



Sustainable Development through Environmental Education: From the Perspectives of Past and Present Group and Individual Rainforestation Adopters

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Abstract Rainforestation is a Visayas State University (VSU) technology designed as an alternative method to Philippine Government's thrust for massive reforestation. Rainforestation's purpose is to plant denuded lands with Philippine Native Trees together with high value crops and fruit trees. With this, ecological functions could be re-established while subsistence farmers would be provided with a stable and sustainable income. For the past twenty plus years, the first batch of individual and group adopters have toiled to succeed in their Rainforestation efforts and are, at present, already reaping the fruits of their labors. Moreover, said adopters are also inspiring new groups of adopters to also adopt Rainforestation. Yet, such things would not be possible without environmental education that has been provided by VSU, Gesellschaft für Technische Zusammenarbeit (GTZ), and the Environment Leadership Training Initiatives (ELTI). Hence, this study aims to understand how Rainforestation has affected the adopters' lives for the past twenty years, examine how environmental education has contributed to sustainable development, and decipher how environmental education has influenced new sets of adopters to go into Rainforestation. In order to achieve the said objectives, this study makes use of hermeneutic phenomenology and focus group discussions to arrive at the adopters' points of views and sentiments towards the connection between environmental education, sustainable development, and Rainforestation. Furthermore, this study concludes that the adopters have already enjoyed economic benefits, sustainable source of water, and biodiversity restoration through Rainforestation adoption. This study also concludes that environmental education is one of the main factors why individuals and groups have adopted Rainforestation by informing them that growing native trees together with fruit trees is doable and possible. Lastly, this study further concludes that the spread of Rainforestation has been an offshoot of the greater reach of education and information dissemination.

Keywords sustainable development, environmental education, rainforestation, adopters

INTRODUCTION

The question on whether or not the natural environment could sustain the needs of the world's growing population has already been felt for quite some time. In the Philippines, Mother Nature's capacity to support the future generations of Filipinos has been challenged by indiscriminate and gross exploitation of the country's natural resources. One of the effects of this environmental abuse is the lost of biodiversity in the country which comes as an offshoot of large and small scale deforestation activities. According to Haribon foundation, biodiversity in the Philippines is one of the richest in the world. It is part of the 17 mega diverse countries which collectively claim two thirds of all global species. Yet, 70% of Philippine forests have vanished from the 1930s to 1988 (Haribon Foundation, 2016). There are two major causes of Philippine forests loss. They refer to the conversion of primary forests to secondary forests by both legal and illegal logging and the

removal of secondary forests cover by expansion of upland agriculture (Fernando, 2005). In the Visayas Region in the Philippines, the effects of environmental degradation have also been felt.

To address this problem, Visayas State University (VSU) in cooperation with the Gesellschaft für Technische Zusammenarbeit (GTZ) and the Environment Leadership Training Initiatives (ELTI) introduced and continued to propagate environmental education to interested adopters through rainforestation. Rainforestation is a technology designed to make use of unproductive lands by planting native tree species which are not widely used in the Philippine government's reforestation program (Milan and Ceniza, 2009). This technology found its way to Visayas State University since in 1990, the Gesellschaft für Technische Zusammenarbeit (GTZ) started to look into possibilities of rehabilitating former forested areas to get back the ecological functions of the degraded areas needed for poverty alleviation through sustainable rural development. This program was directed for the promotion of biodiversity rehabilitation and conservation of remaining primary forests and natural resources. The directives of the program were formulated so that Rainforestation could replace the wide spread slash-and-burn practices and protect and enhance biodiversity by using indigenous trees only. In 1994 the hypothesis was formulated that a farming system in the humid tropics would increasingly be more sustainable the closer it was in its species composition to the original local rainforest (Goltenboth and Tropentag, 2005).

Hence, at the start of the early 1990's, a number of Rainforestation sites had been established in the different parts of the country. This came as a result of massive environmental education initiatives disseminated by Visayas State University and the Gesellschaft für Technische Zusammenarbeit (GTZ). It was during these times that people, predominantly farmers, were recruited to adopt Rainforestation technology. At present, the first batch of group and individual adopters in the Visayas region in the Philippines are already reaping the fruits of their labors. Yet, Visayas State University's thrust to disseminate environmental education continued up to the present since it again partnered with Yale University's Environment Leadership Training Initiative (ELTI) to recruit and educate more rainforestation adopters so that a large number of people would be given a chance to realize the importance of environment conservation so that Mother Nature could sustain the needs of every Filipino for many years to come.

OBJECTIVE

In the thrust to determine environmental education's contribution to the attainment of sustainable development, this paper aims to understand how Rainforestation has affected the adopters' lives for the past twenty years, examine how environmental education has contributed to sustainable development, and decipher how environmental education has influenced new sets of adopters to go into Rainforestation.

METHODOLOGY

In the thrust to wholistically decipher environmental education's contribution to sustainable development, this research makes use of the qualitative research method of hermeneutic phenomenology. This phenomenological method is characterized by Martin Heidegger's interpretative approach which focuses on researcher involvement through on going interpretation which bridles researcher assumptions through questioning and critically reflecting upon one's pre understanding and involvement in the phenomenon (Dahlberg, 2006). Hermeneutic phenomenology aims at producing rich textual descriptions of the experiencing of selected phenomena in the life world of individuals that are able to connect with the experiences of people collectively. From identification of the experience of phenomena, a deeper understanding of the meaning of that experience is sought (Smith & Vandenburg, 1997). Hence, in order to have a full understanding of what this study's respondents want to convey, the use of any language that the respondents are most comfortable with is utilized. As Langdridge (2005) puts it: to understand the life world, people need to explore the stories that others tell of their experiences (Langdridge, 2005). Hence, it is in this sense that the above-mentioned method would challenge the researcher to

reflect deeply on what it is that the texts of the field have to say. Nevertheless, this research method's goal is to invite its readers to enter the world that the texts would disclose and open up in front of themselves (Kafle, 2011). With this at hand, this study could come with a broader understanding of the significance of environmental education to sustainable development

RESULTS AND DISCUSSION

The Effects of Reforestation Adoption to the Lives of Group and Individual Adopters

The pioneering group and individual reforestation adopters refer to the Cienda-San Vicente Farmers Association (CSVFA) of Barangay Gabas, Baybay, Leyte, Philippines and Mr. Manuel Posas of Barangay Marcos, Baybay, Leyte. These adopters were the first to adopt reforestation in the early 1990s and have since inspired younger generations of adopters because they have demonstrated that reforestation would eventually lead to a development that is sustainable. Moreover, the presence of the pioneering adopters' reforestation demonstration farms have also served as models and have educated the younger generations of adopters that there is a need to educate a large number of people in order for them to arrive at a realization that conserving and protecting the natural environment would lead to sustainable development.

These things have positively affected the lives of the pioneering group and individual adopters for the past twenty plus years in the sense that it gives them a variety of benefits. For instance, the Cienda-San Vicente Farmers Association has reaped economic benefits from reforestation adoption. In their thrust to save the trees from indiscriminate and illegal logging, they were able to preserve Philippine native mother tree species in their area. With this, the association members were able to establish a nursery for native trees which gave them the opportunity to enter into contract with the Philippine's Department of Environment and Natural Resources (DENR) as a supplier for native tree seedlings for DENR's National Greening Program (NGP). According to Victoriano Catalan, one of the pioneering members of CSVFA:

“At first, we adopted reforestation because we only wanted to protect our trees that had been illegally and indiscriminately cut by illegal loggers. As a group, the members of our community decided to adopt the technology offered to us by Visayas State University and Gesellschaft für Technische Zusammenarbeit (GTZ) which we later know as reforestation. With this, we organized ourselves into a people's organization and were able to convince a land owner to convert his almost empty and denuded nine thousand square meters piece of land into a demonstration farm. The owner eventually became a member of the CSVFA. Our training in Dendrology made us familiar with the characteristics of the native trees found in our area and we were also taught how to collect wildlings and establish a nursery of our own. This nursery provided us with income that was sufficient enough to compensate for our sacrifices in protecting the environment. With our contract with the DENR national Greening Program and other native tree seedling buyers, we were able to collect a sum of more than a million pesos”.

Aside from economic benefits, the members of CSVFA have also noticed the return of biodiversity in their area. For Agustino Valenzona, a CSVFA member: *“A few years after we started protecting our trees in the forest near our community, we noticed the return of native birds in our area. We also experienced colder temperatures since the trees have started to grow. The fish in our rivers also returned which enabled community members to have access to free source of food. With this, I realized that if we just protect and care for Mother Nature, Mother Nature would also take good care of us in return”.*

Moreover, reforestation has also positively affected the life of the pioneering individual adopter, Mr. Manuel Posas, an Assistant Professor of Visayas State University, of Barangay Marcos, Baybay, Leyte. Having been invited to a meeting on reforestation in the early 1990s, Mr. Posas took the opportunity to attend with the intention of just making his denuded and empty piece of land useful and productive. Yet, years after he implemented his reforestation demonstration farm, Mr. Posas reaped a lot of benefits that he even did not think of before. First, after twelve years of establishing his reforestation farm and planted it with a variety of more than six hundred

Philippine native trees and a few fruit trees, he noticed that a source of water emerged inside his demonstration farm. After retiring from government service, Mr. Posas established a water system that supplied him with safe and potable water all year long. Not only that, Mr. Posas also gave his neighbors access to his water system with a minimal and reasonable fee. Hence, this also gave him economic benefits. Furthermore, since Mr. Posas also planted fruit trees together with his native trees, the trees' fruits during the fruiting season gave him another additional income. According to Mr. Posas: *“When I adopted rainforestation, I only had the intention of making use of a piece of land that has been unproductive for a couple of years. Yet, years after establishing my rainforestation farm, I did not expect to gain things that nature has provided like the source of water in my demonstration farm as well as the sale of the fruit trees during the fruiting season. My newly built water system also irrigated my rice field near my demonstration farm all year long in such a way that my rainforestation did not only provide me with water, it also enabled me to regularly plant rice all year round.”*

Hence, from the stories of the pioneering group and individual adopters of rainforestation, it is common among them that they already are reaping the fruits of their labors. All of the adopters have economically benefitted from rainforestation. Yet, most important of all, the adopters have made it possible to restore biodiversity in their respective areas.

The Contribution of Environmental Education to Sustainable Development

From the experiences of the group and individual rainforestation adopters, it is quite obvious that environmental education is the key element that inspired them to adopt rainforestation. From the very start, the thrust of Gesellschaft für Technische Zusammenarbeit (GTZ) and Visayas State University has paved the way for the Cienda-San Vicente Farmers Association (CSVFA) and Mr. Manuel Posas to adopt rainforestation. To this day, their demonstration farms have served as a model that inspired a number of aspiring environmentalists and rainforestation adopters during cross visits conducted in different trainings. Yet, CSVFA's success is not only an offshoot of formal education provided to them by GTZ but also through informal environmental education that have been practiced in farmers' individual households. In fact, during the early years of establishing the CSVFA, Visayas State University assigned the then community organizer Dr. Marlito Bande to the village to facilitate the establishment of a pilot Rainforestation site. Dr. Bande decided to live with the community and conducted regular discussions and consultations to build consensus on key issues, strategize a plan of action, and mobilize the members based on increased awareness and commitment (Bande, Consunji, Bloomfield, and Labastilla, 2016).

Dr. Bande assisted in restructuring the group and registering them as a people's organization with the Department of Labor and Employment under the name, Cienda San Vicente Farmers' Association (CSVFA). In order to stop the destructive logging and slash and burn practices, the members trained to be deputized forests wardens, giving them the right to apprehend violators in their watershed areas. The organization came up with their organizational structures and came up with their constitution and by laws. They also came up with the outline of different environmental activities and cost-benefit scheme. CSVFA then signed a Memorandum of Agreement (MOA) with VSU, the local government unit, and the owner of the land where the Rainforestation farm would be developed. The MOA legalized the lease of the land to CSVFA for 50 years, formalized the partnership among the different stake holders, and specified the roles and responsibilities of each stake holder (Bande, Consunji, Bloomfield, and Labastilla, 2016). With this, the CSVFA Rainforestation farm was established, and at present, is one of the most successful Rainforestation Demonstration farm in Region 8, if not, the whole country.

According to Dr. Marlito Bande: *“The success of the CSVFA Rainforestation farm is a result of a collaborative efforts among the farmers themselves. It was really the farmers who initiative the move since they were the ones who were affected by the negative effects brought about by environment degradation. When I was assigned to work with the farmers, I saw their sincerity and commitment so I decided to live with the community in order to help them achieve their goal to protect their forest and at the same time teach them to establish a Rainforestation demonstration farm by teaching them the basics like the collection of wildlings from the forest, the establishment*

of a nursery, the identification of a potential Rainforestation site, and the planting of native tree seedlings. In fact, during the early years, I also helped the farmers in negotiating for the use of the lot for the demonstration farm. All in all, I can say that the success of the CSVFA Rainforestation efforts is brought about by the collaborative efforts of the farmers themselves”.

One unique characteristic of CSVFA is that it gives importance and priority to family membership. This means that it is not only the father and the mother who are considered members of the association but also their children. With this, the children have been instructed at home on the significance and necessity to protect the natural environment. This is one way of inculcating to the minds of the young the importance of nature conservation. In fact, Bernie Tabaranza, an employee of the Institute of Tropical Ecology and Environmental Management and a son of one of the pioneering members of the Cienda San Vicente Farmers Association (CSVFA) also stressed that Rainforestation succeeded in Cienda since the organization’s adoption of the Rainforestation is not only about the community, it is also about family involvement. According to Bernie: *“Household forms of membership by Rainforestation adopters ensures social sustainability since children are involved in the planning and are assigned task in taking good care of the existing Rainforestation demonstration farm. With this, the children are given the opportunities to feel that they also possess the Rainforestation farm since they also have invested their time and efforts in taking care of it. Family members involve in CSVFA are also actively involved in the implementation and monitoring of forest restoration activities”*

At present, GTZ’s mission to proliferate environmental education to a large number of people has already ended after almost twenty years of supporting environment education related activities. Yet, this mission has been continued by the Environment Leadership Training Initiatives (ELTI) through its Leadership Program where ELTI graduates have been mandated to re-echo what they learned from the leadership training. In Leyte, ELTI has trained adopters in the town of Inopacan. It also has new adopters in Cabugcayan, Biliran Province and has established rainforestation demonstration farms in the area. This is ELTI’s thrust to continue what GTZ has started so that sustainable development would be achieved through environmental education. Hence, there is no doubt that one of the potent weapons in the thrust to conserve and protect of what is left of the natural environment is environmental education. For the new sets of adopters, rainforestation have given them hope that their efforts could have a significant contribution to nature conservation. Through environmental education, people from all walks of life would be given a chance to realize Mother Nature’s importance to the lives of each and every person including the future generation.

The Influence of Environmental Education to the Generation of Rainforestation Adopters

Environmental education has indubitably played a great role in protecting and conserving of what is left of the natural environment. The efforts of the Environment Leadership Training Initiatives (ELTI) have paved the way for a greater awareness of the significance of each and every person’s role in taking good care of nature so that it could sustain the needs of people for a longer period of time. The establishment of a ten hectare rainforestation demonstration in Inopacan, Leyte as well as the establishment of the same demonstration farm on an eight hectare property in Cabugcayan, Biliran Province are offshoots of rainforestation leadership trainings conducted and sponsored by ELTI. These trainings have educated people of all ages on the importance of protecting Mother Nature since it is also an indirect way of protecting oneself. According to Ricardo Cabulan, a new rainforestation adopter from Cabugcayan Biliran: *“I am convinced by the ELTI Rainforestation training that taking good care of the environment is very important. My exposure to the different rainforestation farms in Baybay, Leyte has given me a strong belief that planting native trees for nature conservation is possible and very doable.”*

This sentiment is re-echoed by Gerald Matinao, an adopter from Inopacan, Leyte who also happened to live within the vicinity of the Inopacan rainforestation site. According to Mr. Matinao: *“The ELTI environmental education and rainforestation training has greatly affected the mind sets of the Inopacan rainforestation adopters. The ELTI training has given them insights that it is not difficult to do our share in taking good care of Mother Nature. My and my neighbors’ exposure to the different vibrant rainforestation farms in Baybay, Leyte have given us hope that*

some day, a large parcel of our unproductive and denuded land would become a green lush forest in the very near future. We believe in this since someone has already proven that rainforestation is doable and possible. Yet all this is not possible without the ELTI rainforestation training since it educated us to value what is left of Mother Nature”.

CONCLUSION

This study concludes that all group and individual rainforestation adopters in the Visayas region in the Philippines have benefitted from the good things that rainforestation has given them. Economic benefits as a result from rainforestation adoption is shared by the group and individual adopters. For instance, the Cienda-San Vicente Farmers Association became a supplier of native tree seedlings to the Philippine government’s National Greening Program that enabled them to earn over a million pesos in income. Not only that, rainforestation farms also serve as a good source of water as demonstrated by Mr. Manuel Posas. This not only give Mr. Posas non-stop supply of water, it also give him the opportunity to earn from his newly installed water system. Above all, rainforestation brings back and restore biodiversity which is the essence of environment conservation.

Moreover, this study also concludes that environmental education is one of the main factors why individuals and groups have adopted Rainforestation. The formal education provided by Visayas State University, Gesellschaft für Technische Zusammenarbeit (GTZ), and the Environment Leadership Training Initiatives (ELTI) has changed the mind-sets of the rainforestation adopters in such a way that it gave them meaningful realizations that Nature conservation is each and every person’s moral obligation. Furthermore, the experience of the CSVFA members has also proven that informal environmental education in one’s home is also effective in inculcating to the minds of the youth the importance of the natural environment to one’s life. This enables the youth to care for Mother Nature by heart which leads to a development that is sustainable. Lastly, this study further concludes that the spread of Rainforestation has been an offshoot of the greater reach of education and information dissemination.

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