



The University of  
Papua New Guinea



Australian  
National  
University

**2023 PNG Update**  
**Resilient and diverse development**  
**UPNG Waigani Campus**

**Presentation Topic**

**Assessment of the Impact of Downstream Processing of  
Agricultural Commodities on PNG's Economy: A Case of Cocoa**

**Presenter: Kenneth Baliwasa, Tutor, School of Business and Public Policy,  
University of Papua New Guinea**

# Outline of the Presentation

- Introduction & Background Information of the Study
- Aims and Objectives of the study
- Choice of the Study Area
- Research Methodology – Data Collection Method
- Data Analysis
- Findings from the Study
- Conclusion and Recommendation
- References

# Introduction & Background Information

- Agriculture is the foundation and mainstay of PNG economy. It serves as the backbone of the country in providing food and income for over 80% of the rural population whilst alleviating poverty (Bourke and Harwood, 2009; Asian Development Bank (ADB), 2020; (DNPM, 2017; CISP, 2016). The sector also creates employment and generate revenue for government through export earnings of agricultural commodities which account for 27% of the country's gross domestic product (GDP) (Bourke and Harwood, 2009; CISP, 2016).
- The importance of agriculture is mainly felt in most of the least developed economies (LDC) and to some extent, developed and industrialized nations also share the same sentiment. Many advanced economies at some point rely on agriculture to modernize and transform their economies to where they are now. For example, Malaysia was once at its initial stage rely on certain agricultural crops for export as the sector acts as vital engine that drives the country's economic transformation and industrialization (World Bank, 2019).

# **The Significant role of Cocoa in Shaping the Economies of Producing Countries**

- Cocoa is of significant economic importance for producing and consuming countries, and is well regarded as the key ingredient of raw material for many confectionary and chocolate manufacturing companies, including pharmaceutical and cosmetics industries (Faila, Hartatri, Rizki, Akbar, 2021; Gayi and Tsowou (UNCTAD, 2016).
- It provides significant economic benefits such as export revenue, income for farmers and employment (UNCTAD, 2016; Emmanuel and Qineti, 2018).
- Production, processing and marketing of cocoa as a agricultural cash crop plays a significant role in shaping the economy of producing countries (Gayi and Tsowou, United Nation Conference on Trade and Development (UNCTAD), 2016, p.2).
- In Ghana, the second largest cocoa producing country in terms of global production after Ivory Coast (International Cocoa Organization, 2021) contributes almost 30% in export earnings and creates employment for almost six million people (Anthonio and Aikins, 2009; Gockowski et al., 2011; USDA, 2012).

# **The Significant role of Cocoa in Shaping the Economies of Producing Countries**

- In PNG, cocoa is the “third most significant agriculture crop in terms of its economic importance” (CISP 2016) for both government and farmers including actors involved along the cocoa supply and value chain after oil palm and coffee (Bourke and Harwood, 2009).
- It is a rural based crop cultivated by rural village farmers and contributes over K300 million to the Gross Domestic Product (GDP) annually and employ about 151, 000 households (representing over 2 million people) in the coastal regions of PNG depend on cocoa as a main cash crop and it hugely impacts the rural livelihoods”

**Table 2.1 Major Production of Cocoa Producing Countries by Region from 2018 – 2021 (thousand Tonnes)**

	2018-2019		Estimates 2019 – 2020		Estimates 2020 – 2021	
	Total	Percentage	Total	Percentage	Total	Percentage
<b>Africa</b>	3645	76.0 %	3549	74.9%	4005	74.4%
<b>Cameron</b>	280		280		290	
<b>Cote d'Ivoire</b>	2154		2105		2248	
<b>Ghana</b>	812		771		2047	
<b>Nigeria</b>	270		250		270	
<b>Others</b>	129		143		150	
<b>Americas</b>	846	17.7%	903	19.1%	905	17.5%
<b>Brazil</b>	176		201		200	
<b>Ecuador</b>	322		342		350	
<b>Others</b>	349		360		355	
<b>Asia &amp; Oceania</b>	303	6.3%	283	6.0%	265	5.1%
<b>Indonesia</b>	220		200		180	
<b>Papua New Guinea</b>	40		41		42	
<b>Others</b>	43		42		43	
<b>World Total</b>	4794	100.0%	4735	100.0%	5175	100.0%

**Source: ICCC Quarterly Bulletin of Cocoa Statistics (2021).**

# **Transforming Cocoa Sector for Export Diversification**

- An investment in cocoa is an investment in the majority of the population and to positively address the UN millennium goals” (CISP (2016).
- Downstream processing of “cocoa beans into other products such as cocoa powder, cocoa butter and chocolate have been either slow or limited in the past years” (Cocoa Board, (2016).
- This is an area of opportunity for PNG’s cocoa industry to pursue and seek support for investments in further processing of cocoa into intermediate and final finished products.

# Transforming Cocoa Sector for Export Diversification

- Downstream processing is part of the sector diversification strategy which is critically important to reduce economic vulnerability, raise GDP, and secure competitive advantages within product niches, subject to developing newer capabilities and easing of bottlenecks (UNESCAP, 2014).
- Enhancing product sophistication and differentiation, as well as effectively tapping export potential, will assist countries to embark on more sustainable growth and development paths.



## **The Aims and objectives of the study**

1. Examine the impact of downstream processing of cocoa on PNG's Economy in comparison with other cocoa producing countries.
2. Assess employment effects, import substitution and export promotion through structural adjustment of export structure.

# Choice of Study Areas

- A comparative case study analysis was conducted to examine the impact of downstream processing of cocoa to test the propositions of its impact to PNG's economy.
- To what extent can downstream processing of cocoa onshore will contribute to PNG's economic development and growth?
- Empirical literatures were explored in the areas of downstream processing, manufacturing, industrialization, export diversification, structural adjustment and policy redirection.
- Two cocoa producing countries were used to make a comparative case analysis with that of PNG. The two countries are Malaysia and Indonesia.
- In global production rank, Indonesia is ranked seventh (ICCO, 2021) while Malaysia is also captured with cocoa ranked third after oil palm and rubber, export as finished products (World Bank, 2019).

# **Choice of Study Areas Continue**

- Malaysia is selected because of the its massive transformation of the agriculture sector through a structural adjustment and policy changes aimed at industrialization.
- For PNG, the study was conducted in two separate locations which are; National Capital District (NCD) and Maprik district in East Sepik Province. Respondents were not restricted to cocoa growing provinces only but include non-cocoa producing provinces as well because convenience sampling technique was employed where the survey link was sent to respondents to participate.

# Data Collection

- The data sources were both from secondary and primary sources.
- Data collected from secondary sources were empirical research papers in the area of cocoa and processing collected through a search engine such as google scholar. Keywords such as cocoa production, downstream processing, further processing, value adding, agro-processing, agro-industrialization and processed cocoa products were used to download.
- Other secondary sources data were collected from organization's websites; government policy documents; and journal articles.
- Primary data was collected through a survey conducted between November to December in 2021 using online and the field survey where a questionnaire was sent to the respondents to participate in the survey.

# Data Collection

- A questionnaire was designed and carried out through Online survey using the Smart-Survey Application (SSA) for the educated population that reside in NCD.
- These category of participants are selected because they have an adequate level of education and brought up by agricultural farmers to clearly understand what the rational and purpose of this study by relating it to their own and family's experiences.
- Since NCD is a metropolitan city, survey questionnaire was designed in a way to cater for participants across the four regions and the twenty provinces who at least majority have access to communication.

# Data Collection

- Seven questions were designed both general and specific to carry out data collection in PNG. General questions relate to downstream processing of agricultural commodities with specific questions on cocoa production, processing and marketing.
- First three out of the seven questions are general questions designed for closed answer where respondents are to select their preferred choice from the likert scale of 1 to 5. 1 is equals to strongly disagree and 5 is equal to strongly disagree. The other four questions require long answers from the respondents. Following are the samples of the questions used for the survey.

# Data Analysis

- A qualitative data analysis method was applied to analyze the data collected from both primary and secondary sources.
- Analysis are based on the literatures reviewed in chapter 2, two case studies presented in chapter 4 and the primary source of data collected to make comparison. Secondary sources of data were analyzed using the comparative analysis method by way of comparing PNG with other cocoa producing countries in particular Indonesia and Malaysia.

# Data Analysis

- Primary data were analyzed using content analysis by grouping the main themes based on the responses collected from the respondents.
- As cite by Kaevakore (2021) in Kumar (2011), Content analysis “is the process of analyzing the contents of surveys and interviews or observational field notes in order to identify the main themes that emerge from participants responses or observation notes made by the researcher” (Kumar, 2011).
- Main themes collected from the participants’ responses from the questionnaire grouped and analyzed to generate key points and ideas for discussions.



# Results and Discussions

- The discussion of results were observed in the two case studies and primary data collected.
- Literatures reviewed with the description of two case studies reveals that onshore processing has many benefits to contribute to the country's long-term sustainable development and growth.
- While some researchers may argue with these views, there is a need for resource rich countries to diversify their economy.
- Downstream processing of the country's both natural and renewable resources into intermediate and final products is a strategy aimed at diversifying the economy which have greater economic benefits.

# Results and Discussions conti..

- **Table 5.2.6 Shows benefits (direct and indirect) provided by the respondents.**

Impact/Benefits of downstream processing of agricultural products on PNG economy	Number of Participants	Percentage (%)
Generating revenue for the government	54	88.5
Creating both direct and indirect employment	51	83.6
Income for households through sale of agricultural products	49	80.3
Poverty Alleviation	43	70.4
Developing entrepreneurial mindset for self-employment	41	67.2
Creating investment opportunities	36	59.0
Increases export diversification and import substitution	36	59.0
Creating spin-off benefits	34	55.7
Address the issues of food security	33	54.9
Increases foreign exchange reserves	32	52.4
Indirectly address the issues of rural migration	31	50.8
Helps addresses law and order issues in the communities	23	37.7
Reduces environmental destruction	9	14.7
Address climate change problems	7	11.47
Total Number of Participants	61	100

# Findings from the Study

- From the results and discussion it is apparently clear that economic diversification through downstream processing of the country's resources including agricultural products into intermediate and end-consumer products have significant economic benefits for long-term sustainability and growth.
- The impact of such diversification strategy is measured in terms of government revenue, income to farmers, rise in employment, export diversification and import substitution.
- Reducing vulnerability to decline and fluctuations in international market prices.
- However, there are several challenges associated with this diversification strategy at all levels of the value chain that requires strong government commitment and action and stakeholder support through a collaborative and strategic partnership to optimize this economic advantage.

# Findings from the Study conti..

- This will lead to improved quality of life and poverty alleviation.
- In PNG, agriculture and the cocoa sub-sector, including manufacturing receive less consideration and attention by the government in terms of budget allocation.
- This have implications on the sector's overall performance. Also without government support in designing favorable and effective agro-industrial and trade policies to drive the industry forward, this will lead to increase in cost of imports for cocoa related products while at the same time being vulnerable to decline and fluctuations in world cocoa prices. This can have negative implication on the economy of the country.
- It is found that many resource rich developing countries still face several challenges to diversify their economy with some having little progress. This is mostly due to poor government commitment and support, low income and partly due to geographical setting. Challenges are faced both at the national and at the lower level and across sectors. To address some of those challenges confronting the industry, one possible way is to forge a strong and mutual collaboration and partnership at the national, regional and global level in an effort to arrest them collectively.

# **Conclusion and Recommendations**

- Firstly, national leadership, both at political and bureaucratic level is critical to provide strategic direction and foresight to drive socio-economic development of the country.
- With good charismatic and visionary leadership at the forefront, there is a maximum government support to address country's economic problems.
- This can be done through designing of appropriate economic policies such as trade, industrial and agro-industrialization policies to drive this diversification strategy for long-term sustainable growth.

## **Continue..**

- Poor state of country's critical infrastructure is a setback to provide an enabling environment for businesses to flourish.
- Cocoa industry value chain also has challenges to meet its sector targets for increased production and improved quality. Following challenges are common in many cocoa-producing countries such as lack of extension services; shortage of land; lack of information and knowledge on best agricultural practices; high cost of input supplies; diseases and lack of financial services.
- Fostering effective collaboration and partnership by the government with private sector businesses to encourage onshore.
- Allocating significant amount of financial resources to the agriculture and cocoa sub-sector by government through its annual budget will have vast impact on cocoa industry and its related sectors along the cocoa value chain.

# Continue..

- The Government must create and provide enabling environment for processing of cocoa within the country by establishing cocoa processing facilities in major cocoa growing provinces.
- Look at developing sound and favorable agro-industrial and trade policies to attract both local and foreign investment. This can be done by imposing export tariff of like 10% for export of raw cocoa beans while removing export tariff for intermediate and finished cocoa products especially for new investors.
- Reduction or removal of import tariff should also be applied for purchase of other inputs by the processing and manufacturing firms and companies to use it in their processing facilities.
- Provide tax free incentives for all processing and manufacturing industries. For example, newly established firms can be exempted from paying taxes at their initial stage of operation.

# Continue..

- Creating economic zones in majoring cocoa producing provinces to reduce cost and time required for delivery, nearest to seaports and accessible to enabling services such as roads, electricity and telecommunication services. Examples of such initiatives includes Pacific Marine Industrial Zone (PMIZ) in Madang Province.
- Price support and subsidizing input supplies such as fertilizers, pesticides and chemicals for cocoa farmers.
- Government through Cocoa Board should establish a marketing entity to buy cocoa at a fair price which gives a boost to cocoa farmers' morale to produce more with improvement in quality of beans.



# References

- Anthonio, D. C., & Aikins, E. D. (2009). Reforming Ghana's cocoa sector - an evaluation of private participation in marketing. Master Thesis. Luleå University of Technology Master.
- Asia Development Bank. (2020). *Asian Development bank country partnership strategy*.
- Asian Development Bank. (2020). Member Fact Sheet. ADB. <https://adb.org>
- Bourke, R.M. and Harwood, T. (eds) (2009). Food and Agriculture in Papua New Guinea [E-book]. ANU E Press, The Australian National University, Canberra.

# **Thank You.**

## **End of the Presentation**