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STRATEGIC INITIATIVES TO BOOST THE COMPETITIVENESS OF COFFEE PRODUCTION IN PAPUA NEW GUINEA

Eugene E. Ezebilo

Volume 14, Issue 6

www.pngnri.org

Key Points

- Coffee is one of the most important agricultural commodities in Papua New Guinea (PNG) for the government and farmers.
- PNG has suitable environmental and climatic conditions for growing high-quality coffee.
- Coffee growers face challenges such as inadequate facilities for processing coffee, inadequate extension services and restricted access to finance.
- Coffee production in PNG can be improved by promoting effective extension services for all coffee growers and replacing coffee trees that have passed productive age.
- Other ways to improve production are: provide loans at low interest rates to coffee growers who want to expand production, and promote modern production and processing techniques.

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June 2021



STRATEGIC INITIATIVES TO BOOST THE COMPETITIVENESS OF COFFEE PRODUCTION IN PAPUA NEW GUINEA

By Eugene E. Ezebilo

Coffee is one of the most tradeable agricultural commodities in the world and it plays an important role in several economies such as Papua New Guinea (PNG). Coffee provides jobs for more than two million people in the country and generates government revenue. However, providing facilities that promote the production, processing and marketing of high-quality coffee has been a long-standing issue in PNG. This paper focuses on one of the findings from Afolami and Ezebilo (2021) concerning strategies for improving coffee production and processing in PNG. The article reported that the coffee harvest area and the quantity of coffee produced in the country have been declining. Most of the coffee trees have passed their economic productive age and most smallholder coffee growers do not have access to extension services as well as processing facilities. The study was based on analysis of secondary data collected from a series of databases such as Food and Agriculture Organisation Statistics, International Coffee Organisation and World Bank as well as a review of literature on production and processing of coffee in different parts of the world. In this paper, emphasis is placed on the potential strategies that can be used to boost the production of high-quality coffee in PNG by drawing lessons from the top coffee-producing countries. In order to revitalise the coffee industry, several initiatives such as the establishment of the Coffee Industry Corporation to provide extension services and decision support to all groups of coffee growers whereas the Productive Partnership in Agriculture Project was implemented with the aim of addressing problems associated with the industry. However, production and revenue levels appear not to have increased significantly as expected. There is a need to find potential strategy to make coffee industry more lucrative and contribute more to the government revenue and livelihood of farmers. In order to find strategy that can be used to make PNG's coffee industry more effective, efficient and competitive,

the country can draw lessons from the top five coffee-producing countries in the world.

Coffee species, quality and processing methods

Although there are several coffee species, the most commonly cultivated species for commercial purposes are *Coffea Arabica (Arabica)* and *Coffea robusta*, also known as Robusta (Winston et al., 2005). Arabica produces higher quality beans and attracts higher market prices than Robusta. However, Robusta is more resistant to diseases than Arabica.

Coffee quality is one of the important factors that often determines the market price of the product. Quality is determined by various physical and physico-chemical constituents of the raw coffee beans. Other factors include coffee variety, conditions of cultivation site, crop fertilisation, and harvesting and processing techniques (Ferreira et al., 2013). The components of coffee that determine its quality influence the appearance of roasted coffee beans, flavour of the coffee beverage and its aroma.

The two commonly used coffee processing methods are dry processing and wet processing. The dry processing method involves either completely drying coffee beans in yards or partially drying the beans in yards and then using mechanical dryers to complete the drying process (Ferreira et al., 2013). Wet processing involves the peeling of coffee beans, washing and the removal of mucilage. The choice of processing method is often influenced by factors such as cost-benefit ratio, the need to comply with environmental regulation and the desired quality standard for the product (Ferreira et al., 2013). If the intention is to supply product of high quality and higher profitability of the coffee business in PNG, it is important to use the wet processing method. It improves the quality of coffee products. Quality of coffee can be improved by removing most of the processing errors.

The top five coffee-producing countries in the world

The following are the top five coffee-producing countries and the quantity of coffee they produced in 2020 (International Coffee Organisation, 2021):

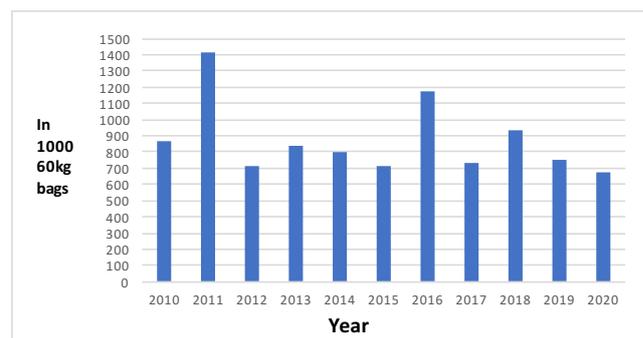
- Brazil is the largest coffee producer in the world, producing 33 percent of the world's coffee in 2020. The total stock of coffee consists of 69 percent Arabica and 31 percent Robusta. The total quantity of coffee produced in 2020 was 69 million 60kg bags. Coffee bean is commonly processed using the dry processing method. However, wet processing method has been promoted.
- Vietnam is the second largest coffee producer in the world. It produced 17 percent of the world's coffee in 2020. The country grows mostly Robusta (95%) and Arabica (5%). The total quantity of coffee produced in 2020 was 29 million 60kg bags. Dry processing method is the most commonly used in Vietnam.
- Colombia is the third largest coffee-producing country, producing 8 percent of the total world's coffee. The country grows primarily Arabica and it produced 14.3 million 60kg bags of coffee in 2020. Washed processing method is commonly used in Columbia, which involves removing the skin and mucilage from the cherries before drying.
- Indonesia is the fourth largest coffee-producing country, producing 6 percent of the world's coffee. It grows mainly Robusta (91%) and little Arabica (9%). The total coffee production in 2020 was 12.4 million 60kg bags. Drying is the most frequently used method. The country produces a specialty of coffee known as kopi luwak, which is the most expensive coffee bean in the world. It is harvested from the faeces of Asian palm civets through an intensive process, which gives it a unique taste.
- Ethiopia is the fifth largest coffee producer in the world, contributing 4 percent to the world's coffee. The country produced 7.35 million 60kg bags in 2020. It produces only Arabica and uses wet processing method.

Coffee production in PNG

PNG ranks 18th position in coffee production in 2020 and contributes 0.5 percent to the world's coffee. The country grows mostly Arabica (94%) and Robusta (6%). Dry processing method is mostly used in the country.

Generally, in the last 11 years, the total quantity of coffee produced in PNG follows a declining trend. PNG had the highest total coffee production in 2011, which corresponds to 1.414 million 60kg bags (Figure 1). This could be linked to the favourable prices at that year. For instance, 2011 was associated with highest prices paid to growers compared to the other years. Robusta was 37.68 US cents per pound and other Arabica was 141 US cents.

Figure 1. Total coffee production in thousand 60kg bags



Data source: International Coffee Organisation 2021.

The lowest quantity of coffee was produced in 2020 (675,000 60kg bags). This could be as a result of the impact of COVID-19 pandemic that crippled the world's economy. Most coffee grower found it difficult to pick coffee beans from their coffee fields because of the restriction of movement. Furthermore, as most of the coffee produced in PNG are often exported to other countries, in 2020 the world market demand for coffee tends to decline as a result of the COVID-19 pandemic. This must have discouraged coffee growers from producing coffee as much as they could.

Challenges associated with coffee production in PNG

The key challenges associated with coffee production in PNG include the following:

- **Inadequate access to basic infrastructure and facilities.** Smallholder farmers, especially those who reside in remote areas, find it difficult to access facilities for milling and storage of coffee beans. There are no good road networks to transport farm inputs and products to and from their coffee farms.
- **Inadequate extension services.** Coffee farmers, especially smallholders, need information on modern coffee production techniques. However, they often find it difficult to access extension services from

the Coffee Industry Corporation, which has been mandated to provide the services.

- *Most of the coffee trees in PNG tend to have passed their economic productive age.* This has resulted in a reduction of crop yield. Coffee tree often begin to produce at about five years and the most productive age is between eight and 20 years. However, on average, coffee trees in PNG is between 27 to 40 years.
- *Change of cropping pattern.* Some coffee growers convert whole or part of their coffee fields to other more economical crops because of a decline in coffee market prices or issues associated with access to coffee processing facilities.
- *Pests and diseases* such as coffee berry borer, coffee leaf rust, coffee green scale and pink disease threaten coffee production.
- *Unfavourable market prices.* The price that smallholder growers receive for their coffee is often less than the premium price that exporters receive. This often discourages smallholders from paying much attention to necessary farm practices.
- *Access to finance.* Some coffee farmers wish to expand their coffee farm or purchase equipment for processing coffee. However, they often find it difficult to access loans from commercial banks.
- *Access to land for commercial coffee production.* For coffee production to be profitable, especially in terms of economies of scale, a large area of land is needed. However, it is often difficult to access large areas of land with proper titles in PNG.

Lessons that PNG can learn from the top five coffee-producing countries

If the intention of PNG is to become one of the top coffee-producing countries in the world, it should consider drawing the following lessons from the top five coffee-producing countries:

- Coffee plantations can trigger an increase in coffee production and an increase in profit from coffee production through economies of scale as shown by Brazil. PNG needs to rehabilitate its coffee plantations and establish new ones.
- There is a need for the Government of PNG (GoPNG) to encourage modernisation of coffee production systems through promoting effective extension services and training of all groups of coffee growers on modern systems and innovations in producing coffee as being

practised in Brazil.

- There is a need to provide more funds for research in areas such as the development of new coffee varieties, high-quality specialty of coffee and farm management practices as revealed by Vietnam, Indonesia and Brazil.
- GoPNG should consider providing agricultural support to coffee farmers through loans facility at low interest rates. The support has the potential to encourage farmers to grow coffee and reduce the tendency of converting coffee fields to other crops as being currently practised in some provinces of PNG.
- If Robusta coffee is managed properly, it can contribute to the production of high-quality coffee that can compete with Arabica coffee as shown by Vietnam.
- Cultivate disease resistant coffee varieties and avoid the abuse of pesticides as shown by Colombia.
- Coffee grower groups such as PNG Small Coffee Growers Association and coffee farmers' cooperative societies have an important role to play in coffee production, processing, and marketing as shown by Colombia and Ethiopia.
- Replace all coffee trees that have passed their productive age with new coffee trees to increase production and yield per hectare as shown by Columbia.

Some possible ways to boost coffee production in PNG

If the intention is to boost coffee production in PNG, "political will" from GoPNG is needed in the following areas:

- Investment in areas such as research in high yielding, disease resistant varieties and high valued coffee specialities.
- Investment in effective extension services and in providing agricultural and infrastructural support for coffee growers.
- Improvement in coffee productivity in PNG through best management practices of the world's top coffee-producing countries will allow coffee growers to earn more money.
- Strengthening of group formation by coffee growers, with close partnerships between farmers and coffee chain leaders such as processors, buyers, and exporters.
- Promoting centralised facility for processing to

the smallholder coffee farmers. PNG used to have plantations and rural coffee mills which resulted in the production of quality coffee. This should be considered in assisting smallholders in the area of processing coffee.

- During long period of decline of coffee prices in the world market, government should consider providing subsidies to smallholders so that they can survive till prices improve.
- Making seedlings of disease resistant and high yielding varieties available to coffee growers so that older trees can be replaced.

Concluding remarks

This article provides insights into potential strategy for improving coffee production in PNG by drawing lessons from the top five coffee-producing countries. The country has suitable environmental and climatic conditions for growing high-quality coffee. However, the challenges that coffee growers, especially smallholders face such as inadequate facilities for processing, inadequate extension services and limited access to finance restrict the country from being one of the top coffee-producing countries. The presence of mostly coffee trees that have passed their economic productive age coupled with the conversion of coffee fields to other types of economical crops further threatens coffee production. If the intention is to increase the production of high-quality coffee and improve PNG's competitiveness in the world coffee markets, GoPNG should promote effective agricultural extension services for all coffee grower groups. Coffee trees that have passed their economic productive age should be replaced with new high yielding and disease resistant coffee varieties. It is important to promote wet processing method by encouraging coffee grower groups, such as PNG Small Coffee Growers Association and farmers' cooperative societies, to own coffee processing mills for processing coffee of their members. GoPNG should consider providing loans through the National Development Bank to the coffee groups for the purchase of coffee milling machines. The findings from this article will assist agriculture managers, planners, and policy makers in making informed decisions on how to improve coffee production in an effective and efficient manner.

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Acknowledgements

The author thanks the Government of Papua New Guinea for financial support.

About the Author

Associate Professor Eugene E. Ezebilo is the Deputy Director for Research at the PNG National Research Institute. He is an Associate Professor of Economics and holds a PhD in Economics from the Swedish University of Agricultural Sciences, Sweden. His research interests include economic development, housing economics and policy, environmental and resource economics, food security and socioeconomic impact analysis.