World Journal of Environmental and Agricultural Sciences
Vol. 2, No. 1, December 2017, pp. 1-6
Available online at http://www.wjeas.com/

Research article

PAVING THE WAY TO ORGANIC FARMING PRACTICES: A CASE OF BUHIAN DIVERSIFIED FARM IN INITAO, MISAMIS ORIENTAL

John Philip A. Viajedor[1,10], Michael James O. Baclayon[10], Cristobal C. Tanael[2,10], Juvelyn B. Lugatiman[3,10], Dinnes M. Cortes[4,10], Aldrin B. Librero[4,10], Jan Rey M. Flores[5,10], Florante G. Requina[6,10], Romersita D. Dadayan[7,10], QuiniGine W. Areola[8,10], Sotico P. Micabalo[8,10], Dan M. Capangpangan[9,10], Ruth S. Talingting[8,10], Florence C. Paler[9,10] and Sonnie A. Vedra[10]

[1] University of Science and Technology of Southern Philippines
[2]City Agriculture Office, Iligan City
[3] Department of Environment and Natural Resources, Region X
[4] Department of Social Welfare and Development, Region X
[5] Caraga State University
[6] Northwestern Mindanao State College of Science and Technology
[7] Mindanao State University, Main Campus, Marawi City
[8] Department of Education, Region X
[9] Department of Trade and Industry, Region X
[10] School of Graduate Studies, Mindanao State University at Naawan, 9023, Naawan, Misamis Oriental, Philippines

ABSTRACT

A study was conducted to attest if organic farming is an effective agricultural innovation towards sustainability. Field visit and interview using survey questionnaire were conducted in an organic farm in Initao, Misamis Oriental. A successful means of organic farming in terms of social development and challenges, management and cultural practices, financial and socio-economic implications and sustainability strategies would mean that farmers should learn the basics of agriculture and learn to transform such knowledge into practicing organic farming, learn the basics of business and accounting so that farming becomes profitable, and learn to share such promising results of organic farming to other farmers to sustain and resolve food security issues. The initiatives and success stories gained should be linked to all stakeholders to achieve a more sustained means of agriculture.

World Journal of Environmental and Agricultural Sciences
Vol. 2, No. 1, December 2017, pp. 1-6
Available online at http://www.wjeas.com/

Keywords: organic farming, sustainable development, tropical agriculture

INTRODUCTION

Agriculture serves as one of the major food sources for human consumption. Since time immemorial, it is the livelihood of many people around the world, mostly among the developing countries. It also contributes and provides many innovations and means to the environment. However, as technology evolves, agriculture is now undergoing numbers of problems like commercial land conversions, climate change, deterioration of soil fertility due to excessive usage of chemical fertilizers and pesticides, which congruently affect the environment directly or indirectly (FAO, 2015; Mozumdar, 2012; Velten et al, 2015; Ozkan et al, 2017).

In the Philippines, agricultural status is deteriorating which is caused by different threats like inevitable calamities and conversion of agriculture land into a commercial land. For more than half of century, the agricultural economy in the Philippines declined together with the fishery and forestry sectors. During flooding, up to 70% of corn crops were damaged, andin year 1998, rice crops were affected due to El Niño that had a decline as much as 24%(Barrios and Nalica, 2007; Fernandez, 2014; Habito and Briones, 2005; Vista, 2014).

To meet the demands of increasing world population, agricultural production should be increased in a way far less destructive and detrimental to the environment, through technology improvement, which is the sustainable agriculture. Trying to respond this challenge, organic agriculture is created by limiting the use of external inputs and integrating several practices which are considered more environment-friendly (Ozkan et al, 2017; Mondelaers et al, 2009; Mozumdar, 2012). Organic farming is a holistic approach to food production making use of crop rotation, environmental management and good animal husbandry to control pests and diseases.

Agricultural practices today provide many solutions to the resource efficiency challenges in terms of nutrient management, energy use and water efficiency with the potential to produce further perspectives in the future. It also increases soil stability, organic matter contents and making it resilient to changing climate conditions.

Organic farmland is rich in biodiversity as it bears on average 30% more species than conventional farmland. It contributes to the maintenance of ecosystem services from pollination and nutrient recycling, to clean water and air(Cisilino and Madau, 2007; IFOAM, 2011; Johansson et al, 2014; Verma 2015).

Organic farming has become one of the fastest growing branches of agriculture during the past two decades. Global revenue shows that products from organic farming continues to rise to a value of around 50 billion and the regions with the highest demand is in North America and Europe. Each year in Europe about half a million hectares of land have been converted to organic production. Due to the concerns in the environment and human health organic farming is slowly climbing to a success (Brenes Muñoz et al, 2012;Mercati, 2016).

To this, one of the known organic farms is located in Initao, Misamis Oriental, which sustained several consequences from a humble beginning. In this context, successful means of organic farming were solicited that hoped to contribute information to other prospective organic farmers, who has agriculture as a prime livelihood. Topics solicited from the farm personnel were the social development and challenges, management and cultural practices, financial and socio-economic implications and sustainability strategies.

METHODOLOGY

Field site was the Buhian Diversified Farm at Apas, Initao, Misamis Oriental, which is located a few kilometres from the Poblacion area. Courtesy calls and visits were done prior to the conduct of field works. This was done to explain the objectives of the study and obtain relevant information from their office. Thereafter, a meeting was set among the farm personnel and a key informant interview was conducted using a semi-structured open-ended questionnaire. The information shared by the farm personnel were validated through an ocular on-site touraround the farm. The technician assigned introduced and explained the various innovative technologies inside the farm.

RESULTS AND DISCUSSION

Main concern of this study was describing the successful means of organic farming that were solicited from the farm personnel that were promising to be shared to farmers who opted to do organic farming. In particular, some aspects were considered such as social development and challenges, management and cultural practices, financial and socio-economic implications and sustainability strategies.

Social development and challenges

Farm development and various strategic means were possible through empowerment from different trainings and seminars conducted by several agricultural institutions and other offices. Such trainings had equipped the owner, a municipal councilor and agricultural education degree holder Hon. Penny Buhian to venture farming from 2006 up to the present.

Hon. Penny Buhian is a public official of the municipality of Initao and one of the Sangguniang Bayan members. She is the chairperson of the Committee on Agriculture of the municipality. By this, she had developed good relationship with other people by promoting sustainable agriculture, creating jobs and conducting seminars for her constituents, especially the local farmers.

To this, Hon. Buhian has provided livelihood for many people through her farm. At present, she has twelve (12) farm personnel who work in the daily operations of the Buhian Diversified Farm. There were assigned personnel per commodity in the farm like the coconut, ducks and other livestocks. The most important component of farm operation was the monetary management, and as such, the farm hired one (1) manager and bookkeeper. Her farm workers earned P300.00 per day for the commodity personnel. All of her employees had social benefits like PhilHealth and other incentives. Challenges like climate change and other environmental concerns urged Hon. Buhian to improve her farming practices by means of using organic methods. The utilization of organic pesticides ensued the reduction of pest intrusion to her farm.

This social challenge had conformed to the study of Mercati (2016) such that many agricultural practices can exert pressure on the environment and cause soil degradation, water shortages and pollution and a loss of natural habitats and biodiversity. In turn, a well-evolved agricultural system must be able to counteract climate change and hydrogeological degradation, preserve animal and plant biodiversity and guarantee full respect for public health. In this perspective, agriculture can play a central part in the development of an economic model aimed at sustainability and the production of public goods.

Management and cultural practices

In year 2010, Hon. Buhian was known by the Philippine Coconut Authority (PCA) and invited her to attend seminars and trainings to improve her coconut-based farm. By this, she realized the importance of organic farming, and luckily, PCA had given her coconut and cacao seedlings. She used the concepts of organic system of farming where it applied organically-produced fertilizers as means of improving and enhancing the soil. Also, natural pesticides and insecticides were made to control pests in her farm, like the Oriental Herbal Nutrients (OHN). In her farm, pesticides and fungicides were applied only when needed.

The main commodity of her farm was coconut. A greater percentage of her farm income was coming from the coconut products like the *tuba* (coconut wine), coconut sugar and coconut seedlings. Other farm income was generated from sale of the duck eggs (i.e. 5,000 duck heads) which produced thousands of eggs per day. Besides, they also had chickens, pigs and other livestock. The farm grew long-term crops like fruit trees (e.g. mango, banana, etc.) and ginger, herbs and other spices.
Diversification of farm and being organic by principle is at par over the conventional farming system. In fact, over the past few decades the area of farmland under organic management has significantly and continuously increased. This trend, observed across all continents, has been accompanied by a strong expansion of the market for organically-produced goods. Likewise, the tremendous expansion of organic agriculture and food systems made the

organic sector experienced a remarkable diversification (Doring, 2014). The potential of organic farming promised to contribute solutions to global challenges in food security issue and economic pressures from the farmers themselves which could be related to their cultural practices.

Financial and socio-economic implications

Hon. Buhian started with only forty nine (49) coconut trees in her farm but this humble beginning had multiplied and sustained her family's everyday expenditures and payments for her children's schooling. Her farm earned approximately 2.1 million pesos last year in 2016. This was coming from her thoughts that "there is really money and income in agriculture if you work hard for it." From this, she received support from the agricultural institutions and offices like the Municipal Agriculture Office (MAO), municipality of Initao by giving her trainings and seminars and technology transfer. Also, the Agricultural Training Institute (ATI RTC X) identified her farm as a FilFarm, an ATI Learning Site that can offer hands-on training and seminars and as a Demo Farm where the farmers can acquire specific farming methods applicable in their respective farms. This in turn, made stronger linkages and partnership with the Buhian Farm and other prospective farm practioners. This is an important strategy such that it allowed smallholder farmers that were considering organic farming as a way of formulating effective implementation strategies (Svotwa et al., 2009).

The marketing strategies of the Buhian Farm varied, to wit: they established stalls in the local market, participated in trade fairs, and by means of hosting farm visits and tours. They also utilized the advance information technology like the social media specifically the Facebook, Twitter and other means. Value adding of their major commodities made her farm more famous and popular not only in the local market but also nationwide. To this, Hon. Buhian was awarded by various prestigious agricultural institutions and other award giving institutions.

In spite of the success of the current operations of the Buhian Farm, it faced some problems, issues and challenges like the farm workers, employees, marketing and diversified farming management. The strong support and assistance of the various agricultural institution partners the Buhian Farm had overcome all of these challenges. Now, Hon. Buhian was able to improve her farming strategies and this gave her an edge over her co-farmers.In this way, sustainable agricultural practices, such as organic and conservation agriculture, should be considered as alternatives to conventional agricultural practices (Middleberg, 2013).

Sustainability strategies

Since then, Hon. Buhianwas using environment-friendly approaches in order to conserve and preserve our environment. She used the Natural Farming Technology System (NFTS) like Oriental Herbal Nutrients (OHN) as natural plant immunity booster and natural pesticide. In this way, concerns about the negative impact conventional agriculture is having on the environmentcalled for farming practices that are not only economically sound but also environmentally-protective and socially-acceptable. By means of continuing as a learning farm site, it could mean that a need to have the agronomic topics basic to the understanding of sustainable agriculture be included in the curriculum, providing a foundation for curriculum innovation related to sustainable agriculture (Agbaje et al., 2001).

Hon. Buhian persuaded other farmers to adopt organic farming systems by utilizing her farm as Demo Farm for various organic promoting institution like the Agricultural Training Institute (ATI RTC X)also by setting up advocacy meetings, information drive and actual field demonstrations on her farming strategies.
With the assistance of the Municipal Agriculture Office (MAO) of the Municipality of Initao, Hon. Buhian built strong linkages and partnership with the local institutions, thus her organic farming practices and strategies made her farm noticed by her works.

CONCLUSION AND RECOMMENDATIONS

A successful means of organic farming in terms of social development and challenges, management and cultural practices, financial and socio-economic implications and sustainability strategies could be sum up as: (1) farmers should learn the basics of agriculture and learn to transform such knowledge into practicing organic farming, (2),

learn the basics of business and accounting so that farming becomes profitable, and (3) learn to share such promising results of organic farming to other farmers to sustain and resolve food security issues.

In this way, it is imperative that the initiatives and success stories of Buhian Diversified Farm should be part of the local government's agricultural programs as it provides a learning hub to the local farmers. It should also link to the academe to do applied research to have the farm becomes more conducive as a learning hub among the farmers and other stakeholders.

ACKNOWLEDGEMENT

The authors gratefully acknowledged the help and support of the farm personnel and farm owner for the information shared as well as the permit to conduct this study.

REFERENCES

Abgaje, K., R. Martin, D. Williams. 2001. Impact of sustainable agriculture on secondary schoolagricultural education teachers and programsin the North Central Region. Journal of Agriculltural Education. 42(2): 38-45.

Barrios, E.B. and Nalica, A.D. 2007. Convergence of Growth in Rice Production in the Philippines. 10th National Convention on Statistics (NCS). Pp. 1-12.

Döring, D. 2014. A fresh start for organic farming research. Organic Farming. 1(1): 1-2.

Brenes Muñoz, T., Lakner, S. and Brümmer, B. 2012. Economic growth of farms: An empirical analysis on organic farming. Selected Paper prepared for presentation at the International Association of Agricultural Economists (IAAE) Triennial Conference, Foz do Iguaçu, Brazil, 18-24 August, 2012. Pp. 1-20.

Cisilino, F. and Madau, F. 2007. Organic and Conventional Farming: a Comparison Analysis through the Italian FADN. Paper prepared for presentation at the I Mediterranean Conference of Agro-Food Social Scientists. 103rd EAAE Seminar 'Adding Value to the Agro-Food Supply Chain in the Future Euromediterranean Space'. Barcelona, Spain, April 23rd - 25th, 2007. Pp. 1-20.

Food and Agricultre Organization. 2015. Solutions for Sustainable Agriculture and Food Systems Technical Report for the Post-2015 Development Agenda. Sustainable Development Solutions Network. A global Initiative for the United Nations.

Fernandez, D. 2014. Threats and Challenges to Agriculture Towards Sustainable Rice Farming. Asia Pacific Journal of Education, Arts and Sciences. 1(1):55-63.

Habito, C.F. and Briones, R.M. 2005. Philippine Agriculture over the Years: Performance, Policies and Pitfalls. Paper Presented in Conference sponsored by the Asia-Europe Meeting (ASEM) Trust Fund, Asian Institute of Management Policy Center, Foreign Investment Advisory Service, Philippine Institute of Development Studies and the World Bank, held in Makati City, June 27, 2005. Pp. 1-38.

Johansson, E., Hussain, A., Kuktaite, R., Andersson, S.C. and Olsson, M.E. 2014. Contribution of Organically Grown Crops to Human Health. International Journal of Environmental Research and Public Health. 11:3870-3893.

Mercati, V. 2016. Organic agriculture as a paradigm of sustainability: Italian food and its progression in the global market. Agriculture and Agricultural Science Procedia. 8: 798-802.

Middelberg, S. 2013. Sustainable Agriculture: A Review of Challenges Facingthe South African Agricultural Sector. Journal of Human Ecology. 42(2): 163-169.

Mozumdar, L. 2012. Agricultural Productivity and Food Security in the Developing World. Bangladesh J. Agric. Econs. 35(1&2):53-69.

Ozkan, Z., Aydinli, V. and Kahraman, A. 2017. Environmental Precision: Importance of Worm Manure in Sustainable Agriculture. Selcuk Journal of Agriculture and Food Sciences. 31(1):81-85

Svotwa, E., R. Baipai, J. Jiyane. 2009. Organic farming in the small holder farming sector of Zimbabwe. Journal of Organic Systems. 4(1): 8-14.
Velten, S., Leventon, J., Jager, N. and Newig, J. 2015. What is Sustainable Agriculture? A Systematic Review. Sustainability 2015. 7: 7833-7865.

Verma, R. 2015. Environmental Benefits of Organic Food and Agriculture. International Journal of Research – Granthaalayah. Social Issues and Environmental Problems. 3(9): 1-3.

Vista, A.B. 2014. Simulating Climate-induced Impacts on Philippine Agriculture Using Computable General Equilibrium Analysis. J. ISSAAS. 20(1):16- 28.