership, and business opportunities, particularly for rural people; and above all includes the learning experiences (Kiper, 2013).

The Drivers: Bench Learning Concepts and Principles of the EDP:

The principles of convergence of the trifocal functions of the SUCs, accountability, corporate social responsibility and fidelity to mandate drive the proponent to undertake this project to fulfill the SUC's mission of transforming or improving the life—Quality, of its stakeholders. Likewise, the concepts and principles of Quality Assurance and Performance Management specifically the use of tools and methodologies such as; Plan-Do-Check-Act (PDCA) of the Deming Cycle, the use of strategy map and the Balance Scorecard is also applied. Indeed, SUCs and SUC leaders shall continuously direct or re-direct all its development efforts towards enabling innovative quality assurance programs, projects and activities that will create a significant impact to its students, in particular, and to the communities, in general. Management of instruction should, therefore, present established efficient systems and

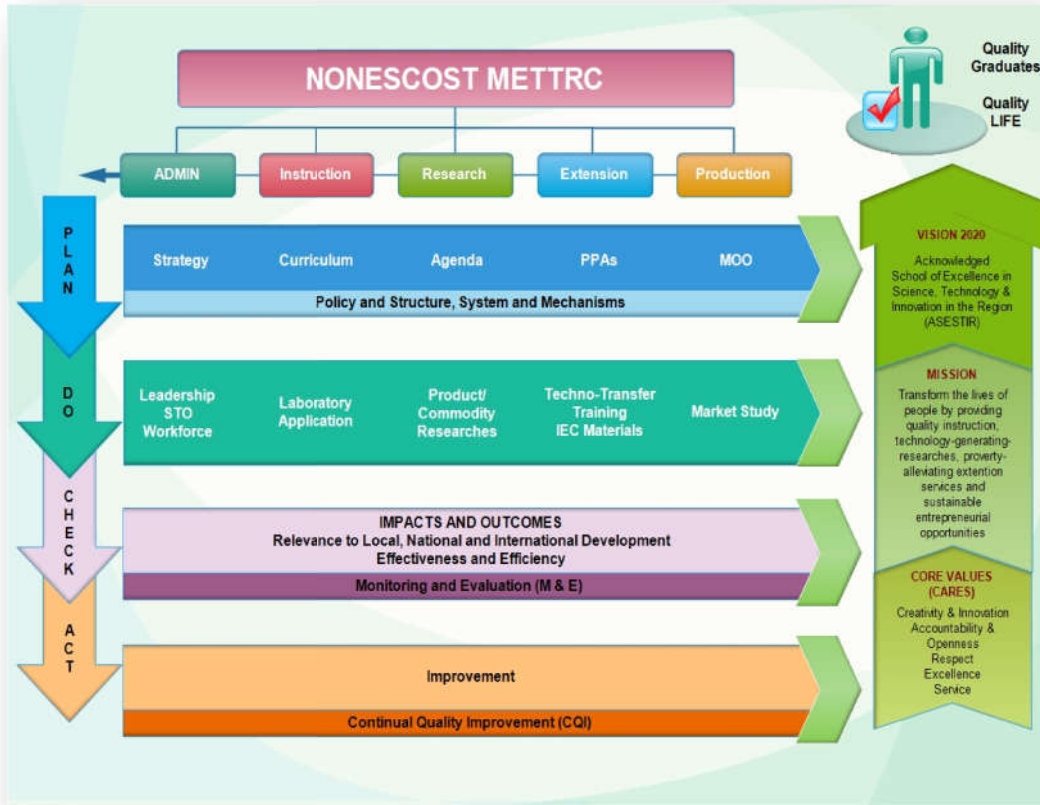


Figure 9. NONESCOST Mangroves Eco-Techno Tourism and Research Centre Design Framework

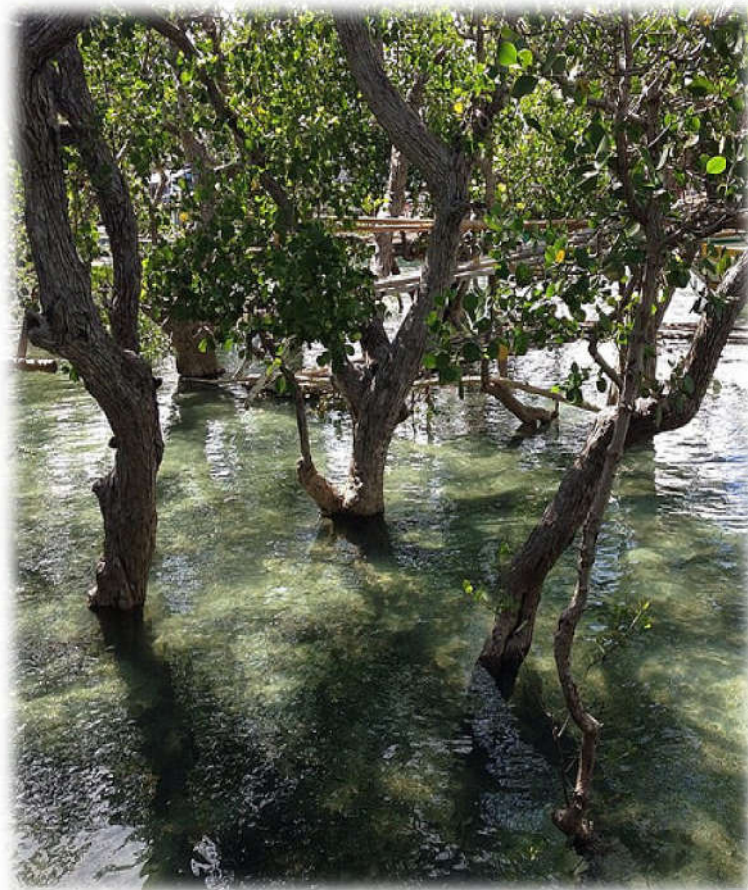


Figure 10. NONESCOST Mangrove Area

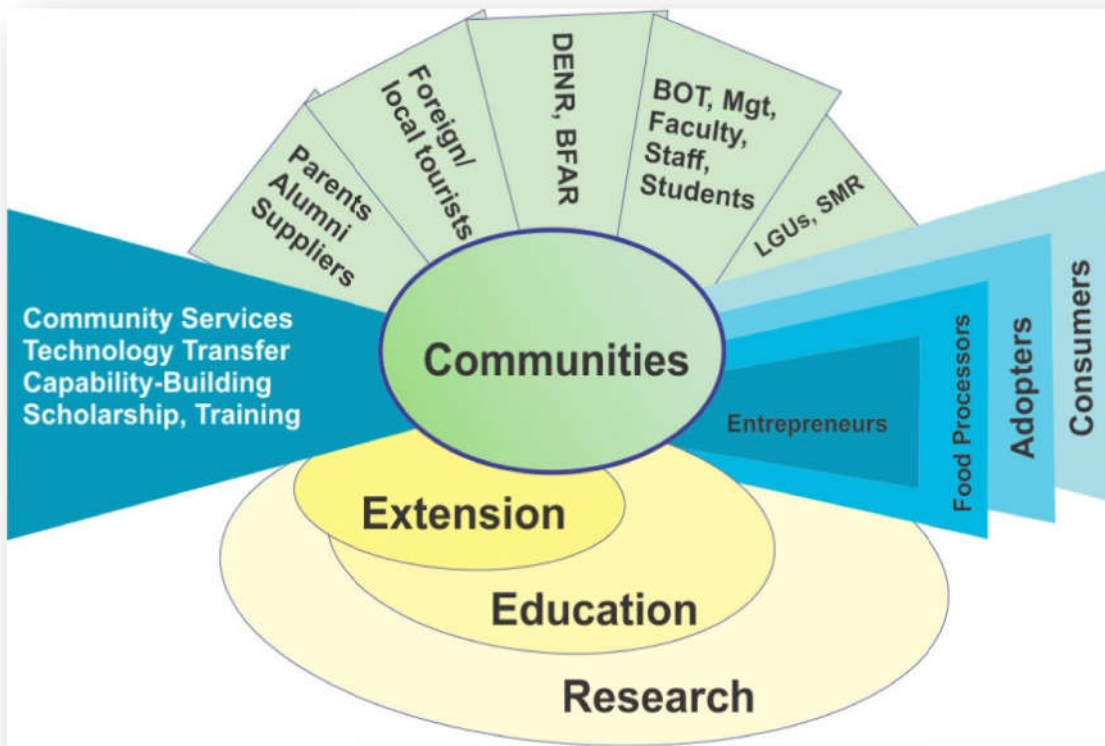
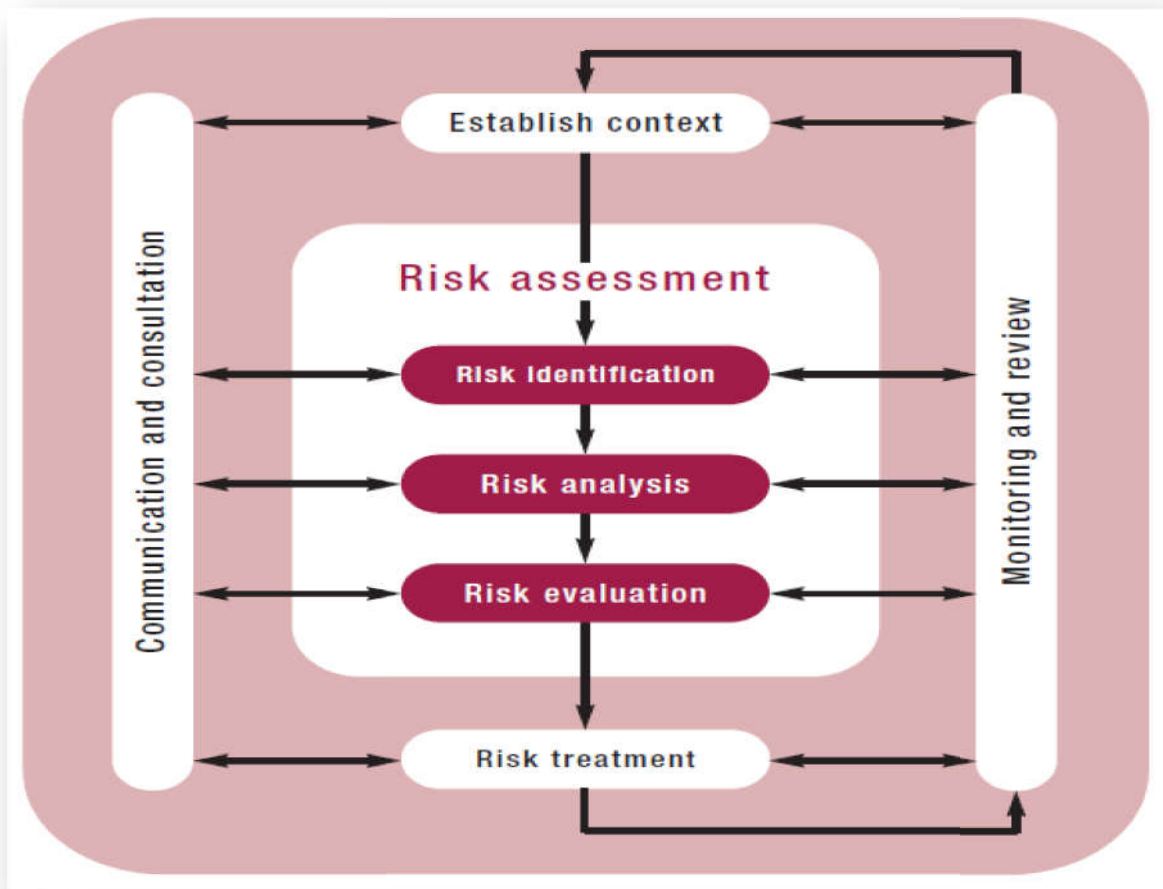


Figure 11. HIT Plan Operational Framework



Based on ISO31000:2009

Figure 12. Risk Management Process of the HIT Plan

Table 1. NONESCOST Mangroves Eco-Techno Tourism and Research Centre Stakeholders' Analysis Matrix

Name of Stakeholder	Role in Project	Main Expectations	Impact	Influence	Attitude towards the Project
NONESCOST as a College	Implementer/Oversight	To ensure continuity/sustainability of the project, knowledge creation and knowledge translators.	Improve delivery of academic, research and extension activities.	Greater involvement in improving the way of life of the students and the communities, in particular and in the national economy in general.	Strong desire and persistent to pursue the HIT Plan Implementation
College Officials, Faculty & Staff and Students, DENR, BFAR, LGUs, other line agencies	Collaborators	To collaborate, participate, and support the college and the local communities in the implementation of the HIT Plan	Improve morale and the sense of belonging as they engaged in planning, management, implementation and monitoring of the HIT Plan.	Positive attitude towards work Greater involvement in the college and towards the project.	Positive attitude towards work Increased participation in the college Job and service satisfaction is enhance
Alumni, Suppliers, Parents, Industry Partners, NGOs					
Local Communities	Collaborators-Beneficiaries	To actively collaborate, participate, and support the college in the implementation of the HIT Plan as beneficiaries.			
Research and Extension Office	Manager/Implementer	To strictly implement the HIT Project as provided in the plan.	Accountability and responsibility acceptance Putting the right persons at the right job/tasks	Follow-ups and feedback Leadership Empowerment Skills and competency matching	Strong desire and persistent to pursue the HIT Project Satisfaction through attainment of targets and College's mission.
Budget and Accounting Office	Fund manager	To review budget scheme to address the needs of the HIT plan including its expected growth and development over time.	Established budget allocation Cost-effective budget strategy	Fiscal control for accounting and auditing measures Appropriate budget allocation	Strong financial controls implementation
PME office	Steering committee member	To oversight the implementation of the HIT Plan through close monitoring and evaluation	Attainment of targets and goals vis-à-vis plans Provide change and tracking mechanisms in case plans and programs goes beyond schedules	Implementation of HIT Plan Cascading of targets Re-action planning/FGD	Imposed rigidity in the implementation Extensive evaluation outlook
VP Admin and Finance	Steering committee member	To oversight the implementation of the HIT as planned	Attainment of targets and college goals/mission	Streamlined activities and process Avoid delays of HIT projects, programs, and activities	Strong support for the HIT Plan
College President	Executive steering committee	To oversight the implementation of the HIT as planned	Attainment of targets and college goals/mission	Streamlined activities and process Avoid delays of HIT projects, programs, and activities	Strong support for the HIT Plan

Table 2. NONESCOST Mangroves Eco-Techno Tourism and Research Centre Log Frame

	Measurable Indicators	Means of Verification	Important Assumptions
<p>GOALS</p> <p>1. Establishing sustainable livelihood programs/projects for the local community of the College.</p> <p>2. Promoting conservation and sustainable management of fishery habitat (the mangrove ecosystem)</p> <p>3. Increase ecotourism activities of the College/Sagay City/Brgy. Old Sagay.</p>	<p>10% increase on income of the household/members of the community (and sustained or higher, year after year)</p> <p>95% increase on level of awareness and involvement in conservation/preservation activities of mangrove eco-techno park (and sustained year after year)</p> <p>15% increase on tourist visits and income generation of the College/Sagay City/Brgy. Old Sagay (and sustained or higher, year after year)</p>	<p>Research results/reports on community assessment (esp. economic profile)</p> <p>Research results/reports on level of awareness and involvement of the local community</p> <p>Reports on tourist visits, financial reports of the project, and the yearly revenue allotment of Sagay City and Brgy. Old Sagay (if possible and when necessary)</p>	<p>1. Availability of funds for operation and maintenance.</p> <p>2. No occurrence of major natural disasters</p> <p>3. Appropriate and effective monitoring scheme</p> <p>4. Increase number of mangroves, fishes and other aquatic species.</p> <p>5. Appropriate ecotourism promotions/advertisements.</p> <p>6. Effective and dynamic marketing plan and strategies.</p> <p>7. Sustainable livelihood and ecotourism plan/programs/projects/activities.</p> <p>8. Inclusion in the tourism loop of Sagay City</p>
<p>PURPOSE</p> <p>1. Provision of income (additional income) of the local community, students, faculty and staff, and the college</p> <p>2. Preservation/conservation of the mangrove forest for ecotourism</p> <p>3. Provision of research and extension venue and training for fish and agriculture processing technologies and others.</p>	<p>Number of men and women, households, students, faculty and staff conducting and/or participating in livelihood programs/activities</p> <p>Number of men and women, students, households, community practicing mangrove conservation/preservation and management</p> <p>Number of men and women, students, households, community and other beneficiaries conducting research and practicing fish and agriculture technologies and others.</p>	<p>Reports on income (share) of the project, local community, students, faculty and staff.</p> <p>Research results/reports on mangrove conservation/preservation and management of the community and others</p> <p>Reports on number of researchers and researches conducted and number of community utilizing/adopting the fish and agriculture processing technologies and others.</p>	<p>1. Availability of research facilities and funding for the conduct of research</p> <p>2. Men and women, students, households, and community were trained on mangrove conservation/preservation and management</p> <p>3. Established policy on the conduct of research and the use of the technologies</p> <p>4. Established policy on the conduct of economic livelihood programs/activities</p> <p>5. Established research venue, fish and agriculture processing technologies and others, including the IEC materials.</p>
<p>OUTPUTS</p> <p>1. Established Mangrove Eco-Techno Tourism and Research Center</p> <p>2. Sustainable community-based economic livelihood programs/activities</p>	<p>Number of tourist visit</p> <p>Number of community-based economic livelihood programs/activities</p>	<p>Reports on tourist visits</p> <p>Reports on sustainable and income generating community-based economic livelihood programs</p>	<p>Community acceptance on mangrove/community-based eco-techno tourism and research center</p> <p>Normal weather conditions</p>

Continue....

<p>3. Packaged technologies on fish and agriculture processing and others</p> <p>4. Research and extension venue and demo farm</p> <p>5. Improved Mangrove nursery</p> <p>6. Mapped and tagged Mangrove species</p>	<p>Increase on fish and agriculture technologies production</p> <p>Number of men and women utilizing/adopting the fish and agriculture processing technologies and others</p> <p>Number of students, researchers, faculty, staff, household, men and women attending training and seminars</p> <p>Number of researches conducted</p> <p>Number of research outputs/technologies transferred, patented, etc.</p> <p>20% increased mangrove seedlings</p> <p>10% increased on different species of mangroves</p> <p>Number of identified and marked/tagged mangroves</p>	<p>Production financial reports</p> <p>Reports on number of men and women adopting the fish and agriculture processing technologies</p> <p>Reports of attendance to trainings and seminars and minutes</p> <p>Training design, schedule and documentation</p> <p>Records or copy of research outputs</p> <p>Reports on technology transferred and technology transfer training conducted. Also report of patented researches</p> <p>Reports on number of mangrove seedlings</p> <p>Reports on number different species of mangroves</p> <p>Reports on number of identified and marked/tagged mangroves</p>	<p>Acceptance of community fish and agriculture processed food and others</p> <p>Maintenance of the fish and agriculture processing technologies and others</p> <p>Expert personnel conducting the training and seminars in fish and agriculture processing technologies and others</p> <p>Accessibility of the research and training venue and demo farm</p> <p>Students apply what they learnt from laboratories and/or classes</p> <p>Faculty conduct researches</p> <p>Mortality rate of mangrove seedlings</p> <p>Availability of different species of mangroves</p> <p>Data banking system of identified mangrove species and appropriate tagging mechanisms</p>
<p>Activities</p> <ol style="list-style-type: none"> 1. Organizational Diagnosis 2. Re-assessment of NONESCOST mangroves species and its biodiversity 3. Research on perceptions of the local communities on community-based ecotourism development 4. TNA and skills and competency assessment of the local communities 5. Assessment of existing ecotourism 6. Presentation of the HIT Plan to the admin and academic councils for endorsement to BOT approval 7. Consultation and presentation meetings with LGUs, DENR, BFAR, SMR, Sagay tourism office 8. Stakeholders' Forum 9. Formation of organization/association-cooperative 10. Capability-building and trainings 11. Launching of the HIT Plan 12. Construction of the research and training center, cottages, pasalubong center, floating restaurant, and bamboo trails 13. Procurement of paddle boats 		<p>Sufficient good trainers are available</p> <p>Researchers and extensionists are well motivated to utilize the demo farms, conduct researches and extension activities</p> <p>No dramatic rise in the price of inputs for fish and agriculture processed products and others</p> <p>Strong partnership and linkages with partners and collaborators</p> <p>Complementary ecotourism activities</p> <p>Strong support of the college and all collaborators/partners/cooperators</p>	

Table 3. NONESCOST Mangroves Eco-Techno Tourism and Research Centre Project Risks and Mitigating Strategy

Risk	Mitigating Strategy
Insufficient resources available to perform the work	<ul style="list-style-type: none"> • Explore various channels to secure resources, including hiring new staff or consider training staff who currently lack sufficient skills, based on TNA results • Consider alternative implementation approaches or rescheduling and prioritizing work • Hire or put in place top talents
High turnover on the project team or partners/collaborators	<ul style="list-style-type: none"> • Investigate reasons for turnover and provide feedback on possible corrective and/or preventive measures to management • Improve team cohesion through proactive communication • Work to establish a project environment success
Friction/conflict between project team and collaborators/partners	<ul style="list-style-type: none"> • Establish clear lines of communication between the project team and collaborators • Proactively managed communication, including gaps • Develop issue logs and plans to track and resolve issues • Follow up on action items • Ensure all project status information is accurate and up-to-date
Contractor failure	<ul style="list-style-type: none"> • Check references • Assess abilities prior to award • Provide a scope of work that clearly defines responsibilities • Actively manage the contractor relationship
Overly optimistic schedule	<ul style="list-style-type: none"> • Incorporate adequate time for planning, design and consultations with stakeholders • Properly account for schedule dependencies including stakeholder dependencies that are not directly controllable
Competition for ecotourism income	<ul style="list-style-type: none"> • Ensure complementation of ecotourism activities with other existing ecotourism sites • Coordinate with other operators or LGU for ecotourism looping • Coordinate with hotel, pen houses and transport operators
Waste Production	<ul style="list-style-type: none"> • Continuous massive education campaign, seminars, workshops to ensure the preservation/conservation management of the mangrove area • Full implementation of the waste segregation policies • Regular waste disposal as provided for in the waste disposal plan/schedule
Research and Extension Activities	<ul style="list-style-type: none"> • Coordinate with the research and extension office to ensure synergy of research and extension activities • Review and evaluation of research and extension agenda/thrusts

mechanisms that underpin the full potential of learners to transcend the learning into research activities and ultimately utilized these research results to empower the local communities towards the attainment of quality life.

The NONESCOST Innovation and Transformation Plan:

The NONESCOST as a state college is mandated to provide quality academic and non-academic programs and services to the different stakeholders through its tri-focal functions: Instruction, Research, and Extension. With its Mission of “transforming the lives of people by providing quality instruction, technology-generating-researches, poverty-alleviating extension services and sustainable entrepreneurial opportunities” the College is still face in a dilemma or even in doubt if indeed, it raised or even improved the quality of life of its people and the local communities. Hence, the College and its people should re-think and re-energize to come up with the best option to ascertain the best and appropriate innovative and transformative intervention programs, projects and activities that will respond the needs of its stakeholders, specifically the local communities. The HIT Plan is a natural follow-up to the NONESCOST Roadmap 2020. The roadmap helps identify where the college is, where it is going, and how it is going to get there. Likewise, the HIT Plan lays out specific tasks, actions, and targets to be undertaken to achieve the college's goals and objectives in areas of instruction, research, extension, production, and corporate social responsibility.

The Design Framework: The ultimate aim or mission is to improve the quality of life of the local communities and quality graduates through the convergence of instruction, research, extension and production functions of the College with the active support of the administration. Hence, policy and structures, quality systems and mechanisms on strategies of implementation, curriculum enhancement, research and

extension agenda/PPAs and entrepreneurial activities will be carefully planned and managed. Implementation of these policy, structures, systems and mechanisms will be cascaded requiring operations, workforce, laboratory applications, product/commodity-based researches, techno-transfer, training, IEC materials, and market study. Essentially, monitoring and evaluation will be undertaken to ensure relevance, efficiency, and effectiveness of implementation from the impacts or outcomes and provide continual quality improvement (CQI) to ascertain the attainment of the NONESCOST mission-vision. Figure 4 illustrates the overall design framework of the HIT Plan. Towards the realization of the plan and this structure the following are the proposed innovative solutions or components of the HIT Plan;

- One Tourist One Mangrove Policy (Adopt a Mangrove (Tree) Approach Program)
- Rationalization of Faculty Loads (esp. Fishery and Agriculture Faculty)
- Student Scholarship Program (UNIFAST)
- Fishery and Agriculture Livelihood PPAs
- Pasalubong Centre, Boating, and Floating Restaurant
- Ecotourism PPAs (Modified Community-based Tourism)
- Product/Commodity-Based Research and Extension PPAs

The HIT Plan Objectives: The HIT Plan aims to improve the quality of life of the students and the local communities of Brgy. Old Sagay, Sagay City, Negros Occidental through community-based ecotourism and the convergence of quality and relevant instruction, research, and extension. The plan's objectives are aligned with the tourism development goals of the City of Sagay; environmental conservation, social

development, and economic development. This will also allow the development of the College regarding capacitating its workforce and its stakeholders.

Specifically, the plan seeks to;

- Establish sustainable livelihood programs/projects for the local community of the college;
- Promote conservation and sustainable management of fishery habitat (the mangrove ecosystem); and
- Increase ecotourism activities of the College, Sagay City, and the Brgy. Old Sagay,

Likewise, for the project to attain its objectives the following project innovations or components shall be implemented;

One Tourist One Mangrove Program (Adopt a Mangrove Approach Program): The one tourist one mangrove policy is a required activity of the ecotourism package of the NONESCOST Mangrove Area where each tourist (local or non-local) is enjoined to; a) plant a mangrove for a cause and a cost, and b) plant and adopt a mangrove through cash pledge or donation.

Rationalization of Faculty Loads (esp. Fishery and Agriculture Faculty): With the dwindling enrolment of the fishery and agriculture programs faculty academic loads of the fishery and agriculture should be rationalized to provide ample time for the faculty to conduct commodity or technology-based researches and extension activities, provided, that the academic and non-academic workload is in consonance with the BOT Approved Workload Equivalency. This allows the College to ensure that quality researches are completed, and results are transferred to the local communities. Similarly, periodic training needs analysis shall be undertaken to ensure implementation of periodic faculty and staff training to enhance their skills in conducting research and community extension services.

Student Scholarship Program (UNIFAST and Appropriate Institutional Scholarship) and the ‘Learning Express Program’: The College may consider the provision of institutional scholarship and the CHED UNIFAST scholarship program for the fishery and agriculture students to alleviate the cohort survival of students' enrollment in the programs. Fishery and agriculture students may also be tapped to cooperatively work with the project to earn additional income while learning as food processors or adopters. Indeed, exposing/immersing students to the actual world of work will make their learning more active, enjoyable, experiential and meaningful. Perhaps, teaching students to learn may not be appropriate method of delivering instruction but rather, providing conditions to which students learn may be an innovative method of delivering instruction. Likewise, the project will also serve as the laboratory for students enrolled in Fisheries, Agriculture, HRM and other allied programs to ensure the applications of what they have learned in the teaching-learning process.

Hence, a curriculum review and evaluation shall be undertaken to ensure that provisions for laboratory and research activities of students are provided for. Learning-by-doing and earning while learning approach is best appropriate to be implemented.

Fishery and Agriculture Livelihood PPAs and others: Sustainability is mandatory for ecotourism project, hence, the

College through the offices of the economic enterprise, research and extension shall ensure that a very comprehensive and viable livelihood projects are identified and operationalized. Other income generating activities that can be considered are; canvass painting of the mangrove park, do-it-yourself (DIY) sessions—interactive craft workshops, artifacts, and souvenir displays, pick-up tour. These livelihood activities should become a lifestyle and should be meaningful to the local communities and must be done sustainably and with dignity. It is therefore not just a means to survive but a way to thrive and prosper.

Pasalubong Centre, Boating, and Floating Restaurant: The development of social enterprises in ecotourism sites may be a good strategy to find a win-win situation where economic, social and environmental goals may be achieved. A social enterprise is a form of business where ownership, control, and income distribution are more evenly spread resulting to more inclusive growth (Spreckly, 2012, as cited in the Tourism Master Plan of Sagay City). Community-based projects adapt the social enterprise approach because most marginalized members of the community do not have enough financial, built or human resources to venture into business on their own. Ecotourism enterprises may be too complicated for fisher folks and farmers and simple homemakers, including those who have not gone to formal schooling. Cooperative will not only provide a source of income for those who are directly involved in the project and for those who are providing services to visitors/tourists but also creates more social and financial wealth for more people. Among others, pasalubongcenter, boating/paddle tour, and the floating restaurant will serve as social enterprises aspect of the project.

The Pasalubong Centre will display produced products of the local communities as a result of the technology-transfer activities undertaken and of the livelihood projects identified by the College. Boating or Paddle tour is a good for three persons' tour within the mangrove areas to have a look with the different biodiversity. The paddler is a trained local community who is earning out of the fees collected for the boating. The floating restaurant shall be a collaboration of the HRM students and the local communities where the catch of the tourist in the fishery projects (fishpond, mud crab,) are cooked and served to them at an appropriate price.

Ecotourism PPAs (Modified Community-Based Ecotourism)

- Ecotourism activities such as boating or paddle tour, fishing,
- Mangroves conservation/preservation/management education or awareness seminar/orientation
- Mangrove planting

Product/Commodity-Based Research and Extension PPAs

- Commodity-based researches
- Commodity-based demonstration and training
- Technology transfer
- Mud crab fattening
- Shrimp culture
- Other ecotourism livelihood PPAs (as identified in the assessment)

The Stakeholders: The key players of the proposed HEI's Innovation and Transformation Plan are the students and the local communities of Brgy. Old Sagay, Sagay City, Negros Occidental, precisely the populace residing in the coastal areas of the NONESCOST Mangroves. These local communities are the right partners and co-operators/collaborators of the College who will have the direct involvement in the planning and management of the project. Other partners include; parents, alumni, suppliers, foreign/local tourists, Board, management, faculty and staff, LGUs, NGOs, the SMR, and other line agencies. Table 1 below is the stakeholders' analysis matrix that identifies the roles, the expectations, influence, impact and attitude of different stakeholders to the project.

Implementation of the HIT Plan: The HIT Plan of NONESCOST will be implemented in consonance with the strategic plan 2020. A collaborative effort is, therefore, necessary that requires the participation of the NONESCOST Board and Management, faculty, staff, students, parents, alumni, suppliers, industry partners and linkages, DENR, BFAR, LGUs, NGOs, Sagay Marine Reserve (SMR) and other appropriate line agencies. With the end in mind of improving the quality of life of the local communities, they should be transformed as entrepreneurs, food processors, technology adopters and consumers. Hence, a well-crafted, dynamic, flexible and integrated curriculum shall be developed and implemented that requires the application of knowledge, skills and attitudes (KSAs) into research and extension. Likewise, commodity-based researches shall have focus and be considered as one major research agenda that is required from faculty and students. Similarly, these commodity-based research outputs/results shall be delivered or transferred to the local communities through the conduct of training, capability-building, technology transfer, and other community services. Figure 5 illustrates the HIT Plan Operational Framework.

To further understand as to how this HIT plan will achieve the purpose, Annex A is the implementation matrix that shows the activities and other factors considered necessary to carry out the plan while Table 2 is the Higher Education Development Framework (HEDF) Log Frame articulates the goals, purpose, assumption, and the observable and verifiable indicators to measure the plan's progress. Annex B is the communication plan that articulates the activities to be undertaken to ensure that the plan including its progress of implementation and revisions when necessary are communicated to the different stakeholders. Likewise, Annex C is the HIT Plan's Financial Requirements, Annex D is the role of the different programs to the project and Annex E illustrates the perspectives of the HIT Plan infrastructure components. On the other hand, change will be managed on the basis of its suitability/applicability and the degree of impact it will contribute towards the plan. Hence, change policy structures, systems and mechanisms shall be established and instituted to ensure appropriate change is addressed. While a continual quality improvement (CQI) that captures change and its responses shall be documented to provide analysis of the modification and its impacts over time and to ascertain a continuity plan brought about by change. Thus, an Organizational Diagnosis (Preziosi Model) will be undertaken to measure perceptions of persons in our SUC as an organization or work unit to determine areas of activity that would benefit the development effort. The questionnaire measures seven variables: purposes, structure, relationships, rewards, leaderships, effective mechanisms, and attitude

toward change. The first six areas are from Weisbord's Six-Box Organizational Model (1976), while the last one was added to provide input on readiness for a change.

The Risks Management: Innovation in the organization means taking risks associated or driven by the change and by the plan. Apparently, these risks should be responded and managed to be mitigated to ensure that it does not provide adversarial impacts to the plan. Necessarily, a risk management policy and structure shall be carefully planned; designed and implemented that considers risks related to operations, tactics, strategies, and change. Moreover, the risk management shall include activities of risk assessment that range from risk identification to risk treatment. Risk identification shall include identification of the risks hazards or anything that could cause harm, who may be harmed and how, assessment of the risk and take actions, make records of the risks and findings, and review the risk assessment, per se. On the other hand, risk analysis shall include activities of identification of the internal and external conditions or situation that may cause or impede the likelihood of the outcomes or the probable happenings. Likewise, this will also involve analysis of various outcomes under different assumptions and under different probabilities that each outcome will take place. While risk evaluation is assessing the probability or degree of the impact of risks taking into account other factors. Finally, risk treatment shall take the forms of risk management which could either be; avoidance, reduction, transfer, and acceptance. Regardless of the type of treating the risk what is significant is that risk shall be proactively managed. Figure 6 presents the HIT Plan's risk management process while Table 3 details the possible project risks and the mitigating strategy.

The HIT Plan shall be treated as ecotourism and research center to ensure continuous funding from the General Appropriations Act and the internally generated income of the college. Likewise, an adamant linkage or partnership shall be forged from the appropriate line agencies (local and national) to provide support for the sustainability of the operation of the project. A functionally effective and efficient set-up, structures and management team as oversight unit shall also be constituted and will be directly responsible for the monitoring of the HIT Plan implementation, evaluation of outcomes, and sustainability. The parameters shall include the monitoring and assessment of the seven (7) components of the HIT Plan and the financial or economic viability and sustainability.

The Reflection: The development of the HIT Plan is attributable to the different modules of the EDP particularly on valuing the role of HEIs towards growth and development of the quality of life of the Filipino. Hence, as leader of HEIs, a strategic direction aligned with the mission, mandate, and the trifocal functions shall be innovatively mapped and strategized to ensure attainment of the quality of life--the HEIs want to its stakeholders. A very productive discussion on the convergence of instruction, research, extension, and production also drive the proponent of the HIT Plan that development and innovation strategies shall directly impact the growth of students and the local communities. Further, HEIs should less forget that efficient management of resources is essential to ensure its optimum used while delivering quality academic and non-academic services. Therefore, mirroring ourselves as SUC leaders in the actual setting of model SUC's operation is

essential for us to be able to have a grasp and understanding on leading a high-performing HEIs and to have these translated or transcended to our SUC should and when we become President in our time. The University Dynamics Laboratory (UDL) which provided us the opportunity to experience through shadowing activities the real world of being an SUC leader in the different functions or affairs of the model SUC allows us to identify the strengths and best practices the SUC are doing to ensure that it delivers the quality services towards stakeholders' satisfaction. Moreover, this also provided us the opportunities to re-think and re-capacitate ourselves and our SUC to optimize the available resources as an avenue for improvement, growth and development of our SUC, in particular, and in the community, in general.

The five (5) day community immersion was a life and leadership changing the experience that significantly contributed to the development of the HIT Plan. That while SUCs are advocating for the quality it should less forget that the quality of education it provide must be convergent or synergistic with the quality of research results translated and transferred as extension programs and services to the community to affect the quality of life. On the other hand, the strategic role of the local government unit must be activated to ensure it provides the right direction to its local communities and maintain active engagement with industries and other line agencies for employment access to ensure economic resiliency of the city. It is inevitable that SUC and LGU must share responsibility in ensuring to raise or maintain the level of economic factors that measure the health of any economic region. The financial state will change many times during the local/regional/national or an institution/organization's lifetime. This way, the LGU, SUCs, and the industry can carry out their strategic plans better to effect economic growth of the local community, thereby, improving the quality of LIFE. Some economic factors we can consider are disposable income, credit accessibility, unemployment rate, and livelihood programs.

The HIT Plan will optimally and maximally use the 19.84 Mangroves Area of the College to ensure its preservation and conservation management through its ecotourism programs, projects, and activities while providing sustainable livelihood to the local communities. As community-based ecotourism, this implies that whatever income that is derived from the use of resources can be shared among the members of the community who are taking care of them. However, as a collaborative project where the college owns the natural resources (the Mangroves), it is, therefore, necessary that a modified community-based ecotourism shall be established as a formal structure and set-up to ensure sustainability. While maximum local involvement is a requirement for planning, managing, decision-making and implementing community-based ecotourism, strong leadership, supervision and management from the College is equally mandatory. It is in this aspect that the SUC and LGU can provide sustainable livelihood programs and other entrepreneurial activities to sustain the economic growth of the local community, in particular, and the local government unit, in general. Community Economic Development (CED) shall be encouraged using the available resources the SUC or the LGU and the families have in a way that it enhances economic opportunities while improving social conditions of the households in a sustainable way. CED initiatives or programs may be implemented to increase

opportunities for communities who are disadvantaged and must be centered on a community participation process that blends social and economic development to foster the economic, social, and cultural well-being of communities. Community economic development is an alternative to conventional economic development. Its central belief is that: "problems facing communities—unemployment, poverty, environmental degradation and loss of community control—need to be addressed in a holistic and participatory way." However, this CED initiative can only be feasible if an educative process of changing the mindset perspectives of the local communities that they can actually have more than what they think they already have, if and only if, the knots of the industries, the LGU, the SUC and the communities are vigorously and dynamically tied. Hence, a community change perspectives and initiatives shall be set-up to start economic growth and development.

The main operating assumption of Community Change Initiatives (CCIs) is that communities in general and community-based organizations, in particular, can improve economic opportunities and outcomes in their communities through the economic activities for the growth and development of the local community. It is hoped that by stimulating business activity in the local neighbourhood, community economic development programs can enhance the quality of life by providing: a) access to capital and stimulating asset accumulation, b) increase local access to consumer goods and services, c) expand the local entrepreneurial activities, d) expand local employment opportunities, and e) connect local communities and businesses to the regional economy <http://www.baruch.cuny.edu/mspia/faculty-and-staff/documents/6-Chapter4-Cordero-> (accessed December 04, 2016).

The HIT Plan contributes to my Personal Leadership Development Plan as it provides me with the leadership framework where individual potentials or capacities of employees evolved, nurtured, developed and utilized. Leadership that empowers people (employees) to understand their inner self or inner worth as drivers of changing the landscape of our HEI, in particular, and the Philippine Education System, in general. Leadership that transforms the lives of students (customers), community and other stakeholders into a life that is rewarding and satisfying. Leadership that transcends beyond borders of bondage from ignorance to knowledge workers. Leadership that encourages active participation, openness, accountability, honesty, care and respect for others, for nature and service excellence. More importantly, leadership that institutes efficient and adequate reward, award and incentive system; harmonious, enjoyable and stress-free environment; flexible-controlled policies and procedures; and quality open-door mechanisms which may somehow promote a culture of honesty when collaboratively planned by the stakeholders. LOVE in CARE—which stands for Learning Other's Valuable Engagement in Creativity, Accountability, Respect, and Excellence is somehow one of an effective leadership approach that can be used by me in the future.

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Annex A
NONESCOST Mangroves Eco-Techno Tourism and
Research Centre Implementation Matrix

Activities	Objectives	Key Performance/ Success Indicators	Key Actors	Resources	Fund Source/ and Budget	Timeframe
The Preliminaries						
Organizational Diagnosis (Presiozi Model)	To measure the perceptions of persons of the organizational functioning of NONESCOST (Self Analysis)	SWOT analysis results of the seven areas of organizational development; purposes, structure, relationships, rewards, leaderships, helpful mechanisms, and attitude toward change	VPAF (in coordination with the research office)	Human and Financial		
Re-assessment of NONESCOST Mangroves Species and its Biodiversity	To identify and provide tagging of the Mangroves Species. To determine the existing biodiversity in the Mangrove area that will be included in the paddle tour and education package.	Identified and tagged Mangroves Identified coastal management program and activities Identified paddle tour area that showcases biodiversity. IEC materials	Research office (in coordination with the ICT office)	Human and Financial		
Research on Perceptions of the Local Communities on Community-based Ecotourism Development	To identify the socio-economic and demographic status of the local communities. To ascertain the KSAs of the local communities towards ecotourism	Identified possible livelihood/economic development PPAs (enhancement) for the project. Identified educational tourism and other PPAs for the local communities.	Research and extension offices (in coordination with BSFi, Brgy. Old Sagay, LGU Sagay Tourism Office)	Human and Financial		
TNA and Skills and Competency Assessment of the Local Communities	To ascertain the skills and competencies of the local communities.	Identified skills and expertise to match the identified livelihood PPAs (Educational qualification, NC certification, and licenses) Identified intervention programs (training/capability building activities)	Research and extension office (in coordination with Brgy. Old Sagay)	Human and Financial		
Assessment of existing Ecotourism (if there exist)	To validate, evaluate and identify if there exist existing ecotourism development and activities.	Crafted complementary ecotourism PPAs Integrate existing eco-programs (if there exist)	VPAF (in coordination with the LGU tourism office and Brgy. Old Sagay)	Human and Financial		
The Milestones						
Presentation of the HIT Plan to the Admin and Academic Councils for endorsement to BOT Approval	To ascertain support and endorsement of the admin and academic councils.	Commitment, support and endorsement of the admin and academic councils.	College President (in coordination with the VPAF-Proponent)	Human and Financial		
Consultation and Presentation Meetings (FGDs) with LGU Sagay Officials, Brgy. Old Sagay Officials	To ascertain their support as collaborators/partners of the project implementation.	Notarized MOAs/MOUs Financial/physical/human resources support	College President (in coordination with VPAF, Research and Extension Offices)	Human and Financial		
Consultation and Presentation Meetings (FGDs) with DENR, BFAR, the SMR and Sagay Tourism Office	To ensure alignment and connection of the project to the tourism platform and programs of the city government of Sagay. To ensure environmental compliance in the ecotourism operations.	Inclusion of the project in the tourism loop of the city government of Sagay				

Continue....

Stakeholders' Forum-Part 1 (College officials, faculty and staff, students)	To ascertain their support as collaborators of the project implementation.	Improved operational project implementation.	College President (in coordination with VPAF, Research and Extension Offices)	Human and Financial	
Stakeholders' Forum-Part 2 (Alumni, Suppliers, Parents, Industry Partners, NGOs)	To solicit valid and appropriate suggestions/recommendations helpful to the project implementation.	Committed/commitment to roles in the project implementation.			
Stakeholders' Forum-Part 3 (Local Communities)	To communicate respective roles, they play in the project implementation.	Improved morale and belongingness.			
Forming/Organization Association-Cooperative	To set-up organizational structure in the local communities.	Established organizational structure Identified Eco Team Leaders	Research and extension office(in coordination with the NONESCOST MPC)	Human and Financial	
Capability-building/Trainings of the Local Communities Officials/Leaders and Paddleboat Personnel/Boatman	To capacitate the local community Officials and Eco Team Leaders on Ecotourism Project Management, Implementation, Monitoring, Evaluation, and other related training.	Well trained or capacitated local community Eco Team leaders/managers/boatmen.	College President (in coordination with the VPAF, VPAA, and the Directors)	Human and Financial	
Launching of the HIT Plan	To officially launch and disseminate to the general public the start of the HIT Plan implementation.	Informed general public of the HIT Plan Policy and Strategy Development and Implementation Plan	College President	Human and Financial	
<p>The Infrastructure Construction and Procurement of Equipment: The implementation schedule of the infrastructure construction and procurement of equipment shall be coordinated by the proponent to the Director of Planning, Monitoring, and Evaluation. Hence, the PME office will be directly responsible for the crafting of the Monthly Cash Program (MCP) as per required by the Department of Budget and Management. Provided, however; that the oversight committee of the project shall closely coordinate with the PME office to ensure that the construction and procurement and the project's programs, projects, and activities (PPAs) are implemented as planned.</p> <p>Below is the summary of the infrastructure;</p>					
Construction of Research and Training Center	To construct the research and training center, cottages, pasalubong centers, floating restaurants, and bamboo trails,	Constructed research and training centers, cottages, pasalubong centers, floating restaurants, and bamboo trails.	College President (in coordination with the PME and BAC office)	Human and Financial	
Construction of Cottages					
Construction of Pasalubong Center					
Construction of Floating Restaurant					
Construction of Bamboo Trail					
Procurement of Paddle Boat					

Annex B Communication Plan

Name of Stakeholder	Objective	Key Message	Frequency of Communication
College Officials, Faculty & Staff, Students, DENR, BFAR, LGU and other line agencies	To keep awareness and updates of the HIT Plan and its implementation	Provision for the HIT plan, its policies, programs, projects, activities, set-up, components and others as required and for other regulatory and statutory requirements.	Twice a year during mid-year and year-end evaluation
Alumni, Suppliers, Parents, Industry Partners, and NGOs	To continue support and cooperation on the implementation of the HIT Plan.		
Local Communities			
Research and Extension Office			
Budget and Accounting Office	To update on fiscal matters and concerns about the implementation of the HIT Plan	Provisions for HIT Plan budget appropriation scheme/system and other accounting and auditing requirements.	Quarterly
PME office	To keep awareness and updates of HIT Plan implementation about physical accomplishments	Provisions for HIT Plan implementation, monitoring and evaluation results and suggested recommendations.	Twice a year during mid-year and year-end evaluation
VP Admin and Finance	To keep awareness and updates of HIT Plan implementation about physical accomplishments and financial concerns	Provisions for HIT Plan implementation, monitoring and assessment/findings for decision-making	Twice a year during mid-year and year-end evaluation
College President	To keep awareness and updates of HIT Plan implementation about physical accomplishments and financial concerns	Provisions for Hit Plan implementation, follow-up and assessment/outcomes for decision-making	Twice a year during mid-year and year-end evaluation

Annex C. The HIT Plan Budget

Infrastructure Budget:

Project: Proposed NONESCOST Mangrove Eco-techno Tourism and Research Center						
Location: Brgy. Old Sagay, Sagay City, Negros Occidental						
Owner: NONESCOST						
No.	Description	Quantity	Unit	Capacity	Fund Source/s	Budget (Php)
1	Research and Training Center	1	Unit	good for 25 persons		
2	Cottages	10	Units	good for 25 persons		
3	Pasalubong Center	2	Units	good for 25 persons		
4	Floating Restaurant	1	Unit	good for 25 persons		
5	Bamboo Trail	350	SQM	good for 30 persons		
6	Paddle Boat	10	Units	good for three persons		
Total						

Training/Capability-Building and Preliminary Activities Budget

Description	Fund Source/s	Budget (Php)
Preliminary Activities (refer to implementation plan)	Internally Generated Fund-Research	
Milestone Activities (refer to implementation plan)	Internally Generated Fund-Admin and Extension	
Total		

Summary of Budget for the HIT Plan

Description	Fund Source/s	Budget (Php)
Infrastructure	GAA and Income	
Training/Capability-Building and Preliminary Activities	Income (Admin, Research, and Extension)	
Total		

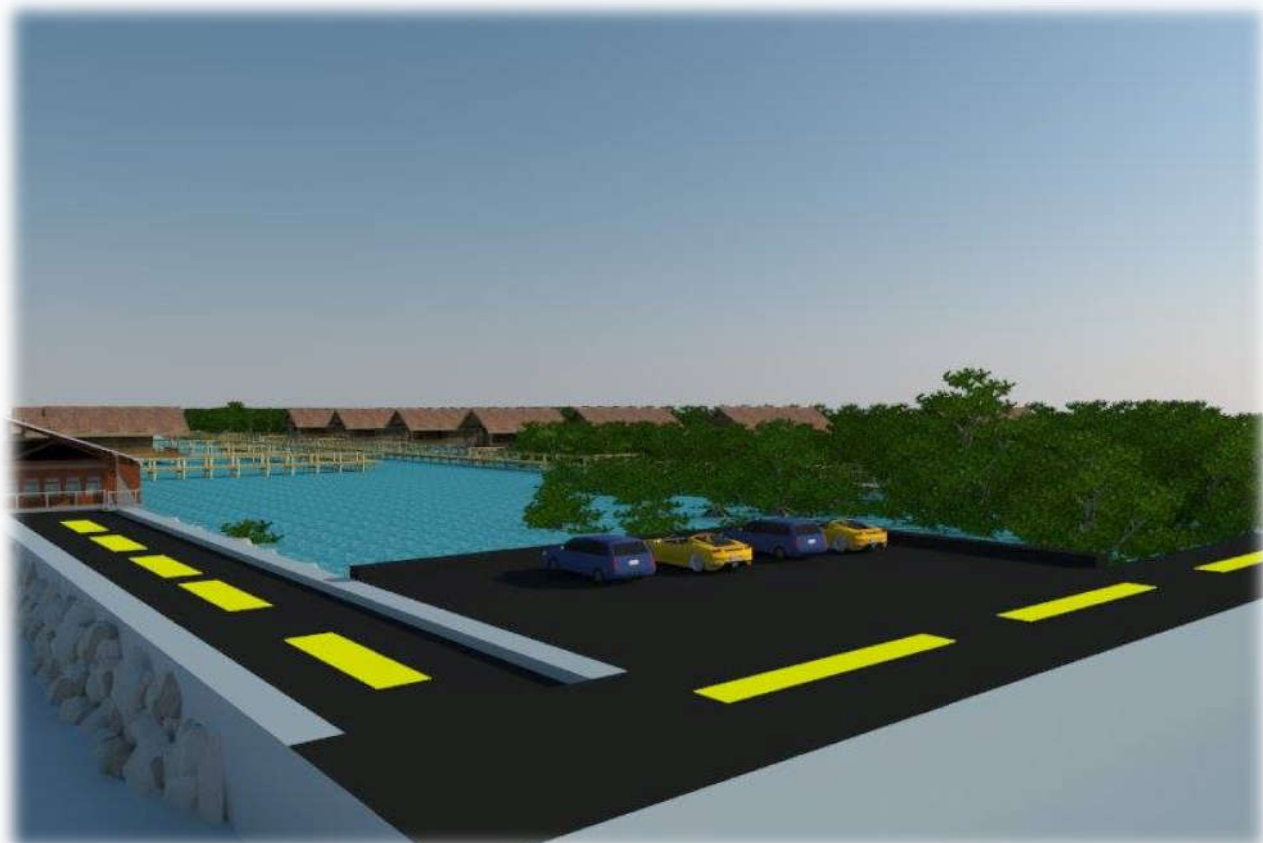
Annex D Role of Academic Programs

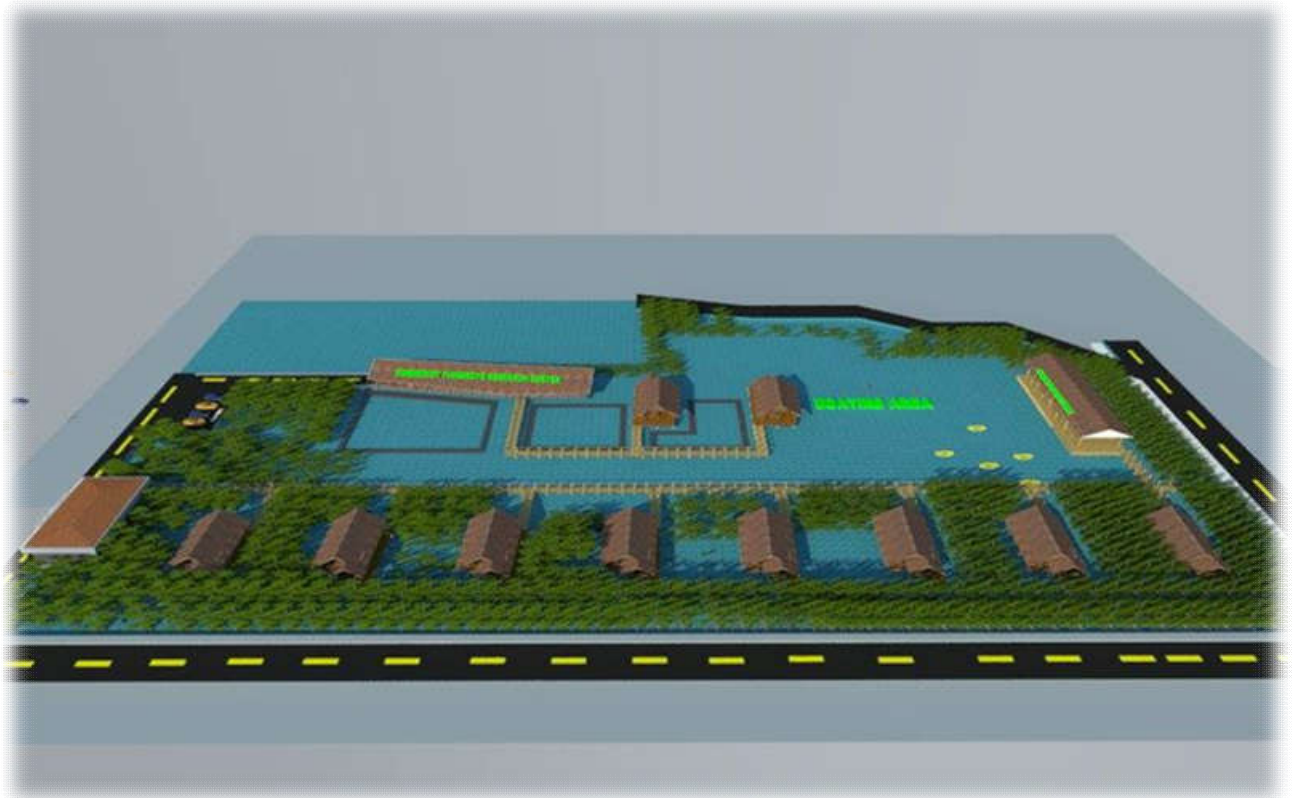
Academic Programs	Role in the Project	
	Common	Specific
BS Fisheries	Product or Commodity-Based Research Generators Extension service providers	Incharged of the fishery projects of the project such as but not limited to; mud crab fattening, shrimp culture, aquasilviculture and others
BS Information Technology		Packaging of IEC materials and promotion/advertising brochures to be used for marketing. Development and maintenance of information system (project system/website)
BS Business Administration		Financial Education and capability building of project collaborators
BS Hotel and Restaurant Management		Incharged of the tourism activities such as, catering, boating, and others. Basically, the 5 As of tourism is undertaken.
BS Criminology		Crafting and implementation of security and safety protocols of the tourist and the projects.
BS Education		Continuing education program which will center on nature conservation, management and preservation and other related topics.
BS Agriculture		Incharged of the agricultural research activities which may include but not limited to food for the fish and/or fish culture and others
BS Nursing		Continuing education on health, wealth and sanitation
BS Biology		Incharged of biological research activities which may include but not limited to insect repellent and others since the project site is in coastal area

Annex E

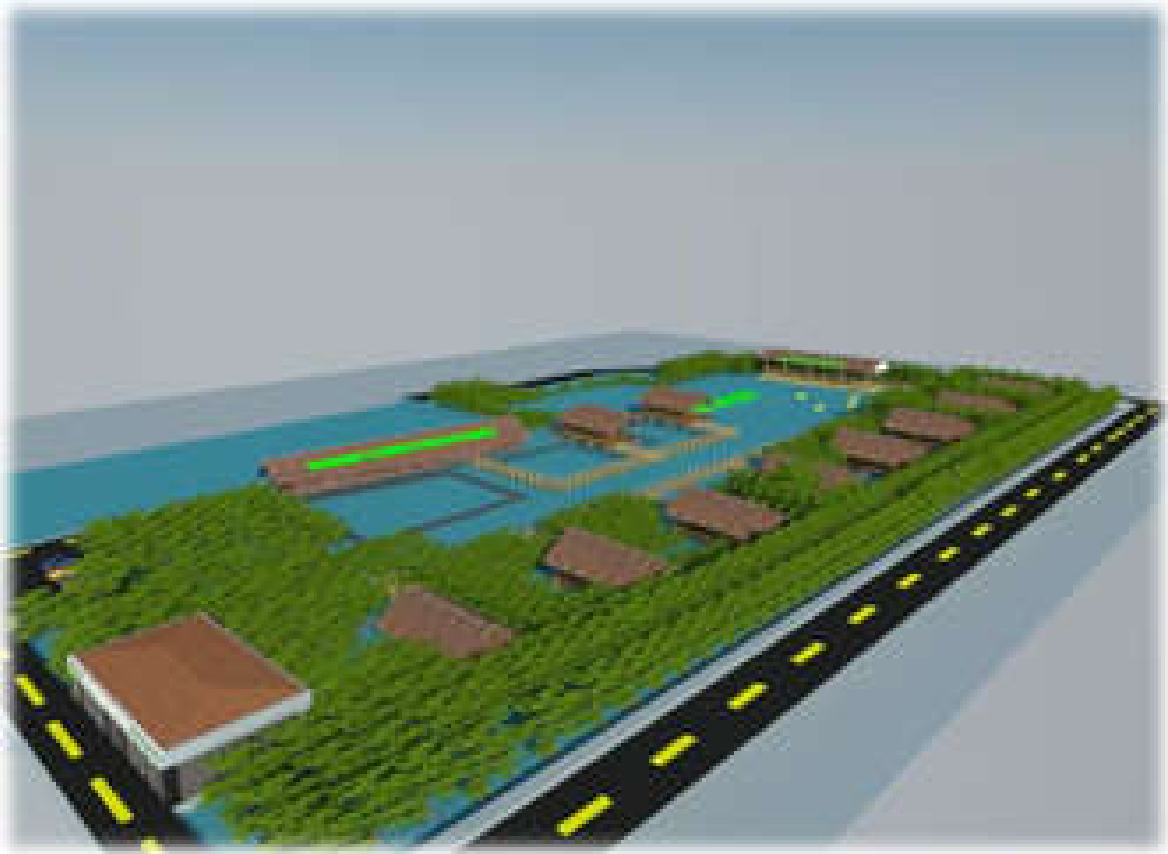
Perspective Illustrations of the NONESCOST Mangrove Eco-techno Tourism and Research Center

NONESCOST Mangrove Eco-Techno Tourism and Research Center

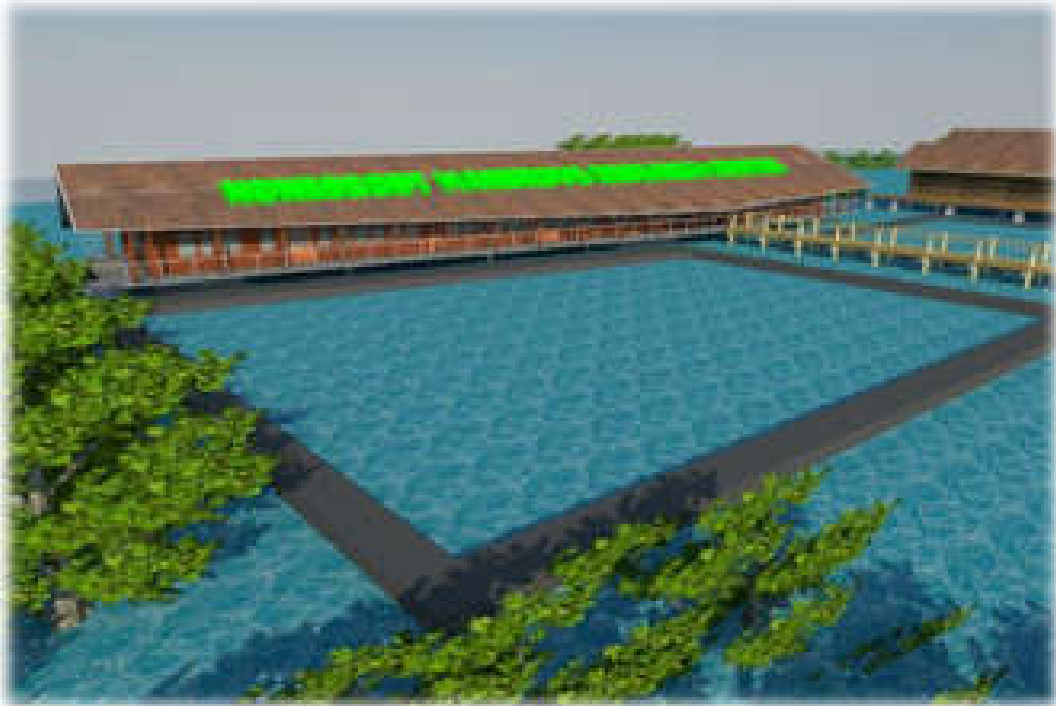




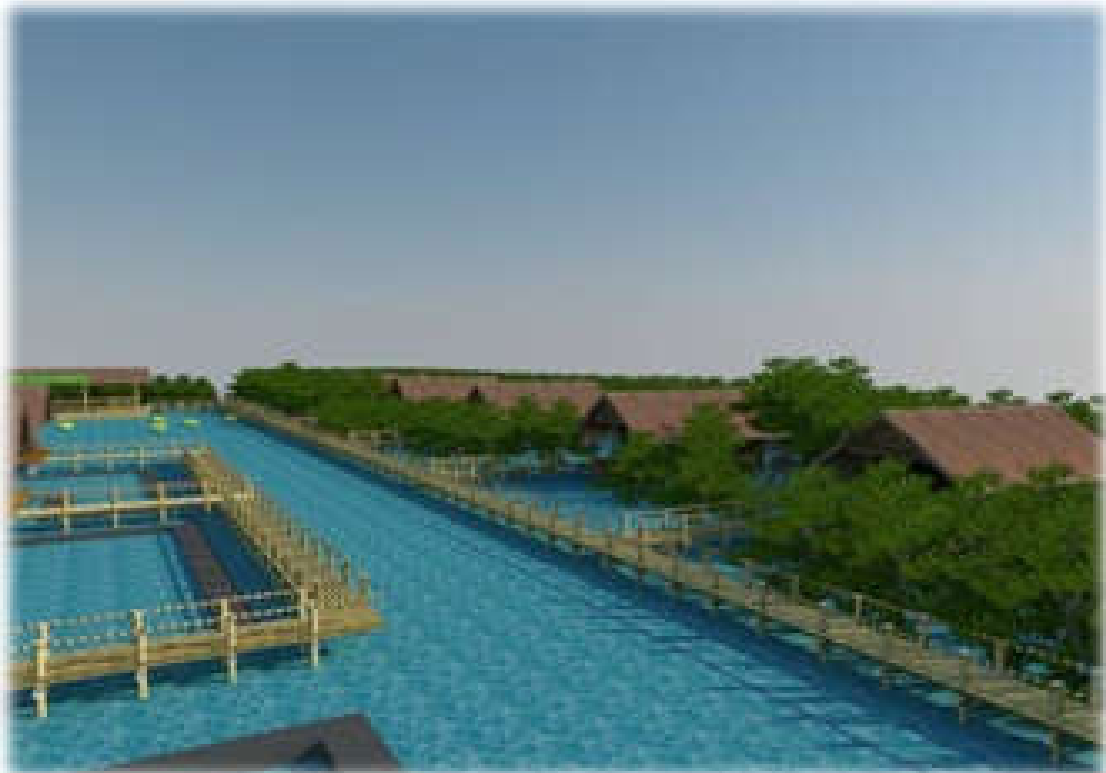
NONESCOST Mangrove Eco-Techno Tourism and Research Center



NONESCOST Mangrove Research and Training Center

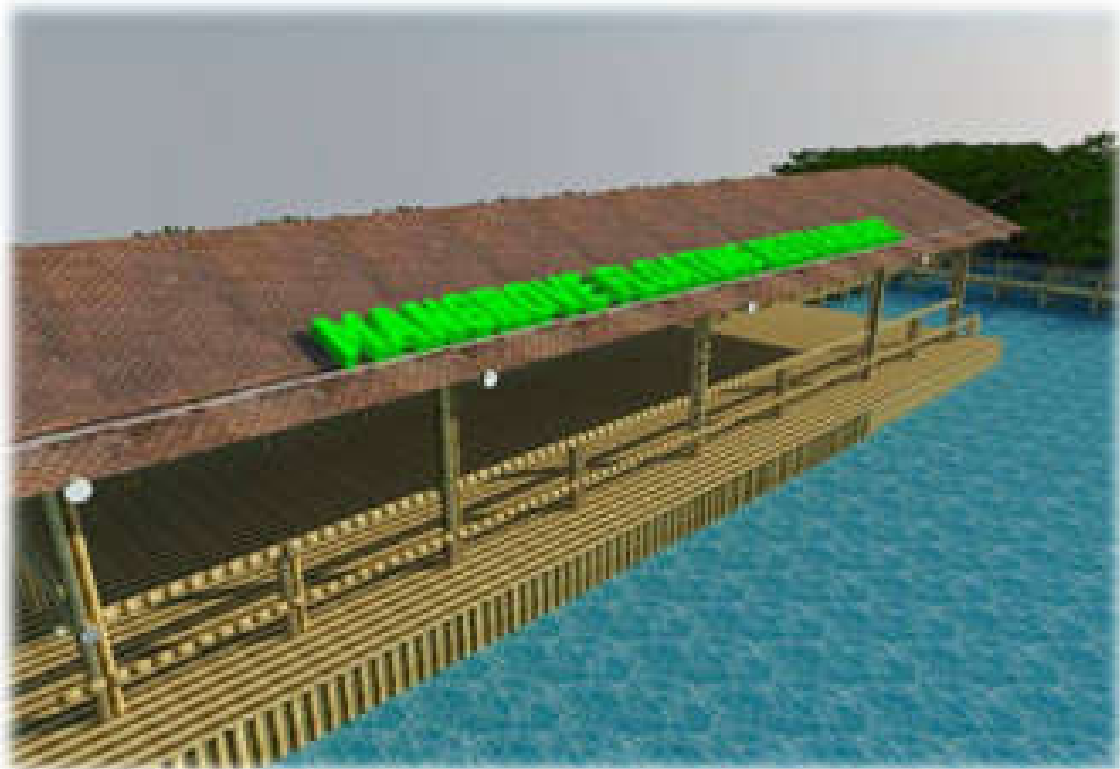


NONESCOST Mangrove Bamboo Trails



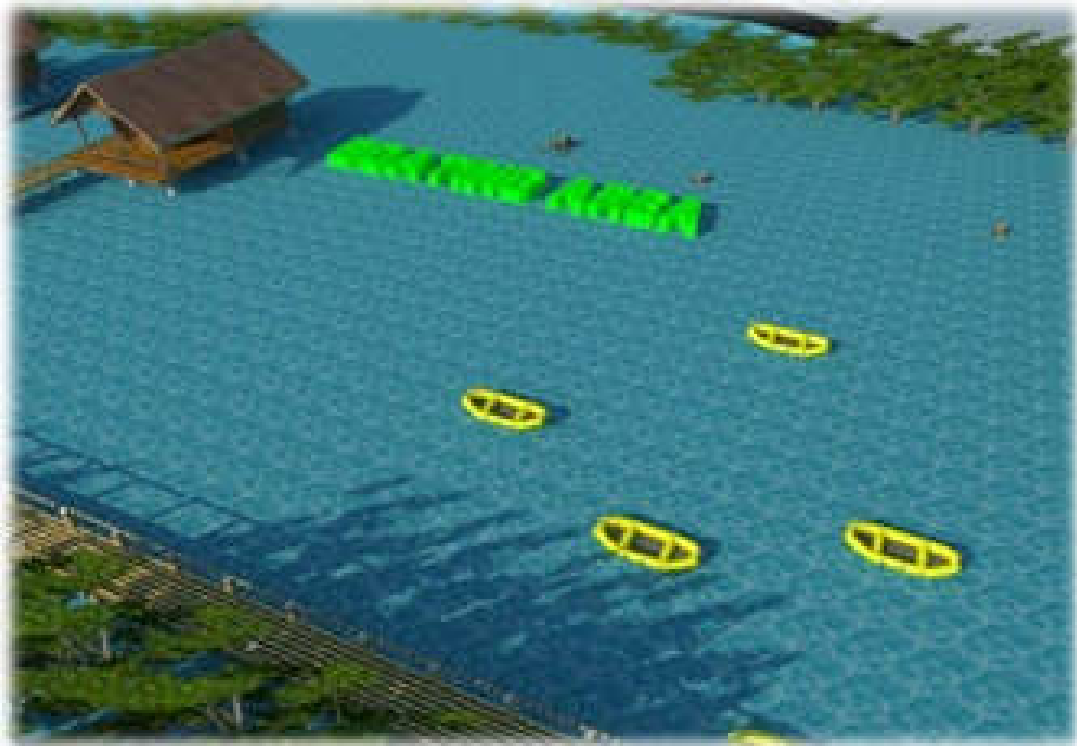


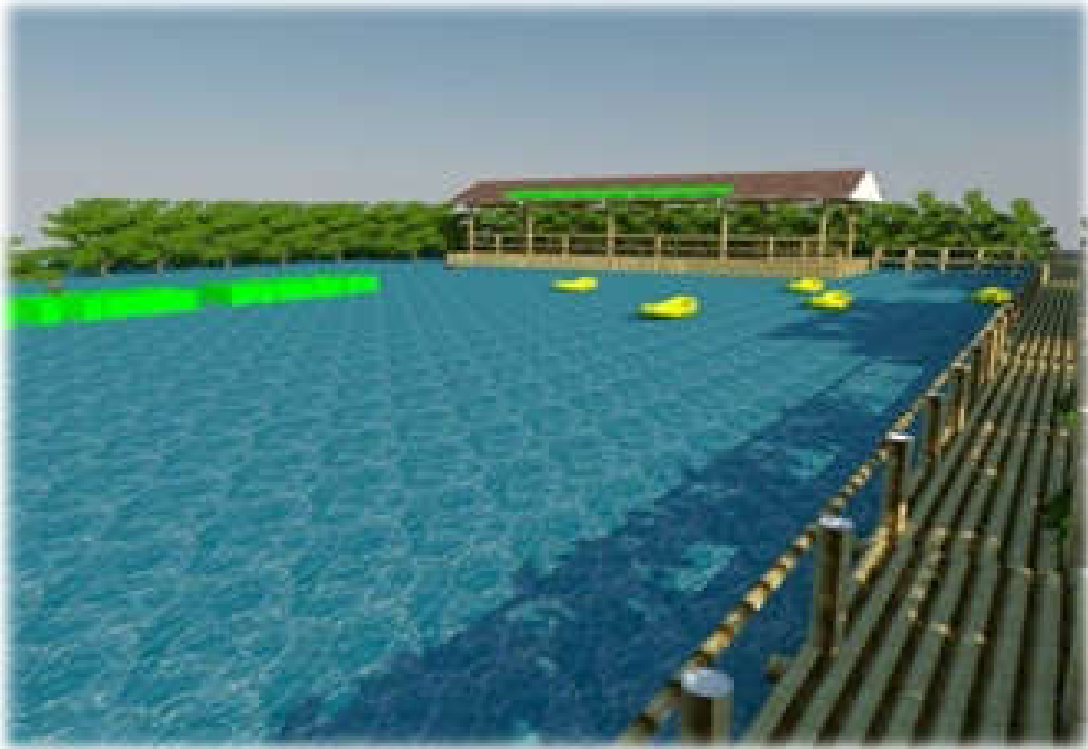
NONESCOST Mangrove Restaurant





NONESCOST Mangrove Boating Area





NONESCOST Mangrove Pasalubong Centre





NONE-COST Mangrove Cottages