



29 November 2021

Dr. Antonio P. Abamo - Over-all Project Leader
Dr. Lorina A. Galvez - Co- Project Leaders
Engr. Eldon P. De Padua
Engr. Wilmar P. Alfeche
Dr. Ana Marquiza Qulicot
Dr. Harvie P/ Portugaliza
Dr. Jonah Flor Orano
Dr. Catherine Arradaza
Dr. Dario Lina

Dear **Dr. Abamo et.al**,


This is to officially inform you of the approval of your research proposal entitled "**Comprehensive Baseline Documentation and Product Market Profiling of the Jackfruit Industry in the Philippines**" with funding support from the Futures Thinking Funds of Sen. Pia Cayetano (GAA funds) amounting to one million seventy three thousand seven hundred ten and forty centavos (**P1,073, 710.40**) for the one year implementation (December 1, 2021 to November 30, 2022).

This also serves as an official **NOTICE TO PROCEED** for the implementation of this project. Please refer below for the details:

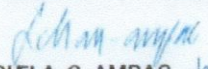
Research Title	Project Code	Amount
Comprehensive Baseline Documentation and Product Market Profiling of the Jackfruit Industry in the Philippines	VSU-FTP-2021-2	1,073,710.40

Thank you and I hope that all the expected project outputs will be delivered on time .

Very truly yours,


EDGARDO E. TULIN
President

Certified Funds Available :


LOUELA C. AMPAC 11/24/21
Director for
Financial Management

cc: Office of the Director for Research
Office of the President
Project Staff File

Futures of Langka: Langka All You Can

Project Proposal

Delivering Department Unit	Department of Business and Management Department of Food Science and Technology Department of Agricultural and Biosystems Engineering Department of Geodetic Engineering College of Veterinary Medicine Department of Computer Science and Technology Department of Horticulture
Project Title	Comprehensive Baseline Documentation and Product-Market Profiling of the Jackfruit Industry in Philippines Objectives: <ol style="list-style-type: none">1. Conduct Needs Assessment and Gap Analysis (NAGA) along the major segments of the Jackfruit value chain in Philippines;2. Establish baseline information to understand the status of jackfruit production in Philippines;3. Conduct a survey on stakeholders perception on emerging product and market, and export jackfruit products for jackfruit in Southeast Asia; and4. Suggest policy implications for the future of the jackfruit industry.
Project Proponents	Project Leader: Dr. Antonio P. Abamo Department of Business and Management tonyabamo@vsu.edu.ph Co-project Leaders: Dr. Lorina A. Galvez Department of Food Science and Technology lorina.galvez@vsu.edu.ph Engr. Eldon P. De Padua Department of Agricultural and Biosystems Engineering Visayas State University eldon.depadua@vsu.edu.ph Engr. Wilmar P. Alfeche Department of Geodetic Engineering Visayas State University

	<p>wilmar.alfече@vsu.edu.ph</p> <p>Dr. Ana Marquiza Quilicot College of Veterinary Medicine Visayas State University amm.quilicot@vsu.edu.ph</p> <p>Dr. Harvie P. Portugaliza College of Veterinary Medicine Visayas State University hportugaliza@vsu.edu.ph</p> <p>Dr. Jonah Flor V. Orano Department of Computer Science and Technology jonahflor.orano@vsu.edu.ph</p> <p>Dr. Catherine Arradaza Department of Horticulture catherine.arradaza@vsu.edu.ph</p> <p>Dr. Dario Lina Department of Horticulture dario.lina@vsu.edu.ph</p> <p>Project Staff:</p> <p>Mr. Ian Dave B. Custodio (<u>Data analytics</u>) Instructor College of Management and Economics davecustodio@vsu.edu.ph</p> <p>Mr. Gideon Niel D. Tan (<u>Market Analyst</u>) Instructor Department of Business and Mgt gideon.tan@vsu.edu.ph</p> <p>Ms. Hadasha N. Bongat (<u>Agribusiness Development</u>) Instructor Department of Business and Management hadasha.bongat@vsu.edu.ph</p>
Project Collaborators	<p>DA Regional Field Office 8 (DA-RFO 8) Local Agriculture Offices (PAO, MAO, CAO) LGUs DOST DTI Manufacturers, Traders, Processors Industry Associations/Cooperatives Jackfruit Farmers Associations</p>
Rationale	<p>Region 8 is developed to be the jackfruit capital in the country. More research endeavors have been done by different Institutions including DA and SUC's to strengthen the jackfruit Industry in the region. Efforts were done on the production to increase the yield, varietal improvement, disease protection and</p>

	<p>even food processing. However, during our literature search, very scanty data on production was observed. Minimal data for production, no. of hectares planted with jackfruit, number of farmers engaged in jackfruit farming, number of bearing trees, number of yield per tree, major season production, minor season production, researches on jackfruit conducted in the past years and other relevant data important in figuring out the status of jackfruit industry in the region.</p> <p>In this connection, it is necessary then to establish baseline information for us to understand the status of jackfruit production not only in Eastern Visayas but in the country as a whole and see what still remains undone. This can be done by generating a systematic baseline information database and suitability maps reflecting the status of jackfruit production in the Philippines as influenced by different external and intrinsic factors affecting jackfruit yield. Moreover, it is a very necessary move to visualize the status of the jackfruit industry in the country especially in its preparedness to go global since the internationalization plan to export food products globally can only be sustainable if we have enough raw material supply.</p> <p>On the other hand, according to USDA, one hundred sixty-five grams of raw jackfruit contains calories of 157 g, fat of 1.1 g, sodium of 3.3 mg, fiber of 2.5 g, sugars of 32 g, protein of 2.8 g, vit C of 22.6 mg, potassium of 739 mg, an amount of Vitamin A and magnesium. It also contains antioxidants which supports heart health, enhances immunity, may improve sleep, strengthen bones and lowers risks of Type 2 diabetes. Generally these components are all good for the health and wellness for food consumers.</p> <p>This product is a good material for food processing which includes vacuum fried jackfruit, dehydrated jackfruit, jackfruit jam, marmalade using the main pulps that constitute 30% of the fruit weight. However other parts of the fruit which constitute 70% including seeds, rags ,pith, sees coat and peel , can also be processed into food products like jackfruit seed flour (Cuadra and Galvez,2017), jackfruit rags meatloaf (Cortes & Galvez,2015), jackfruit patty, jackfruit rags-tuna canned product (Bornias & Lauzon,2017) , jackfruit sauces, vinegar, wine, coffee-like product , vacuum fried jackfruit seeds (Montajes & Lauzon,2014), etc. If zero waste processing can be done then there is a big margin for the farmers.</p> <p>In the current market the demand for healthy food to the vegan consumers is high. Since these types of consumers will not eat meat, they need to use a raw material that can replace meat in developing their food products. Jackfruit is a good raw material since it has a bland taste that can easily absorb or blend with other flavors. Aside from that it also has a feature that mimics the physical appearance of meat. It can substitute meat in any meal that features pulled or shredded meat. It can also be used as a vegetarian alternative to pull-apart pork for street tacos. Cooked jackfruit can also be marinated in a buffalo or Caesar dressing, shred & stuff in a wrap. Nachos, salads & loaded baked potatoes are all additional opportunities for using jackfruit in place of pulled meats (https://www.verywelllift.com).</p>
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	<p>Despite the current and emerging potential of jackfruit as a profitable agribusiness enterprise, there is still a dearth of systematic <i>albeit</i> specific production and market information supportive of the need for a targeted and competitiveness-enhancing investment of the industry addressing both the local and global demand. In Eastern Visayas alone, there is a shortage of 85.35% for fresh jackfruit demanded from the region while 99.97% for processed forms (dehydrated and vacuum-fried) to cater the demand within and outside the region (DARFO VIII, 2018). This market opportunity could easily translate to generate remunerative options for value chain operators.</p> <p>It is then important to document the supply, the production and consumptive utilization of jackfruit so that processing of diversified product formats in the near future can strategically catch up with market demand not only in the Philippines but other countries of Southeast Asia as well. Hence, this study, strengthens the product-market information support for a more comparatively advantageous jackfruit industry in the near future.</p>
Project Duration	One (1) year
Total Budget <ul style="list-style-type: none"> VSU Collaborating partner 	<p>Php 1,000,000.00</p> <p>For negotiation</p>

I. Proposal Details.

Logical Framework					
Objectives	Activities	Outputs	Verifiable Indicators	Means of Verification	Assumptions
1. Conduct Needs Assessment and Gap Analysis (NAGA) along the major segments of the Jackfruit value chain in Philippines;	• Field Survey	• Survey Report	• Inventory of identified needs and gaps from the Survey Report	• Documentation of actual visits/interviews /consent	<ul style="list-style-type: none"> Accessible cross-border travel Project staff and field researcher are fully vaccinated Respondents and key informants are supportive to the conduct of the quantitative and qualitative surveys
	• Focused Group Discussion (FGD)	• FGD Report highlighting major gaps and needs	• Transcript of FGD result	<ul style="list-style-type: none"> Documentation of the actual date and conduct of FGD Official communication documents 	
	• Key Informant	• KII report highlighting	• Transcript of KII result	• Documentation of the actual	

	Interview (KII)	thematic analysis result		date and conduct of KII ● Official communication documents	
2. Establish baseline information to understand the status of jackfruit production in Philippines;	<ul style="list-style-type: none"> ● Coordination with stakeholders (communication letters, virtual meetings, MOA) ● Online Survey (using Google Forms) ● On-site data gathering (if deemed necessary) ● Consolidation of data 	<ul style="list-style-type: none"> ● Baseline information database of the jackfruit industry in the Philippines 	<ul style="list-style-type: none"> ● Inventory of baseline information 	<ul style="list-style-type: none"> ● Official communication documents ● Documentation of actual visits/interviews /consent/etc 	<ul style="list-style-type: none"> ● All relevant secondary data are available and complete ● Accessible cross-border travel ● Project staff and field researcher are fully vaccinated ● Respondents and key informants are supportive to the conduct of the quantitative and qualitative surveys
	<ul style="list-style-type: none"> ● Coordination with stakeholders (communication/request letters, virtual meetings, MOA) ● On-site data gathering (if deemed necessary) ● Consolidation of data ● Analytic Hierarchy Process Model Generation 	<ul style="list-style-type: none"> ● Jackfruit Suitability Map for the Philippines 	<ul style="list-style-type: none"> ● Thematic Maps from secondary data ● Map of Economic Crops in Philippines ● Jackfruit Suitability Analytic Hierarchy Process (AHP) Model 	<ul style="list-style-type: none"> ● Official communication documents ● Documentation of actual visits/interviews /consent/etc 	

	<ul style="list-style-type: none"> Map generation 				
3. Conduct a survey on stakeholders' perception on emerging product and market, and export jackfruit products for jackfruit in Southeast Asia; and	<ul style="list-style-type: none"> Key Informant Interview (KII) 	<ul style="list-style-type: none"> KII report 	<ul style="list-style-type: none"> Transcript of KII result 	<ul style="list-style-type: none"> Documentation of actual interview of key informants Official communication documents 	<ul style="list-style-type: none"> Respondents and key informants are very supportive to the conduct of the quantitative and qualitative surveys Accessible data on emerging and exported jackfruit products in the web
	<ul style="list-style-type: none"> Consumer preference survey 	Survey report	Summary of the the results	<ul style="list-style-type: none"> Documentation of actual visits/interviews /consent/etc 	
	<ul style="list-style-type: none"> Data mining on emerging products, market and exported jackfruit food products in SEA 	<ul style="list-style-type: none"> Database of emerging and exported jackfruit products in SEA 	<ul style="list-style-type: none"> Inventory of jackfruit products in SEA and exported jackfruit products 	<ul style="list-style-type: none"> Official websites of agencies and publications with data on jackfruit products and market in SEA 	
	<ul style="list-style-type: none"> Online survey using web-based data gathering tool 	<ul style="list-style-type: none"> Survey report on stakeholders' perceptions 	<ul style="list-style-type: none"> Summary report on the stakeholders' perception 	<ul style="list-style-type: none"> Official websites of agencies and publications with data on jackfruit products and market in SEA 	
4. Suggest policy implications for the future of the jackfruit industry.	<ul style="list-style-type: none"> Dialogue and validation of results with the industry players and stakeholders 	<ul style="list-style-type: none"> Multi-stakeholder recommendations built from collective goals and shared interests, identified constraints, and designed solution pathways 	<ul style="list-style-type: none"> Crafted document from multi-stakeholder dialogues 	<ul style="list-style-type: none"> Documentation of the actual date and conduct of dialogues Official communication documents 	<ul style="list-style-type: none"> Stakeholders are visionary regarding the future of jackfruit industry. Manageable conflicts of any form between stakeholders

II. Project Details

Target Beneficiaries	Jackfruit growers (Individual /Association) LGUs DA-RFO 8 DOST, DTI,DAR & other line Agencies NGOs, POs Jackfruit Food Processors Vegan Community
Discipline (<i>check all that apply</i>)	
<input type="checkbox"/> Education Science, Teacher Training <input type="checkbox"/> Fine, Applied Arts <input type="checkbox"/> Humanities <input type="checkbox"/> Religion, Theology <input type="checkbox"/> Social, Behavioral Sciences <input type="checkbox"/> Business Administration Related <input type="checkbox"/> Law, Jurisprudence <input type="checkbox"/> Natural Science <input type="checkbox"/> Mathematics <input checked="" type="checkbox"/> IT-Related	<input type="checkbox"/> Mass Communication, Documentation <input type="checkbox"/> Medical, Applied Professions <input checked="" type="checkbox"/> Trade, Craft, and Industrial Engineering <input checked="" type="checkbox"/> Engineering <input type="checkbox"/> Architectural, Town Planning <input checked="" type="checkbox"/> Agricultural, Forestry, Fisheries <input type="checkbox"/> Home Economics <input type="checkbox"/> Service Trades <input type="checkbox"/> Maritime <input type="checkbox"/> Others (specify) _____
Priority Area (<i>Check all that apply</i>).	
<input checked="" type="checkbox"/> Health, Life Sciences <input checked="" type="checkbox"/> Improving environmental resilience <input type="checkbox"/> Improving energy security	<input type="checkbox"/> Future cities <input checked="" type="checkbox"/> Agritech <input checked="" type="checkbox"/> Digital, innovation, and creativity
Responsiveness to UN Sustainable Development Goals (<i>Depending on the research type and platform, you may check more than one (1) SDG</i>)	
<input checked="" type="checkbox"/> SDG 1. End poverty in all its forms everywhere. <input checked="" type="checkbox"/> SDG 2. End hunger, achieve food security, and improve nutrition and promote sustainable agriculture. <input checked="" type="checkbox"/> SDG 3. Ensure healthy lives and promote well-being for all at all ages. <input type="checkbox"/> SDG 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities at all. <input checked="" type="checkbox"/> SDG 5. Achieve gender equality and empower all women and girls.	<input type="checkbox"/> SDG 10. Reduce inequality within and among other countries <input type="checkbox"/> SDG 11. Make cities and human settlements inclusive, safe, resilient, and sustainable <input checked="" type="checkbox"/> SDG 12. Ensure sustainable consumption and production patterns <input checked="" type="checkbox"/> SDG 13. Take urgent action to combat climate change and its impacts <input type="checkbox"/> SDG 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development

<p><input type="checkbox"/> SDG 6. Ensure availability and sustainable management of water and sanitation for all.</p> <p><input type="checkbox"/> SDG 7. Ensure access to affordable , reliable, sustainable and modern energy for all.</p> <p><input checked="" type="checkbox"/> SDG 8. Promote sustained , inclusive and sustainable economic growth, full productive employment, and decent work for all.</p> <p><input type="checkbox"/> SDG 9. Build resilient infrastructure , promote inclusive and sustainable industrialization and foster innovation.</p>	<p><input checked="" type="checkbox"/> SDG 15. Protect, restore and promote sustainable use of terrestrial systems, sustainable manage forests, combat desertification and reverse land degradation and halt biodiversity loss.</p> <p><input type="checkbox"/> SDG 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels.</p> <p><input checked="" type="checkbox"/> SDG 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.</p>
<p>Explain how the project responds to SDG selected above.</p>	<p>SDG 1: Provides sustainable livelihood to jackfruit farmers through domestic market and export opportunities.</p> <p>SDG 2: Jackfruit production and processing augment family income which caused them to be more secure in accessing nutritious food on the table.</p> <p>SDG 3: If every family has enough income for the family the health and well-being of the family members are assured. This can be achieved through jackfruit production and processing.</p> <p>SDG 5: In the Jackfruit industry, the women are given equal opportunity with men, be it in the production, processing or distribution in the food value chain.</p> <p>SDG 8: The jackfruit industry will provide employment especially in the production, processing and marketing.</p> <p>SDG 12: Integrating the influence of the different stakeholders (producers, policymakers, government agencies, consumers, processors, etc.) of the jackfruit industry will</p>

	<p>ensure sustainable consumption and production patterns.</p> <p>SDG 13: The identification of the most adaptable jackfruit variety to the climate of Eastern Visayas will ensure that jackfruit production will be sustainable despite the threats of climate change.</p> <p>SDG 15: Identification of the most suitable areas for jackfruit production ensures the sustainable use of terrestrial systems.</p> <p>SDG 17: The conduct of research on increasing jackfruit production and market, and distribution of jackfruit products to the global market will initiate and strengthen collaboration with international partners.</p>
<p>Explain how the project responds to the <i>Ambisyon 2040</i>.</p>	<p>Matatag The project could help to build a high-trust society with a strong sense of community among local farmers including jackfruit farmers, processors, manufacturers, and other stakeholders. It could also create volunteer opportunities, and encourage Filipinos to spend time to serve the community, help others who are in need, and contribute to various causes.</p> <p>Maginhawa The project could lead to the opening of opportunities for decent jobs that bring sustainable income, including opportunities for entrepreneurship.</p> <p>Panatag The project could help local farmers and consumers to live a productive and healthy lifestyle (physically and economically) in order to achieve their goal to live long and enjoy a comfortable life upon retirement. It could also open opportunities for them to supplement their resources to cover unexpected expenses, and accrue savings.</p>

III. Schedule of Activities.

Main Activities		No. Mo.	Months											
			1	2	3	4	5	6	7	8	9	10	11	12
Obj. 1: Conduct Needs Assessment and Gap Analysis (NAGA)														
			Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	Hiring of Research Assistants. Research team meetings for specific project planning activities.	1												
2	Stakeholders engagement, official communications, and MOA signing	2												
3	Conduct of field surveys, focused group discussions, and key informant interviews	4												
4	Data management, transcription, coding, and analysis	2												
5	Synthesis and writing of results to be presented during multi-stakeholder dialogues	1												
Obj. 2: Establish baseline information to understand the status of jackfruit production in Eastern Visayas;														

4	Data management, transcription, coding, and analysis	2												
5	Synthesis and writing of results to be presented during multi-stakeholder dialogues	1												
Obj. 4: Suggest policy implications for the future of the jackfruit industry.														
1	Dialogues and validation of results with the industry players and stakeholders	1												
2	Crafting one document from multi-stakeholder dialogues	1												
3	Preparing final project reports and scientific publications	1												

IV. Work and Financial Plan

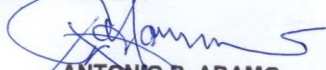
I. Work Plan for the Project		
Activity	Output	Date
Hiring of Research Assistants. Research team meetings for specific project planning activities.	Project plan details Identified stakeholders of the project	December 2021
Stakeholders engagement, official communications, and MOA signing	Signed MOA	January, 2022 – February, 2022

Field survey	Survey report	March, 2022 – June, 2022
Focused group discussion	FGD report highlighting major gaps and needs	
Key Informant Interview	KII report highlighting thematic analysis result	
Data management, transcription, coding, and analysis	Findings	July, 2022 – August, 2022
Synthesis and writing of results to be presented during multi-stakeholder dialogues	Project status report	September, 2022
Gathering of secondary data from responsible government agencies	Database	February, 2022
Collecting data relating to langka farming, such as climatic, edaphic, biotic, and physiographic factors, socio-economic factors, langka intrinsic factors, and farming management factors.	Database	March, 2022 – June, 2022
Mapping, spatial data analysis, and factor analysis	Map of Economic Crops in EV and Suitability Map	July, 2022 – August, 2022
Data mining on emerging products and market for jackfruit in SEA	Database of emerging jackfruit products in SEA	December, 2021 – January, 2022
Online survey using web-based data gathering tool	Survey report on stakeholders perceptions	February, 2022 – April, 2022
Dialogue and validation of results with the industry players and stakeholders	Multi-stakeholder recommendations built from collective goals and shared interests, identified constraints, and designed solution pathways	October, 2022
Crafting one document from multi-stakeholder dialogues	Summary report of multi-stakeholder dialogues	November, 2022
Preparing final project reports and scientific publications	Terminal Report Technical or scientific paper for publication	November, 2022

II. Line Item Budget					
Items / Particulars	Q1	Q2	Q3	Q4	Total
Personnel Services					
(3) SRAs @ 23400 per month (Agribusiness (Q1-Q4), Engineering (Q2-Q4), DevCom (Q2-Q4))	70,200.00	210,600.00	210,600.00	210,600.00	702,000.00
MOOE					
Travel	30,000.00	80,000.00	70,000.00	30,000.00	210,000.00
Supplies and materials (handheld GPS, fuel, oil)	100,000.00				100,000.00
Communication	3,000.00	3,000.00	3,000.00	1,000.00	10,000.00
Representation (on call labor services, token incentives for KII respondents etc.)	12,000.00	12,000.00	12,000.00	14,000.00	50,000.00
TOTAL	208,000.00	284,000.00	274,000.00	234,000.00	1,072,000.00


Category / Item/ Description	Quantity
Publications	3
Eastern Visayas' Jackfruit value chain Needs Assessment and Gap Analysis Report	1
Jackfruit Suitability Map	1
Report on stakeholders perception on emerging product and market for jackfruit in Southeast Asia	1
Report on multi-stakeholder recommendations for the future of the jackfruit industry	1
Terminal Report	1

SUBMITTED BY:

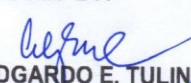

ANTONIO P. ABAMO

Signature over printed Name of Delivering
Project Lead / Point Person

REVIEWED AND ENDORSED BY:


MARIA JULIET C. CENIZA
Signature over printed name of
College / VP

APPROVED BY:


EDGARDO E. TULIN
Signature over printed name of
Agency Head