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THE INFORMAL ECONOMY IN PAPUA NEW GUINEA: SCOPING REVIEW OF LITERATURE AND AREAS FOR FURTHER RESEARCH

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Abstract

This paper is based on a desktop scoping review of the literature on Papua New Guinea's informal economy. The findings show that current knowledge and understanding on this subject has been informed by research from various academic disciplines. Over the last decade, an improved understanding of critical constraints facing the informal economy has led to state intervention through legislation and policy. Policy priority areas require the state to play an enabling role in providing public goods and effective delivery of services and facilitate the growth of informal economic activities. While progress has been made to address underlying impediments with the assistance of donor partners in improving market places and agricultural research, much remains to be done. The study has identified a number of gaps in research, and issues emerging from the literature are outlined for further investigation. Ongoing research is vital as it can positively contribute to the debate and discussion on addressing issues for effective policy decision making for the informal economy.

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THE INFORMAL ECONOMY IN PAPUA NEW GUINEA: SCOPING REVIEW OF LITERATURE AND AREAS FOR FURTHER RESEARCH

By Elizabeth Kopel

Introduction

Papua New Guinea's (PNG) informal economy supports the livelihoods of more than 80 percent of the population (IS PNG, 2014; Sowe, et al., 2010). Formal employment is not widely available, except in a few places such as plantations and the enclaves of the extractive resource industry. The engagement of rural PNG in the cash economy is largely in the areas of cash crop production while in the informal economy it is mainly in the production and sale of fresh food. There is also a large segment of the urban population increasingly dependent on the informal economy for their livelihoods (Independent State of Papua New Guinea (IS PNG), 2011). It provides a viable source of income, mitigating the increasing costs of living by enabling people to afford goods and services and sustain their livelihoods.

This paper is based on a scoping review of the literature on the informal economy for the purposes of identifying the main issues and gaps in the literature and recommending future areas of research. It focuses on reviewing PNG literature and draws on key global sources as and where necessary. The discussion begins with an overview of the concept of the informal economy, how it is defined and understood. This is followed by an outline of the key issues facing the informal economy before considering the policy context. The reviewed work is presented under topical themes and the paper ends with an outline of identified gaps in the literature and recommendations for further research.

How the informal economy is defined and understood

The concept of the informal economy was coined in the development context by Keith Hart following studies of urban labour markets in Ghana in 1973 (Gerxhani, 2004). It was subsequently used by the World Bank in urbanisation and poverty studies around the so-called 'Third World', or developing world or developing countries. The concept

later became widely used in relation to concerns with issues of equity, social development and economic opportunity to describe the dual economic structures characteristic of developing economies. The wealth of theoretical and empirical knowledge generated from research on the Third World informed and was drawn on by scholars with an interest in studying the nature and dynamics of the informal economy in advanced economies (Losby et al., 2002).

The informal economy is often misunderstood, comes with emotive negative connotations and is used with different meanings for different purposes. There is no agreed definition of the concept with informal economic activities spanning across sectors (Joshi et al., 2012). The way in which the informal economy is defined and understood influences what policies and strategies are adopted by a country to address issues related to it (Godfrey, 2011; OECD, 2008; Losby et al., 2002). A useful definition depends on the policy concern that motivates a specific study (Andrews et al., 2011).

For instance, when approached from a social protection perspective the definition tends to focus on informal employment and its implications on social security and superannuation schemes. Those concerned with potential tax revenue losses are more likely to focus on the types of enterprises that are more likely to evade tax. There is yet another perception of taxation and regulation as disincentives that discourage participation in formal entrepreneurship and employment. Disincentives are assumed to drive entrepreneurs to switch to participation in the untaxed informal part of the economy (Kucera and Roncolato, 2008; Schneider, 2002). Further, an objective of making accurate estimates of the informal economy's contribution to gross domestic product (GDP) or analysing the impact of the informal economy on growth would take a broad approach to defining informality (Andrews et al., 2011).

Chen (2005) provided a useful distinction between the informal economy and two related concepts: the informal sector and informal employment. The informal sector refers to the production and employment that takes place in unincorporated or unregistered small enterprises; while informal employment relates to employment without legal

and social protection—both inside and outside the informal sector. The informal economy, on the other hand, is considered in a wider context and refers to all units, activities and workers so defined and the output from them that together forms the broad-base of the workforce and economy. The International Labour Organization (ILO)’s understanding of the informal economy reflects this definition, focusing on units engaged in producing goods or services to generate employment and incomes, at a low level of organisation on a small scale, with little or no division of labour and financed from non-formal sources. Labour relations—where they exist—are based mostly on casual employment, kinship or personal and social relations rather than contractual arrangements (Organisation for Economic Co-operation and Development (OECD), 2002; ILO, 1993).

It is in this wider context that PNG took an enlightened approach to adopt a national policy to protect and promote its informal economy. Use of the narrower term ‘informal sector’ was replaced with the broader concept of ‘informal economy’: seeing it as a fundamental part of the whole economic system, an equal partner in economic growth and development (IS PNG, 2011; Conroy, 2010). A vibrant informal economy is considered to have the potential to provide enhanced income earning opportunities, sustainable livelihoods and improved wellbeing (IS PNG, 2011). Key issues and factors driving the informal economy are considered next.

Key issues of the informal economy

Driving factors

The growth of the informal economy is attributed to a variety of complex intertwining social and economic factors that interact to drive its growth and expansion (IS PNG, 2011). PNG underwent several coercive structural adjustment reforms, imposed by international financial institutions—notably the World Bank and the International Monetary Fund—during the early 1990s. Accompanying these reforms were retrenchment exercises and downsizing of the public service; devaluation and floating of the Kina that fuelled increases in the prices of consumer goods and the inability of formal employment to keep pace with the increasing population (IS PNG, 2011). These factors have exerted increasing economic pressure on ordinary citizens and their livelihoods have become highly dependent on income from informal economic activities. The informal economy provides a viable income earning opportunity for households with and without regular income. Informal income mitigates the effects of increasing costs of living by enabling people to afford goods and services and sustain their livelihoods (Eugenio, 2001; Sowe et al., 2010; IS PNG, 2011).

Binding challenges and constraints

Broader concerns with the informal economy relate ultimately to binding challenges and constraints that limit the set-up, growth and expansion of economic enterprises. Many of these constraints have consistently been highlighted in the literature (IS PNG, 2015; Wang, 2014; Asian Development Bank (ADB), 2012; IS PNG, 2011; Sowe et al., 2010; Bourke, 2005; Kopel, 2002; INA, 2001). The following are some of the major issues identified from the scoping review:

- Financial access.
- Markets, especially:
 - access to markets for goods and services
 - lack of provision for and poor state of market places with facilities, services and management.
- Education and literacy.
- Business skills training and access to support services especially for horticulture-related activities.
- Lack of infrastructure and infrastructure services.
- Transport (availability of reliable and affordable transport services) and poor supply chain issues.
- Law and order issues.
- Socio-cultural factors such as control over economic resources and meeting competing demands imposed by customary obligations.

For further examples of studies that highlight specific constraints and challenges affecting the informal economy, refer to Annex A. The ADB’s (2012) country diagnostics study of PNG’s critical development constraints provides a comprehensive overview of major issues. Those directly related to the informal economy include:

- Weaknesses in governance and institutions;
- ineffective delivery of public services;
- poor and deteriorating state of law and order;
- poor infrastructure and infrastructure services;
- lack of transport;
- absence of utilities—electricity; water and sanitation services; and
- education—poor access to education and shortage of skilled human capital.

Key studies that influenced legislation and policy on the informal economy

Two of the key studies that had a major influence on policy and legislation on the informal economy were the INA (2001) report, 'Review of Constraints to Informal Sector Development', and Sowe et al. (2010), *The Rural Informal Sector in Papua New Guinea: An analysis of developments in select communities*. These studies were commissioned by the government under the Consultative Implementation and Monitoring Council (CIMC).

Sowe et al. (2010) was based on a study undertaken in 2003 to complement the findings of the INA (2001) study. Using data collected from five of the major urban centres, it paved the way to conducting nationwide research on issues pertaining to the informal economy. The study concluded that the informal economy has become 'the employer' for the bulk of the population, as formal employment is unable to keep pace with rapid population growth (INA, 2001:i). Before this study the informal economy had neither been understood nor supported, though it supported the livelihoods of most citizens. The study provided detailed and reliable evidence that enabled a better understanding of the extent and nature of the urban informal economy and also constraints impeding its growth and expansion. INA's research was instrumental in contributing to the formulation of the Informal Sector Development and Control Act 2004.

The results of Sowe et al's (2010) study further demonstrated that the informal economy is the main source of livelihoods in PNG. Well over half (62%) of the sampled population derived incomes from engaging in informal economic activities. Its conclusions echoed those of the INA (2001) in that the informal economy has a key role to play in creating income earning opportunities and supporting livelihoods in rural areas. The study also identified numerous challenges that constrain individual and household efforts for start-ups, growth and expansion of enterprises. In sum, Sowe et al's (2010) findings complemented INA's (2001) urban informal sector study. This provided the much needed national overview of the extent, nature and challenges facing the informal economy, which contributed to the formulation of the National Policy for the Informal Economy. The next section provides a brief outline of legislation and policy on the informal economy.

Policy and legislation

Concerns to develop PNG's informal economy are rooted in its National Constitution (IS PNG, 2011). Intervention in the informal economy is also consistent with various

sector policies and national development strategies as well as UN development targets that PNG has ratified, especially the Millennium Development Goals and Sustainable Development Goals.

Informal Sector Development and Control Act 2004

The Informal Sector Development and Control Act, 2004 was passed to promote informal economic activities in a safe and healthy environment (IS PNG, 2004). However, the Act preceded a policy to guide its implementation. Hence, the laws are currently under review, to address practical issues associated with their implementation and harmonise the Act with the implementation policy (Constitutional and Law Reform Commission (CLRC), 2014).

The findings of stakeholder consultations conducted by CLRC (2015) as part of the review process of the subsequent amendment Act revealed several problematic points: First the law was little known about in the provinces and many of those who were aware of the law assumed that it was meant just for the National Capital District (NCD). Second, regulatory authorities have not been able to control vending activities, especially in NCD, as a section of the Act (Section 18) excludes the application of all other laws. This effectively allows vendors to trade anywhere at any time (CLRC, 2015). While this is good for the informal economy, it has inhibited policing of serious public health, hygiene and safety concerns leading to problems of trading everywhere in the city such as selling at traffic lights and selling of cooked food on the streets.

The National Policy for the Informal Economy

The National Policy for the Informal Economy 2011–2015 was adopted in 2011 with a vision to position it ultimately as a grassroots expression of the private sector and an equal partner to the formal economy. The policy advocates for all citizens, rural and urban, to participate in the informal economy (IS PNG, 2011).

The range of constraints affecting the social and economic development of the country are diverse and deeply rooted, and require a comprehensive approach to address progressively over time. Policy has delineated a number of pertinent issues of central importance to the informal economy to be addressed as a matter of priority. These challenges have been divided into two categories: financial and non-financial issues, with the latter referring to provision of public goods and services (IS PNG, 2011: xi–xiii).

Financial inclusion as a central policy with microfinance as the primary instrument for that goal

This aspect of the policy is intended to address extreme

financial exclusion prevalent in PNG. Ninety two percent of the population, the majority of who are in the informal economy, lack access to financial services, credit and basic banking facilities for savings, deposits, micro insurance and remittance (IS PNG, 2011). Many factors interplay to contribute to financial exclusion. These include but are not limited to: general illiteracy; lack of financial literacy; lack of savings; poor coverage of financial services by service providers; and inaccessibility due to tough geography marked by numerous isolated islands, mountains and valleys with deteriorating roads and poor transport systems.

Progressively increasing levels of financial inclusion is a major objective of this policy, with microfinance a key instrument. Achieving financial inclusion requires the state to provide the necessary regulatory framework and incentives for active private sector engagement to turn that into reality.

Various initiatives have been undertaken on that front, including establishment of micro banks and the National Development Bank and Commercial Banks' introduction of agent, phone and internet banking services. The Centre for Excellence in Financial Inclusion (CEFI) was established to coordinate financial inclusion initiatives in Papua New Guinea. In 2013, the Bank of PNG rolled out the first National Financial Inclusion and Financial Literacy Strategy (2014–2015). Under the first strategy 586,000 new accounts were opened of which 112,000 were youth accounts under the Young Minds campaign. Forty seven percent of the account holders are women and girls (Kanari, 2016). To build on the progress of the first strategy, CEFI is now formulating the second national financial inclusion and financial literacy strategy.

Provision of prioritised public goods and services

This policy relates to the role of the state to provide a favourable environment that can facilitate the set-up and operation of economic activities. Prioritised public goods and services include adequate provision of tangible infrastructure facilities such as roads and bridges as well as non-tangible products and services like ensuring peace and order in communities and providing regulations that stimulate and facilitate economic activities (see Figure 1).

Most of the highlighted areas of priority to facilitate the start-up and improvement of microenterprises are concerned with enabling the production and sale of fresh food through formal and informal markets. This is justifiable, as it comprises much informal economic activity and it is the key to income generation and national food security.

Progressive work on improving market places has been supported by donor funding. National Capital District

Figure 1: Prioritised public goods and services

| Prioritised public goods | Prioritised public services |
|---|--|
| <ul style="list-style-type: none"> • Market places • Agricultural, research and marketing facilities • Law and order • Urban planning regulations | <ul style="list-style-type: none"> • Transport, urban and regional planning • Active policing of market places • Political representation and voice of informal entrepreneurs • Education, training and extension • Consumer protection • Financial literacy campaigns • National audit of all informal economic activity in PNG • A sensible solution to the betelnut problem |

Commission (NCDC)'s work on improving Port Moresby's Gerehu, Gordons and Koki markets have been supported by UN Women, while the Australian Incentive Fund supported the redevelopment of the Mount Hagen market (Mullen et al., 2013). Donor partners have also funded research projects with the objective of improving markets. Bonney, Worinu and Muscat's (2012) feasibility study of setting up a fresh produce wholesale market facility in Port Moresby was supported by New Zealand government aid. The Government of New Zealand and the Australian Centre for International Agricultural Research (ACIAR) have also played an instrumental role in funding or conducting agricultural research over recent years in partnership with the Fresh Produce Development Agency (FPDC) and National Agricultural Research Institute (NARI).

The focus of provision of public goods and services over the long term needs to move beyond the narrow focus on improving market places. Taking a holistic approach to improve the entire marketing system will enhance growth of the informal economy to its full potential. A stocktake of those efforts is needed to monitor and evaluate the impact of current initiatives that will inform the future course of action.

The policy also emphasises the importance of telecommunication and its role in enabling access to finance. However, it is striking that little mention is made of the enabling role of access to electricity and water beyond acknowledging the need to provide these services in markets. Access to electricity and safe water are essential not just for use in markets, but also for homes and other designated locations of trade, for maintaining both personal and public health and hygiene and for conducting economic activities.

Overview of research on the informal economy

There is a vast range of literature on the informal economy

spreading across disciplines. The findings of the scoping review are organised under six main themes: women-based; ethnographic and livelihood; agriculture; supply-chain analysis; consumer-focused; and producer-focused studies. Although some studies can be placed under more than one category, for the purpose of this exercise each study is covered just once. The agriculture sector is evidently over represented in the material reviewed, reflecting ongoing research on a large segment of the population that is highly dependent on subsistence agriculture and the informal economy for its livelihood. Moreover, most of the activities for informal economic enterprises are centred on fresh food production and marketing. A recurring strand of thought that runs through most studies is the emphasis on obstacles to advancement of microenterprise activities. Recommendations emanating from much of the existing research are concerned with addressing constraints to enable growth and expansion of the informal economy.

Women-based studies

Studies of women and their participation in agriculture-related activities feature dominantly, underpinned by the fact that women are at the forefront of food production and marketing in PNG (IS PNG, 2011; 2015). This is also noted in other Melanesian countries like the Solomon Islands and Fiji where women also dominate food production and marketing (Foundation for Development Corporation, 2010; Pollard, 1996). In PNG women are responsible for over 80 percent of food production and marketing (IS PNG, 2015; UN Women, 2012; IS PNG, 2011), much of which is used for subsistence purposes, with the rest sold for cash. This dominance partially explains why much of the rural informal economic activities are concentrated on perishable fresh food commodity production and partly due to illiteracy, lack of knowledge, skills training and extension services as well as capital (INA, 2001; Kopel, 2002). Though much of women's food production goes into informal or 'wet' markets, some of it goes into formal markets comprising of supermarkets, hotels, public sector institutions, educational establishments and major resource development projects (Peter, 2011; Chang and Spriggs, 2007).

A number of studies are exclusively focused on women and their participation in informal economic activities (Wang, 2014; Hutchens, 2009; Anderson, 2008; Warner and Bauer, 2002, Kopel, 2002). Wang's (2014) study of women market traders in the NCD used an asset-based approach to analyse market participants' supply chains of local produce and stakeholders in the chain as well as barriers that limit women's advancement of informal semi-subsistence to established microenterprises. Important concerns were raised

around constraints that prevent women from participating meaningfully in and benefiting from development through microeconomic enterprises. While barriers to business advancement affect all entrepreneurs, women are considered to be more disadvantaged, partly due to underlying gender inequalities (Wang, 2014; Hutchens, 2009).

A common assumption is that enterprises start out small and informal and transition into big, formally registered businesses. However, the reality is that most women-led informal enterprises need to be supported to survive and remain in business (IS PNG, 2011). These small-scale income generation activities are fundamentally vital in sustaining livelihoods. Women engage in informal enterprises out of necessity to generate income that can enable them to meet basic needs such as putting food on the table, paying school fees, and meeting socio-cultural obligations.

Only a small minority of these enterprises can potentially make the transition to formalisation. Even then as Wang (2014) noted, there was a deliberate choice by one woman to retain informal status even though the enterprise reached a point where it could have been easily formalised. This supports a diverging contention that some entrepreneurs are either not business minded or have no intention to expand their ventures, preferring to remain small and informal (Ramani et al., 2013). Both of these perceptions are worth investigating by further research, addressing the question of how informal enterprises, particularly women-led ventures, can be assisted to enable them to grow and make the transition to formal businesses.

In a conference paper on women in sweet potato marketing in PNG, Chang et al (2010) expressed a concern that women's crucial roles in fresh food production and marketing, and supporting livelihoods, are not institutionally supported. Among the key issues identified as affecting women farmers and market traders are increasing workloads, access to reliable transport, deteriorating and poor market facilities, as well as harassment and violence against women. Similarly, UN Women's Safe City Project scoping study Making Port Moresby Safe for Women and Girls (2012) highlighted that extremely high levels of violence in urban markets have a huge bearing on economic activities and made recommendations for addressing various aspects of this issue. As markets effectively serve as places of work for women, a concerted effort to tackle violence against women and girls, ensuring that markets are safe as places of work, is considered a high priority.

Kolopen et al's (2006) report on an ACIAR study examined the role of women in producing and marketing peanuts in the Markham Valley. It revealed that women are

instrumental in subsistence food cultivation and household responsibilities, while actively participating in the process of peanut production and marketing. The obstacles to the advancement of these activities identified by women include lack of: education (literacy and training), book keeping skills, extension services, and pest and disease control. Kopel's (2002) analysis of the Western Highlands Provincial Women's Microcredit Scheme suggests that access to credit has the potential to provide financial independence and social empowerment of women. However, progress is constrained by huge challenges such as poor state of infrastructure, access to markets, and lack of training and extension services. The study also revealed that there is little innovation and diversity in the range of microenterprises established due to limited levels of knowledge and skill for women to undertake rare or niche enterprises.

Further, Warner and Bauer's (2002) study of the 'Mama Lus Frut Scheme: An assessment of poverty reduction', an outcome of ACIAR's impact assessment series, examined the impact of payments made directly to women for loose fruit from oil palms collected after the main harvest. The study reported increased incomes and improved welfare among oil palm-producing households.

However, the chances of existing gender inequalities impeding intervention success was demonstrated by an analysis of the impact of the Integrated Agriculture Training Program in East New Britain Province. This program aimed to provide rural livelihood training for women, but the impact assessment indicated that while achieving some objectives, existing gender inequalities limited overall project outcomes as many women did not take up the services made available to them (Cahn and Liu, 2008).

Ethnographic livelihood studies

Anthropologists and sociologists are often concerned with participation in the informal economy as a household economic or livelihood strategy (Losby et al., 2002). Ethnographic studies by Epstein (1982) and Benediktsson (1998, 2002) locate and discuss the informal economy in the broader social and cultural context. Benediktsson (1998) examined the social world of food markets through fruit and vegetable market trading in the Eastern Highlands; Benediktsson (2002) analysed the change in producing fresh food for subsistence consumption to trade in an urban market economy in the Asaro Valley, Eastern Highlands. Benediktsson referred to sweet potato as the 'travelling tuber,' tracing its journey from the highlands to the coast in Lae and onward to Port Moresby and highlighting the difficulties rural producers confront in transporting commodities to urban markets.

Curry (1999) examined the social context of economic decision making in PNG, using case studies of trade store enterprises in Wosera, East Sepik Province. The analysis made an important contribution in pointing out that the Eurocentric assumptions of business enterprise success, as measured by profit maximisation, do not take into consideration ideas about business as enmeshed with indigenous forms of socio-cultural value systems and practices. The study observed that enterprises enabled people to maintain livelihoods and contribute funds and supplies towards gift giving and cultural exchanges. Participating in such activities helps to maintain reciprocal relationships, forges social bonds, and improves individual and group social standing even if the business becomes insolvent. This view is supported by Wang (2014) and Ramani et al. (2013) who suggested that many informal entrepreneurs do not enter business to maximise profits or formalise their informal ventures, but simply to meet livelihood needs. Wang (2014) also noted that a minority of successful women entrepreneurs chose to remain informal.

Studies on livelihood strategies view informal economic activities as a way of coping with poverty and hardship through adopting diverse adaptive strategies for survival (Sharp, et al., 2015; Koczberski and Curry, 2005; Umezaki and Ohtsuka, 2003). For many people, participating in the informal economy is a survival strategy, valuable in itself, with no intention to expand and formalise enterprises. Families and households often engage in multiple income generating activities, either informal or a combination of formal and informal, which create and boost levels of income and contribute to a marked improvement in welfare. Sharp et al. (2015) presented case studies that draw on knowledge from research on different informal economic activities around the country. These studies highlighted diverse survival strategies that Papua New Guineans deploy in efforts to manage livelihoods in precarious situations.

Umezaki and Ohtsuka (2003) examined the adaptive strategies of migrants in Port Moresby, revealing that households depend on a variety of informal activities as well as formal sector jobs for their livelihood. Rooney (2015) focused on the political economy context of urban livelihoods in NCD's informal settlements. Koczberski and Curry (2005) investigated changing innovative livelihood strategies, particularly engagement in diverse non-farm informal economic opportunities in response to increasing population and land pressure among oil palm settlers in West New Britain Province.

With the ongoing attention and public criticisms levelled at betelnut trading in Port Moresby and the fact that betelnut

has been identified as a key element to tackle in the National Policy for the Informal Economy it is surprising that only Sharp (2012) has investigated its trading. Betelnut trade is indeed the most visible manifestation of a thriving informal economy (Sharp, 2014). Though condemned by local authorities, particularly in NCD, betelnut trade is considered one of the most important livelihood activities, confined not just to the grassroots, but also adopted by a diverse range of households with varying socio-economic circumstances. This partly explains why betelnut sales and consumption continue to persist despite extreme punitive measures to control it. Consequently, NCDC has softened its stand by allowing betelnut trade at designated markets and setting K500 fine to be imposed on anyone found chewing betelnut in public in Port Moresby (Salmang, 2016). Further investigation could provide evidence on the underlying factors that drive betelnut trading and informed evidence to help the search for a long-term solution.

Agricultural studies

The agriculture sector dominates the literature on the informal economy in PNG. As pointed out earlier, this is mainly due to ongoing research on a large segment of the population dependent on this part of the informal economy for their livelihoods. Production and sale of fresh food crops including fish, fruit, vegetables and root crops account for much informal economic production and dominate both formal and informal market trade (DTI, 2015; IS PNG, 2011; Sowe et al., 2010; Eugenio, 2001). Key themes that run through most of these studies emphasise various constraints and the poor enabling environment in which entrepreneurs conduct microenterprises.

The Fresh Produce Development Agency (FPDA) and the National Agricultural Research Institute (NARI) have been instrumental in conducting agricultural research. FPDA's core function is to contribute to the development of the horticulture industry. Among other things, it provides technical and market information to farmers and key stakeholders in the horticulture value chain as well as extension services, mentoring, agribusiness advice, post-harvest handling and marketing. In 2009 FPDA conducted a comprehensive study of the fresh food market in Port Moresby (FPDA, 2009). NARI conducts applied science and socio-economic research and development into small holder agriculture in the rural sector with the objective of contributing to improved efficient production and sustainable agriculture (Martin and Jagadish, 2006; Omot et al., 2010; Omot et al., 2007).

In addition to implementing their core functions these organisations commission as well as conduct independent

and collaborative research, especially with the ACIAR, as demonstrated by workshop proceedings of Socio-economic Agricultural Research in PNG (Hickey, 2013). FPDA studies also focus on improving transportation and supply issues (Omot et al., 2010) as well as improving the quality of produce for both formal and informal markets (Hickey, 2013, Chang and Griffith, 2011, Worinu, 2007). FPDA's (2009) Feeding Port Moresby Study aimed to document the origin, volume and distribution of fresh produce in the city over six weeks. It focused on the amount of imported fresh food (from abroad and other parts of PNG), the amount of local peri-urban fresh produce, and the food distribution system. Its findings showed that much of the produce was locally supplied from within Port Moresby and Central Province pointing to the need to improve the city's open markets.

A World Bank-funded Baseline Survey of Small holder Agricultural Development in Oil Palm Areas (Tanorama, 2009) was conducted in oil palm and non-oil palm areas in two Districts of West New Britain (Bialla, Hoskins) and Oro, Oro Province. The survey found that the potential issues of lack of skills training and transportation, and concerns of oil palm growers around market access, are being effectively addressed by the oil palm company. The company provides oil-palm-growing households with training and collects the harvest from the farm gate. This case shows that there are potentially effective initiatives that can address issues of training and market access confronting rural people.

Supply chain analysis

Closely related to agricultural-themed research are fresh produce market studies. Chang and Mullen (2013) conducted an impact assessment of the redevelopment of the Mount Hagen market. The study indicated that the partnership between the Australia-PNG Incentive Fund and Wamp Nga Holdings to redevelop Mount Hagen market was very successful, leading to a robust, well designed market (Chang and Mullen, 2013:v).

Among numerous positive changes reported was a significant increase in commercial production of introduced vegetables triggered by the increased demand from the booming extractive resource sector. Increased production has been accompanied by growing farmer specialisation in crop cultivation within and between regions, with higher sale of produce leading to improved efficiency gains. The impact of the market is far reaching and extends well beyond to other provinces providing income earning opportunities to thousands of people, especially women, through fresh produce and handicraft marketing (Mullen et al., 2013). The market was considered to have functioned effectively for two years following its opening. However, issues of deterioration

in all respects have infiltrated following a change in market management, which necessitates the importance of putting in place effective market management systems.

Supply chain studies are concerned with improving the supply of fresh produce for both formal and informal markets.

Martin and Jagadish (2006) highlighted two market segments: 1) there is a large informal economy including urban markets that caters for the bulk of lower income consumers, providing a wide range of produce that varies in quality and price; 2) the formal market comprises a much smaller but lucrative segment, and serves high income consumers at much higher prices. The fresh produce supply chain is not efficient so by the time commodities reach the market, much of it deteriorates in quality. Formal market consumers pay much higher prices because of the lack of availability of quality local produce. Development of an improved and efficient supply chain is a key challenge for both market segments that needs to be addressed (Martin and Jagadish, 2006).

Worinu (2007) studied the operation and effectiveness of the supply chain of fresh produce in the Western Highlands Province, examining formal and informal potato supply chains. The study considered how value can be added to each market segment in the supply chain, thus enabling improved quality products to reach the consumer at the lowest possible price. Using the supply chain management approach, it noted that improving supply chain infrastructure, transport, cooling systems and communication between respective parties would enable commodities to be moved from producers to consumers cost effectively in a timely manner (Worinu, 2007).

Improving transportation systems has a positive impact on farm gate prices and supply chains, enhancing product quality, and offering better value for consumers. This is supported by a number of studies, for instance Ebata et al. (2015) addressed ways to improve the supply chain and farm gate prices of staple beans in rural Nicaragua. The study found that improved infrastructure development reduces transport costs and travel time to market, resulting in higher earnings from sales as well as increased farm gate prices. Conversely, poor infrastructure was found to increase travel time and transaction costs for farmers hence reducing their earnings. This is a common sentiment shared by the bulk of rural producers in PNG, who are confronted with poor road and transport systems. Their returns on investment are much lower than farmers who have access to improved infrastructure. This is also demonstrated by Anderson's (2008) study of women sellers on roadside markets.

Since much of the fresh produce from sources outside Port

Moresby comes from the highlands, Bonney, Worinu and Muscat (2012) emphasised the importance of making a concerted effort at improving the supply chain upstream by aggregating produce through wholesale markets and cool storage facilities in Mount Hagen and Lae. They suggested that this can be done concurrently with a capacity building program for farmers and training to improve the value chain and minimise post-harvest losses, followed by constructing a downstream wholesale venue for aggregating produce. They reiterated that building a wholesale market facility without addressing the other parts of the supply chain will not adequately address fresh produce market issues.

Consumer-focused studies

Consumer studies cited in the current study are exclusively focused on the fresh produce sector. Fresh produce is a key part of agricultural production that has great potential to provide cash income for rural households. Consumer studies focus on individuals as well as formal sector purchasers. Formal purchasers of fresh produce include supermarkets, catering companies, the hospitality industry, public sector institutions, and educational establishments such as colleges and universities.

Omot, Anjen and Spriggs (2007) carried out a study with a focus on searching for options to improve the formal marketing system for fresh produce in Lae and Port Moresby. Their survey of supermarket customers and corporate bulk buyers revealed that most customers prefer to buy local produce. However, local produce is often not readily available; producers/suppliers lack consistency and reliability in continually supplying high quality produce. Similar issues are echoed in Chang and Griffith's (2011) survey assessing buyer requirements for fresh produce in the PNG formal marketing system. Omot, Spriggs and Chang (2010) analysed consumer preferences and supplier responsiveness using long distance sweet potato marketing from the highlands to Lae. This study highlighted the issue of producer sellers lacking an understanding of customer preferences and choices, suggesting the need for more farmer education as well as research in this area.

Producer sellers

Bourke (2005) described production and marketing of fresh food as a successful part of the PNG economy and argued that this had not been officially recognised, valued and supported by the state and development partners. Higher demand for locally produced fresh food with direct benefits to producers in the informal economy has stemmed from increased costs of imports (due to a weaker Kina) and population increases amid growing unemployment.

Anderson's (2008) research on women roadside sellers in Madang concluded that the economic success of women's microenterprises is attributed mainly to good access to fertile customary land to cultivate crops and easy access to main roads and markets. Informal income was found to differ considerably, ranging from just a few hundred Kina to thousands between those who sell just the surplus from subsistence production to those who produce solely for the market (Anderson, 2011, 2008; Sowe et al., 2010). These findings are consistent with Ebata et al's (2015) contention that access to infrastructure reduces transportation costs, travel time and improves income. Improved road infrastructure and transport facilitate informal economic enterprises, improve people's access to markets and enhance incomes.

Hirsch's (1994) article also described how access to roads enabled the Mekeo of Central Province easy access to transport betel nut and other produce to Port Moresby for sale compared with the Fuyuge, who have no road access and can only fly commodities to market. This supports the argument that people in isolated communities experience multiple deprivations as they are excluded from potential social and economic benefits of access to roads and other public goods and services.

Furthermore, while Flores' (1979) study on food marketing in Port Moresby's local markets is an outdated paper, many of the issues raised back then are still prevalent today. Sellers in seven markets were surveyed; and findings revealed that transport costs to market were very high for producer sellers who commuted mainly from the Central Province. Respondents indicated a willingness to sell commodities at the farm gate rather than incurring extra costs in time and finance to transport produce to Port Moresby.

The idea of selling at the farm gate could be explored further through contract farming. Under contract farming an agreement is made between the buyer (middle person, wholesaler or retailer) and the producer whereby the farmer produces specific commodities to a specified order for the buyer. In other countries this type of trading is normal practice between large firms and farmers, so an insight into contract farming experiences would offer valuable lessons for PNG. The benefits of contract farming were demonstrated by a recent study of poultry farmers in Kenya, which showed that though farmer specific factors such as financial asset endowment and transaction costs determined engagement in contract farming, earnings per bird were significantly higher for contract farmers than for non-contract farmers (Wainaina, Okello and Nzuma, 2014). While some authors argue that contract farmers can be subject to exploitation by large corporations, the arrangement has the potential

to benefit rural farmers by tackling supply chain issues of transportation, storage and market access, which continue to be the biggest problems in PNG (Sowe et al., 2010; INA, 2001).

It may be possible for FPDA or a similar organisation to provide training on harvesting and packing produce at subsidised fees. Public-private partnership arrangements or contract buyers could provide packing crates and organise transportation and storage at various aggregate points from the farm gate right through to the retail market and consumer, along the lines suggested by Bonney, Worinu and Muscat (2012).

Knowledge gaps and recommendations for further research

This section outlines the knowledge gaps in literature and recommends key areas for further research. These are not in listed order of importance.

Monitoring and tracking access to capital

A key part of the National Policy for the Informal Economy is to provide an enabling financial environment (IS PNG, 2011). To this end a number of initiatives have already been undertaken by the government and the private sector. The Bank of PNG has been actively rolling out a financial inclusion and literacy program over the last two years. Follow up studies will be useful to determine the extent to which this initiative benefits those who engage in the informal economy and establish the number of active accounts.

The Bank of Papua New Guinea (BPNG) collects data from service providers under the financial inclusion and literacy program, which is crucial for monitoring progress of financial inclusion efforts. That rich source of data can be used for research on issues such as constraints to financial inclusion efforts, critical success factors to accelerate financial inclusion, or analysing the impact of financial inclusion initiatives. However, current financial access data compiled by BPNG is aggregated only to region level. Meanwhile, data submitted by service providers is not disaggregated by gender so there is no way of knowing how many men and women are served by existing financial service providers. It is important to ensure that this data is disaggregated by variables like gender and location – down to province and district level. Collecting appropriate data and making it accessible will facilitate progress of research on analysing the impact of PNG's implementation of the financial inclusion and literacy program. Key questions to address are: is access to finance reaching the majority of people and to what extent it is benefiting informal economy participants? To what

extent are women benefiting from these initiatives? How can access to capital be improved?

Innovative enterprises

The current dominance in existing research of studies on informal agricultural-based economic activities is indicative of a dominant agriculture sector. However, future studies need to extend to innovative informal non-agricultural enterprises. Examples of such activities include but are in no way limited to: downstream processing, artisan, cottage industries, manufacturing, alluvial mining (gold panning), alternative energy sources like solar panels, tourism and hospitality. Such research could focus on the technological base of informal enterprises as well as the actual type and nature of enterprises that are undertaken.

Study of commodities with export potential

Informal enterprises producing commodities with export potential need to be researched further. The FPDA conducted some relevant work on the potential export of ginger to New Zealand and further studies are needed to explore other opportunities. For instance, studies of informal enterprises producing handicrafts, spices, exotic flower cultivation for export or beekeeping with the potential to export honey under the banner of organic or fair trade products.

Conduct baseline studies

Only one baseline study of oil palm areas by Tanorama (2009) was identified in scoping the literature. Yet the importance of conducting baseline studies should not be overlooked. It is essential to conduct more baseline studies and profile communities to improve decision making. Availability of baseline data before setting up projects and programs intended to boost the informal economy will set the benchmark against which the impact of projects/programs can be monitored and evaluated. In the absence of these it is difficult to assess and measure outcomes of new initiatives.

Gender disaggregated data collection

There is a need to collect and maintain gender disaggregated data on those working in the informal economy. Research topics that can be studied using gender disaggregated data include: the contribution of women and men to the informal economy, gender dynamics, constraints facing men and women, coping mechanisms and access to support systems and financial services.

Transition from informal to formal enterprises

Emerging research evidence indicates that not all informal entrepreneurs have the drive to expand and formalise their

businesses. Further research needs to uncover the rate at which enterprises make the transition to formal businesses, if at all. In addition to issues of transition, it would be interesting to study their links to the formal economy. Why and to what do extent traders prefer to remain informal? What are the barriers to making the transition from informal to formal? What are the benefits of formalising informal enterprises? What incentives can be provided to encourage informal entrepreneurs to make the transition to small and medium-sized enterprises (SMEs)? Are there lessons from other settings to be learned and adapted to suit PNG's context? Research needs to provide answers to these questions and more.

Informal urban settlements and housing research

The current high rate of urbanisation in Port Moresby and the increasing demand for housing has led to a tremendous growth in informal settlements. Huge settlements have emerged on customary land on the periphery of urban centres in recent years such as Taurama Valley and Tete. There is a need for studies to be conducted on this growing informal settlement sector to investigate the dynamics of informal land settlement transactions and relationships between customary landowners and migrants and implications for policy and planning. Examples of issues to explore include driving factors, coping strategies, challenges and constraints as well as policy options.

Markets

Markets are thriving physical manifestations of the informal economy. Dominated by the country's women folk whose livelihoods depend on market trade (UN Women, 2012; Flores, 1979), markets have been described as unsafe, dirty and unhygienic places. Markets should be made complete as places of work, and better serviced with basic facilities. How can markets be incorporated into the overall urban planning and design process and not dotted on the urban outskirts as an afterthought? Are there lessons to learn from other countries? How can markets be made into decent, clean and safe places of trade? Research needs to provide answers to these questions to inform improved policy decisions.

Betel nut

Public disorder, crime and violence, the spread of litter not to mention the risk of spreading diseases are associated with betel nut trading. NCDC in particular has adopted a hard-line, no tolerance approach to betel nut trading. Vendors caught selling have been subjected to extreme physical violence at the hands of city authorities. This reduced trading to some extent in the lead up to the 2015 Pacific Games, but did not stop the sale and use of betel nut. Vendors returned

to trading on the streets after the games. NCDC gradually softened its approach by establishing specific markets designated for betel nut sale. It has now set a fine of K500 for those caught chewing or selling betel nut in public places (Salmang, 2016). This measure is yet to be implemented.

Research needs to focus on addressing a series of key questions. Is betel nut really a problem or is it a symptom of deeper underlying socio-economic issues associated with low levels of education, unemployment, poverty and inequality? Why is it still here despite extreme measures to prevent betel nut trading? Is the top-down draconian approach the only option available to curb betel nut trading or are there possible alternatives? Are there best practices PNG can learn from neighbouring Asian countries that grow and consume betel nut? How can we find a lasting solution to the betel nut problem?

Innovative approaches to addressing key constraints and challenges

Many of the challenges and constraints to promote and boost the informal economy have been continuously highlighted by past research and experts. Future studies need to document and take stock of the impact of new initiatives and implemented programs that aim to address these key obstacles, such as the Mount Hagen Market redevelopment project. It would be of value to search for best practices from other settings both within PNG and other economies in the region or further afield with similar levels of development experience. How have they dealt with their situation? What lessons can PNG learn from other settings, be these positive with appropriate adaptations or otherwise? A good example of this is exploring the idea of contract farming, which partly solves access to market, transportation and supply chain issues.

Establishing the link between provision of utility services, a growing informal economy and improved wellbeing

The policy for the informal economy does not place sufficient emphasis on elements related to providing adequate utilities: affordable telecommunication services, clean and safe drinking water and electricity. Access to adequate utility services is vital as these complement other services like health and education, which also facilitate participation in economic activities. Healthy, educated and skilled entrepreneurs, especially women, can increasingly engage in economic activities in the convenience of their homes with access to electricity and improved water and sanitation services, conducting their businesses using modern systems of communication. Research has a critical role to contribute

to the understanding of the relationship between access to utility services, its facilitation in growth of the informal economy and the impact on wellbeing.

Review progress on implementation of the National Policy for the Informal Economy

The National Policy for the Informal Economy 2011–2015 was adopted five years ago. There needs to be a review to assess the extent of its implementation so far. This must take stock of the progress that has been made in translating target priority areas into programs and projects, assessing the impact of those initiatives, analysing key obstacles and making recommendations for improvement.

Other research topics

Other interesting topics that can be researched include but are not limited to: informal employment—types of labour employed, self-employment and household enterprises; informal economic activities and the rule of law and governance; fiscal losses due to undeclared economic activities; earnings, skills and human capital in the informal sector; links between the informal and the formal economy; poverty and social welfare; consequences of informality on competition and economic growth; and informal sector response to reforms and adjustment policies.

Conclusion

Most Papua New Guineans are rural inhabitants who depend on subsistence agriculture and the informal economy for their livelihoods. Past research clearly indicates that the informal economy is riddled with numerous impediments. This evidence was important in informing the formulation of National Informal Sector Act 2004 and subsequent National Policy for the Informal Economy 2011–2015.

To effectively address challenges facing the informal economy, the policy tasked the state with the role of providing an enabling environment that can facilitate informal entrepreneurial activities. Priority areas of focus around the provision of public goods and services include addressing challenges facing both rural and urban areas across the country. Evidence from this study shows that progress has been made in terms of implementing several priority areas. But much is yet to be done to address persistent prevalence of impediments to setting up and growing informal economic activities.

Being proactive in addressing these underlying challenges can bring positive multiplier effects and contribute to growth of the informal economy. A growing informal economy has the potential to create employment opportunities and generate

income for people, both rural and urban. It is of paramount importance for the state to make concrete investments in addressing these long-standing challenges. Without a concerted effort, inclusive growth and development of the informal economy will continue to be rhetoric for most citizens. Ongoing research is essential for analysing issues, monitoring progress, assessing the impact of implemented programs and projects and providing the evidence that can inform improved policy decision making on the informal economy.

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Annex A: Sample of reviewed studies highlighting challenges and constraints

| Issue | Author/Study | | | | | | | |
|---|--------------------------|---------|--|--|-------|-------|--------------------|----------|
| | General informal economy | | | | Women | | Livelihood studies | |
| | Sowe et al | Eugenio | | | Wang | Kopel | Anderson | Tanorama |
| Financial | 2010 | 2001 | | | 2014 | 2002 | 2008 | 2009 |
| Access to credit/capital | * | * | | | * | * | | * |
| Non-financial enabling environment | | | | | | | | |
| Production issues | | | | | | | | |
| High operational costs | * | * | | | * | * | | |
| Crude and inadequate tools | | | | | | | | |
| Markets | | | | | | | | |
| Market access | * | * | | | | * | * | * |
| Oversupply/poor sales | * | * | | | * | * | | |
| Lack of demand | * | * | | | * | * | | |
| Infrastructure/transport | | | | | | | | |
| Poor road conditions | * | * | | | | * | | * |
| Inadequate transportation, unreliable | * | * | | | | * | | |
| High costs | * | * | | | | * | | |
| Market places | | | | | | | | |
| Poor facilities/hygiene | | | | | * | * | | |
| Management | | | | | * | * | | |
| Intangible public goods and services | | | | | | | | |
| Law and order problems | * | * | | | * | * | * | * |
| Safety/security | | | | | * | * | | |
| Regulatory environment | | | | | | | | |
| Securing permits to do business | * | | | | | | | |
| Complex/ tough urban planning regulations | * | | | | | | | |
| Education/Knowledge/Skills | | | | | | | | |
| Limited access to support services | | | | | | * | | |
| (extension services and training) | | | | | | | | |
| Lack book keeping/management skills | | | | | | | | |
| Socio-cultural | | | | | | | | |
| Control over economic resources | | | | | * | * | | |
| Credit by wantoks | | | | | | | | |
| Traditional obligations | | | | | | * | | * |
| Environmental issues (degradation, seasonal) | | | | | | | | |
| | * | * | | | | | | |

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