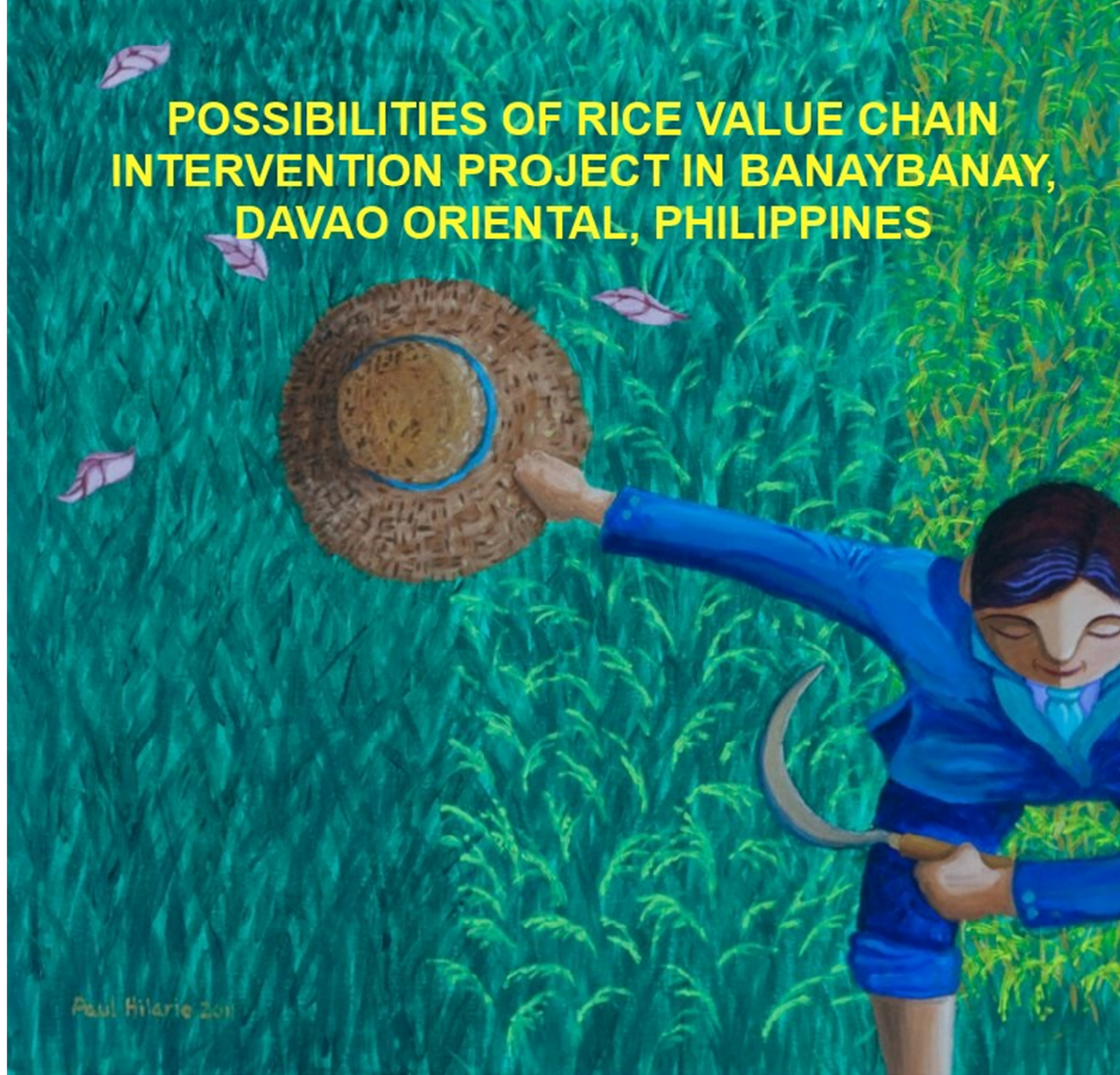


POSSIBILITIES OF RICE VALUE CHAIN INTERVENTION PROJECT IN BANAYBANAY, DAVAO ORIENTAL, PHILIPPINES



A Master's thesis presented to Van Hall Larenstein,
University of Applied Science, in partial fulfillment
for the degree in Master of Agricultural Production
Chain Management specialising in
Horticulture Chains

Nelben Raymunda

September 2013
Wageningen, The Netherlands

Copyright Nelben Raymunda
All rights reserved

ACKNOWLEDGEMENTS

Thank you so much.

There are no simple but true words that could simply express my profound gratitude to God and the following persons who were involve in realising this study:

Again, to the Almighty God, for this beautiful gift of life You have given me. You have endowed me with talents and wisdom so that whatever task is given I will be able to fulfill according to Your will;

To my Nader and Ebrahim Philippines (NEH) family especially to Mr. Paul Smits, Jeroen de Haas and Fresh Studio Innovation Europe's Hanneke Hermans and Philip Hansmann for giving this opportunity of being educated in a prestigious university and in Europe;

To Van Hall Larenstein especially to my supervisor, Tracey Campbell, for the well thought advises and guidance given throughout my study and to the lecturers Marco Verschuur and Geert Houwers who were always willing to listen and answer my questions with gladness;

To the small scale farmers of Banaybanay, Davao Oriental especially to my host family, Jenny Madelo, and the Municipal Agriculture Officers' Lolet, Auring, Jun, and Esther for the warm accommodation and I hope that this study will contribute towards the improvement and sustainability of rice in Banaybanay;

To Paul and Maria Celeste Hilario for allowing me to use one of Paul's beautiful rice painting in my cover;

To my new found Filipino and international friends, I would always remember you and our shared tears in times of failure and triumph. Our diversity makes my world go round;

To my families, Raymunda and Tesoro, I am forever indebted to you. Your love has kept me going and surviving especially in my moments of nostalgia;

Lastly, to my hubby and friend, Kist, for the love and support you have given me.

This experience will always be treasured in my heart forever.

Again, thank you so much.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	ii
GLOSSARY OF TERMS	v
ABBREVIATIONS	vi
LIST OF FIGURES.....	vii
LIST OF TABLES	viii
ABSTRACT	ix
CHAPTER 1. INTRODUCTION	1
1.1 Background	1
1.2 Problem statement.....	3
1.3 Problem owner.....	3
1.4 Objective.....	4
1.5 Research questions	4
CHAPTER 2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK	5
2.1 Value chain concepts.....	5
2.1.1 Value added distribution	5
2.1.2 Market institutions	6
2.1.3 Constraints and Developments in Value Chains	6
2.2 Rice Production	7
2.2.1 Production	7
2.2.2 Profitability.....	9
2.2.4. Key government institutions.....	9
2.3 Organisational Development.....	10
2.4 NEH Philippines, Incorporated	12
CHAPTER 3. METHODOLOGY	14
3.1 Research area	14
3.2 Research design.....	15
3.2.1 Desk study	16
3.2.2 Field work.....	16
3.2.3 Analysis.....	18
3.2.4 Limitations of the study	18
CHAPTER 4. RESULTS.....	20
4.1 Current Features of Rice Value Chain in Banaybanay	20

4.1.1 Chain Actors.....	21
4.1.2 Value shares of actors in the marketing chain.....	29
4.1.3 Market Institutions.....	32
4.1.4 Constraints and Opportunities in the Chain.....	35
Constraints in the Chain	35
Opportunities in the Chain	37
4.2 Capacity of NEH Philippines for Diversification Project.....	39
4.2.1 Challenges faced by NEH in previous product diversification projects.....	39
4.2.2 Strengths and Weaknesses of the NEH Philippines	40
CHAPTER 5. DISCUSSION	45
5.1 Actors in the chain	45
5.2 Value shares.....	46
5.3 Marketing Institutions.....	46
5.4 Constraints and Opportunities in the chain.....	47
5.5 Challenges faced by NEH Philippines in previous product diversification projects.....	47
5.6 Strengths and Weaknesses of the NEH Philippines	48
CHAPTER 6. CONCLUSION AND RECOMMENDATIONS	50
6.1 Conclusion.....	50
6.2 Recommendations.....	50
REFERENCES.....	55
APPENDICES	59
Appendix 1. Questionnaires for rice chain actors	59
Appendix 2. Questionnaire for NEH management team.....	62
Appendix 3. Estimated cost and profit (Php) of traditional paddy to milled rice.....	63
Appendix 4. Estimated cost and profit (Php) of organic paddy production.....	69
Appendix 5. Grade requirements for palay.....	72
Appendix 6. Grade requirements for rice	72
Appendix 7. 360 ⁰ Assessment of NEH Philippines, Inc.	73
Appendix 8. Gantt Chart of Rice Value Chain Intervention Project.....	74

GLOSSARY OF TERMS

Barangay - a unit of administration in Philippine society consisting of from 50 to 100 families under a headman (Merriam Webster, 2013)

Dicer - a person paid by millers to look for farmers to sell wet palay to them

Gross Domestic Product (GDP) – gross national product excluding the value of net income earned abroad (Merriam Webster, 2013)

Gross Value Added (GVA) - value of goods and services produced in an area, industry or sector of an economy; a measurement of GDP

Intermediaries – traders which include wholesalers, retailers and strikers

Maintenair – rice field workers and sometimes owners of their leased land or are hired workers

Municipality - a primarily urban political unit having corporate status and usually powers of self-government (Merriam Webster, 2013)

Paddy – English term for palay

Palay - rice at any stage prior to husking —used especially in the Philippines (Merriam Webster, 2013)

Strikers - known as travelling traders, they travel with a truck and buy paddy at the farm

Traditional rice – rice grown using non-organic fertilisers and pesticides

Value share – percentage of the final retail price that each actor manages to capture; reflects the amount of costs and risks that an actor has put in the chain (KIT, 2006)

ABBREVIATIONS

BAS	–	Bureau of Agricultural Statistics
DA	–	Department of Agriculture
DPRDI	–	Davao Province Rice Development Intervention
EUR	-	Euro
FAO	–	Food and Agriculture Organisation
FSIA	-	Fresh Studio Innovations Asia
FSIE	–	Fresh Studio Innovations Europe
HPO	–	High Performing Organisation
IRRI	–	International Rice Research Institute
MAO	–	Municipal Agriculture Office of Banaybanay
NEH	–	Nader and Ebrahim Son of Hassan Philippines, Incorporated
NFA	–	National Food Authority
NIA	–	National Irrigators Administration
OPP	–	Office of the Philippine President
PhilRice	–	Philippine Rice Research Institute
Php	-	Philippine Peso
SFCAI	-	Small Farmers Christian Association, Inc.

LIST OF FIGURES

<i>Figure 1. Gross value added in agriculture sub sectors</i>	<i>1</i>
<i>Figure 2. Supply and utilization of rice in the Philippines</i>	<i>2</i>
<i>Figure 3. Conceptual framework in analysing value chains</i>	<i>7</i>
<i>Figure 4. Rice production cycle</i>	<i>8</i>
<i>Figure 5. Philippine rice production</i>	<i>9</i>
<i>Figure 6. Conceptual framework in analysing organisation development capacity.....</i>	<i>12</i>
<i>Figure 7. HPO Scores of NEH and Other Philippine and Asian companies</i>	<i>13</i>
<i>Figure 8. Map of the Philippines and location of Banaybanay.....</i>	<i>14</i>
<i>Figure 9. Rice production in Banaybanay from 2008-2012</i>	<i>15</i>
<i>Figure 10. Research phases</i>	<i>16</i>
<i>Figure 11. Participants of Focus Group Discussion</i>	<i>18</i>
<i>Figure 12. Rice Value Chains in Banaybanay.....</i>	<i>20</i>
<i>Figure 13. DOSEPCO Seed Supplier</i>	<i>21</i>
<i>Figure 14. Rice farmers in Banaybanay.....</i>	<i>23</i>
<i>Figure 15. Rice millers in the area</i>	<i>24</i>
<i>Figure 16. Retailers of Banaybanay rice.....</i>	<i>25</i>
<i>Figure 17. Fancy rice produced by SCFAI farmers.....</i>	<i>26</i>
<i>Figure 18. Interview with DRDI and its farmers.....</i>	<i>26</i>
<i>Figure 19. National Food Authority Office</i>	<i>27</i>
<i>Figure 20. Machineries distributed by MAO to farmers' organisation</i>	<i>27</i>
<i>Figure 21. One Network Bank</i>	<i>28</i>
<i>Figure 22. Value shares of traditional and organic rice value chains</i>	<i>32</i>
<i>Figure 23. Interview with former FSIA team leader.....</i>	<i>40</i>
<i>Figure 24. NEH assessment on capacity for organisational development.....</i>	<i>41</i>
<i>Figure 25. Comparative rating of satisfaction</i>	<i>44</i>
<i>Figure 26. Relationship among actors in the chain</i>	<i>45</i>
<i>Figure 27. Force field analysis.....</i>	<i>49</i>

LIST OF TABLES

<i>Table 1. Difference of a traditional chain and value chain.....</i>	<i>5</i>
<i>Table 2. List of traditional rice farmers in Banaybanay</i>	<i>22</i>
<i>Table 3. List of rice intermediaries in Banaybanay</i>	<i>25</i>
<i>Table 4. Functions of actors in the chain</i>	<i>29</i>
<i>Table 5. Estimated cost and profit (Php) in the traditional rice value chain (farmer-miller/trader-retailer).....</i>	<i>30</i>
<i>Table 6. Estimated cost and margin (Php) of farmers in the organic value chain.....</i>	<i>31</i>
<i>Table 7. Existing marketing institutions in the chain</i>	<i>32</i>
<i>Table 8. Challenges in Lakatan trading project.....</i>	<i>39</i>
<i>Table 9. Proposed action plan.....</i>	<i>51</i>
<i>Table 10. Proposed activity for partnership building</i>	<i>51</i>
<i>Table 11. Proposed activities for technology intervention</i>	<i>52</i>
<i>Table 12. Potential in palay and rice production</i>	<i>53</i>
<i>Table 13. Propose scheme for financing intervention</i>	<i>53</i>
<i>Table 14. Proposed activities for capacity building</i>	<i>54</i>
<i>Table 15. Proposed activities in marketing intervention</i>	<i>54</i>

ABSTRACT

A study on the possibilities of rice value chain intervention project in Banaybanay, Davao Oriental Philippines was conducted in order to provide an analysis of the rice value chain in the proposed area and the capacity of NEH Philippines, Inc., initiator, to engage in this project thereby supporting its decision in venturing in this kind of diversification project.

This study was conducted in July to September 2013 and which it used desk study and field work that includes interviews and focus group discussion among rice chain actors and interviews of the members of the top management of NEH Philippines, Inc.

Results of the study showed that there are two existing rice chains, traditional and organic rice value chains in the area. Both chains are dominated by small scale actors and few powerful actors/intermediaries in the chain. The biggest value added in the chain is in its processing, i.e., milling paddy to edible rice. Profitability in rice depends on the quantity of paddy/ rice that each actor in the chain acquires. The relationships that exist among actors in the chain are based on price and trust. As such only few rules that exist and that quality come second in consideration. On the other hand, the organic rice chain is quite a promising sector in Banaybanay however there is still much to be proven since it is still in its infancy period.

There is a good opportunity for development in the rice value chain of Banaybanay; the fact that there is a great demand for rice sufficiency in the country is an opportunity to explore. However, this is overshadowed by the inefficiencies in the chain which includes low productivity, lack of post- harvest facility, lack of capital and weak horizontal and vertical linkages. Thus interventions should focus on these areas.

Looking at the capacity of NEH Philippines, it is possible for the organisation to engage in rice value chain intervention project. It possesses strengths of having a system to human resource development, access to financial resources, culture of supporting innovations, relationship building towards its clients and network. However, the challenge lies on the right time in starting this project because currently the management is all focus in making the core business, banana trading, more efficient. There is no question if the product is suitable for the organisation since it is still aligned to its vision of satisfying its customer however, due considerations should be given in engaging in this project.

As recommendations, the management of NEH Philippines, Inc. should discuss among themselves and agree when and how this project should be started. Second a feasibility study should be conducted in order to strengthen the market aspect of this project. Based on the identified constraints in the chain, four intervention aspects are suggested which are on technology, financing, marketing and organisational capacity.

CHAPTER 1. INTRODUCTION

1.1 Background

The Philippines is located in the Southeastern Asia bounded by the Pacific Ocean to the east, the Bashi Channel to the north and the Sulu and the Celebes Seas to the south. It is an archipelago made up of 7,107 islands with a total land area of 298,170 square kilometres. It has a democratic and republican form of government. The country is divided into the geographical areas of Luzon, Visayas and Mindanao. Its capital, the City of Manila, is in Luzon and the country's food basket where most of the agricultural products are sourced is in Mindanao (BAS, 2012; OPP, 2012).

Agriculture is the backbone of the Philippine economy. About 32% of the country's total land area is agricultural lands. Of this, 51% and 44% are arable and permanent croplands, respectively. The agriculture sector contributed 11% of the total Gross Domestic Product (GDP) in 2011. In its sub sector, crops have the highest contribution with 49% of Gross Added Value (GVA) that includes: palay, corn, coconut, banana, sugar cane, mango, and pineapple. Figure 1 shows the percentage distribution of GVA of the agriculture sub-sectors in 2011 (BAS, 2013).

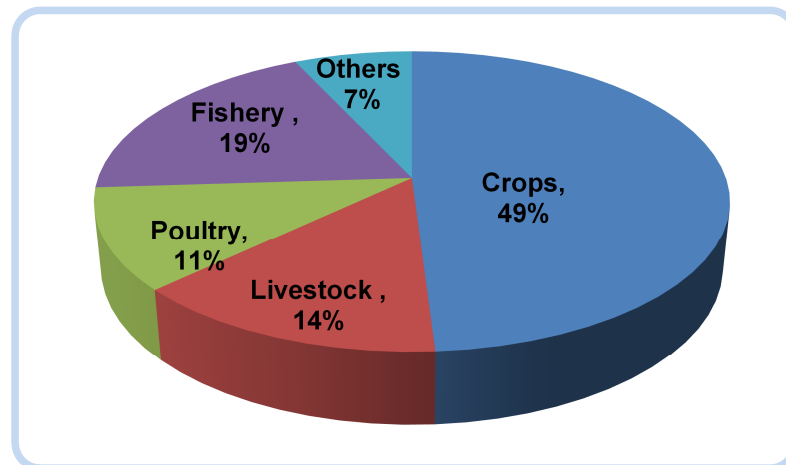


Figure 1. Gross value added in agriculture sub sectors

Source: Department of Agriculture (2013)

In terms of employment, agricultural jobs share about 33% or 12.17 million persons in the total employment of the country which is at 37.19 million persons. The agricultural wage rates per day are about Php 207.31(nominal) and real wage rate is Php 122.01 (BAS, 2013). Among the agricultural crops in the Philippines, rice is the most valued crop because of its two-fold functions in the country. It is the main staple food among 90% of the Filipinos and a major source of income. It provides 45% of the caloric intake of Filipinos, accounts for 20% of the typical household's budget and more than two million households are engaged in rice-based farming (DA, 2012). It also plays an important economic role in the country that is, the trend in rice pricing has a substantial impact in the overall inflation rates which concerns among policy makers on pricing and fiscal stability (DA, 2012).

In general, the country is a net importer of rice. In 2011, the production of rice in the country was estimated at 16.6 million tonnes paddy rice valued at \$41million (FAOSTAT, 2013). In the same year, the country's production of rice is dubbed as the eight highest production in the world but also the fourth largest importer of rice, after Nigeria, Iran, and China, with 17.3% share of the world rice imports (USDA, 2012). Based on World Rice Statistics in 2011, the average rice yield in the Philippines is approximately 3.7 tonnes per hectare which is higher than of Thailand's, the world's biggest exporter of rice however, the domestic utilization of rice which is estimated at 12.4 million tonnes exceeded the domestic supply of 10.9 million tonnes (IRRI, 2012). Thus, it is importing rice from neighbouring countries, Thailand and Vietnam. Figure 2 shows the supply and utilization of rice from 2007-2011 as reported by the Bureau of Agricultural Statistics (2013).

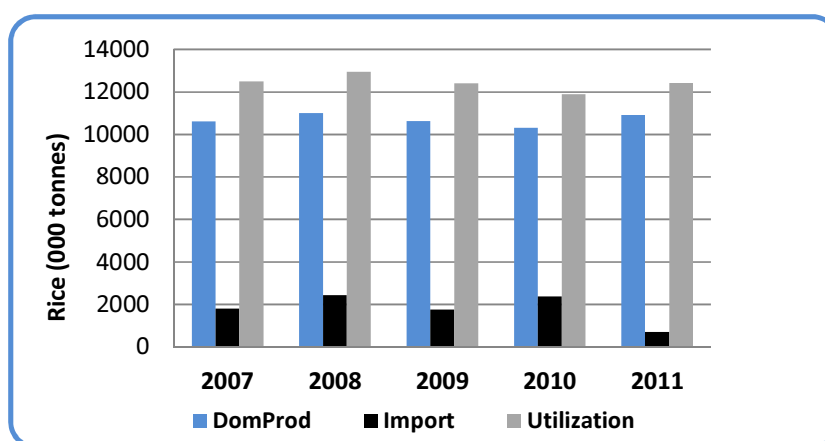


Figure 2. Supply and utilization of rice in the Philippines

Source: BAS (2013)

Among the causes of rice insufficiency are high prices of agricultural inputs, rising population, typhoons, and decreasing land area planted to rice (IRRI, 2012). In addition, the growth of population at 1.9% per year contribute to the demand in rice, as such the government has launched the Food Staples Sufficiency Program in 2010 in which rice, the main staple, is focused. It aims that the country will be self-sufficient or meets the domestic food staple requirements by 2013 and strengthens the national resilience in staples production (DA, 2012). The key interventions include raising farm productivity and competitiveness, enhance economic incentives and enabling mechanisms, and manage food staples. However, a report released in February 2013 from the United States Department of Agriculture Foreign Services Department stated that the country remains a net rice importer however a decline of 1.2 million tons in rice import between 2013 and 2014 is forecasted due to improve production. In addition the report also stated that experts agreed that a low milling rate, high tariff (35-40%) and thriving economy will keep the Philippines in this situation (Corpuz, Verzani 2013).

In order to strengthen the capacity of the public institutions in battling with rice insufficiency, the private sector has been recognized to play an important role to provide services such as credit and other innovative schemes (DA, 2012). Since last year, there has been an invitation from the local government in the province of Pangasinan to Nader

and Ebrahim Son of Hassan Philippines, private institution, to look into and engage in the rice industry. For the company, it is interested in providing services among actors in the rice value chain and since this will also provide them an opportunity to diversify its product portfolio.

NEH Philippines is engaged in the export of fresh 'Cavendish' bananas to the Asian and Middle East markets. It is a division of NEH Group Bahrain, which is involved in the distribution of fresh fruits and vegetables amongst others. Since its creation in 2001, it has been working with small and medium scale farmers through contract farming schemes. Aside from taking the function of an exporter in its chain, the organisation is linked with agricultural input suppliers and banks to enable farmers to access farm and financial needs. It also outsourced its technical services in order to improve farm productivity.

In 2010, NEH Philippines launched its latest product diversification project with Fresh Studio Innovations Asia. Through its partnership, the project involved trading of "Lakatan", a local variety of banana, in the local market. It sourced its product from the small scale farmers through outgrowing scheme. The project was implemented for one year but discontinued because of various social and economic related problems.

Despite the discontinuity of "Lakatan" trading project, NEH Philippines still continues to explore possibilities of diversifying local products that show potential in the local and export markets. One of the products the company considers is rice. Last year, a rice value chain intervention project has been conceptualised with its new business partner, Fresh Studio Innovations Europe (FSIE). The project aims to attract partnerships with other institutions to build a professional and fair rice trade model that sustains win-win partnerships among stakeholders specifically the small and medium scale farmers (FSIE, 2012). FSIE's assumptions about the rice sector include low profitability, unfair chain power distribution, and lack of infrastructure, technology, and knowledge and market access. The possible interventions could be in terms of developing technology on best production and post-harvest practices, extension, long term contracts, and direct marketing. However, these ideas need verification in order to produce a solid basis before embarking on this project. Thus, an in depth analysis is needed that will investigate the general structures, relations and challenges related to the Philippine rice sector and the capacity of the organisation itself to engage in this new project.

1.2 Problem statement

The current need of the Philippines to attain self-sufficiency in rice has prompted NEH Philippines to consider rice as a potential product for development and diversification. This idea provides an avenue for the organisation to create a sustainable, professional and fair trade rice model in partnership with small and medium scale farmers. However the unavailability of information that shows the different facets within the rice value chain and without reflecting the organisation's capacity and previous shortcomings to engage in new project will only lead to unanticipated obstacles.

1.3 Problem owner

NEH Philippines, Incorporated

1.4 Objective

This research was conducted in order to provide an analysis of the existing rice value chain in Banaybanay, Davao Oriental and reflect on the capacity of the organisation in diversification projects in order to place NEH's management decision of venturing into value chain intervention project on a solid knowledge base.

1.5 Research questions

1. What are the current features of the rice value chain in Banaybanay?
 - 1.1 Who are the actors involved and what are their functions?
 - 1.2 What are the value shares among actors in the chain?
 - 1.3 What are the market institutions that exist in the chain?
 - 1.4 What are the constraints and opportunities in the chain?
2. What is the capacity of the organisation to engage in diversification projects?
 - 2.1 What were the challenges faced by NEH Philippines in their previous diversification projects?
 - 2.2 What are the current strengths and weaknesses of NEH Philippines in engaging into new projects?

CHAPTER 2. LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

2.1 Value chain concepts

Value chain comprises all the activities that are required in bringing the products or services to the final consumers. The actors in the value chain actively seek to support each other so they can increase their efficiency and competitiveness. This includes investment of time, effort and money and build relationships among themselves to reach a common goal of satisfying their consumer needs in order to increase their profits (Kaplinsky, 2000; KIT *et. al*, 2006).

Hobbs (2001) cited the a value chain is characterized by an interdependency among actors in the chain who recognise their mutual need for one another, work together, willing to share risk and share the resources in order for the relationship to work in order to become responsive to customer's needs. Table 1 shows the characteristics of a traditional chain and value chain according to Hobbs.

Table 1. Difference of a traditional chain and value chain

Aspect	Supply Chain	Value Chain
Information sharing	Little/none	Extensive
Primary focus	Cost/ price	Value/quality
Orientation	Commodity	Differentiated product
Organizational structure	Independent	Interdependent
Philosophy	Self - optimization	Chain optimization

Source: Hobbs 2001

In analysing a chain, Kaplinsky and Morris (2001 as cited in KIT *et. al*, 2006) stressed that, "There is no correct way to conduct a value- chain analysis; rather, the approach taken fundamentally rests upon the research question that is being answered."

2.1.1 Value added distribution

Kaplinsky and Morris (2001) stated that in determining the distribution of values among actors in the chain, that is, through the analysis of margins and profits within the chain, one can identify who benefitted in its participation in the chain and which actors will benefit more when support is provided. They added that, 'this is particularly important in the context of developing countries (and agriculture in particular), given concerns that the poor in particular are vulnerable to the process of globalization'.

The value added distribution among actors in the chain is different between market driven and producer driven chains. Whoever holds the function in physical production to the design and sales possesses control over how, when, and where production takes place, and how much profit gained to each stage and agent in the supply chain (Gereffi, 1994 as cited by Ruben *et. al*. 2007).

Nadvi (2004 as cited by Trienekens, 2012) stated that 'distribution of value added over various actors is strongly related to the governance form of the chains and depends on the power and bargaining position of actors, asymmetry between chain stages and production technology used'.

2.1.2 Market institutions

Institutions are the informal and informal rules that govern the interaction among the participants in the chain (Woodhill, 2013). It sets how the game is to be played as said. Institutions can be classified political, social, and market.

Market institutions have shape the interactions among the actors in the value chain. The rules of trading reduce uncertainty through the creation of structures or rules that serve as guide to people on negotiation, buy and sell, transport and distribute, lending money and payment of loan or debts. A weak market institution is characterised by few rules, poorly enforced rules, ad hoc arrangements, and few services and chaotic; in contrast a strong market institution has many rules such as quality standards, strongly enforced contracts and offers many services (KIT and IIRR, 2008). The implicit contracts between buyers and sellers are a common form of agreement, and give rise to the different levels of uncertainty and transaction costs. Mistrust among actors occurs because buyers and sellers opportunistically trade with others even if there are prior agreements (KIT *et. al*, 2006).

Governance in the chain is based on the institutions that exist in the chain. Gerrifi (2001) stated that a market form of governance is characterised by an arms-length transaction where it only requires little or no cooperation at all and that price is the basis of the relationship.

2.1.3 Constraints and Developments in Value Chains

There are a number of barriers in the value chain which affects one or several actors in the chain. Van Dijk and Trienekens (2012) pointed out the barriers in value chain development include quality standards that limit the access to markets such as in the European markets, unavailability of skilled workers, inaccessibility to credit and other resources, too much regulation or no appropriate governance structure, and poor infrastructure. Among the small holder farmers, the challenges include an understanding of the market demand and develop skills, capital requirements and supply of the required volume of quality product at the right time of the season (KIT and IIRR, 2008).

On the other hand, opportunities in chain take in the form of value chain development. Intermediary organisation's can lead the chain and integrate farmers as chain partner, activity integrator or co-owner (KIT and IIRR, 2008). "In using the value chain approach for enterprise development, it seeks more than just linking the microenterprises to buyers. It is developing the changes in the behaviour and improves the quality of relationship between and among the players to increase the competitiveness of the chain, while ensuring a broad distribution of benefits, skills, and income levels of the industry." (USAID, 2008).

Based on the theories sited above, the conceptual framework of this study is shown in Figure 3.

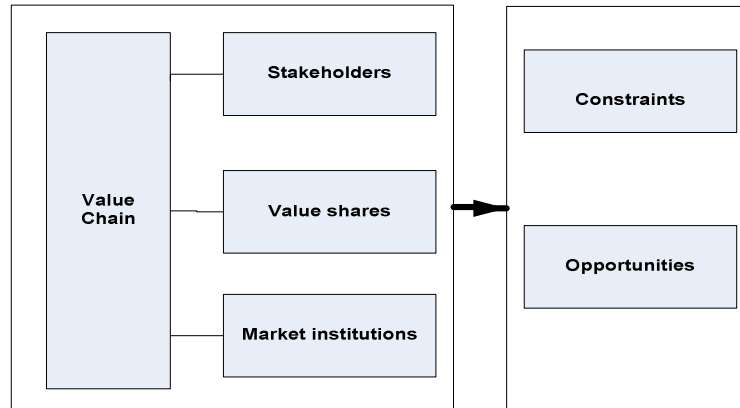


Figure 3. Conceptual framework in analysing value chains

2.2 Rice Production

2.2.1 Production

There are about 2.5 million rice farmers in the country which owns about less than a hectare of land, mostly are male with an average age of 50 years old, elementary graduates, and have been farming for more than 20 years (BAS, 2012; PhilRice, 2012). Rice is grown in a varied range of locations and agro-climatic conditions. These conditions serves as basis in the classification of rice and its production systems into: upland rice which is grown in the mountainous areas and low land rice which is grown in the plains; irrigated production systems in which rice is grown in puddled field with irrigation for at least one crop per year and rainfed production system which rely on the availability of rainfall for water supply; and wet and dry cropping seasons (Mariano, Villano and Fleming, 2010). In 2012, about 74% of the 17.9 million metric tons total palay production is coming from the irrigated areas (BAS, 2013). In producing rice, there are key points that should be considered which are variety and seed selection, land preparation, crop establishment, nutrient management, water management, and harvest management (PhilRice, 2012) (See Figure 4).

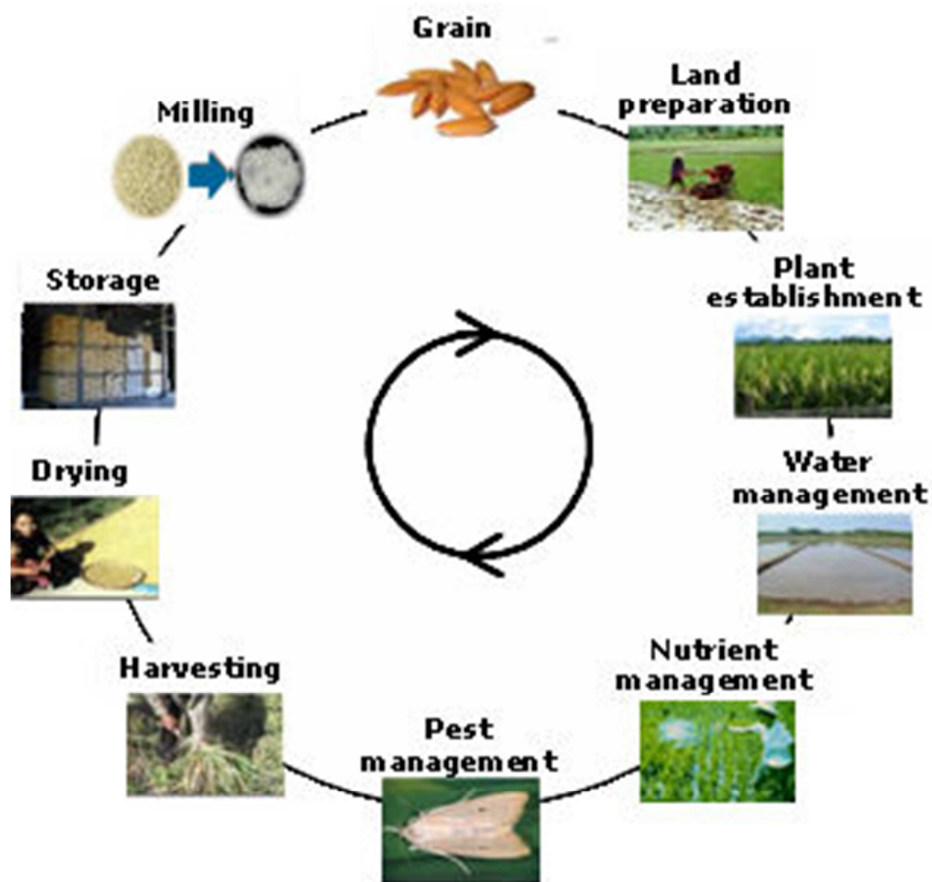


Figure 4. Rice production cycle

Adapted from: IRRI, 2010

After production, palay undergoes several processes in the chain which includes threshing/shelling which is mostly done by the farmers at their farm; sun-drying which is done at drying pavements and concrete roads; milling, to dehusk palay, and storage which is done in 50 kilos plastic sacks. It is estimated that the postharvest losses in rice is about 15-20% of production which is attributed to the misdistribution of postharvest facilities. The national average of milling recovery is at 63% against the 65% standard (ADB, 2012; PhilRice 2012).

Milled rice is classified as fancy, premium, well-milled, or regular milled rice. Fancy rice is special variety of rice such as 'Dinorado', brown, red, and organic rice among others. Premium rice is any variety of rice other than fancy that meets the highest grade standard with 5% or less broken kernel. Well- milled rice has remaining bran layers less than 20% of the kernels and not more than 20% broken kernels. Regular-milled rice has 10%-40% remaining bran layers and 15%-45% broken kernels. Price of rice is highest to fancy and lowest to the regular-milled rice (ADB, 2012).

On the other hand, organic farming in the Philippines is still in its infancy. In 2005, the area devoted to organic rice production is about 0.35% (14,209 ha) with 34,990 farmers. The non-governmental organisations are the major drivers in organic farming. Aside that only few actors are engaged in organic farming, there is still a debate on the definition of

organic since it varies from one group to another (Alfon and Redona, 2005). To boost organic farming in the country, the Organic Agricultural Act of 2010 was enacted into law that tap the government's research and development to strengthen organic farming.

As shown in Figure 5 below, there has been a wide gap between the size of harvested area compared to the quantity of area harvested from 1960's to early 1990's but from middle of 2005 the gap was closed and from then there an increase of production can be seen.

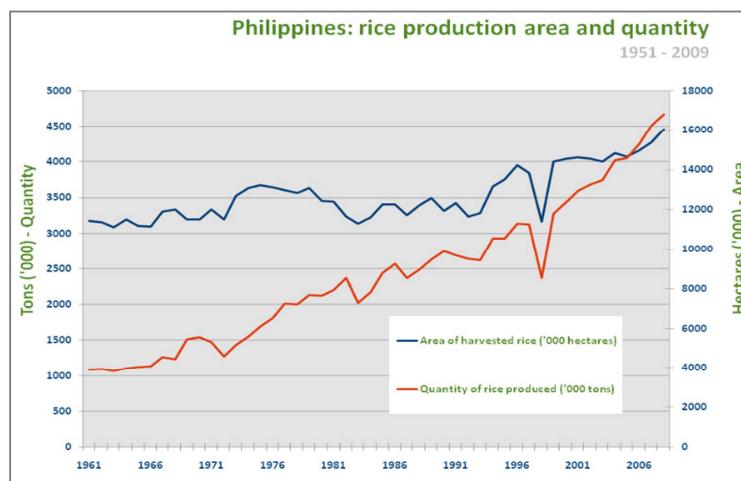


Figure 5. Philippine rice production

Adapted from IRRI, 2012

2.2.2 Profitability

The profitability of rice chain actors is influenced by the type of rice. Mostly margins are high for fancy rice and followed by premium rice. While well-milled and regular rice have almost the same margins (ADB, 2012).

In a study conducted in Abuyog, Leyte (Philippines) in 2008, more than half of its total costs in palay production are allotted for labourers yet they only receive quarter of the total production's revenue where the rest are shared by the tenant and landlord. Furthermore, farmers play a crucial role in the production of rice in Abuyog but they are the ones who experience the highest level of social costs among the actors in the rice sub-sector value chain (Alvero, 2008).

A study comparing margins in the Philippines and Thailand concluded that margins are higher in the Philippines and marketing costs explain one fourth of the difference. Marketing cost is higher because of the road quality which increases transport costs, seasonality and lack of openness to trade, making storage time longer and increases financial services which increase costs of money (ADB, 2012).

2.2.4. Key government institutions

With the Food Staples Sufficiency Program, there are three important government institutions heavily involved in this program: (1) National Irrigation Administration (NIA) that is in-charge of the irrigation and the development of its infrastructure; (2) Department of Agriculture that is working on the productivity enhancement with the

cooperation of the Philippine Rice Institute and (3) National Food Authority (NFA) that is in-charge of the market interventions in rice marketing. The interventions of NFA include buying of paddy from farmers and farmer organisation at a support price to allow farmers adequate returns which also influences the private traders buying price. It also sells NFA rice and other essential goods at the poor communities at a price which is 15% or 20% lower than the average prices of well-milled and regular rice (ADB 2012; DA 2012).

2.3 Organisational Development

Organisational development is caused by changes within the organisation. Rollinson (2008) defines change as “moving an organisation, or one or more parts, from one state to another”. It is triggered by internal and external factors with an objective that the organisation will effectively respond to the business environment. Kurt Lewin (1951 as cited by Rollinson, 2008) cited that when change occurs there will be driving forces that encourage the change to occur and restraining forces that hinder change and attempt to maintain the status quo. To achieve a status quo in new changes, there is a need to reduce the restraining forces and/ or increasing the driving forces (Rollinson, 2008 and Beitler, 2006).

Graetz, *et al.* (2006) pointed out the four reasons of resistance to changes among members of the organisation namely; fear and anxiety; impractical in the given system; no need for change and correct imbalances in the status quo. They added that it will be overcome by through empowerment, participation, education, facilitation, negotiation, manipulation and coercion.

He added that, “Resistance to change will bring positive and negative effect to the organisation such as forcing the change initiators to reconsider hasty plans or marshalling support from the employees to support the new vision,” (Graetz *et al.*, 2006).

The role of top management in the development or innovations in an organisation is significant. It is through their commitment that innovations are successful (Tidd and Bessant, 2009). Several studies have been conducted on the role of leadership in the performance of an organisation. Seventy to ninety percent is the result of good leadership and 30-10% is the result of good management. (Marcus and van Dam, 2007). On the other hand, the success of innovation may come from the lower level management, this is manifested in the case of IBM that pioneered in e-business where it was through the lack of response of the line managers have led to the establishment of a broad coalition of people within the company who brought the idea into practice and established IBM a leader in e-business (Tidd and Bessant, 2009).

Marcus and van Dam (2007) highlighted the work of John Kotter on the causes of failure of the organisational development which includes: allowing a feeling of satisfaction, failure to form a powerful coalition of leaders, underestimating the power vision, insufficiently communicating the vision, allowing all kinds of obstacles to block that vision, failure to achieve short term results and insufficient anchoring changes in the company culture.

The internal capabilities of the organisation such as its structure, culture, and communication are quite important in the performance of the organisation. Graetz, *et al.*, (2006) cited that, “organisation must determine the core human capabilities it requires,

including the skills, knowledge, attitudes and values that support the new directions of the business. It is the required to formulate and implement appropriately designed education, training, and development initiatives.”

In a study conducted by Ritter and Gemunden (2003) among German mechanical and electronics companies, they found a positive impact on the organisation’s network competence on the success of its product and innovation. In addition, they pointed out the four organizational antecedents that have an impact on a company's network competence which are access to resources, network orientation of human resource management, organisational communication, and openness of corporate culture. In the Harvard Business Review (2006 cited in Marcus and van Dam, 2007), it was quoted that, “People who know how to find partners in the mainstream business or outside world – they flourish in culture of collaboration.”

Diversification is one of the organisational developments, it comes in the form of geographic and product which has been recognise as a strategy of companies. The objective is to increase sales and reduce operating costs of an organisation (Hashia, 2012).

Diversification projects are associated with risks. Based on Ansoff matrix, diversification, i.e., introducing new product in a new market possesses the highest risk and thus requires crucial attention from the management (KIT *et.al.*, 2006). Management consultants have stated that, “It is critical that the top management team develop an understanding of the needs of the customers in different segments. The management team must then assess whether it has the capabilities to develop and market the required product/service offerings” (Slater, Olson and Hult, 2010). This provides a solid background in determining the right strategy for the business. In a study on the role of market information in the success of new product conducted by Ottum and Moore (1997), 80% of the successful new products used a greater amount of market information while 75% of the failed new products used less amount of market information at project inception.

Reflecting the organisation’s performance and provides an insight of an organisation in determining its capacity to manage diversification projects. This will serve as basis in assessing the organisation’s readiness for change or diversification projects. The European Union (EU) in 2011 develops a toolkit to capacity development which is designed for decision making and planning at strategic level. Among the tools used is the 360 degree self-assessment for capacity development. This tool uses qualitative assessment of the strengths and weaknesses of the organisation, stakeholders in context, and its ability to relate to stakeholders. The four dimensions are listed below as cited by the EU (2011):

- 1) ‘Northern corner’ - position of formal or informal superiors or authorities, as well as the access to and ability to influence them;
- 2) ‘Southern corner’ - team capacity, assessing leadership, resources, competing priorities, and clarity of change tasks and roles;
- 3) ‘Eastern corner’ - position of users, clients or customers in relation to the change, and the access to and ability to influence them;

- 4) 'Western corner' - position of important stakeholders in the broader 'supply side' network of colleagues, peers, other organisations and external partners, and the access to and ability to influence them.

These dimensions will be used as a framework in analysing the capacity of the organisation as shown on Figure 6.

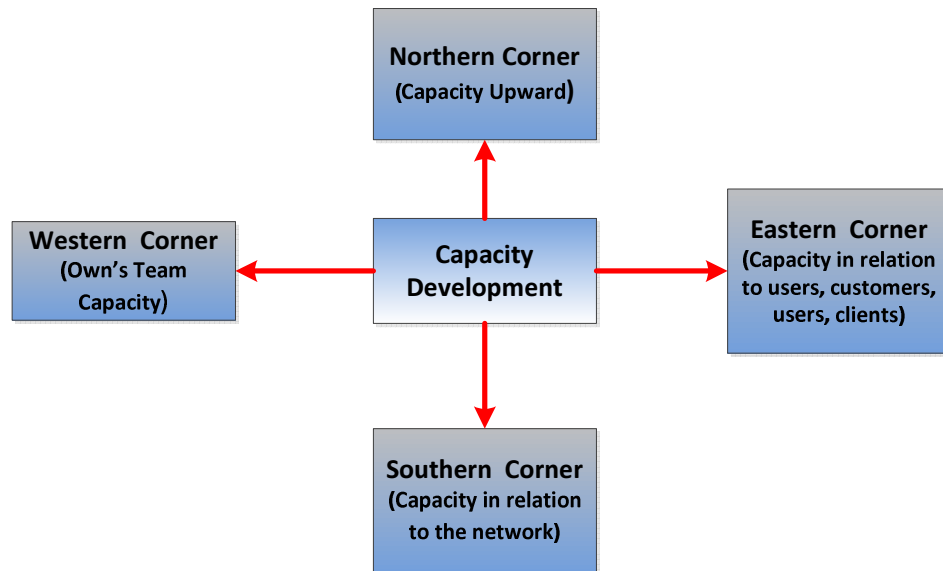


Figure 6. Conceptual framework in analysing organisation development capacity
Adapted from EU, 2011

2.4 NEH Philippines, Incorporated

NEH Philippines, Inc. is an exporter of fresh "Cavendish" bananas based in Davao City, southern part of the Philippines. It was established in June 2001 with business partners from Bahrain and the Netherlands. It is a division of NEH Group Bahrain. Since its operation, it sources its product from the small and medium scale growers through contract growing scheme and currently it has about 90 contracted growers. Its main markets include Bahrain, Iran, Japan, Korea, and China. In 2012, it exported around 3.7 million boxes of bananas to its markets (NEH, 2012).

Through the years, there have been several developments within the organisation. Currently, it has four entities operating under the organisation namely:

- Fresh Studio Innovations Asia - research and development arm focusing on bananas
- Dana Farms Aviation – provides aerial spray services to its growers
- Dana Foundation – corporate social responsibility arm
- Dana Farms Agri - Ventures Development – corporate plantation to complement the growership program and ensure the consistent quality and volume of bananas

It also established a new business partner in Europe, Fresh Studio Innovations Europe in Wageningen, Netherlands that serves as a research unit for the organisation in a

broader perspective. Recently it is involved in a project where a new a new variety of banana is currently developed against *Fusarium wilt* and Sigatoka diseases in association with the Wageningen University. This development also includes other parties in the banana industry including its business competitors (De Waal and De Haas, 2013).

NEH possesses a bureaucratic organization run by top management team. There are seven departments in the organisation namely executive, operations, finance and accounting, sale and marketing, supply chain, human resources, and research and development. Each department head represent the top management; and where all decision making regarding operations are made. The division of work is based on the specialisation of employees from the lower level to upper level.

NEH also started offering differentiated premium products, Fairtrade bananas, to successfully sustain its market share. It was acknowledged as the first Fairtrade-Certified Bananas in Asia, specifically for the Japan market, in 2010 (NEH 2012).

In coping the pressures in the banana industry brought by increase competition in quality and price and demand, NEH Philippines used the framework of High Performing Organisation (HPO), an instrument used to evaluate the performance of the organisation to improve it and make it sustainable. Result of the evaluation showed that NEH Philippines has an average HPO score of 8.3 out of 10, and that NEH seemed to performed better than other Philippine and Asian organizations (See Figure 7) (De Waal and De Haas, 2013).

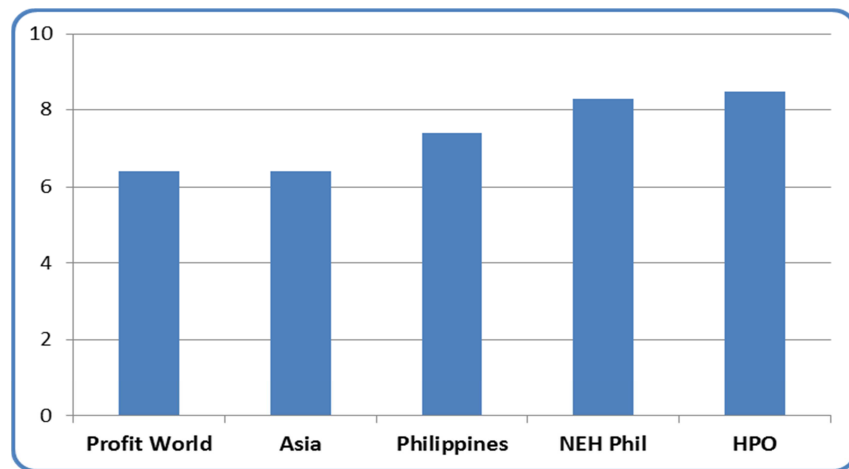


Figure 7. HPO Scores of NEH and Other Philippine and Asian companies

Adapted from De Waal and De Haas (2013)

There are points that NEH needs to improve which includes: a need of consistency in executing and completing its process. Key improvements have to be chosen and that other improvements must have to wait so that it will be integrated, aligned, and completed; creation of strong leadership; dealing positively with mistakes; and dialogue within the organisation (De Waal and De Haas, 2013).

CHAPTER 3. METHODOLOGY

3.1 Research area

The research was conducted in the municipality of Banaybanay. It lies in the southern part of Philippines and in the island of Mindanao. It belongs to the province of Davao Oriental and located between latitude of 6° 55' -7° 04' North and longitude of 125° 55'-126° 06' East (See Figure 8). It has an aggregate land area of 41,479 hectares or 7.07% of the total land area of Davao Oriental (LGU Banaybanay, 2012).

It is a middle class municipality composed of 14 barangays or villages in this area which are inhabited by 37,344 people and 7,755 households. Like any other municipalities in Davao Oriental, agriculture is the main source of livelihood in the area and rice is the main commodity grown. The municipality is noted for its "Banaybanay Rice" which is known for its good quality in terms of whiteness and distinct sweet taste. Because of this, it is called as the "Rice Basin and Home of the Finest Rice" in the Davao region (PhilCeCNet, 2012). It is estimated that Banaybanay contributes 27% of the total rice production in the province of Davao Oriental (DA, 2012). In addition, the area is also known as one of the biggest producers of rice hybrid seeds in the island of Mindanao. Currently there is one local, Davao Oriental Seed Producers Cooperative (DOSEPCO) and three multinational companies present in the area, Bayer, Syngenta, and S and L Agritech.



Figure 8. Map of the Philippines and location of Banaybanay
Source: Google Maps (2012)

Rice production in the municipality have two cropping seasons which are wet cropping season, from November until May and dry cropping season, from June to October. All of the existing rice farms are lowland rice and are irrigated. Recently, a few farmers in the area are growing organic rice with their diversified farming system through the assistance of a non-government organisation.

In the 2004, the MAO reported that the total area devoted to rice production is 2,161 hectares which is only 5.21% of the total land area of the municipality. However, as of May 2013, the total area planted and harvested with rice is only 1,568.87 hectares, a reduction of 27% of the rice land area. The average annual yield of palay production from 2008-2012 was 5.87 tons/hectare. Figure 9 shows the trend of production in the area. There are two existing rice related value chains in the municipality which are the rice seed production and commercial rice production.

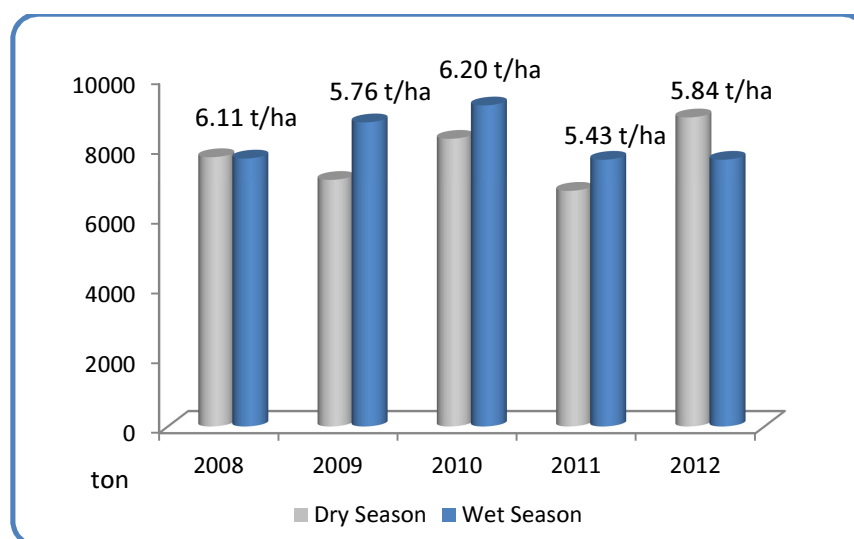


Figure 9. Rice production in Banaybanay from 2008-2012

Source: Municipal Agriculture Office of Banaybanay, 2013

3.2 Research design

This study was conducted from July to September 2013. In carrying out this study it used both quantitative and qualitative approaches that are based on empirical data and literature collected from desk research. Figure 10 shows the different phases of this study.

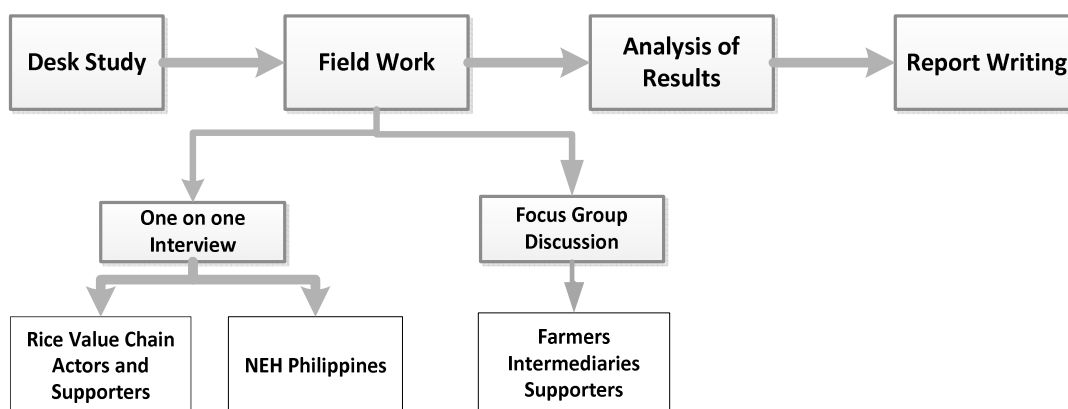


Figure 10. Research phases

3.2.1 Desk study

A desk study was conducted to obtain secondary data and literature from books, journals, master's theses, reports and internet sites on the following subjects: value chain concepts and 360 degree approach on capacity development developed by the EU that serve as the frameworks of this study, rice industry in the Philippines that provides background of the commodity being studied and geographical description and rice sector in Banaybanay, Davao Oriental that provides an in depth information.

In analysing the challenges faced by NEH Philippines in their previous product diversification project, "Lakatan" trading, the closing report was reviewed to analyse what went well and wrong of the project. This has supported the over-all analysis on the capacity of the organisation to engage in new diversification project.

3.2.2 Field work

The field work consisted of an interview of the different actors and supporters in the chain and a focus group discussion and members of the management team of NEH Philippines.

• Interviews

In setting up the interview, the researcher visited the Municipal Agriculture Office in Banaybanay since the organisation has been working closely with rice farmers in the area. Through its staff, appointments were set for the interviews amongst the stakeholders in the rice value chain. The one-on-one interview was administered to the 30 farmers, 17 intermediaries, 3 supporters, and 3 input suppliers in Barangay Poblacion, Panikian and Calobihan in Banaybanay. These barangays were selected based on the number of rice farmers, volume of production and transportation accessibility of the area. Intermediaries include miller/traders, traders, and retailers and key informants from the supporters in the chain. Structured questionnaires were prepared (See Appendix 1.) which was translated in Bisaya, dialect spoken in the area. This questionnaire was tested to one farmer, one intermediary and one supporter in order to clarify the statements and identify important points that are left out during the preparation.

The one-on-one interview was also conducted among the six members of management team including the general manager of NEH Philippines. A prepared questionnaire was made which served as guideline in the interview and was based on 360° self-assessment to capacity development created by the European Union. However, this assessment was modified in order to suit the context of this study. The survey questionnaire was prepared by the researcher (See Appendix 2.) and was tested to one of the assistant managers in the organisation for clarity of statements. In addition, an open interview was also done by the researcher to the former team leader of Fresh Studio Innovations Asia, Inc. who was the over all in charge of 'Lakatan' trade project in order to confirm the findings.

• **Focus Group Discussion**

A Focus Group Discussion (FGD) is a research methodology that collects qualitative data through group interaction of a pre-determined topic. This is used when data collected cannot be explained by statistics. It allows the participants to agree and disagree on the topic and provides an insight on certain issues (Morgan, 1998).

In this research, the FGD was conducted in order to validate the result of the interviews and allow the participants to identify themselves the constraints and opportunities in the rice value chain. The participants of the FGD included those who have been previously interviewed and part of the rice value chain which were invited in the one day activity. The participants were two input suppliers, Agway and DOSEPCO, six farmers from Barangay Poblacion and Panikian, three intermediaries who are small scale traders, and two chain supporters from NFA and MAO, and the legislative secretary of the Municipality of Banaybanay who did observe in the activity.

In the FGD, the following activities were done:

- Introduction - In this activity, each of the participants was asked to introduce him/her and state their expectation in attending the activity.
- Presentation of agenda and objectives – The agenda and objectives of the day was presented to the participants.
- Levelling of expectations -During introduction, expectations were written on the board. These were compared to the objectives of FGD. As such those that could not be attained in this activity were crossed out and retained the ones in line with the FGD's objective.
- Presentation of the result of interview - A preliminary result of the analysis was presented by the researcher which includes the actors involve, prices of palay and milled rice only since value shares was not calculated yet, and the market institutions or marketing rules. After the presentation, an open discussion followed on items that they have questions and additional information was given by the participants.
- Identifying constraints and opportunities -In the identification of constraints in the chain, the participants were grouped according to their function in the chain. The Strength, Weaknesses, Opportunities, and Threats tool was used. Prior to the workshop, the researcher explained beforehand what do each category mean and provide examples in other agricultural sector. Then each of the group was asked to write the results in Manila paper and a member presented it among the participants. After presentation, other participants were allowed to ask questions for clarification.

- Socials -A break between the two aforementioned activities was given to the participants to allow them to refresh themselves. Also, lunch was served to the participants as a way of giving thanks to the participants.



Figure 11. Participants of Focus Group Discussion

(Left to right – input suppliers, traders, farmers, traders, NFA and DA officer (standing) surrounded by the farmers)

3.2.3 Analysis

In analysing the current conditions in the chain, the tools used were:

- Chain mapping – visualization of the linkages among actors in order to get a better understanding of connections between actors and processes in a value chain.
- Cost and margin calculation – showing the value share of each actor in the chain
- SWOT – an analysis used to show the constraints and opportunities in the chain

In analysing the capacity of the organisation to engage in diversification project, the result of the 360° self - assessment for change management, result of the previous diversification project, and Lewins Force Field Analysis were used.

3.2.4 Limitations of the study

Due to the short period allotted in this study, it covered only three barangays that represented the municipality of Banaybanay and commercial rice value chain for

consumption both in traditional and organic chains. Another limitation is on the scope of the information that was provided by private intermediaries involved since they are confidential and may reveal their source of competitiveness.

CHAPTER 4. RESULTS

4.1 Current Features of Rice Value Chain in Banaybanay

There are two existing chains in the commercial rice value chain in Banaybanay, Davao Oriental namely traditional and organic chains (See Figure 12.).

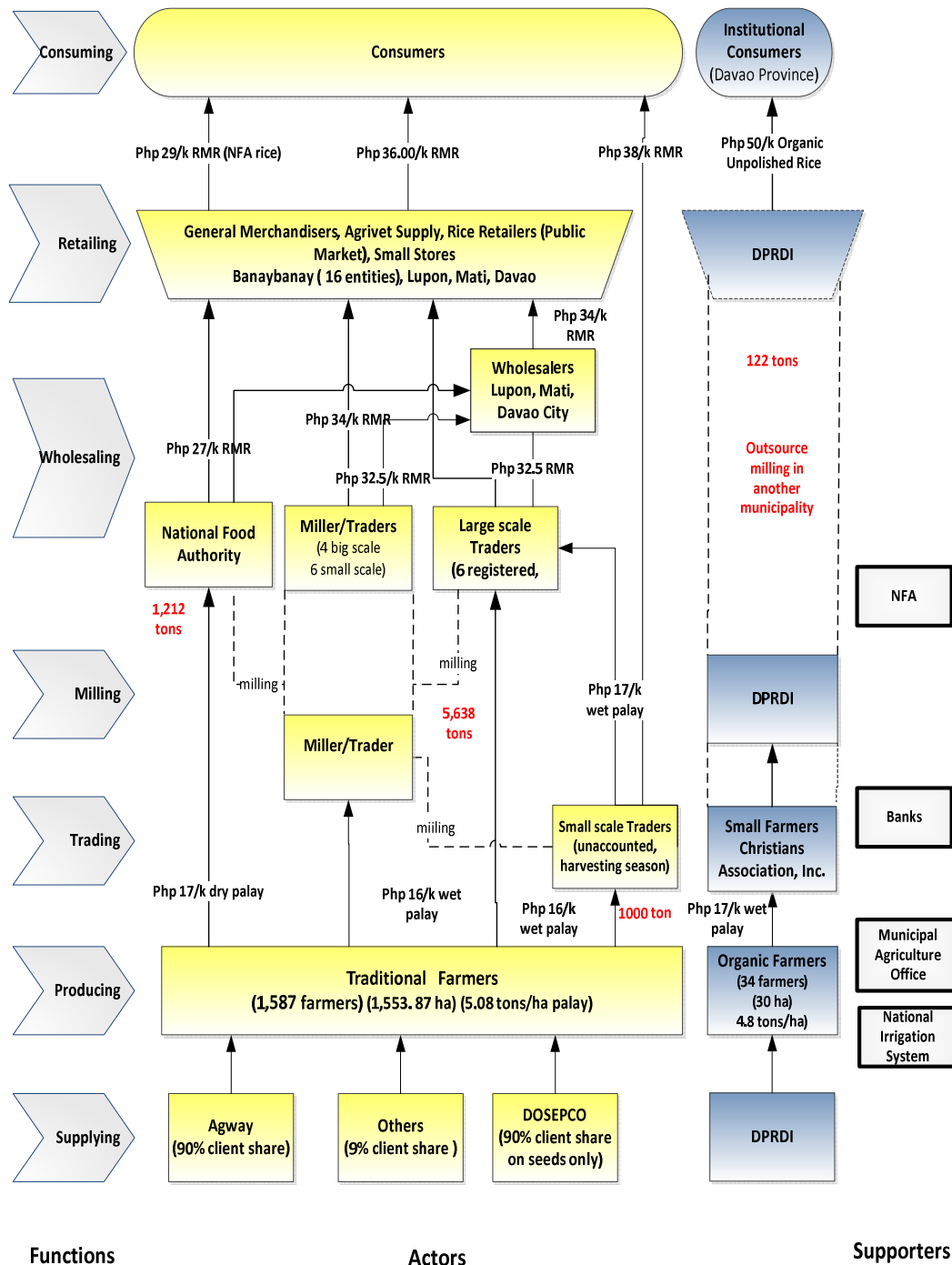


Figure 12. Rice Value Chains in Banaybanay

4.1.1 Chain Actors

In the traditional rice value chain, the following actors are presented below.

Input Suppliers

Agway is a major supplier of agricultural and veterinary products in the area that has several distribution centres nationwide. In Banaybanay, it has one distribution centre that caters for customers from neighbouring town, Pantukan. It has 90% market share for agricultural supplies such as fertilizers and pesticides. It acts as wholesaler and retailer of farm inputs. It sells directly to the farmers on cash basis and distributors or input retailers with different terms of payment such as 30 and 60 day terms of payment.

The Davao Oriental Seed Producers Cooperative (DOSEPCO) is the biggest seed producers both hybrid and inbred seeds in the area and in the province. It has 95% market share of clients. It is an organisation of farmers which has 14 members only since 2001. It also sells fertilizers and pesticides but is currently sourcing from Agway.



Figure 13. DOSEPCO Seed Supplier

(Left to right) D. Cantiga, former DOSEPCO employee and B. Alingalan, chairman of DOSEPCO during an interview with the researcher

The Municipal Agriculture Office (MAO) is currently giving away two bags of urea and five bags of organic fertilizers to each farmer. The inputs are sourced from the national government as an aid to the farmers to boost rice production and part of the Food Staples Sufficiency Program. Farmers then will have to collect these inputs from MAO.

Producers

Based on the interviews conducted, there is an equal distribution on the gender of the farmers interviewed with an average of 42 years old. The land area cultivated by farmers ranges from 0.46 to 7.9 ha. and by average they have 0.98 ha. Out of the 30 farmers, only 3 or 10% of them are lease holders with an average land area of 7.9 ha. Based on the report given by the National Irrigation System (2013), 66% of the total titled land is either leased or rented from other farmers. These lessors have their own 'maintenair', a person in charge of cultivating the land and are paid based on the labour rendered in the farm. Out of 30 farmers, only 1 or 3% is hiring labour for all types of job from planting and

cultivating while the 97% are working in their farm and hiring additional labour especially during land preparation, planting, and harvesting.

Table 2 shows the number of traditional rice farmers among the rice producing barangays in Banaybanay.

Table 2. List of Traditional rice farmers in Banaybanay

Barangay	No. of farmers	Land Area
1. Poblacion	422	566.04
2. Caganganan	178	236.53
3. Panikian	24	38.20
4. San Vicente	143	190.03
5. Cabangcalan	176	222.86
6. Calobihan	180	352.12
7. Mogbongcogon	233	333.73
8. Rang-ay	265	202.81
Total	1,621	2142.32

Source: Municipal Agriculture Office, 2013

Rice production is the major source of income among farmers in the area. There are two cropping seasons' namely wet and dry seasons which last for four months in each season. In between of the production seasons, 50% of the interviewed farmers cultivate other crops such as water melon, mungbeans, and vegetables or others leave the soil uncultivated. Also, 27 out of 30 or 90% farmers do not own machineries used in land preparation and harvesting but are renting it either from the financier or other farmers. Since little time is needed during growing periods of rice, 20 out of 30 or 67% farmers are working with other farms as hired labour for weeding, pesticide and fertiliser application to have another source of income. From production to harvest, farmers hire each other for the labour needed especially during land preparation, planting, de-rooting and harvesting. The schedule of works mentioned is agreed among themselves. During harvesting, 29 out of 30 or 97% farmers sell wet palay to the trader in order to obtain immediate cash. All of the farmers interviewed retain a few sacks of palay depending on the number of household members, dry, and mill it for their home consumption throughout the production period. It is estimated that 15 sacks of palay is retained per family of four (DA, 2012).



Figure 14. Rice farmers in Banaybanay
(Right and center) Farmers in Barangay Poblacion attending farmer field school and (left) farmers in Barangay Panikian during an interview with the researcher

Intermediaries

Intermediaries are actors involved in the marketing of paddy or palay and milled rice. There are four types intermediaries present in the area.

Miller/Traders –There are four big miller/traders namely Bagayas Milling, Viaro Milling, BALURIMCO and Guinez Milling in the area. All of the four interviewed millers in the area are engaged into trading business. There are also six other small millers based on the municipal registry office that are also engaged in trading. At an average, they have been in this business for 20 years. Each of the four big millers has a milling facility of 20-30 bags of rice per hour. Per estimate, millers have a storage capacity of 50-100,000 bags of rice and have milling recovery at 63%. They also both have solar and mechanical driers; however mechanical dryer is only used during rainy days. Among the four millers, only Bagayas milling has rice polishers that brightly whitens milled rice and thus has higher milling and selling price.

The millers either transact business directly with farmers or with ‘dicer’ whom are paid to look for farmers to sell wet palay to them. Aside from milling, two of the millers are offering free storage space to big traders who are frequently milling to them and if not free, they are charging Php 2.00 per sack of dry palay. Also all of the millers may charge Php 10.00 per piece of printed rice sack used to store rice if the client doesn’t have available sack including tags. Financing to farmers is also part of service offered. However, no information was given regarding interest rate. In buying wet palay, transportation is also offered by the miller/trader from the area going to the milling site. In determining the buying price of wet palay, all of the interviewed agreed that they offer at an average of Php 1.00 or 2.00 pesos lower of the current NFA dry palay price in order to get the supply needed. Although it was not directly spoken by the miller/trader that they are not sourcing palay from Banaybanay alone but their clients revealed that they are sourcing also from the provinces of Davao Del Sur and Cotabato and sell it to Davao City and Mati City. The interviewed miller agreed that 80% of their customers, rice retailers, demand for Banaybanay rice.



Figure 15. Rice millers in the area

Large scale traders— There are six registered traders of rice in the area based on the Municipal Registry Office. Based on the interview with these traders, they purchased wet and dry palay from farmers and outsource milling services either in BALURIMCO or Viaro because of the lower milling price which is about Php10.00 difference compared to other millers. They also buy palay and milled rice from the neighbouring towns such as Cateel, Baganga and from the province of Cotabato. The traders have been in the business for an average of 11 years and sell milled rice in Davao City, Mati City, and other municipalities in Davao Oriental. Like other trader they provide transportation and financing to the farmers in Banaybanay.

Small scale traders – These are traders which are only present during harvest period. They source palay mainly from the farmers in the area and outsource milling in the four aforementioned millers. Based on the interview with three small scale traders, they directly sell milled rice to the small retailers and institutions such as government offices, banks, and customers with a one month payment terms. However, all of the interviewed small scale traders agreed that they are not registered from the municipal government and therefore free of taxes. Aside from buying wet palay, they also offer loans to farmers at varying interest rate per month which in return the farmers could pay in cash or in palay. It also offers transportation service of wet palay harvested area to the milling facility where drying is also done.

Retailers – Based on the municipal treasury office, there are 17 retailers of commercial rice in the municipality. Most of them are located in the public market. Eighty percent (80%) of the sold milled rice are sourced from the miller/trader within the area. Selling of milled rice is done either per sack which is equivalent to 50 kilos or per kilo. According to the interviewed retailers, it is an advantage to sell per kilo than per sack. The added cost is at an average of Php25.00 per sack or Php0.50 per kilo; while if sold per kilo then adds on cost is at Php1.00 per kilo an equivalent of Php50.00 per sack.

An interview with the seven retailers of Banaybanay rice was conducted in the public market of Mati City, the capital of Davao Oriental. The same advantage was also mentioned by the retailers on selling rice. In addition, they were asked about the preference of the rice consumers. All of the retailers agreed that Banaybanay rice is the most preferred rice because consumers perceive Banaybanay rice is of good quality,

next is NFA rice because of low price despite of its poor quality. However, they also agree that some of their milled rice although are not sourced from Banaybanay are named after it because it sells at a higher price over the other rice. Aside from Banaybanay rice, retailers also sell NFA rice, imported rice from Thailand, and rice from Davao City.



Figure 16. Retailers of Banaybanay rice
(An interview with the rice retailers in the public markets of Mati City (left) and Banaybanay (right))

Table 3 shows the total number of intermediaries in Banaybanay, excluding the small traders which are not accounted by the Municipal Registry Office.

Table 3. List of rice intermediaries in Banaybanay

Intermediaries	Number
1. Rice Milling	6
2. Rice Milling/Buy and Sell	4
3. Buy and Sell (Trading)	6
4. Retailers (General Merchandise)	17
Total	33

Source: Municipal Treasurer Office, 2013

The organic rice value chain is a lean chain where only a few actors participate in this chain. This chain is in the infancy period where the first cropping started this year. However, linkages with the supporting organisation have been started last year for training of technology in organic rice production.

Farmers - Farmers are members of Small Farmers Christians Association, Inc. (SFCAl). It is a newly organised association this year of organic rice farmers which acts as the bulking and trading organisation of the small scale farmers in the area. Currently, it heavily assisted by Davao Province Rice Development Intervention (DPRDI), Inc, a non-government organisation that provides assistance to farmers and association in terms of technology and social enterprising. Farmers of the SCFAI grow fancy rice such as red, black, and brown rice which are organically grown (See Figure 17).



Figure 17. Fancy rice produced by SCFAI farmers
(left-red rice; centre-black rice; right-brown rice)

Davao Province Rice Development Intervention (DPRDI) – It is non-government organisation that provides intervention projects among the organic rice farmers in the provinces of Davao in which Banaybanay is one of the target areas. Intervention includes technology transfer, organisational development, and social enterprising among rice organic farmers in the area. In Banaybanay, it started with holding a Farmer Field School in the area teaching about sustainable farming in rice farming. It operates among the five barangays in the area namely: Calobihan, Cabangcalan, Rang-ay, San Vicente, and Mogbongcogon. Currently there are about 34 farmers involve in the area with a total land area of 30 hectares.

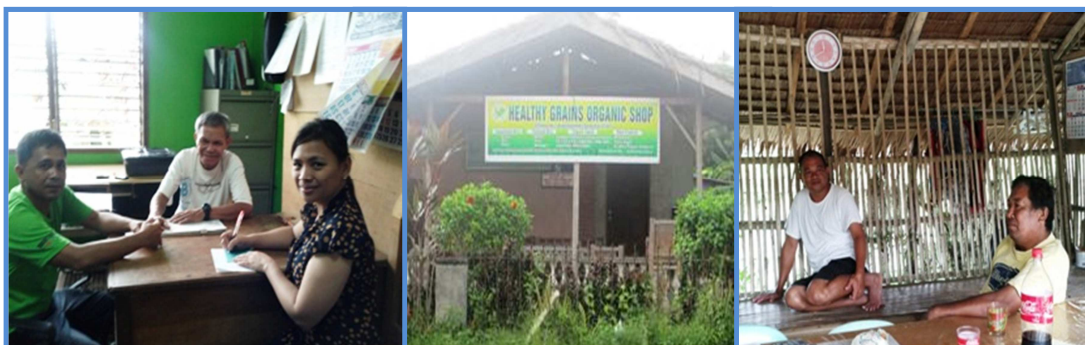


Figure 18. Interview with DRDI and its farmers
(Left-DRDI's Dodong and Perfecto Urdaneta, centre- retail shop, right- farmers)

Chain Supporters

Below are the organisations that support and influences in both the traditional and organic rice value chains.

National Food Authority (NFA)- It is a government agency that functions as an actor and as supporter in the chain. The main role of the agency in the chain is to regulate pricing of palay and commercial rice and ensure the availability of rice in the area it operates. Other functions include: buying of dry palay and corn from individual farmers and cooperatives; sale of milled rice to the wholesalers, retailers, and individual consumers, distribution of rice to other NFA offices in the provinces especially when the office is running out of stock; licensing of NFA or commercial rice retailers; licensing of truckers carrying rice, licensing of post-harvest facilities such as thresher, milling and buffering, to maintain stocks good for 30 days so that there will be available stocks during calamities. Currently, NFA was able to buy 20,000 bags of palay from

Banaybanay farmers in the May 2013 harvest which is 11% only of the total production. It has a storage capacity of 150,000 bags of rice. All products of NFA are sold to the rice retailers per policy of the organisation.



Figure 19. National Food Authority Office

Municipal Agriculture Office – It is the local office of Department of Agriculture (DA). With the Food Sufficiency Staples Program of the government, it serves as the implementing arm of the technical aspect of the program. Currently, MAO distributes fertilizers and pesticides to the individual farmers and farm implements given to the cooperatives which are source from the national office (See Figure 20).

Aside from distribution, the agency provides technical support to the farmers through its Palay Check program where MAO officers and famers meet every week to discuss production techniques. Out of the seven barangays engaged in rice production, there are three barangays where the program is implemented due to limited manpower.

In seed production, MAO has critical functions in assessing and allowing farmers to engage in seed production and inspecting the quality of seeds produced. However, final inspection is done by the Bureau of Plant Industry. All farmers, either members of cooperative or multinational companies such as Bayer and S and L Agritech go through this process set by MAO.



Figure 20. Machineries distributed by MAO to farmers' organisation
(Left-planter, centre-harvester, right-mechanical dryer)

National Irrigation Administration (NIA) – It is a government owned and controlled corporation that is responsible for the development and management of irrigation systems among agricultural areas in the country NIA in Banaybanay is managed by the local irrigation management office that manages both Banaybanay and Lupon areas, another town in Davao Province. In the current management of NIA, there are three systems that exist namely:

- National Irrigation System (NIS) which is a large and medium scheme where NIS does maintenance and development of water reservoir and main canals. The beneficiaries are in charge with irrigation fee for the services done by NIS in delivering water in the farms.
- Irrigation System (CIS) is a small scale scheme where the construction and maintenance of the irrigation facility like canals are jointly done by the farmers through the Irrigation Association
- Private Irrigation Systems (PIS) where irrigation system development and management is done by the private owners and which NIA has no participation. In Mindanao, plantation owners usually have a private irrigation system (NIA, 2013).

All farmers in Banaybanay are at least member in one of the nine irrigators associations present in the municipality. The management of small irrigation facility such as canals and payment of irrigation fee are managed by the association. However, since currently some associations are not well organised, members of the association pay directly to local NIA. The average payment of farmers annually is PhP 2,120.00 per year for the irrigation system.

Banks – Currently, there are two banks present in the municipality namely One Network Bank and TruBank. These banks offer agricultural loans in the area and at different interest rates which is dependent on the number of months or years the loan is to be paid. Based on the interview with the manager of Network Bank, no agricultural loan is made without any land title as collateral. The terms of payment depends upon the choice of the borrowers, the shortest is six months with an average interest rate of 10% per month. Also, only a farmer with five hectares farm can avail of the loan. The banks do not accept loans applied by cooperatives because of their previous bad experience where cooperatives have delayed or unpaid loans. In Network Bank, there are 50 farmers only who have availed agricultural loan. According to the interviewed person, the only constraints that they have are delayed and unpaid payment of loans.



Figure 21. One Network Bank

Table 4 shows the summary of activities among the actors and supporters in the rice value chain.

Table 4. Functions of actors in the chain

Actors	Activities
Input Suppliers	<ul style="list-style-type: none"> • Selling seeds, agrochemicals
Farmers	<ul style="list-style-type: none"> • Cultivation • Harvesting
Intermediaries	
Miller/Trader	<ul style="list-style-type: none"> • Financing • Purchase of paddy • Transporting of paddy • Drying • Milling • Packaging • Storage • Transporting to the market • Marketing
Trader only	<ul style="list-style-type: none"> • Financing • Purchase of paddy • Transporting paddy • Storage • Transporting to the market • Marketing
Retailer	<ul style="list-style-type: none"> • Purchase milled rice • Repackaging (optional) • Marketing
Support	
NFA	<ul style="list-style-type: none"> • Trading • Regulate price • Stocking
NIA	<ul style="list-style-type: none"> • Provision on irrigation
MAO	<ul style="list-style-type: none"> • Extension service • Distribution of subsidized fertilisers and machinery
Banks	<ul style="list-style-type: none"> • Financing

4.1.2 Value shares of actors in the marketing chain

In computing the value shares among the actors in the chain, an estimate of the operational costs and profit were computed among the three actors of the traditional rice value chain: farmer, miller/wholesaler, and retailer which is shown on Table 5. Due to the

limitation of information given by the respondents only the three actors were included in this computation.

Table 5. Estimated cost and profit (Php) in traditional rice value chain (farmer-miller/trader-retailer)

A. Variable Costs	Cost (per ha)	Assumptions
	(1Php = 0.02 Euro)	
Farmers		
Farm inputs (seeds, fertilisers, pesticides)	11,110.00	(See Appendix 2 for detailed lists.)
Cultivation and expense	14,000.00	
Harvesting expense	13,668.00	
B. Other expense	10,512.00	(irrigation fee, tax)
Total	49,289.50	
C. Gross Sales		
Gross sale of wet palay	5,100.00	85 sacks at 60 sacks per kilo
Net sale of wet palay	29,591.00	Less 170 sacks for 3 'deduction' (loss)per sack @ 16/kilo
Cost per kilo	9.66	(0.19 Euro)
Selling price per kilo	16.00	(0.32 Euro)
Gross margin per kilo	6.34	(0.13 Euro)
Miller/Trader		
	Cost per kilo	
A. Palay purchase		
Palay	16.00	
Drying fee (facility)	0.17	
Drying fee (labour)	0.33	
Drying loss	3.55	
B. Marketing costs		
Milling Costs	1.50	
Materials Costs	0.24	
Warehouse Fee	0.20	
Marketing Expense	0.35	
Hauling	0.12	
Transportation fee	0.80	
Labour Cost	0.03	
Total	27.59	(0.55 Euro)
C. Sales		
Milled rice	34.00	(0.68 Euro)
Gross margin	6.41	(0.13 Euro)

Retailer	Cost per kilo	
A. Marketing Costs		
Rice	34.00	
Transaction costs	1.00	
Materials Costs	0.05	
Labour Cost	0.25	
Total Cost	35.30	(0.71 Euro)
C. Sales		
Milled rice	36.00	(0.72 Euro)
Gross margin	0.70	(0.01 Euro)

Source: Interview of traditional farmers, millers, and retailer

As shown on Table 5, the biggest expense that farmers incurred are on cultivation and harvesting which is at 56% of the total production costs. Based on the interview, 28 out of 30 farmers rent machinery for cultivation and harvesting. In addition, it was also revealed that owners of the machines are usually the financiers or traders.

For the miller/trader, the four respondents revealed that although buying of palay is where the value is mostly added but they have to level or at least above the buying price of NFA to be able to get the needed volume.

In the case of the organic chain, it was difficult to collect data among the actors in the chain due to time constraints. However, estimate cost on production is shown below.

Table 6. Estimated cost and margin (Php) of farmers in organic value chain

A. Variable Costs	Cost (per ha)	Assumptions
	(1Php = 0.02 Euro)	
Farmers		
Farm inputs		(See Appendix 3 for detailed lists.)
(seeds, fertilisers, pesticides)	7,000.00	
Cultivation and expense	14,500.00	
Harvesting expense	11,256.00	
B. Other expense	7,480.00	(irrigation fee, tax)
Total	40,236.00	
C. Gross Sales		
Gross sale of wet palay	4,200	70 sacks at 60 sacks per kilo
Net sale of wet palay		Less 170 sacks for 3 kilos
	71,349.00	deduction for loss per sack @ 17/kilo
Cost per kilo	9.53	(0.19 Euro)
Selling price per kilo	17.00	(0.34 Euro)
Gross margin per kilo	7.47	(0.15 Euro)

Source: Interviews with organic rice farmers

Based on the interview with the members of the SCFAI, the association has Php 0.50 operation cost and Php 0.50 net income per sack. Also the manager of DPRDI, relayed that per sack they would have a net margin of Php 200.00.

Based on the computation above, the value shares of actors is shown on Figure 22 where the biggest value added is on processing, done by miller/trader and DPRDI, followed by the farmers and the least are retailers and SCFAI.

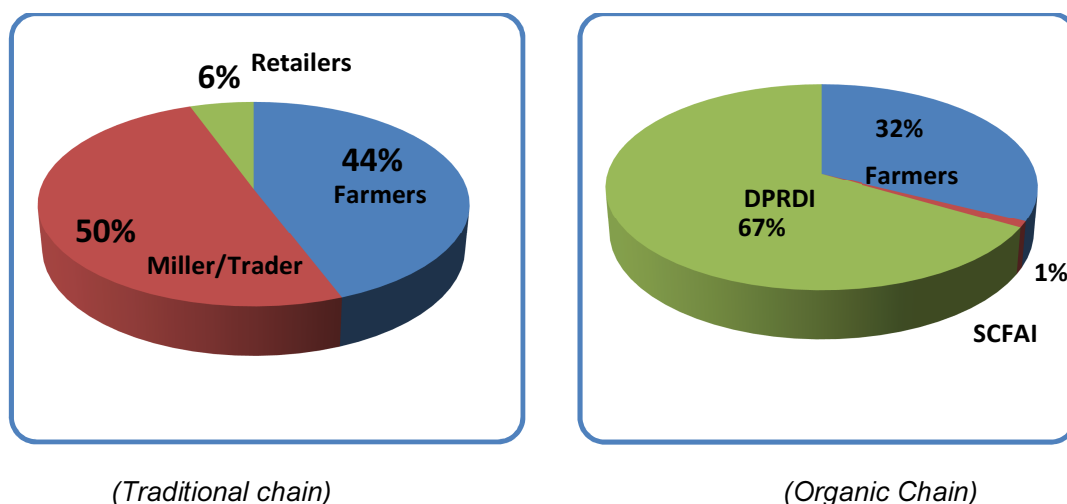


Figure 22. Value shares of traditional and organic rice value chains

4.1.3 Market Institutions

Market institutions are the rules and regulations of trading imposed between and among actors in the chain. The rules of trading reduce uncertainty through a structure which people can negotiate, buy and sell, transport and distribute, borrow money and pay debts (KIT, 2006). Table 7 below shows the rules and regulations that influence the rice value chain.

Table 7. Existing marketing institutions in the chain

Actors	Activity	Rules
Input Supplier	Selling (fertilizers, pesticides, seeds)	<ul style="list-style-type: none"> Selling of inputs to farmers is done through cash basis or direct payment but has a lower price by 10-20%. Selling to retailers is done through a pre-order basis. It also has 15-30 days payment terms. Prices of the product are varied per customer.
Farmers	Land rent	<ul style="list-style-type: none"> Sixteen out of thirty (16/30) or 53% of the interviewed farmers have an 'Inupat' sharing of profit, where $\frac{1}{4}$ of the total palay production will be given to the land owner and $\frac{3}{4}$ to the farmer/tenant. All cost incurred during production is shouldered by the farmer/tenant. Three out thirty (3/30) or 10% of the farmers have leased lands. They pay about Php300,000.00 per hectare to the land owner. <p>The farmer/lessor will have to return the amount in three years plus an interest of 15% per year. Land</p>

		owners also waived the right to till their land.
	Selling (palay)	<ul style="list-style-type: none"> Selling of palay to traders is done on cash basis which is mostly done by 98% of the interviewed farmers and while 2% have it on 15 days term of payment. Among the 98% farmers, the choice of trader is dependent on whoever is the source of financing.
	Selling (milled rice)	<ul style="list-style-type: none"> Farmers, who do drying and milling, sell the milled rice to the traders who have highest price.
Traders	Financing	<ul style="list-style-type: none"> Based on the interview conducted, 2/3 or 67% of small traders provide loans to the farmers in terms of monetary. Payment of loans is done at the end of cropping season or if there is crop failure, at the next cropping season. Interest rate of loan payment is about 10-25% per month. It is also part of their agreement, that farmers will sell their palay to them/ financier who is mostly involved in trading. Payment of rice to payback cash borrowed is also exists. One out 30 farmers said that she paid 1 sack of palay (60 kilos) for every Php1,000.00 she borrowed which is equivalent to Php912.00 for four months or 25% per month.
	Buying (palay)	<ul style="list-style-type: none"> Traders, except NFA, buy palay either wet or dry. Based on the interviews, 98% of the farmers are selling wet palay. Transportation – Again, except for NFA, all traders provide transportation of palay from farm to their warehouses. During rainy days, all small traders lower prices of palay or stop buying because they lack storage facility that could store wet palay. They also added that within 48 hours wet palay if not dried will rot easily. However, this is also done by the big traders.
	Milling	<ul style="list-style-type: none"> Millers of palay offer not only milling but also storage of palay. Offers free storage of palay for bulk milling
	Selling (milled rice)	<ul style="list-style-type: none"> Milled rice is sold based on how it is milled which are : WMR – Well milled rice; RMR – Regularly Milled rice; and Pricing is based on the milling classification. Payment from customer is done either through bank to bank or cash basis, if it is not paid, transaction is stopped. 100% of the traders (miller/trader and small and big

		traders sell rice to the retailers without any contract. 60% of the traders says transaction only stops when the payment is not done within 15 days. While 40% of them said that even if there is delayed payment but because of the relationship build, they could waive it for another 15 days.
	Buying of milled rice	<ul style="list-style-type: none"> Buying of milled rice is based on the price and the quality of milled rice. All of the interviewed retailers agree that price is the main basis of buying than its quality.
	Quality Requirements	<ul style="list-style-type: none"> The moisture content is the basis of the quality requirements in palay, irrespective of variety. This requirement is tested during buying only. Palay to be bought will always have deduction of either 5 kilo if it is too wet or 1 kilo deduction if a bit wet.
(NFA)	Buying (palay)	<ul style="list-style-type: none"> NFA has the established rule in buying palay. These rules include the following: <ul style="list-style-type: none"> Dry palay is only accepted. Moisture content is also tested during buying. Payment is done through banking transaction
	Selling (milled rice)	<ul style="list-style-type: none"> Wholesalers and retailers of NFA rice should be registered by the agency. The number of bags to be sold to the retailer will depend on the budgeted/forecasted stocks to be released per month Pricing of NFA rice should be based on the mandated price. No retailer is allowed to sell NFA rice without license from the agency itself. A bank to bank transaction is done for payment. NFA has its own inspectors to verify that retailers are selling NFA rice at an agreed price. Non-compliance of the regulations means a rebuke of the license.
	Quality Requirements	<ul style="list-style-type: none"> According to the farmers, NFA has the strictest quality requirements. The quality requirements of NFA are found in Appendices 4 and 5.
DPRDI (organic chain)		<ul style="list-style-type: none"> There is no existing contract between the DPRDI and SCFAI and between DPRDI and its market clients Financing – All organic farmers acquire a loan from the rural bank of Php 14,000.00 per cropping with interest rate 3% per month. In the release of loan, they are required to buy organic pesticide and fertilisers. DPRDI – Invested in the rural bank as cash bond so farmers could avail of the loan. Buying of palay – Php 1.00 higher of the prevailing

DPRDI (organic chain)		price of the traditional palay <ul style="list-style-type: none"> • Field workers of DRDI are heavily involved in monitoring the production of organic rice to produce quality rice. • No certification is acquired for organically grown rice.
-----------------------------	--	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Source: Interviews of chain actors

4.1.4 Constraints and Opportunities in the Chain

In determining the constraints and opportunities in the chain, a Focus Group Discussion (FGD) was conducted among the traditional rice value chain participants that include input suppliers, farmers, traders, and chain supporters. The SWOT (strengths, weaknesses, opportunities, and threats) was used in identifying the constraints and opportunities in the chain. However, in this section only the constraints and opportunities are presented.

Constraints in the Chain

Based on the result above, the constraints that inhibit the development of the rice industry and value added activities include the following:

Lack of knowledge in production

Although the farmers have been farming for an average of 30 years in the area, but it is still evident that there is a lack of technology in production especially a technology that responds to the current environmental situation. Based on the interviews, 100% of the farmers decide on application of fertiliser and pesticides based on what their co-farmer is doing. Recently, through their Farmer Field School initiated by MAO, they were taught what to apply. However, there was no soil analysis done among the farms. This lack of production technology combined with irrigation facility problem has led to poor production among farmers especially in Barangay Panikian. This is also true in the application of pesticides where based on interview; application is based on the presence of pesticide either in damaging and non-damaging stages. As such, there is always a variation on the number of applications even in the same area.

On the other hand, the officers of MAO disagree about this issue and said that they have started teaching farmers through Farmer Field School. They pointed out that it is the negative attitude of farmers in adopting technology as the reason of low production. However the administration officer said, *“Have we asked ourselves why they are not adopting? Maybe because the technology is not suited to their situation or that they lack understanding of the technology itself.”*

Lack of post-harvest facility

One of the reasons why farmers could not sell nor store palay is that there is lack of post-harvest facility in the municipality. Twenty nine out of thirty (29/30) or 97% of farmers interviewed share a small basketball court/solar dryer which serves as drying facility for each barangay. During harvest season, this facility could not accommodate all the harvested palay. In addition, if rain occurs during harvesting, palay price will go down and some traders will not buy because they lack storage while some are taking advantage of the situation in order to purchase it at lower price. Although, farmers are not favourable to harvest during rainy days but due to limited number of threshing

machine, they are forced to do so. The lack also of knowledge on current weather situation by farmers results to unexpected harvest during rainy season.

Lack of capital

One of the reasons why farmers are dependent to the financier is because of lack of capital to finance their production. Out of 30 farmers interviewed, 25 farmers or 83% were reported seeking financing from traders (big and small). There are a lot of factors that contribute to this kind of problem. One of the reasons is that because their income is not enough to support their family due to low production or failure in production, low price, and high interest rate.

Poor horizontal linkages

Among the farmers, there is lack of coordination among each other. According to the Municipal Agriculture Office, there has been five cooperatives that were disorganized and went on bankruptcy. As such the farmers are not interested of engaging into cooperatives because of this bad previous experience. Presently, the irrigators associations are newly formed organisations that are initiated by the National Irrigation Administration through their local office. This is a new system of NIA where they will not be dealing with individual farmers anymore but group of farmers. Although, the farmers are not interested but they are force to join in the association in order to avail of the water from irrigation system. In Barangay Poblacion, farmers are still in the stage of observing if it will work out or not while in Barangay Panikian, farmers are having problems already with other farmers since some do not cooperate in cleaning dikes and distribution of water. During the FGD, many farmers are waiting for NIA officers in order to get answers to their long questions of the irrigations systems in the area.

Poor vertical integration

As noticed, there is a wide market fragmentation where there are different existing rice market channels. As shown in Figure 12, there are several palay buyers in the area. Since its basis of relationship is mostly based on price and pre-harvest arrangement, farmers and palay buyers and even milled rice traders could not be assured of the volume of supply thus in order to get the advantage of selling Banaybanay rice at a higher price. Cheating through buying palay or milled rice from neighbouring town or province at a lower cost and selling at a higher price bearing the trade name is also done not only by traders in the area but also in traders of other town.

Poor quality infrastructure system

Although Banaybanay rice is popular in Davao Oriental province, retailers and consumers are asking for the consistent quality of rice because of the inconsistency of quality milled they produce. This could be attributed to the poor quality infrastructure system for commercial rice production. There is no person involve in checking the quality of milled rice sold. Also there is no system in place to check whether it is of pure quality, good variety, and is worth the price. Unlike in seeds, the government is quite active in controlling the production and marketing of seeds according to the municipal agriculture office. Based on the interview, two of the retailers said that although it is not coming from Banaybanay they just used the name because it what the consumers want despite of the

high price. The MAO officer also reported that in Davao City, he found out that a retailer is using the name of Banaybanay rice by imprinting it in the rice sacks yet there is no rice miller's tag. He could not report it to the police because it requires long process.

At present there are two ordinances that protect the brand name, i.e., no trader can bear the name of Banaybanay unless it is produced in the area and strikers are not allowed to purchase palay in the area during harvest seasons. However no one has been penalised by this ordinance.

Opportunities in the Chain

Although there are a more constraints in the chain, the rice value chain in Banaybanay also have opportunities for improvement.

Need of rice

There is a need of rice all throughout the country because of low supply and growing population. In fact, during the duration of this study, there was a short supply already of rice on the second month after the harvest season in June. As such, imported rice that are coming from Thailand and Vietnam was released by NFA and sold by the private traders. As a result of this shortage process of regular milled rice rose to Php 42.00 per kilo which is PhP 6.00 per kilo higher than the usual Php 36.00/kilo regular milled rice.

Demand for Banaybanay Rice

Banaybanay rice possess a strong brand name in the market thus providing a competitive advantage over other brands of rice or rice coming from other areas and in launching a differentiated product in the market.

Growing demand for organic rice

Nowadays, there is a growing demand of organic rice in the market. This is manifested by a number of traders in Banaybanay who is willing to buy the organic rice from SCFAI in Banaybanay. Based also on the interview with SCFAI, traders coming from the capital, Manila, are ordering hundreds of kilos rice from there organisation however because of the short volume, around 100 tons, that the organisation have currently in total. However, traders except for SCFAI still buy rice at a common price with the inorganic rice and selling it at premium rice.

Subsidies given by the national government on rice facilities

Currently the Department of Agriculture through its local counterpart, Municipal Agriculture Office is providing assistance to individual and group of farmers. As mentioned previously, each of the farmers receive an average of two bags of urea, one bag of potash, one bag of organic fertiliser while machineries such as in plowing, harvesting and threshing and mechanical drier are given to group of farmers with 15% price equity payable in 3 years which will eventually lower the cost of production for farmers.

Public private partnership

In the same case with DOSEPCO, a farmer's cooperative that produces quality rice seeds, have been in close coordination with PhilRice to source newly developed hybrid seeds and the Municipal Agriculture Office for few input and machinery subsidies. Also, there have been farmers who are contracted with multinational companies such as Bayer, SG and L Agritech in seed production. This partnership makes use of the expertise of each other in order to boost production. This is also possible for the local commercial rice value chain in the area.

“I hope that one day, the traditional rice farmers can organise themselves like in DOSEPCO and receive the same benefit that seed producers have.” This was the hope of the municipal administration officer during the FGD.

In the organic rice value chain, the actors agree that they have similar opportunities but less in their constraints. The farmers are facing the problem of low profitability since currently they have small production compared to the traditional chain since they are still starting. Their only hope is that their production would increase in the coming seasons; their association will be stronger so they could negotiate with pricing and avail of government subsidy on machinery.

4.2 Capacity of NEH Philippines for Diversification Project

4.2.1 Challenges faced by NEH in previous product diversification projects.

There have been attempts made by NEH Philippines in product diversification. These products include mango and pineapple in the export market such as in New Zealand for mango and 'Lakatan', local variety of banana, in the local market. However, all were not successful. On the other hand, due to the limited information on the mango and pineapple projects, this discussion would only include 'Lakatan' trading project, the most recent product diversification project of the organisation which was operating in 2009 – 2010.

The 'Lakatan' trading project was conceptualised to professionalise the 'Lakatan' sector by marketing premium Lakatan bananas at low cost in the local market. This was initiated by Fresh Studio Innovations Asia, research and development department of NEH Philippines, Inc. There were two strategies used in the project. In 2009, it started by acting as a consolidator in the chain where the intervention is on facilitating quality assurance and market transactions. It purchased fruits from farmers and sold to consignees or middle man in the market. A year later, it shifted its strategy by directly selling fruits to the retailers in the market, thus leaving the middle man. However, due to numerous challenges encountered by the team, it was stopped in 2011 (Bumaya and Almasa, 2011).

Based on the SWOT Analysis made by the team, the challenges are internally and externally driven which include the following:

Table 8. Challenges in 'Lakatan' trading project

Internal	External
<ul style="list-style-type: none">• Poor market knowledge – No thorough market research was done by the team	<ul style="list-style-type: none">• Small market for high quality 'Lakatan' bananas
<ul style="list-style-type: none">• Unfit business strategy – The established system did not fit in the wet market set up and was not flexible for business venture	<ul style="list-style-type: none">• Stiff competition in the wet market
<ul style="list-style-type: none">• Higher overhead costs (salaries & allowances) and low margin.	<ul style="list-style-type: none">• Unavailability of resources on hauling and trucking services
<ul style="list-style-type: none">• Low collection of payments	
<ul style="list-style-type: none">• Sourcing base is scattered in nature.	
<ul style="list-style-type: none">• The available supply of bananas could not meet the market standard set by the former institutional buyer.	
<ul style="list-style-type: none">• No own farm and source limited most of the time to highland bananas	

Source: Bumaya and Almasa, 2011

“One very clear reason why the Lakatan trading project failed is that we did not understand the market.”

These were the words of the former team leader of Fresh Studio Innovations Asia, Inc. who was the over all in charge of the project when interviewed on what the challenges were met by the team in the project and asked of the failure of the project. She added that there was a feasibility study done at the beginning but the assumptions were too optimistic i.e., the market needs a quality product and that with better product and better price they would be able to capture the market. Although they tried few strategies to stay in the market but the Lakatan supply chain is established that the players knew each other and kicked them out of the chain.

When the former team leader was asked what should have been done, she replied, *“A thorough market study should have been implemented and that there should have been somebody in the team who knows in and out of the local ‘Lakatan’ sector in order to get solid market knowledge. Also, there were few of the activities in the project that were not conducted like having a small retailing shop to record the supply, demand, and price trends which would help the team in understanding the market.”*

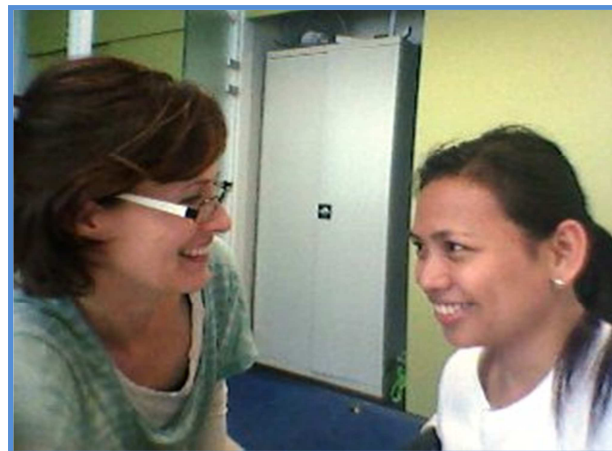


Figure 23. Interview with former FSIA team leader
(Left – Hanneke Hermans, right – researcher)

4.2.2 Strengths and Weaknesses of the NEH Philippines

The strengths and weaknesses of NEH Philippines were measured using 360° degrees approach, a tool developed by EU that assesses the capacity of the organisation for development such as diversification projects.

The respondents of the assessment include 6 out of 7 members of the management team of the organisation. This includes sales, supply chain, human resources, finance, research and development and the general manger. Result is shown on Figure 24.

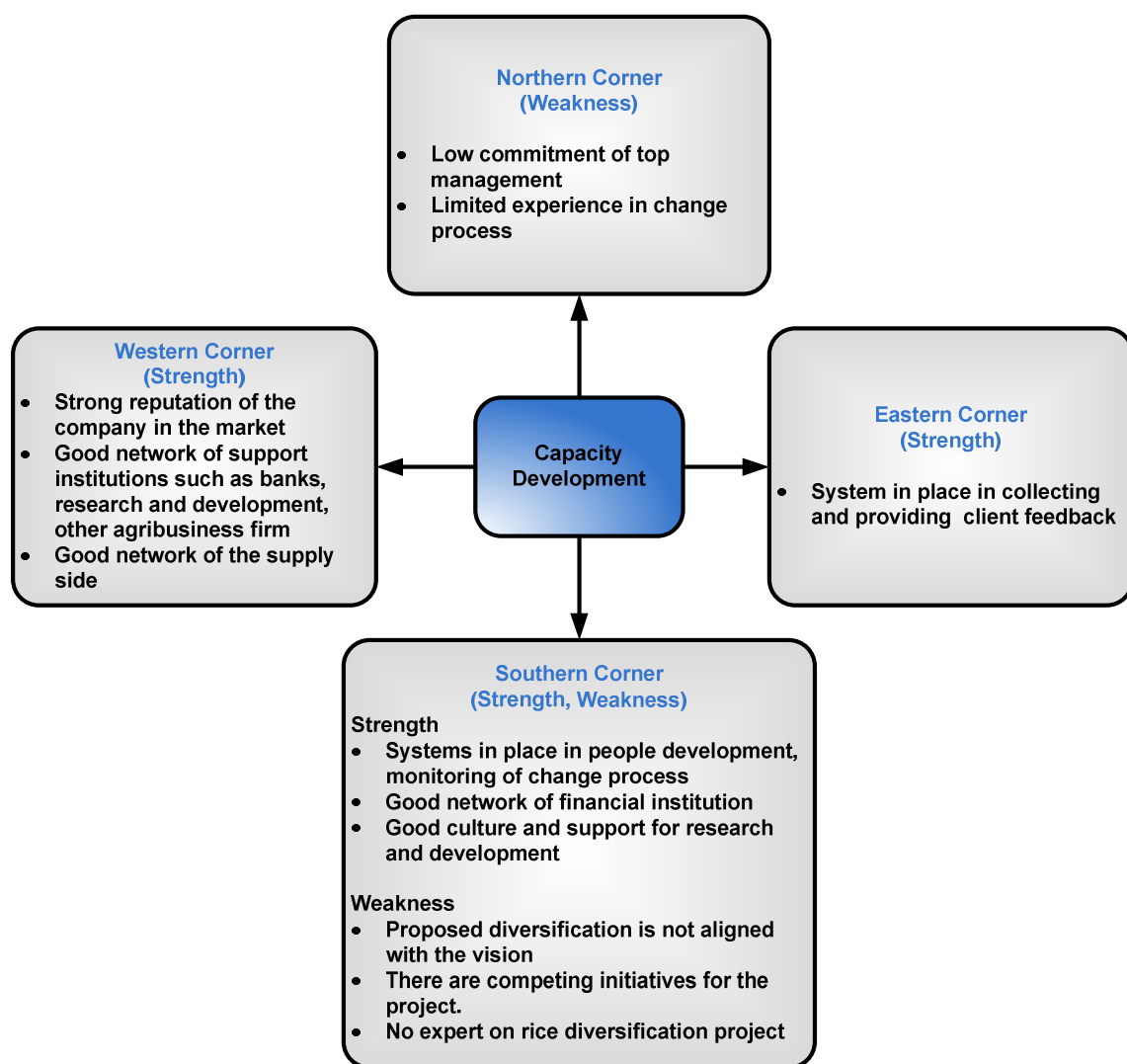


Figure 24. NEH assessment on capacity for organisational development

Northern Corner: Capacity Upward

Based on the interviews, all members of the management team of NEH Philippines, Inc, supported the idea of product diversification projects and agreed that product diversification project is promising for NEH Philippines, Inc.

The sales and marketing manager says that, *“Our clients in the market want a fruit basket which means that they are asking for other fruits that we could supply. Thus it would be a good opportunity for NEH to explore.”* She added that if a fruit supplier has banana, it serves as an entry to other fruits. *‘Other companies are gaining profits with other supplied fruits and not on banana,’* she added.

On the other hand, two of the managers agreed that the company is interested in diversification projects. In the past, the company tried for mango and pineapple which were sent to New Zealand but it was not continued due to market problems. When the respondents were asked of the reasons of the failure, 5 out of 6 or 83% of the members

said that because of the low commitment of the management team in those projects. Although it was outsourced with Fresh Studio Innovations, Asia but they were also heavily involved in the research and development activities in banana.

“The past attempts of product diversification failed because of the lack of market knowledge and expertise of the team. Those projects were production driven and not market driven.”

This is the point of view of the general manager of the organisation regarding the past diversification projects. He said that the trials were production driven projects and not having a solid background of the market needs. The diversification project was not also a priority project of the company due to pressing problems in banana. Currently there are three products that the company is considering namely highland bananas and pineapple for export market, and rice and other crops for local market. He added that highland bananas and pineapple were requested by the current clients in the market thus feasibility studies are being conducted by the finance department. While, one of the local provinces in the country, Pangasinan, through its governor is looking forward to a possible partnership with NEH Philippines to professionalise the rice sector in the area. In addition, NEH Philippines has been dealing with small scale farmers in banana like in rice thus this could be a potential project.

Southern Corner: Own team’s capacity

In terms of own team’s capacity, there are four points that all the managers agree which are:

1. There is a system in place to support/train/hire people in proposed change.
2. The organisation has the capacity to access financial resources for change process such as this diversification project.
3. There is a system in place to monitor and assess the change process.
4. The organisation’s culture and support innovation and technology applications.

When the managers were asked if the diversification project, such as in rice, would be aligned to the organisation’s desired of the future, 50% of the managers agreed that it is aligned since the vision of the company is that the customers would love them thus whatever product is sold by the company, the aim would always be customer satisfaction. Rice could be a potential product and cited that this is because of the growing demand for rice both in the domestic and export markets.

The 50% of the members of the team viewed rice as a product that is not fitted for NEH since the orientation of NEH is in the export market and banana is its expertise. The sales manager commented that rice would not be fitted for the organisation since the organisation currently is dealing with export high valued products. Also, there are a lot of challenges faced by the organisation in its banana operations.

The sales and marketing manager said that, *“Even if it is not in rice, there is a need first to stabilize the core operation, that is, in banana, before venturing into new product.”*

The general manager on the other hand said that, *“Rice is a potential product, aside that it has demand in the local market; there is also a growing demand in the Middle East*

market. Currently there are three products considered for diversification which are highland bananas, pineapple, and rice and other local commodities.”

Regarding the suitability of this project in the organisation, he said it would depend on the result of the value chain study currently conducted by the researcher and thorough market research thereafter. He added, *“If this project will be pursued, we will propose for a 50-50 sharing of profit between us (NEH and future business partner) and farmers.”*

On the other hand, the respondents were also asked if the rice project will be pushed through, would it compete with other change processes at the moment. Again, 50% of the respondents said that it will compete since other change process such as the High Performing Organisation (HPO) framework is still in its infancy period but the 50% of the respondents said that HPO will help in this new project since it is only a system that enhances the performance of the organisation. The human resources manager said that, *“HPO does not compete with new project but it will help simplify the processes in the new project, only it is still in the implementation phase.”*

When regards to financing, 5 out of 6 or 83% of the managers said that there is an available source of funding for the project. The stockholders have resources and it has a good network of financing institutions because of its good reputation. However, the finance manager said that currently rice diversification project is not included for funding, only in pineapple since this is not a priority project. She, on the other hand, agreed that the company has a good network of banks in the Philippines and in Bahrain.

Eastern corner: capacity in relation to users, customers and/or clients -

All the members of the management team agreed that there is a strong system in relation to managing customer's feedback and providing feedback. Since 2006, a customer satisfaction survey has been conducted yearly from the supply and market based clients in order to get the feedback on its quality and services provided. A survey conducted by Fresh Studio Innovations in which in 2012 NEH got a score of 9.1 in a scale of 1-10 for satisfaction which is very satisfied and the highest in five surveys (See Figure 24). Since this year also, the organisation is conducting sessions with various partners in the chain, farmers, suppliers, and market clients, to achieve High Performing Partners (HPP).

Its capacity in relation towards its clients is supported by the 2012 Growers Satisfaction (See Figure 25).

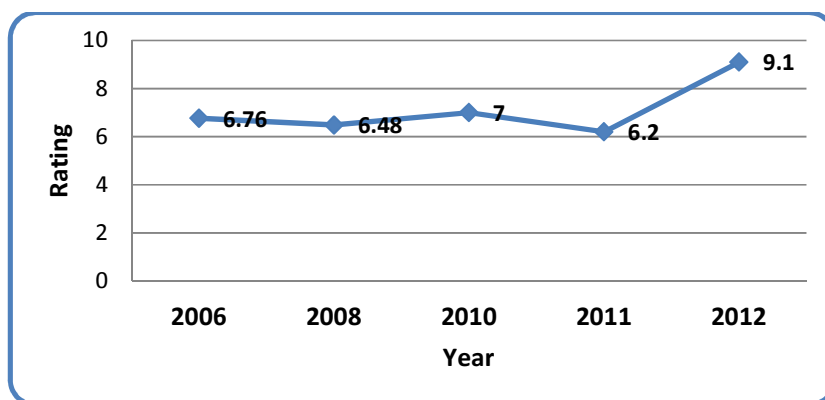


Figure 25. Comparative rating of satisfaction

Source: Raymunda, N.

Western corner: capacity in relation to supply-side networks -

In relation to the supply side of the network, all the top management team agreed that NEH has built up a strong and good reputation within the area it currently operates.

On the other hand, the respondents also recognise that it is the strength of the organisation of its small yet strong network of institutions. Based on the interviews, the following are some of the networks of NEH Philippines, Inc.

- | | |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Finance | Bank of the Kingdom of Bahrain (international)
Kingdom of Bahrain
AMA Computer College
Dutch private investors
Kingdom of the Netherlands |
| 2. Research and Development | Fresh Studio Innovations Asia (Vietnam)
Fresh Studio Innovations Europe
Wageningen University |
| 3. Other services | Unifrutti Philippines
Input suppliers – Agway Philippines, Bayer, Jocanima Philippines and others |
| 4. Organisational Development | High Performing Organisation (Netherlands)
SGS Philippines |
| 5. Community Involvement | Dana Foundation, KASILAK Foundation |

CHAPTER 5. DISCUSSION

5.1 Actors in the chain

The rice value chain in Banaybanay is dominated by small scale farmers who own less than a hectare of land which is not different with the rest of the farmers in the country who by average have less than 1.5 hectares of land (PhilRice, 2012). This is also typical characteristic among rice farmers in Asia which is considered as small and marginal scale farmers such as in Vietnam with 0.58 ha, Bangladesh with 1.1 ha and India with 5.4 ha (ADB, 2012).

In the traditional rice chain, farmers form an ad hoc arrangement with intermediaries (paddy buyers) and input suppliers for services related to production and marketing. In return, intermediaries are assured of supply for a definite time. While among intermediaries, price and trust bind their relationship. Due to the limited influence of the chain supporters, actors in the chain form a weak linkage between and among actors in the chain. Thus actors are independent to each other and exist for self-optimisation (Hobbs, 2001). With this, the traditional rice chain could still be classified as a supply chain.

There is no problem with an open spot market, however small scale rice farmers and intermediaries are vulnerable to the risks such as low quality paddy, low price, high deductions for high moisture content, non- payment or no buying of palay and other related risks. Often, farmers are at a disadvantage for they lack market information and do not know the worth of their produce and other market related information and thus have low bargaining power (KIT *et. al*, 2006).

On the other hand, the organic rice chain, although in its infancy stage, is forming a strong link with its supporter/intermediary in producing a differentiated product in the market. It is a lean chain where few actors exist. Farmers and SCFAI are dependent from DPRDI for technology, financing, capacity building, and marketing. DPRDI, on the other hand, is assured of its supply and long term relationship with the farmer. Actors in the value chain are interdependent and look into the optimization of the chain (Hobbs, 2001).

Figure 26 illustrates the relationship that exists among actors in the chain.

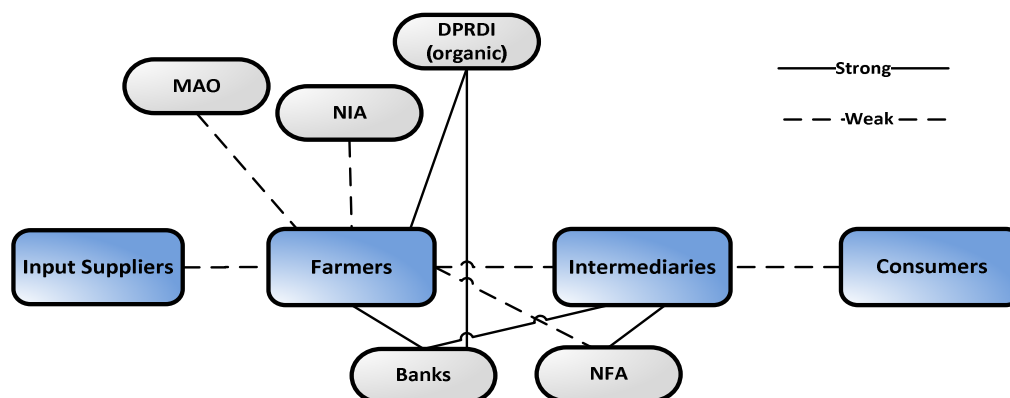


Figure 26. Relationship among actors in the chain

5.2 Value shares

Based on estimated gross income computation, farmers have 40% share compared to rice miller with 18% only. Findings of the ADB (2012) showed that farmer's margins have been increasing in with a net profit-cost ratio from 0.26 in 2002 to 0.44 in 2009. However, it does not mean the farmers have more income than the miller since they only have a small volume compared to the miller/trader. In addition, its profit will be shared with landlords who will have 75% left only. In a study conducted in Abuyog, Leyte (Philippines) in 2008, more than half of its total costs in palay production are allotted for labourers yet they only receive quarter of the total production's revenue where the rest are shared by the tenant and landlord. In a study conducted on the profitability of rice in Banaybanay, it was found out that rice profitability is significantly affected by farm size and large areas which means that large areas means large volume and large profit (Reambonanza, 2012). If the volume of product is to be considered alone, the miller/traders gain most of the profit in the chain.

Based on the computation of the value shares, the rice miller/traders have the biggest added value which is at 50%, followed by farmers at 44%, retailers at 6%. The high value share added by the miller/trader can be attributed also to its strong bargaining position in the chain. They have the facility and technology in processing rice and offer other services to the farmers such as financing, transportation, and cultivation machineries. Whereas the retailers don't offer any added value and farmers who have small volumes have less bargaining power. Nadvi (2004 as cited by Trienekens, 2012) stated that 'distribution of value added over various actors is strongly related to the governance form of the chains and depends on the power and bargaining position of actors, asymmetry between chain stages and production technology used'. This is supported by Kaplinsky (2006) that in general the larger the firm the more influential is its role in the chain.

On the other hand, the estimated gross margin of the organic rice is 9% higher than in the traditional rice chain. This finding is supported in the study of ADB (2012) that the profitability of the rice chain actors is influence by the type of rice. Mostly margins are high for fancy rice and followed by premium rice. In terms of value sharing, still the intermediary, DPDRI, possessed the highest value added to the product. This could be attributed to the costs incurred by DPRDI in the technology, financing and processing to reach its desired end product. In terms of profitability, again farmers have the biggest gross margin compared to DPRDI but because they have small volume, they could not fully optimize the profit.

5.3 Marketing Institutions

The traditional rice chain in Banaybanay possesses a market form of governance and where the relationship among actors is based on price and trust and not by rules imposed by the powerful actor in the chain. Since price is the main determinant of the transaction, it is always an ad hoc arrangement between actors in the chain and quality comes second priority (Gereffi, 2001; KIT and IIRR, 2008). Due to the poor information sharing on price and quality brought by poor coordination in the chain, it is not surprising to note that the quality of Banaybanay rice is varied and inconsistent and a few times adulterated. In addition, the poor quality infrastructure worsens the scenario. This weak market institutions provides an avenue for actors in the chain to take advantage over the

others resulting to unfair power and profit distribution (KIT and IRRI, 2008). In the long term, it will also affect the competitiveness of rice from Banaybanay.

On the other hand, the organic value chain possesses a market like structure. There is no formal contract existing among actors in the chain but both the farmers and DRDI have a strong coordination because of the interdependency towards each other. Farmers of SCFAI have land and labour resources but lack technology in producing organic rice while DPRDI provides technology and take up marketing function, thus possessing a strong relationship unlike in the traditional rice value chain. Several studies have proved that a collective action of farmer's group is in a better position to reduce transaction costs, access new technology and obtain market information (Hashaia, 2012). This is also evident in the success of DOSEPCO, one of the producers of good quality rice seeds in the country. On the other hand, price, quality, and sustainability are the basis of this relationship that exists among the actors in this chain. This type of chain often has the potential to optimize the benefit of the chain (KIT and IIRR, 2008).

5.4 Constraints and Opportunities in the chain

The findings on the constraints of both rice value chains that include lack of technology and infrastructure and poor coordination and inaccess to capital are the same findings of KIT and IIRI (2008). This is also supported by Dijk van and Treinekens (2012) who pointed out that the inaccessibility to credit and other resources, too much regulation or no appropriate governance structure, and poor infrastructure are barriers towards chain development. These constraints are the same with the assumptions made by Fresh Studio Innovations Europe that says there is unfair chain power distribution, lack of infrastructure, technology and knowledge and market access in the rice value chain in the Philippines. This implies that in developing a pro poor value chain intervention that will create a sustainable, professional and fair trade model, these aspects should be considered.

The opportunities in the rice value chains have been enjoyed by the powerful chain actors such as the continuous demand for rice both organic and traditional, strong brand name of Banaybanay rice that commands good price, and a promising good partnership of public and private sectors like in the case of the organic rice value chain. However, should these situation continues, the possibility is that more rice farmers will leave farming as evident in the reduction of area cultivated with rice by 27% from 2004 and 2013 in Banaybanay (MAO, 2013). However, should this be explored together by chain actors of the same vision of a sustainable and efficient chain, it serves as an advantage.

5.5 Challenges faced by NEH Philippines in previous product diversification projects

Knowledge of the market is a critical factor in determining the success and failure of producers or businesses in penetrating the market (KIT and IRRI, 2008). This idea has been proven in the findings of NEH Philippines that unsuccessfully penetrated the 'Lakatan' local market. Their poor market knowledge led to wrong market strategy and eventually stopped the operation. This is supported by the findings of Ottum and Moore (1997) in a study on the role of market information in the success of new product where 80% of the successful new products used a greater amount of market information while

75% of the failed new products used less amount of market information at project inception.

On other hand, poor market knowledge could not only be the main reason of the failure of this project. It is also posts a question on how the organisation responded to the business environment of 'Lakatan' sector. Marcus and van Dam (2007) pointed out the causes of failure of the organisational development include allowing a feeling of satisfaction, failure to form a powerful coalition of leaders, underestimating the power vision, insufficiently communicating the vision, allowing all kinds of obstacles to block that vision, failure to achieve short term results and insufficient anchoring changes in the company culture.

Although, there was strategic meeting held to re-strategize the 'Lakatan' trading project but it was not pushed through by the management and discontinued the project.

5.6 Strengths and Weaknesses of the NEH Philippines

Based on the findings of the interviews, one of the strengths of the organisation is on its external capacity to relate towards its suppliers and customers. This is evident in establishing of a system of providing and giving feedback to their customers in order to respond to the current business situation. Their current activity of making the participants a High Performing Partner (HPP) in its own banana chain is a promising strategy in order to strengthen the chain.

On the other hand, the strength of the organisation in relation to the supply side of the network is also an advantage. This means that the company given that it could engage in the intervention in the rice value chain would be an advantage since it has an experience in partnership with small scale farmers. "People who know how to find partners in the mainstream business or outside world –they flourish in culture of collaboration" (Harvard Business Review, 2006 as cited by Marcus and van Dam, 2007).

The internal capacity of the organisation is both its strength and a weakness. The organisation's strength lies on its systems in people development, financial resources, monitoring developments and its culture of supporting innovations and technology. This supported by the findings of De Waal and De Haas (2013) that NEH is an innovative company where it has two separate entities concentrating in innovations namely FSIA in Davao, Philippines and FSIE in Wageningen, Netherlands. These strengths will be the driver of the change. In the recent HPO assessment, NEH scored 8.3 out of 10, and that NEH seemed to performed better than other Philippine and Asian organizations (De Waal and De Haas, 2013.)

The critical weakness of the organisation is that the management team has a low interest and commitment for diversification project. This could be attributed on the perception of the management as another development which would compete with the recent change process, i.e, gearing towards High Performing Organisation (HPO) and expansions and which could divert their focus. This resistance could be explained based on the view of Graetz, *et.al.* (2006) that one of the causes of resistance to organisational change is that member see that there is still a need to balance the status quo of the core business and that there is no need for any development. On the contrary, this resistance could bring positive effect to the organisation where change agents will reconsider the plans for

change. Also, based on the report on the result of the HPO assessment in 2012, NEH needs to achieve consistency in its process and that NEH processes were not designed and executed in a manner that would enable the company to have enough time to train them in it (De Waal and De Haas, 2013).

The support of the management team is crucial to the development initiatives. It is through their commitment that innovations are successful (Tidd and Bessant, 2009). Several studies have been conducted on the role of leadership in the performance of an organisation. Seventy to ninety percent is the result of good leadership and 30-10% is the result of good management. (Marcus and van Dam, 2007).

Using Lewin's Force Field Analysis, the driving and restraining forces towards the engagement of the organisation in the rice intervention project are shown on Figure 27.

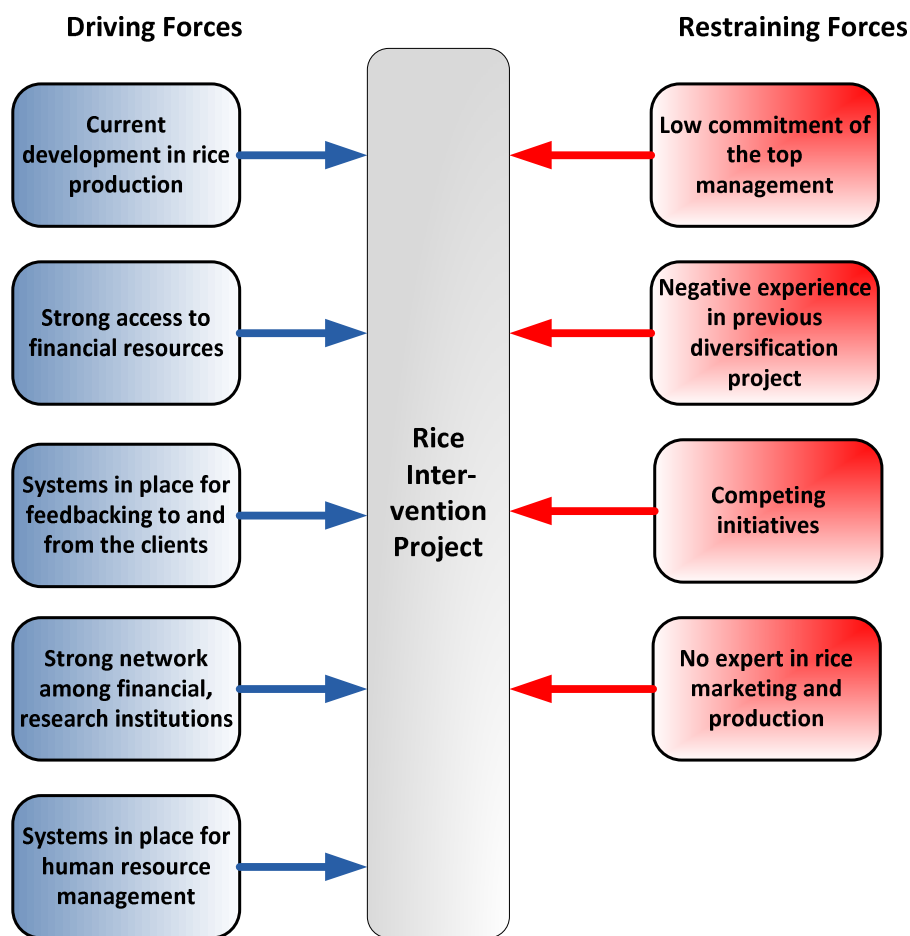


Figure 27. Force field analysis

Following the idea of Lewin's force field theory, that the status quo in organisational development is achieved by equal strength and weaknesses but what is needed is turning out the restraining forces into driving forces (Rollinson, 2008 and Beitler, 2006). This implies that should this initiative be pursued there is a need to collect the support of the top management, learn from the previous experience, prioritise changes so that it will not compete with other initiatives and use its current internal and external strengths.

CHAPTER 6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The rice value chain in Banaybanay is dominated by small scale farmers and a few powerful intermediaries directly involved in the processing of paddy or palay into rice. Both in the traditional and organic value chains, the biggest value added is in processing paddy into consumable rice. As such the miller/trader, processor has captured the biggest share in added value. Profitability in rice depends on the quantity of paddy/ rice that each actor in the chain acquires. Thus, small scale farmers who are not collectively grouped could not take advantage of this situation. The relationships that exist among actors in the chain are based on price and trust. As such only few rules that exist and that quality are of little value. On the other hand, the organic rice chain is quite a promising sector in Banaybanay however there is still much to be proved since it is still in its infancy stage.

There is a vast opportunities of the rice value chain in Banaybanay, the fact that there is a great demand for rice sufficiency in the country is a good opportunity to explore. However, this is overshadowed by the inefficiencies in the chain which includes low productivity, lack of post- harvest facility, and lack of capital and weak horizontal and vertical linkages. Thus interventions should focus on these areas.

The objective of NEH Philippines, Inc. to create a sustainable, professional, and fair trade rice model in partnership with small scale farmers is indeed potential and fitted in the rice value chain given its current situation. Both chains, traditional and organic, are worthy to be developed.

Looking at the capacity of NEH Philippines, it is possible for the organisation to engage in rice value chain intervention project. It possesses strengths of having a system to human resource development, access to financial resources, culture of supporting innovations, relationship building towards its clients and network. However, the challenge lies on the right time in starting this project because currently the management is all focus in making the core business, banana trading, more efficient. There is no question if the product is suitable for the organisation since it is still aligned to its vision of satisfying its customer however, due considerations should be given in engaging in this project.

6.2 Recommendations

If this project will be implemented, there are two things that NEH Philippines should consider, that is, to have a separate management team for this project or to wait until the current initiatives are completed.

Either of the two actions mentioned above will be taken, the following activities could be done (See Table 9) as the next step following this research.

Table 9. Proposed action plan

Activity	Objective	Persons Involved	Time Frame
1. Presentation result of research	Provide data on chain analysis and capability of NEH in engaging in rice intervention project.	Nelben Raymunda NEH Top Management	Period 13, 2013
2. Market study	Provide detailed study on the market. will serve as basis on what product is needed and thus where intervention of technology can be based; and determine the financial needs.	General Manager Finance and accounting Manager (Either outsource or new team)	Period 1, 2014
3. Top management meeting	Further discussion on the project (strategic planning)	General Manager Top Management	Period 1, 2014

Should the project be started, there are four interventions in the rice value chain that are needed. However, it is highly recommended that NEH Philippines would look for partners in interventions in order to compensate the aspects that NEH Philippines is weak and share the risks. This would include partnership with input suppliers, research institutions, and funding agencies. Although the value chain development will be led by the private sector (NEH), cooperation and coordination with relevant support organizations is a key to success (KIT and IIRR 2008).

In partnership building, the proposed activities are shown in Table 10.

Table 10. Proposed activity for partnership building

Activity	Objective	Persons Involved	Time Frame
1. Consultation of identified partners	To identify the prospective partner in this initiative	Top Management NEH Philippines, Inc.	4 weeks
2. Formation of Working Group	To make an ad hoc committee that will lead the intervention projects	NEH Philippines Partners - MAO, DOSEPCO, AGWAY, Lead Farmers in Brgy. Poblacion and Panikian, IRRI, CRS	4 weeks

In implementing the intervention project, the suggested activities are discussed below.

Intervention 1: Production and Postharvest Technology

Technology – The main objective of this intervention is to improve the technical skills of the farmers and processors in order to increase production and produce rice of good quality and with high milling recovery. Table 11 outlines the activities for this intervention.

Table 11. Proposed activities for technology intervention

Activities	Objective	Persons/Agency Involved	Time Frame
1. Planning	To provide detailed planning in this intervention	NEH Philippines	2 weeks
2. Development of package of technology in rice production and post-harvest	To create a package of technology based on problems identified in the chain related to plant nutrition, crop protection and water use; and identified existing solutions in consultation with rice experts.	PhilRice Municipal Agriculture Office NEH Philippines	2 months
3. Set up of 3 rice plots in the different areas within the municipality	To test technology generated in activity 1.	PhilRice Municipal Agriculture Office NEH Philippines	6 months
4. Creation of Farmer Field School	To teach farmers on the knowledge related to technology and economics in adopting the technology (plant nutrition, crop protection water use and cost and profit analysis)	NEH Philippines Farmers Proposed farmers' association MAO	4 months
5. Feedbacking	To monitor performance and discuss issues related to production, quality, and others	Farmers Proposed farmers' association NEH Philippines	monthly

The potential of rice production in the area is shown in Table 12 which could be a performance indicator among rice farmers.

Table 12. Potential in palay and rice production

Item	Current	Potential	Gaps
Production (palay)	5.2 tons per ha	6 tons per ha	0.8 tons per hectare
Post harvest losses	37% loss or 63% milling recovery	15% (national average) loss or 75% milling recovery	17% or 22% milling recovery
Gross Income @Php16/kilo palay	Php52,416.00	Php 72,000.00	Php 19,584.00

Sources: MOA (2013), NFA (2012)

Intervention 2: Financing

Currently, the lack of capital among farmers has directed them towards different financiers who gave them high interest rates, thus the aim of this intervention is to provide capital for production to the small scale farmers in the form of a loan. Table 13 outlines the financing scheme which was successfully used by Credivida in financing the potato farmers in Peru (KIT and IIRR, 2010) which could be applied in the Philippines such as the case in DPRDI.

Table 13. Proposed scheme for financing intervention

Objective	To provide capital for rice farmers during production
Amount	Php 30,000.00/ha/ cropping (estimate) (based on over- all production cost minus family labour)
Period	4-6 months
Disbursement	Disburse directly to the farmers through the 'proposed marketing platform' (See Intervention 4) in 2 instalments (planting and harvesting periods)
Repayment	Lump sum, including interest, after delivery of product to the 'proposed marketing platform'
Interest rate	3-5%
Transaction costs	None
Securitization	Borrower must own the land, but land not use as collateral and member of the association
Liability	Borrower
Information required during season	Visitation of the credit/technical officer to check progress of the farm.

The source of funding could be NEH Philippines, banks, or grants from development institutions.

Intervention 3: Capacity building

The rice farmers in Banaybanay are generally small scale, thus it would be an advantage to the farmers to form into an organisation. Currently, all farmers are members of the irrigators association. This association should be supported in terms of their capacity to in managing the association. Through this farmers would be able to enjoy the benefits of a group by purchasing bulk inputs at lower costs, access to capital for financing

production and other investments, acquire machineries from the government, and later on take up the marketing function. A proposed scheme is shown in Table 14.

Table 14. Proposed activities for capacity building

Activity	Objective	Person/Agency Involved	Time Frame
1. Planning	To provide detailed planning in this intervention	NEH Philippines	2 weeks
2. Orientation	To analyse farmers' situation and its relation to the chain	Development Agency NEH Philippines Farmers MAO PhilRice	1 month (including preparation)
3. Value Formation Training	To enhance cooperation among farmers	NEH Philippines, Inc. Development Agency	2 days
4. Management Training	To develop leadership and management skills among farmer leaders/officers in the association	NEH Philippines, Inc. Development Agency	3 days

Intervention 4: Marketing

Although marketing could be the main function of the lead organisation, but farmers could participate in marketing rice. A marketing platform can be created where both it will be owned by the association of the farmers and NEH Philippines, Inc. such as the case of AgroFair but 60% would be owned by NEH Philippines and 40% by the producers association. The proposed activities for marketing intervention are shown on Table 15.

Table 15. Proposed activities in marketing intervention

Activity	Objective	Person/Agency Involved	Time Frame
1. Financial study	To conduct a study on the financial aspect of this marketing scheme which will serve as basis in the financial structure of the scheme	NEH Philippines, Inc.	2 months
2. Consultations with stakeholders	To present the scheme with stakeholders (farmers' association and NEH Philippines)	Farmers' association and NEH Philippines	1 month
3. Implementation of the project	To implement the marketing scheme	Farmers' association and NEH Philippines	

These interventions have two years' time allocation. A Gantt Chart is shown on Appendix 8 which shows the schedule and duration of the activities in each intervention.

REFERENCES

Alfon, HB and Redona, ED. 2005. A Preliminary Study on the Philippine Organic Rice Subsector. [online] Available at http://orgprints.org/4379/1/Alfon_Redona_4p_revised-ed.doc. Accessed on 9 September 2013.

Alvero, J. Value Chain Study of Rice in Abuyog Leyte. 2008. Undergraduate Thesis. Ateneo de Manila University.[online] Available at <http://www.scribd.com/doc/7279938/A-Value-Chain-Study-of-Rice-in-Abuyog-Leyte>. Accessed on 18 December 2012

Asian Development Bank. 2012. The Philippine Rice Situation. [online] Available at <http://www.adb.org>. Accessed on 18 December 2012

Ansoff, HI. Strategies for diversification. 1958. [online] Available at http://foswiki.org/pub/Sandbox/SimiWiki/Strategies_for_diversification.pdf. Accessed on 3 September 2013.

Banaybanay Map and Location. 2012. Local Government of Banaybanay at <http://www.banaybany.gov.ph/>. Accessed on 22 June 2013.

Baser, H. and Morgan, P. 2008. Capacity, Change and Performance Study Report. (ECDPM Discussion Paper 59B). Maastricht: ECDPM

Beitler, M. Strategic Organisational Change: A Practitioner's Guide for Managers and Consultants. Practitioner's Press International. North Carolina, USA

Bumaya, M. and Almasa, S. 2010. Output Report on Lakatan Trade Workshop. Fresh Studio Innovations, Asia, Inc.

Bureau of Agricultural Statistics. 2013. Production, Palay and Corn: Updated Average Production Costs and Returns [online] Available at <http://www.bas.gov.ph/>. Accessed on 22 June 2013.

Corpuz, P and Verzani, W. 2013. Philippine Grain and Feed Situation and Outlook [online] Available at <http://gain.fas.usda.gov>. Accessed on 31 August 2013.

De Waal, A. and De Haas, J. 2013. Working on High Performance in the Philippines: The Case of NEH Philippines. [online] Available at <http://www.hpocenter.nl/uploads/NEH.pdf> Accessed on 11 July 2013.

Dijk van, M.P. and Treinekens, J. (eds) 2012. Global Value Chains. Linking Local Producers to International Markets. Amsterdam University Press. Amsterdam, The Netherlands

European Union. 2011. Toolkit for Capacity Development. Belgium. [online] Available at http://www.cc.cec/dgintranet/europeaid/activities/adm/technical_cooperation/index_en.htm. Accessed on 22 July 2013.

Food and Agriculture Statistics (FAO). 2013. Rice Statistics. [online] Available at <http://faostat.fao.org/site/339/default.aspx>. Accessed on 2 June 2013.

Fresh Studio Innovations Asia, Limited (FSIA). 2006. Report of the Avocado Sector Stakeholder Workshop, Buon Ma Thout, August 4, 2006.

Fresh Studio Innovations Europe (FSIE). 2012. Rice Intervention Project Concept Proposal. Unpublished document.

Gereffi, G., and Kaplinsky (eds). 2001. The value of value chains: Spreading the gains from globalization. IDS Bulletin

Graetz, F., Rimmer, M., Lawrence, A., Smith, A. 2006. Managing Organisational Change. Second Edition. John Wiley and Sons Australia Ltd. Australia

Hashaia, N. 2012. Balancing growth across geographic diversification and product diversification: A contingency approach. [online] Available at <http://www.sciencedirect.com/science/article/pii/S0969593111001909> International Business Review. Accessed on 2 September 2013.

History of NEH Philippines. 2012. NEH Philippines, Inc. unpublished corporate article

International Rice Research Institute. 2012. Global rice metrics at a glance. [online] Available at http://ricestat.irri.org/vis/wrs_quickCharts.php. Accessed on 22 June 2013.

KIT and IIRR. 2010. Value Chain Finance. Beyond microfinance for rural entrepreneurs. Royal Tropical Institute, Amsterdam; and International Institute of Rural Reconstruction, Nairobi

KIT and IIRR. 2008. Trading Up. Building cooperation between farmers and traders in Africa. Royal Tropical Institute, Amsterdam; Faida Market Link, Arusha; and International Institute of Rural Reconstruction, Nairobi

KIT, Faida Mali and IIRR. 2006. Chain empowerment: Supporting African farmers to develop markets. Royal Tropical Institute, Amsterdam; Faida Market Link, Arusha; and International Institute of Rural Reconstruction, Nairobi

Kaplinsky, R. 2000: Globalisation and Unequalisation: What Can Be Learned from Value Chain Analysis?, The Journal of Development Studies, 37:2, 117- [online] Available at <http://www.tandfonline.com/doi/pdf/10.1080/713600071>. Accessed on 22 June 2013

Kaplinsky, R. and M. Morris 2001. A Handbook for Value Chain Research. Brighton, United Kingdom, Institute of Development Studies, University of Sussex

Mariano,MJ., Villano,R., Fleming,E., 2010. Are irrigated farming ecosystems more productive than rainfed farming systems in rice production in the Philippines?, *Agriculture, Ecosystems & Environment*, Volume 139, Issue 4, Pages 603-610, ISSN 0167-8809

Merriam Webster Disctionary.2013. Barangay, Palay. [online] Available at <http://www.merriam-webster.com/dictionary>. Accessed on 1 July 2013

Morgan, D. 1996. Focus Groups. *Annual Review of Sociology* , Vol. 22, (1996), pp. 129-152 [online] Available at: <http://www.jstor.org/stable/2083427>. Accessed on 12 July 2013

Municipal Agriculture Office. 2013. Rice Annual Production of 2013. Muncipal Agriculture Office of Banaybanay, Davao Oriental

National Food Authority.2012.Revised Rules and Regulations of NFA on Grains Business. [online] Available at <http://www.nfa.gov.ph/files/rules-regulations.pdf>. Accessed on 1 August 2013.

Ottum,B. and Moore W. 1997. The Role of Market Information in New Product Successes and Failures. *Journal of Product Innovation*. Volume 14, Issue 4, July 1997, Pages 258–273. [online] Available at <http://www.sciencedirect.com/science/article/> Accessed on 6 October.2013

Philippine Rice Research Institute. 2012. Palay Check System. PhilRice. Manila, Philippines

Raymunda,N. 2012. NEH Growers Satisfaction Survey. Fresh Studio Innovations Asia, Inc.

Reambonanza, R. 2008. Profitability of Rice in Banaybanay, Davao Oriental. Undergraduate thesis. Unpublished. University of Southeastern Philippines

Ritter,T. and Gemunden,HG. (2003) Network competence: Its impact on innovation success and its antecedents, *Journal of Business Research*, Volume 56, Issue 9, September 2003, Pages 745-755, ISSN 0148-2963 [online] Available at: (<http://www.sciencedirect.com/science/article/pii/>) Accessed on 8 Sept. 2013.

Rollinson, D. *Organisational Behaviour and Analysis* 4th Ed. An Integrated Approach. 2008. Pearson Education Limited. England

Ruben, R., van Boekel, M., vanTilburg, A., Trienkens, J. (eds.) 2007.*Tropical Food Chains*. Wageningen Academic Publishers. The Netherlands

Slater,S., Olson,E., Hult,TM. 2010.Worried about strategy implementation? Don't overlook marketing's role, *Business Horizons*, Volume 53, Issue 5, September–October 2010, Pages 469-479, ISSN 0007-6813. [online] Available at <http://www.sciencedirect.com/science/article/> Accessed on 6 October.2013

United States Agency for International Development (USAID). 2008. Facilitating Behavior Change and Transforming Relationships.

APPENDICES

Appendix 1. Questionnaires for rice chain actors

1. Farmer's Questionnaire			
1.1 Basic Information			
Name:			
Address:			
Area for rice production:		No. of years in rice farming:	
Gender:		Age:	
1.2 Production			
<ul style="list-style-type: none"> What are the inputs used in producing rice? (per hectare) 	Where do you buy them?	How much do you pay?	
		Quantity	Price
Seeds			
Fertilizer			
Pesticide			
<ul style="list-style-type: none"> How many people and what are they working in your farm? 	Where are they from?	How much do you pay?	
		Quantity	Price
<ul style="list-style-type: none"> What are services do you hire 	Where are they from?	How much do you pay?	
		Quantity	Price
What type of production system is used?	<ul style="list-style-type: none"> Irrigated Non-irrigated 		
1.3 Marketing			
Where do you sell your palay?	Why are you selling it to them?	How much is the price /kilo?	
What are the quality requirements of your buyer?	<ul style="list-style-type: none"> Variety – Volume – Schedule – 		
Do you have an existing contract with your buyer?			
1.4 Others			
What have been your problems encountered in production?			

How did you solve it?	
Where there people or organisation who have helped you in solving your problems?	
What do you think is the key to a sustainable partnership with your traders or millers?	
Aside from rice, what are other crops grown in the farm?	

2. Intermediaries' Questionnaire			
2.1 Basic Information			
Name:			
Address:			
Gender:		Age:	
Area of operation:		No. of years in trading:	
2.2 Operation			
• Where do you buy palay?		How much do you pay?	
		Quantity	Price
• What are the inputs you used in your operation?	Where are they from?		
How many people and what is the working in your operation?	Where are they from?		
•			
Aside from buying palay, what are you offering to the farmers?			
• Why are you offering it?	•		
• What are the quality requirements of your buyer?	• Variety – • Volume – • Schedule -		
Do you have an existing contract with your buyer?	•		
2.3 Marketing			
Where do you sell your palay/ milled rice?	Why are you selling it to them?		

3. Supporter's Questionnaire
2.1 Basic Information
Agency:
Address:
Name of correspondents:
Gender :
2.2 Services/support offered
What kind of services are you offering to the farmer or other actor?
How are these services provided?
What are the challenges that you have faced in implementing your services to the farmers or other actors in the chain?

Appendix 2. Questionnaire for NEH management team

1.4 NEH Philippines Questionnaire		
1.4.1 Basic Information		
Name:		
Position:		
Gender :		
1.4.2 360⁰ self-assessment tool for capacity change		
Parameters	Strengths	Weaknesses
Northern Corner : capacity upward		
The top management is supportive of change process such as diversification programs in rice.		
There is a person from the top management who is in charge of change process.		
The management has an experience for change process.		
Overall assessment		
Southern corner: own team's capacity		
The proposed project is aligned with the organisation's vision of desired future.		
There are other initiatives competing for this project.		
There is an expert for the project.		
There is a system in place to support/train/hire people in proposed change.		
There is an available source of funding for this project.		
The organisation has the capacity to access financial resources for this project.		
There is a system in place to monitor and assess the change process.		
The organisation's culture and support innovation and technology applications.		
Overall assessment		
Eastern corner: capacity in relation to users, customers and/or clients		
There is a system in place to collect customer/client feedback.		
There is a system in place to provide feedback to clients or customer.		
Overall assessment		
Western corner: capacity in relation to supply-side networks		
The organisation has built up a strong and good reputation in the area it operates.		
The organisation has the capacity to access to the networks of institution.		
Overall assessment		

Appendix 3. Estimated cost and profit (Php) of traditional paddy to milled rice

2.1 Production (Farmer)

Basic Assumptions				
Productivity Profile (per hectare)				
Gross Yield per sack (kg)	85			
Gross Yield (kg)	5,100			
Farm gate price (per kilo of palay) (Php)	16.00	(0.32 EUR)		(1 Php = 0.02 Euro/EUR)
Gross Income (Php)	81,600.00	(1,632.00 EUR)		
FARM PRODUCTION EXPENSES				
FARM INPUTS	Quantity	Unit Price	Amount	Assumptions/ Remarks
Procurement of seeds	1 sack	1,200.00	1,200.00	
Basal application (pre-planting fertilization)		1,200.00		
Fertilizer		1,200.00		
Synthetic/Inorganic		1,200.00	4,330.00	
Ammonium	3 bags	2,010.00		Php 670/50kg bag
Urea	1 bag	1,070.00		Php 1,070/50kg bag
Complete	1 bag	1,250.00		Php 1,250/50kg bag
Organic				
Snail Control	1 box	950.00	950.00	
Herbicides	5 quarts	600.00	3,000.00	
Pesticides/Insecticides			1,630.00	
Machete		600.00		Php 600/ liter
Sofate		700.00		Php 700/ liter
24D		330.00		Php 330/ liter
Subtotal			11,110.00	(222.2 EUR)

FARM OPERATIONS/ACTIVITIES (labor & services expenses)	<i>Family (Non-Cash Expenses)</i>	<i>Hired (Cash Expenses)</i>	<i>Total</i>	<i>Assumptions/Remarks</i>
Land Preparation				
a. Dike clearing/Slashing		500.00	500.00	
b. Dike bonding		500.00	500.00	
c. Plowing		500.00	500.00	
d. Tractor		4,500.00	4,500.00	
f. Basal Application (labor fee)		500.00	500.00	
g. Paddy levelling (Plantsa)		500.00	500.00	
Seedbed Preparation		200.00	200.00	
Planting Activities			0.00	
Pulling of seedling		1,500.00	1,500.00	
Transplanting		2,300.00	2,300.00	
Maintainance Management Activities			0.00	
Fertilizer Application (Nutrition Management)		1,000.00	1,000.00	
Herbicide Application (Weeds Control Management)		500.00	500.00	
Pesticide/Insecticide Application (Pest Control)		1,000.00	1,000.00	
Snail Control Application		500.00	500.00	
Subtotal			14,000.00	(280.00 EUR)
HARVESTING OPERATIONS	in sacks			
Harvesting	6.80	6,528.00	6,528.00	2 sacks per every 25 sacks
Threshing	5.67	5,440.00	5,440.00	2 sacks per every 30 sacks
Hauling			1,700.00	10 sacks per move x 2 moves
Subtotal			13,668.00	(273.36 EUR)

OTHER EXPENSES				
Irrigation budget - NIA fee	1,012.50	2,025.00	per hectare per year	
Land Rental		0.00		
Loan Interest		3,766.50	15% per cropping	
Food and Transportation	1,500.00	1,500.00		
Land Tax	1,000.00	500.00	Php 1000 per year/ 2 croppings	
Deductions	170.00 kilos	2,720.00	average 2 kilos per sack	
Subtotal		10,511.50	(210.53 EUR)	
Grand Total - FARM EXPENSES		49,289.50	(985.79 EUR)	

Gross Yield in kilos	5,100.00	
Net yield (less 3 kg per sack wet loss)	4,845	
Cost per kilogram of palay	9.66	
Farm gate price (per kilo of palay)	16.00	
Total Cost (PhP)	49,289.50	985.79 EUR
Gross Income (PhP)	77,520.00	1,550.40 EUR
(less		
Gross Margin (Php)	28,231.00	564.62 EUR
Gross Margin (per kilo)	6.34	0.13 EUR

2.2 Processing (Miller/Trader)

POST PRODUCTION ACTIVITIES	Quantity	Unit Price	Amount	Assumptions/Remarks
Assumptions				
Gross Yield in sacks	85.00	sacks		
Gross Yield in kilos	5,100.00	kilos		
Deductions	170.00	kilos		
Fresh Palay	4,930.00	kilos		
	82.17	sacks		
Recovery from Fresh to Dry Palay				
	in kilos	4,190.50		85% recovery rate
	in sacks	69.84		
Recovery from Dry Palay to Rice				65% recovery rate
	in kilos	2,723.83		
	in sacks	54.48		
Cost of Sales				
		Per kilo	Per sack	
Post Harvest Expenses				
Palay Purchase		16.00	960.00	
DryMan Fee		0.17	10.00	
Solar dryer Fee		0.33	20.00	
Wastage expenses (drying loss)		3.55	213.05	(15.5 sacks)
Marketing Expenses				
Milling Costs		1.50	90.00	
Materials Costs		0.24	12.00	
Warehouse Fee		0.20	10.00	

Transaction Cost	0.35	17.36	Php 100,000 per month; 30sacks/hr efficiency
Hauling	0.12	6.00	
Trucking fee	0.80	40.00	
Labour Cost	0.03	1.25	
Total Cost	27.59	1,379.66	
	(0.55 EUR)	(27.58 EUR)	

Gross Profit on Sales		34.00	1,700.00	
	Gross Margin	6.41	320.34	
		(0.13 EUR)	(6.41 EUR)	
<i>(Not included as computation is focus on milled rice but shown for information purposes)</i>				
	<i>(Other product)</i>			
	Rice bran	15.00	480.00	
	Rice hull		1500.00	1 per ton; 1.5 tons/ truck load

2.3 Retailer

Retailers				
Price of Rice		34.00	1700.00	
Cost of Sales				
Marketing Exp		1.00	50.00	Php 60000/mo; 50 sacks/day
Materials Costs		0.05	2.50	Php 50 per 20 sacks
Labour Cost		0.25	12.50	
	Total Cost	1.30	71.00	
		(0.03 EUR)	(1.42 EUR)	
Gross Sales		36.00	1,800.00	103,505
Operational expenses		35.30	1,765.00	97,567
	Gross Margin	0.70	35.00	5,938
		(0.01 EUR)	(0.70)	

Appendix 4. Estimated cost and profit (Php) of organic paddy production

Basic Assumptions	
Productivity Profile (per hectare)	
Gross Yield in sacks	70
Gross Yield in kilos	4,200
Farm gate price (per kilo of palay)	17.00
Gross Income	71,400.00

FARM PRODUCTION EXPENSES				
<i>Farm Inputs</i>	<i>Quantity</i>	<i>Unit Price</i>	<i>Amount</i>	<i>Assumptions/Remarks</i>
Seed procurement				Produced or swapping
Urea	1 bag	1000.00	1000.00	
Organic fertilisers	15 bags	300.00	4500.00	
Snail control	CRH 10	50.00	500.00	
Concoction/fermentation			1000.00	FPJ, FAA, FFJ, OHN, Calcium, Calphos, Guso/Seaweeds
	Sub total		7,000.00	(140.00 EUR)

FARM OPERATIONS/ACTIVITIES (labor & services expenses)	Hired (Cash)	Unit Cost	Total	Assumptions/Remarks
Land Preparation				
a. Dike clearing/Slashing		500.00	500.00	
b. Dike bonding		500.00	500.00	
c. Plowing		500.00	500.00	
d. Tractor		4,500.00	4500.00	
f. Basal Application (labor fee)		500.00	500.00	
g. Paddy levelling (Plantsa)		500.00	500.00	
Seedbed Preparation		200.00	200.00	
Planting Activities			0.00	
Pulling of seedling		1,500.00	1,500.00	
Transplanting		2,800.00	2,800.00	
Maintainance Management Activities			0.00	
Fertilizer Application (Nutrition Management)		1,000.00	1,000.00	
Herbicide Application (Weeds Control Management)		500.00	500.00	
Pesticide/Insecticide Application (Pest Control)		1,000.00	1,000.00	
Snail Control Application		500.00	500.00	
Subtotal			14,500.00	
HARVESTING OPERATIONS	in sacks			
Harvesting	5.60	5376.00	5376.00	2 sacks per every 25 sacks
Threshing	4.67	4480.00	4480.00	2 sacks per every 30 sacks
Hauling			1400.00	10 sacks per move x 2 moves
Subtotal			11,256.00	
OTHER EXPENSES				
Irrigation budget - NIA fee		2,025.00	1,012.50	per hectare per year
Loan Interest			1,075.00	5% per cropping
Food and Transportation		1,500.00	1500.00	
Land Tax		1,000.00	500.00	Php 2000 per year/ 2 croppings
Deductions (own consumption)		17.00	2,380.00	140 kilos
Subtotal			7,480.00	(145.00 EUR)
Grand Total			40,236.00	(804.72 EUR)

Gross Yield in kilos	4,200.00	
Net yield (Less 3 kilos wet loss per sack)	3,990.00	
Cost per kg of palay	9.53	0.19 EUR
Farm gate price per kilo of palay	17.00	0.34 EUR
Total Cost	40,236.00	804.72 EUR
Gross Income	67,830.00	1,356.60 EUR
Gross Margin	27,594.00	551.88 EUR
Gross margin in kilos	7.47	0.15 EUR

Appendix 5. Grade requirements for palay

GRADING FACTORS	PREMIUM	GRADE 1	GRADE 2	GRADE 3
Purity	98	95	90	85
Foreign matters	2.0	5.0	10.0	15.0
Weeds	0.1	0.2	0.3	0.5
Other foreign	1.9	4.9	9.8	14.5
Defectives				
Chalky and immature kernels max	3.0	6.0	12.0	20.0
Damaged kernels max	0.5	1.5	3.0	5.0
Contrasting type max	3.0	6.0	10.0	18.0
Red kernels max	1.0	3.0	5.0	10.0
Discolored kernel max.	0.5	2.0	4.0	8.0
Moisture content max.	14.0	14.0	14.0	14.0

Source: NFA, 2012

Appendix 6. Grade requirements for rice

GRADING FACTORS (% by weight)	PREMIUMS	GRADE 1	GRADE 2	GRADE 3	GRADE 4	GRADE 5
Head Rice, min.	95	90	85	75	65	55
Broken rice (Total including brewing)	5	10	15	25	35	45
Brewers max	0.1	0.2	0.5	0.6	1	2
Defective max	0.5	0.7	1	1.5	2	3
Chalky kernels, max	4	5	7	7	10	15
Immature kernels max	0.2	0.3	0.5	2	2	2
Contrasting types,	3	5	10	-	-	-
Red kernels,	1	2	4	5	5	7
Foreign matters	0.03	0.1	0.15	0.17	0.2	0.25
Paddy (max. nos. per 1000 grams)	10	15	20	25	25	25
Moisture Content	14	14	14	14	14	14
Milling Degree	WMR	WMR	RMR	RMR	RMR	RMR

Source: NFA, 2012

Appendix 7. 360⁰ Assessment of NEH Philippines, Inc.

Parameters	Strengths	Weaknesses
Northern Corner : capacity upward		
The top management is supportive of change process such as diversification projects.	+++	+++
There is a person from the top management who is in charge of change process.		-----
The management has enough experience for change process.		-----
Overall assessment	3+	10-
Southern corner: own team's capacity		
The proposed project is aligned with the organisation's vision of desired future.	+++	---
There are other initiatives competing for this project.	+++	---
There is an expert for the project.		-----
There is a system in place to support/train/hire people in proposed change.	++++++	
There is an available source of funding for this project.	+++	---
The organisation has the capacity to access financial resources for this project.	++++++	
There is a system in place to monitor and assess the change process.	++++++	
The organisation's culture and support innovation and technology applications.	++++++	
Overall assessment	33+	15-
Eastern corner: capacity in relation to users, customers and/or clients		
There is a system in place to collect customer/client feedback.	++++++	
There is a system in place to provide feedback to clients or customer.	++++++	
Overall assessment	12+	
Western corner: capacity in relation to supply-side networks		
The organisation has built up a strong and good reputation in the area it operates.	++++++	
The organisation has a strong network in the supply side	++++++	
The organisation has the capacity to access to the networks of institution.	++++++	
Overall assessment	18+	

Appendix 8. Gantt Chart of Rice Value Chain Intervention Project

Rice Value Chain Intervention Project

Activities	Year 1												Year 2											
Month No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Building Partnerships																								
Courtesy Call																								
Working Group Formation																								
Technology Intervention																								
Planning																								
Development of package of technology																								
Set up of 3 rice plots																								
Creation of Farmer Field School																								
Finance Intervention																								
Planning																								
Consultation with NEH and finance partners																								
Implementation																								
Capacity Building																								
Planning																								
Orientation																								
Group and Value Formation Training																								
Management Training																								
Marketing Intervention																								
Financial study/Planning																								
Consultations with stakeholders																								
Implementation of the project																								