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STATUS OF NIPA INDUSTRY: INSIGHTS TO ALTERNATIVE FUTURES

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ABSTRACT

New norms and sustainable futures in the changing times are among the challenges industries face today. This study was conceptualized to seek insights of alternative nipa industry futures using the Futures Triangle tool, thereby the study of the history and the present status in terms of problems and challenges of the industry were necessary. Mixed research methods were used and the grounded theory method was specific approach in determining the required conceptual framework anchored on the theories of Systems Management, New Time, and Futures Thinking, principles of marketing and management along with the tools of Future Triangles and Lean Six Sigma

Results of the study established that the nipa industry in Panay, Capiz, Philippines, is more than a century industry. The problems of the industry were the low production of nipa shingles relative to land area; traditional production processes; declining number of weavers and nipa workers coupled with backward manpower skills. Markets had remained unchanged but challenged by the presence of new technologies and products; price mechanism dependent on buyers and the declining demand for nipa shingles as roofing and walling material.

Benchmarks with Bulacan and Surigao del Sur,Philippines, Malaysia and Thailand, viable investment s and development options for the industry gave insights of industry's alternative futures. Six alternative futures emerged: nipa sap/juice production and nipa-based food products; nipa syrup and sugar production; vinegar and wine production; traditional nipa thatching with ecotourism; and traditional nipa thatching with historical-cultural tourism; and biofuel.

KEYWORDS:

future alternatives, insights, nipa industry

INTRODUCTION

New norms and sustainable futures in the changing times are among the challenges industries face today. This study was conceptualized to seek insights of alternative nipa industry futures.

This study evolved around the context of sustainability of an agriculture system in production, marketing, investment and development options along with a community-based and mission driven concept with the industry futures at the heart of the study.

Nipa is among the minor forest products with great potential for commercial use. In the Philippines, Malaysia, Indonesia and Thailand the fabrication of thatching panels, is a significant local source of income. In Capiz, particularly in the Municipality Panay and its barangays, nipa is primarily utilized in the production of thatches or shingles, which locals commonly call "pawod" for roofing and distributed within and nearby provinces in island.

In other parts of the country, like Bulacan, nipa is the primary source of raw material in the production of their famous Paombong vinegar, *sasa* syrup and sugar.

The importance of the industry for its potential contribution to the socio-economic growth of the communities involved was instrumental to the conduct of this study, conceptualized to assess and seek insights for alternative futures by benchmarking with nipa-related industry experiences in the county and nearby region.

Statement of the Problem

Generally, the study aimed to determine and analyze the history, present status in terms of problems and challenges that confront the Nipa (*Nypha fruticans wurmb)* industry in Panay, Capiz, Philippines to get insights of the alternative industry futures. Specifically, it addressed the following inquiries:

1. What is the historical background of the Nipa Industry in Panay, Capiz, Philippines?;

2. What is the present status of the Nipa industry in Panay, Capiz, Philippines in terms of: problems encountered and challenges faced by the industry?; and
3. What insights to alternative futures can be drawn from benchmarks with nipa-related industries in the region?

Theoretical Framework

This study was anchored on the theories of New Time of Dr. Bradford Skow (2015) and Futures Thinking and Future Triangles tool of Sohail Inayatullah (2008) along with the Lean Six Sigma pioneered by the Jack Welch of the General Electric Company, the General Systems Theory, originally proposed by biologist Ludwig von Bertalanffy and the Management Theory popularized by Peter Drucker and basic principles of management and marketing.

The New time Theory by Dr. Bradford Scow, a Massachusetts Institute of Technology professor of philosophy, claims that time does not move forward, but rather, everything in time is ever-present. It posits that the past, present and future all exist together whereby, the present and the future are explained by the past (Massachusetts Technology, 2015). On the other hand, the Theory of Futures Thinking and Futures Triangle, invented by Sohail Inayatullah (2008) posits that while a particular future may not predict accurately, by focusing on a range of options, a future can be better prepared for uncertainty. Futures Triangle is a tool for mapping the past, present and the future with the fundamental thought that there are three dimensions that shape plausible futures: the weight of the past (barriers to change/deep structures that resist change); the push of the present (trends/drivers/challenges that pushes fo a certain future); and the pull of the future (the compelling images of the future/ problems). The tension and interaction between these forces creates a possible future space (Sheraz, 2014).

The concept of Lean Six Sigma was necessary in benchmarking the industry with nipa-related industries in the region and the Management Theory of Peter Drucker's point-of-view is about organization as an open-system; management must interact with the environment to gather inputs and return the outputs of production as it recognizes the importance of the organization's relationship with the external environment; organization's objectives encompass both efficiency and effectiveness; organizations contain series of where the whole is greater than the sum of its parts. Further, the General Systems Theory explains the socio-economic behavior of the industry. Ludwig von Bertalanffy advanced what he called the general system theory. The theory describes "a whole of elements and in interrelation, connection with one another". Two major tendencies appeared in work: the systems approach used to handle technical problems of production (i.e. biological relationships) and to investigate systems management and control (i.e. mathematical methods applied to economic based decision-making (Bertanlanffy, 2003).

Conceptual Framework

The Conceptual Framework in Figure 1 shows schematic diagram of the interplay of the nipa industry's past, present in defining the future industry alternatives with new norms and challenges of the changing times with the research paradigm anchored on the theories of New Time Theory, Futures Thinking Theory and Futures Triangle, Systems and General Systems Management, Lean Six Sigma Tool and the principles of management and marketing.

METHODOLOGY

Research Design

This exploratory industry specifically studied the Nipa Industry in the Municipality of Panay, Capiz, Philippines using the mixed methods. The study adopted the grounded theory method and descriptive type of research, both qualitative and quantity. .

The descriptive method was used in the data analysis of the present status of the industry in terms of the problems and challenges encountered; while the historical method was employed in the presentation of the industry history drawn from narratology of case studies and analysis.

Futures triangle, was adopted in drawing insights of the industry futures alternative using the benchmark method on the successful nipa industries in the Philippines and around Southeast Asia.

Respondents and/or Subjects of the Study

The subject of the study was the Nipa Industry in the Municipality of Panay, Capiz, Philippines. Respondents and participants were individuals associated with the industry which included landowner-operators, workers and nipa weavers and marketing agents. Other participants in the study were the key informants interviewed to gather data for the narratology on the industry history.

Table 1 shows the distribution and profile of respondents who participated in the actual survey. Profile of respondents included the frequency and percentage distribution of the profile of the respondents in terms of age, sex, civil status, educational attainment, estimated monthly income and proximity of nipa plantation. See Appendix A.

Other participants in the study were the ten (10) key informants interviewed for the narratology of the industry history and case study: five (5)key informants were identified and interviewed; a nipa plantation owner-operator; one(1) nipa plantation administrator; one (1) retired nipa worker; one (1)divesting nipa operator; and one (1) marketing agent who have sustained the industry during the last thirty (30) years.

Additional insights were drawn from the ten (10) key industry players or nipa traders were also considered for a holistic view of the industry's status and future based on their actual accounts as nipa traders or agents/middlemen.

Sample Size and Sampling Techniques

Using the random a total of two hundred ninety-six (296) nipa-associated respondents participated in this study. Two hundred seventy-one (271) determined using the Cochran formula: $N_i = N_T/(1+ N_T e^2)$, taken by purposive random sampling from the total of eight hundred forty-two (842) identified population associated with the industry by the Provincial Environment and Natural Resources Office, Capiz (PENRO, 2016); and ten (10) key informants for nipa status, who were not part of the 271 surveyed.

In addition, there were nine (10) marketing agents, all registered with the Provincial Environment and Natural Resources Office with authority to transport nipa shingles from plantation/ warehouse to points-of-sale in the Province and around Panay Island and Region VI. They were the informants on nipa marketing,

Research Instrument

A researcher-made survey questionnaire validated, reliability tested and translated in the vernacular was used in the study. An interview Guide translated in vernacular was also used for key informant interviews.

Data Gathering Procedure

Different statements of the problem required data to be gathered and specific research methods to be used. A data gathering map was made in support aligned with the conceptual framework of the study illustrating the deliverables of this study. Figure 2 illustrates that data gathering procedure used for every data required, also required specific research method. Data on specific statement of the problem were dealt with individually then cross-analyzed with other data and observations to arrive to a consolidated data and analysis required by the study.

Data Analysis Procedure

All results and analysis were crossed analyzed with previous studies and secondary data. Data analysis included descriptive statistics: frequency, ranking and percentages; and benchmark analysis. In-depth analysis of the nipa industry was done in the context of business-economics, mission-driven and community-based industry using a circular Strengths-Weaknesses-Opportunities-Treats (SWOT) Model.

The present status of the industry in terms of problems and challenges was analyzed considering the 5Ps of marketing (Product, Price, Place, People and Promotion); and production was evaluated along the modern day's resources or the 'Ms' of management: Man, Money, Minute, Material and Moment. On the other hand, the industry challenges were also drawn from the surveys and interviews as perceived by industry players.

Ethical Considerations

Participation of people associated with the nipa industry, surveyed and interviewed were voluntary and were assured that all these were strictly for the use of the study. Identities of participants/respondents were treated ethically.

RESULTS AND DISCUSSIONS

Key findings of this study were hopeful insights of the alternative industry futures.

History of the Industry

This study had established the antiquity of the century-old local industry dates back as early as 1910. History of the industry had given insights to why the industry had laid-back despite the advances in technology. There were indices of non-interest among the heirs of the industry. The younger generation of the people associated to the industry had perceived life in the industry as not promising thus, preferred to migrate for employment than stay in the industry.

Recounts from key informants that management of the nipa operations were transferred from one generation to the next not for knowhow or interest but primarily because of death and the heirs (wife or children) had no other choice but to take-over and this been handed down over generations. Two case studies were made to draw the history of the industry and had shown that it had been transferred to four to five generations over the century.

Figures 3 and 4 present the Timelines showing the history of the industry from two case studies.

Status of the Industry

Status of the industry was viewed in terms of problems and challenges. Problems of the industry were evaluated on two major areas: production and marketing.

Industry Problems. In terms of production, the production processes were as old as its history. While there were five major resources available for the industry, namely: skilled workers; abundant raw materials; money for profits and money for livelihood, labor are expression of time or minute; and live experiences of workers translates to workers' skill necessary to the industry as moment, however, records of the Capiz Provincial Office of the Department of Natural Environment and Resources (the national agency in-charge of the industry), production capacities and volume were low.

Records had shown that the Municipality of Panay, Capiz, Philippines and its barangays were the only enlisted source of nipa for permits to transport. Further, records had shown over the last three years (2013-2016) an annual average nipa transported was at 3.8 million shingles per year with listed area of 219.67 hectares which by computation, was only thirty (30) percent of the potential capacity of the industry. Land resources were underutilized as benchmarks on production of mature plantation could produce 51,148 nipa shingles per year per hectare, then Panay nipa production capacity would be 11.23 million shingles per year. Further, the records had shown to be underreported considering the two operators combined land holdings for plantation was about 450 hectares.

Labor hours or man-days were also underutilized; noted was the declining number of skilled workers, worker migration to urban areas and entry of neophyte weavers who were associated to the industry by circumstance like marriage to a nipa worker or family associated to the industry.

Industry problems in terms of marketing showed that nipa markets had practically remained unchanged but challenged by new entrants, new technologies, new and alternative products available to replace or as an option to societies; pricing was dictated by the middlemen or traders; price had remained low over the last three years. Markets were limited to Iloilo, Aklan and Antique; with Iloilo province as the prime market of the industry. The industry had 'pawod' as the sole product of the industry. Other related product such as vinegar and delicacies were only for personal consumptions. There were twenty major nipa traders along with their respective markets, of which had been in the trade for more than thirty (30) years.

In terms of its marketing, 5Ps of marketing were considered: product, price, people, promotion and place. The product, nipa shingles while was strongly backed-up by the abundance of its raw materials, much of the raw materials were wasted as volume of production was low; price dynamics of nipa was not influenced by the supply-demand-price mechanisms of a market but highly characterized by a buyers' price unique mechanism whereby traders dictate the volume, price and terms of sale; and people associated to the industry had remained rural and marginal.

Challenges of the Industry. The industry is and will be challenged by the conversion of agricultural lands to the promise of real estate; shifting away of people from utilizing nipa shingles for house roofing towards the options available in the market; the flourishing product alternatives at a lesser cost in the long run; and the growing markets available and wider considering the Roll-on-Roll-off (RoRo) infrastructure.

Insights to Alternative Industry Futures. In the context of Futures Triangles, the plausible future of the nipa industry in Panay were benchmarked to be the viable and sustainable investment and development options. The futures triangle presents a way to map the complex scenarios of the future. The future Nipa industry was seen as a socio-economically, historically and culturally dynamic industry

shaped by the various forces: the problems, challenges and the influence of its history.

Pulls of the present. What pulls the industry towards a particular future were the various problems encountered. There was the negative pull of the migration of skilled workers to urban areas; the market-dictated price mechanisms; traditional and low volumes of production; backward skills; and absence of interest in by the heirs of industry players. The many problems both in production and marketing pulls the industry to understand the future to where these problems would bring the industry should there be no actions taken.

The Push of the futures. The industry is pushed by the challenges coupled by the benchmarks with nipa-related industries of Bulacan, Surigao del Sur, Malaysia and Thailand. The industry pushed by the challenge to complement the antiquity of the industry, the antiquity of the culture of the locality being the house of the biggest bell in Asia and the presence of the new technology and alternate products for nipa shingles. The industry is further pushed by the challenges of the conversion of agricultural lands to real estate together with the unwillingness of the nipa operators to explore sustainable socio-economically viable investments. Mission driven and community-based concepts further challenges the industry. However, for the industry to have a sustainable future, the need to address the forces that pulls the industry towards the compelling images of the future.

Weight of the Future. History of the nipa industry represents the weight of the future. What holds back the industry to move forward over the last century were the deep-rooted structures that had become barriers to change. Timelines from case studies had shown a laid-back attitude of industry operators; data had shown that the transfer of technology or business was not by interest or knowhow but rather because an heir, a wife or child, need to take over because of death; income from nipa production was not the sole source of income for operators; structures had practically not changed based on recounts of key informants.

In a combined analysis using the futures triangle tool, six alternative futures emerged: 1) nipa sap/juice production and nipa-based food products; 2) nipa syrup andsugar production; 3) vinegar and wine production; 4) traditional nipa thatching with ecotourism; 5) traditional nipa thatching with historical-cultural tourism; and 6) biofuel.

CONCLUSIONS

The Nipa industry is a century old industry. The production processes and management were as old as its history. The industry had shown to be a "family affair", engaging every member of the family to be associated with the industry for various tasks like weaver, harvester, trader or worker.

Status of the industry when benchmarked with other high earning nipa-related industries showed to have a great potential to develop. The promise for the nipa industry may be considered not being at its brink but rather at its breaking through the boundaries of a traditional system and management towards a socio-economically and sustainable industry.

Six alternative industry futures were identified, namely: 1) nipa sap/juice production and nipa-based food products; 2) nipa syrup and sugar production; 3) vinegar and wine production; 4) traditional nipa thatching with ecotourism; 5) traditional nipa thatching with historical-cultural tourism; and 6) biofuel.

RECOPMMENDATIONS

The century-old Nipa Industry of Panay, Capiz, Philippines, is an institution. It is a true test of how the industry had survived and sustained the industry that locals may take pride and preserve its antiquity.

While the industry is both at its brink and at its breaking-through, nipa operators as key leaders of the industry may begin to think outside the box and explore more options to preserve the industry without compromising the history it had gained. While challenges were many, the industry may consider its vast resources and avail of the good practices of other nipa-related industries.

It is highly recommended to continue the existing industry but augment the current position with investment and development options from the six identified alternative futures with the most viable options may be the vinegar and sugar production. Any or both would be socio-economically beneficial to all involved in the industry and continue to live on the lived and rich experiences of the industry.

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APPENDIX 1

Table 1. Distribution and Profile of Respondents.

Description	Frequency	Percentage (%)
Age Below 18 years old	48*	17.71
18 - 40 years old	92	33.95
41 - 63 year old	113	41.70
Above 63 years old	18	6.64
	271	**100.00**
Sex Male	58	21.40
Female	213	78.60
	271	**100.00**
Civil Status		
Single	69	25.46
Married	194	71.59
Widow/widower	7	2.58
Separated	1	0.37
	271	**100.00**
Educational Attainment		
Elementary	106	39.11
High School	86	31.74
College	79**	29.15
	271	**100.00**
Estimated Monthly Income		
below PHP 8,000.00	264	97.42
PHP 8,000.01 - PHP 15,000.00	5	1.85
P 15,000.01 up	2	0.74
	271	**100.00**
Proximity of Nipa Plantation to Home		
100 meters and below	142	52.40
101 to 500 meters	19	7.01
501 meters to 1 kilometer	43	15.87
above 1 kilometer	67	24.72
	271	**100.00**

* 7 respondents, below 15 years old; 9 respondents, 15-17 years old
** 15 weavers during weekends/employed professionals

APPENDIX 2

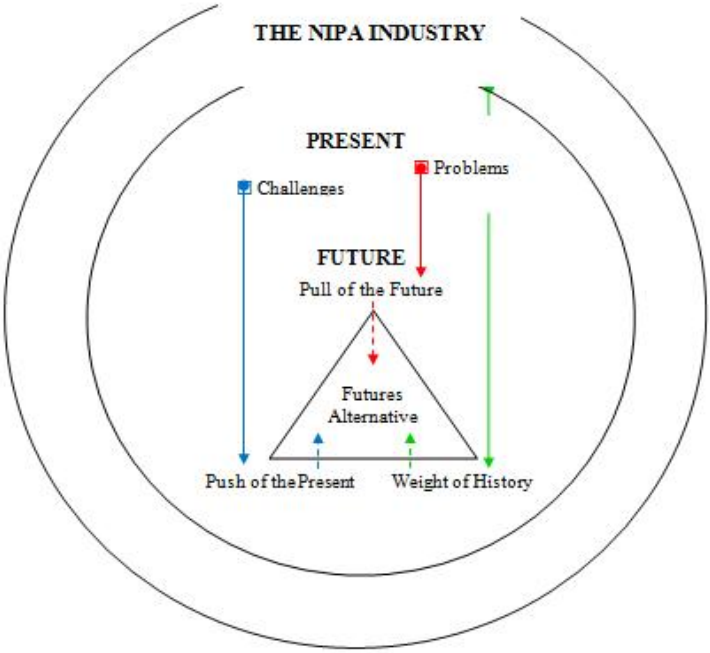

Figure 1. The schematic diagram in determining the insights for the alternative nipa industry futures.

APPENDIX 3

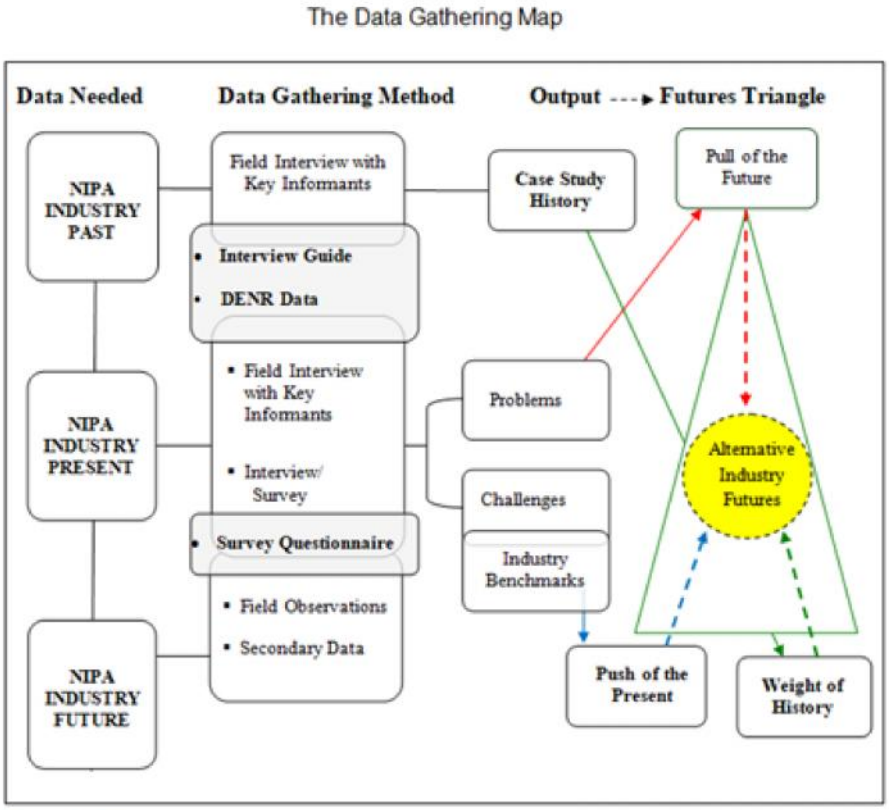

Figure 2. The data gathering map.

APPENDIX 4

Nipa Industry Case Study Timelines

Case Study [1] Timeline

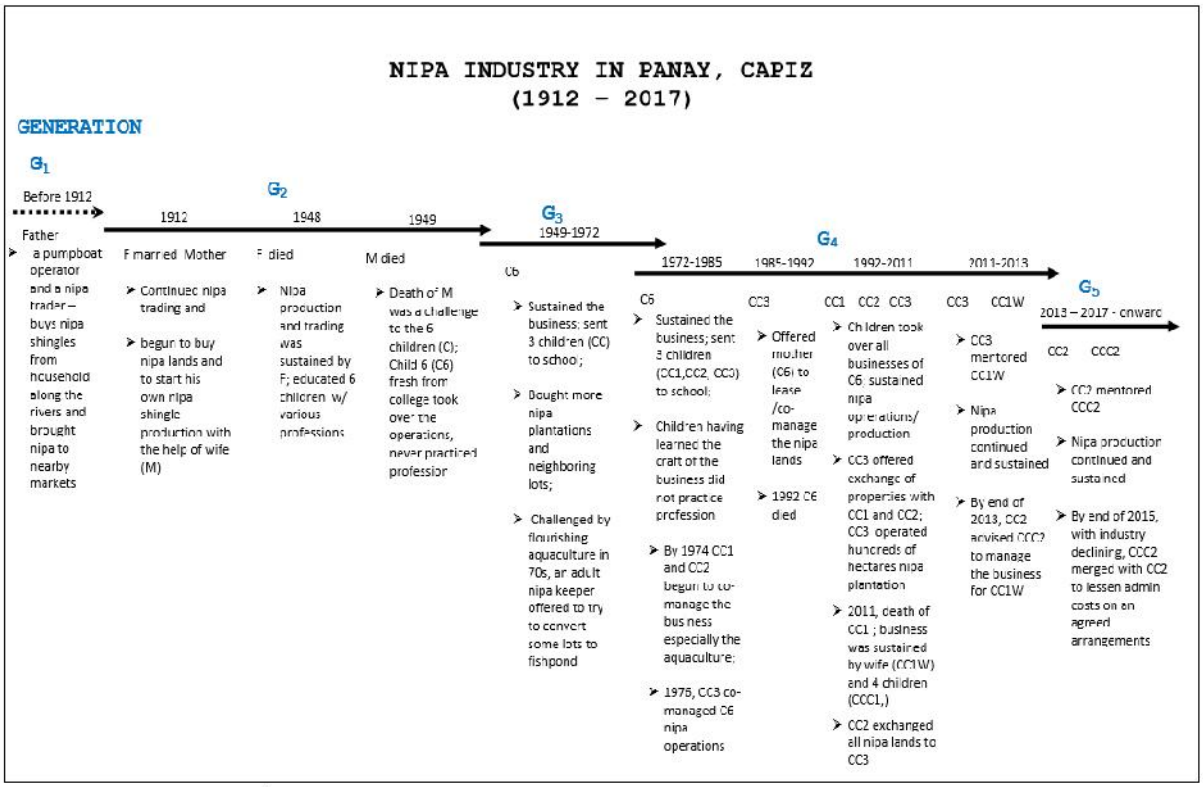

Figure 3. Case Study[1] Timeline of Nipa Industry in Panay Capiz.

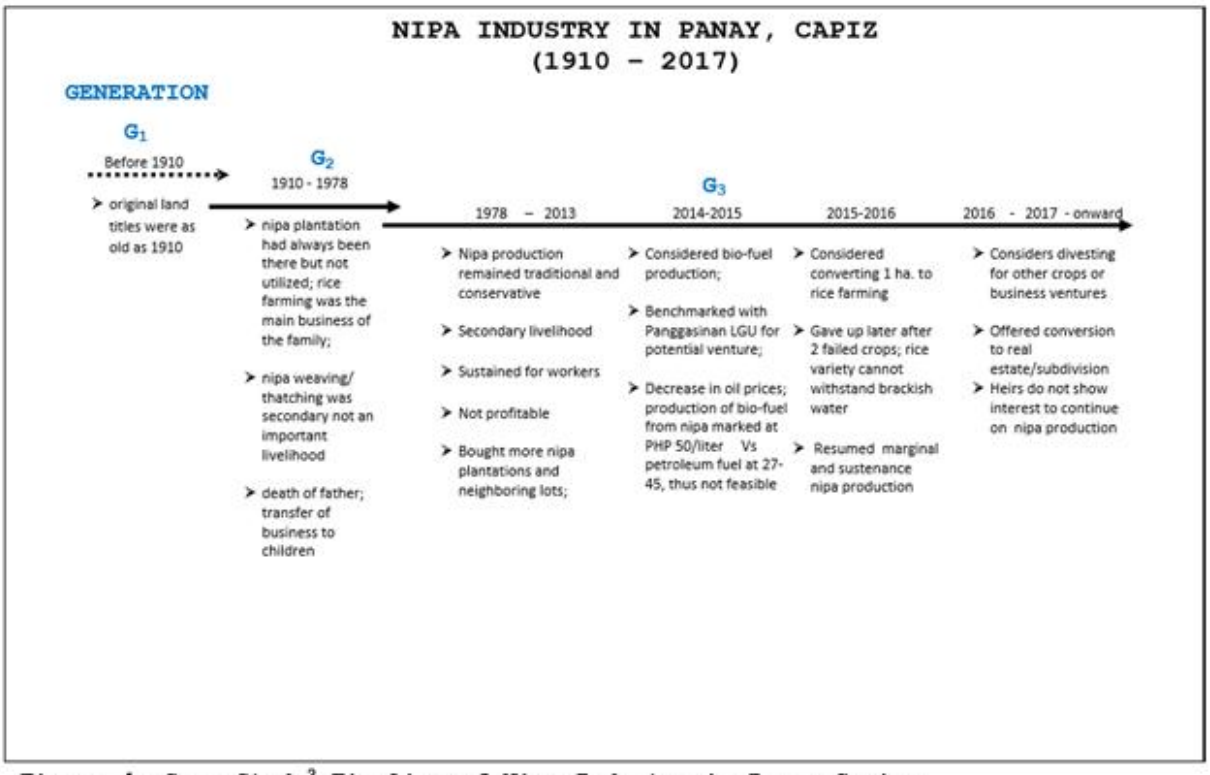

Figure 4. Case Study[2] Timeline of Nipa Industry in Panay Capiz.