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Editorial comment

Dispelling common misconceptions to improve policy outlook in developing countries

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Abstract

There is no question that the proliferation of electronic and electrical equipment, which animates the information and communications technology (or technologies) revolution were always going to kick up some dust. Not least because the infrastructure needed to manage the end-of-life products are non-existent. Consequently, the large quantities of used electrical and electronic devices such as personal computers, mobile telephones and entertainment electronics that are disposed of are growing rapidly. This development has consigned the e-waste industry to a landmine of myths, incorrect assumptions and half truths, ranging from those rooted in a misreading of the informal activity to the truly bizarre. This editorial piece highlights some commonly held myths about the e-waste management practices in Ghana that are perpetuated by different stakeholders and actors in the sector for different reasons. The paper cautions that only an unbiased, in-depth understanding of the complexities and multidimensional nature of the e-waste industry among the various stakeholders – public officials, informal operators and non-governmental organisations can generate a mutually beneficial governance framework.

- Misconceptions perpetuate myths that feed perceptions about the e-waste economy.
- Myths can misguide policy response to e-waste management.
- Myths narrow the scope of e-waste discussions to an environmental niche.
- Debunking myths is necessary to formulate a holistic policy response.

Background information

The world today faces the two extremes of the electrical and electronic equipment (EEE) industry: while the production, use and trade in EEE has proliferated, available methods of managing e-waste end-of-life products, particularly in developing countries, are not

as effective as they need to be. The deficiency has created fertile grounds for spreading partial information and over-generalizations full of contradictions, stereotyping, and misconceptions. Such dramatizations concentrate on the aspects of e-waste activities (e.g., storage and burning) which are the most highly visible spatial imprints. Thus, criminalising the informal e-waste sector masks its actual contributions to livelihoods and poverty reduction, and hurts in devising appropriate policy interventions. An underlying and often amplifying challenge that results from the misconceptions is a lack of reliable, consistent, and comparable data on the e-waste sector which would form a baseline for any robust decision making. Thus, clarifying and debunking the myths is paramount for demonstrating the contribution e-waste could make towards improving livelihoods and addressing the poverty and economic challenges in developing countries.

Though e-waste management policies are generally non-existent in most developing countries, some African countries are now developing some regulations, albeit with implementation and operational challenges. The emerging e-waste legislations technically mimic those from the developed countries where: (i) challenges of informal collection and recycling are less relevant, (ii) basic infrastructure for the appropriate waste management is present, and (iii) consumers and industry are generally aware of waste management practices.

At individual country level, at best, the emerging policies in Ghana present the use and available management e-waste as ‘traditional’ or ‘primitive’, which is in conflict with formal development objectives. Switching to ‘formal recycling’ or banning informal production, trade, and use of used electrical and electronic equipment have become a dominant approach for addressing the e-waste ‘problem’. However, due to the lack of viable alternatives, such policies, often unclear and conflicting, die at birth. (Bisschop, 2013).

Using a review of the literature and more than a decade of personal research experiences with e-waste recycling in Agbogbloshie, this editorial piece highlights some commonly held myths that are perpetuated by different stakeholders and actors in the e-waste sector for different reasons, and which frustrate the quest for more sustainable and environmentally friendly e-waste recycling practices. These myths include, for example, that Agbogbloshie, Accra is the largest electronic waste dump in the world, and that every year, about 250,000 tons of sorted out computers, smartphones, air condition tanks and other devices from a faraway electrified and digitalised world end up in Agbogbloshie illegally. This commentary examines why these myths are disputable, and how the widespread belief of these myths has continue to misguide policy responses to the quest for sound e-waste management policies.

Suffice it to state from the onset that new approaches on how to address the e-waste menace are emerging. However, the successful implementation of these approaches is also

dependent on clarifying some misinformation, and debunking harmful misconceptions about the industry. Thus, two objectives motivate this commentary. The first is to extract the e-waste story from that of the more general hazardous waste. In my view, addressing the e-waste parochially and consolidating the information into ambiguous terms such as 'toxic waste' continues to distort information, perpetuate negative attitudes and misguide policy interventions.

The second is to debunk the myths about e-waste that have materialised over time, largely due to the blended approach of handling the information on informal e-waste recycling. Ultimately, the lack of cohesion over what is to be believed and not believed about e-waste perpetuates confusion and contributes substantially to the absence of appropriate policy responses in Ghana and beyond. This piece is intended to stimulate the adoption of a more positive and balanced attitude toward informal e-waste practices to help craft well-informed policies. It will also inspire more targeted and better designed research on e-waste in the global south and in the process, clarify misconceptions and blatant biased reportage.

Information biases - policy space nexus

In most developing economies, having a voice in the media space is important for gaining power and legitimacy in policy shaping processes. Ghana is no exception. For example comments on how wicked policy processes are either avoided by some media personalities or drastically reframed and reshaped to fit reporters' norms and interests. Also discusses the four trends in media reportage - personalisation, dramatisation, fragmentisation and an authority-disorder bias, which he calls information biases, that simplify complex governmental issues. Concludes that in most human endeavours, there is always a bias towards negativity, especially with environmental issues.

Typically, personalisation bias refers to the framing of stories in terms of human interest, thus bringing a human face or emotions into the presentation (Bennett, 2009). The dramatisation bias concerns an emphasis on crisis and conflict in stories rather than on continuity and harmony (Patterson, 2000). In such scenarios, reporters tend to describe the situation at hand in terms of conflicts, with winners and losers. The process where reporters selectively isolate stories from one another and from the larger context is termed fragmentisation bias.

In such 'episodic' framing, issues are described in terms of specific events instead of placing them in their more general context. Further, situations preoccupied with order, where authorities are questioned whether they are capable of establishing or restoring the order, are known as authority-disorder bias (Semetko and Valkenburg, 2000). Lastly, the tendency for the news to be more negative in general reflects a negativity bias.

Discussing the different type of biases comprehensively is beyond the scope of this editorial piece. But be that as it may, one could see how such biases influence the continuous distortion of what is known about informal e-waste practices in Agbogbloshie, and how such distortion perpetuates negative attitudes and misguides policy interventions. The fact is that people make choices individually, but their decision-making process is influenced strongly by the social infrastructure in which they live and work as well as their collective norms – the collectively agreed rules on how to behave in mainstream society. To that extent, the individual becomes an important actor in creating a sustainable society. It also implies that the overreliance on (mis)informed power of the individual may lead to poor policy results.

Such appear to be the case of the newly enacted e-waste policy, Act 917 in Ghana, passed in 2016 to regulate e-waste trade and management. The form and content of the policy smacks of an externally-induced policy prescription, as it mimics the Basel Convention (Pathak et al, 2017). Such a ‘coerced response’ has visible exclusionary command-and-control features, an anomaly that raises doubts about the policy’s cohesiveness and suitability for its intended purpose (Bisschop, 2013). A similar failed policy was passed in 2008; i.e. the ‘Energy Efficiency Regulations 2008’ (LI 1932). The LI made it illegal to import any used refrigerating appliance into the country. This was followed by the ‘Energy Efficiency Standards and Labelling Regulations, 2009’ (LI1958) as amended in LI 1970.

In spite of these laws, obsolete and discarded refrigerating appliances still fill streets of the major cities in Ghana, due to disturbingly one-sided sensational media reports, often riddled with half-truths, inconsistencies, and subjective opinions, unsupported by empirical evidence. Sees such policies as a product of instances where official agencies are lobbied by environmental non-governmental organisations (ENGOS) to promulgate ‘sound environmental laws’, and communities empowered to resist the use of their environment as an uncoded sink for locally unwanted land use (LULU) projects. Rather, it complicates the worlds of work processes, networks, and outcomes and perpetuates an open hostility towards the e-waste industry.

Making poor people pay to support wealthy peoples’ business or consumption pattern is not really what I believe is sustainability. A number of interdisciplinary studies show that policy formulation on human actions and decisions is shaped by a range of economic, political, psychological, technological, and social factors that are outside the control of the individual actors. This makes it compelling and worth addressing the misconceptions that a place like Agbogbloshie has been unduly and continuously subjected to. This is imperative since if the public does not understand a policy (or even worse, misunderstands it), they may accept or reject it based on misinformation. As rightly noted in earlier studies, the quest to optimally manage e-waste for improved

socio-economic and environmental benefits is frequently delayed not only for economic reasons but sometimes societal hesitancy due to misinformation may be a crucial factor. (Stacey, 2021)

Also noted that sometimes, the challenge stems from pessimistic accounts and debates over conceptual issues such as the (dis)proportionate creation of (il)legal dumped waste, thus creating imaginary landscapes of risk, which are socially peripheral, isolated, powerless, and degraded, and mask other innovative practices. Such pessimistic accounts championed mainly by Environmental Non-governmental Organisation (ENGOS) who seek outright e-waste trade ban and promote a single version of recycling hurt the policy space, and as earlier noted by Oteng-Ababio and Maja, (2020) only an unbiased, in-depth understanding of its complexities and multi-dimensional nature can generate a mutually beneficial of sustainable governance framework.

The Agbogbloshie Mythoi in focus

‘When public opinion on policy is driven by misconceptions, refute them.’ The statement was my conclusion when I participated in a debate on Ghana’s e-waste management policy. The debates generally alternated between a too-neat bimodal pattern describing ‘dumping of waste by the rich “developed” nations in poor “developing” ones’, and what terms ‘mixed optimism drawn from win–win notions of trade’. In my opinion, the continuous mythological (mis)representation of the e-waste industry has an implicit cost for e-waste regulatory frameworks. This exemplified Ghana’s Act 917—which took nearly a decade to be implemented (2008–2016), but whose end product still remains patently unclear. My contention is that e-waste recycling encapsulates an economically motivated chain of activities which requires significant downstream investments. It also requires engaging professionals with the appropriate competences and mindset to devise regulatory frameworks that situate the informal sector, as pertains in Agbogbloshie, within the overall national development framework.

Geographically, Agbogbloshie is an urban area in Ghana’s capital, Accra, housing a vegetable market, a scrap metal yard, a large slum, an industrial area, and a household waste dump (see Figure 1). Unfortunately, the area has assumed notoriety in the environmental sustainability discourses in the last three decades. The situation is particularly challenging with e-waste, and the so-called illegal dumping of electronics from the global North. Undeniably, Agbogbloshie is a thoroughly polluted place and the people working in the recycling trade in particular are exposed to serious health and safety risks (Stacey, Grant and Oteng-Ababio, 2021).

The difficulty however relates to why media portrayals focus almost exclusively on the area as an electronic waste dump, drawing on the dramatic imagery of burning cables

and tires for the extraction of copper, which forms only part of the activities of the scrap metal yard. A quick online search of “Agbogbloshie + e-waste” reveals the epistemological complexity of describing the scrap yard, often erroneously referred to as the largest e-waste dump in the world, a depiction consistently reiterated on social media and in documentaries and articles.

Such depiction is empirically inaccurate, and only indignifies the area. It makes the complexity of Agbogbloshie to be lost in the Western media and renders invisible the many economically innovative works taking place in the area, and how these are generating much needed jobs for the youth and contributing to an important repair and recycling culture. The latest in a long line of documentaries and publications to ‘dramatise’ and sensationalise Agbogbloshie is *Welcome to Sodom*, a 2018 documentary directed by Austrian filmmakers Florian Weigensamer and Christian Krönes. In its title, and in its portrayal of ‘this apocalyptic society’, the film perpetuates the tendency to mythologise a reality that needs no exaggeration. In the process, the film gets most relevant facts wrong. Consider the logline of the documentary:

Agbogbloshie, Accra is the largest electronic waste dump in the world. About 6,000 women, men and children live and work here. They call it “Sodom”. Every year about 250,000 tons of sorted out computers, smartphones, air conditions tanks and other devices from a faraway electrified and digitalized world end up here. Illegally. Cleverly interwoven, the destinies of the various protagonists unravel the complex story of this apocalyptic society. Their very personal inner voices allow a deep insight into life and work at this place – and of Sodom itself. And you can be sure – it will most probably be the final destination of the smartphone, the computer you buy today.

As already asserted emphatically, when public opinion on policy is driven by misconceptions, then there is an imperative need to refute them, and this is what this commentary seeks to do by examining a couple of statements in the logline above:

Myth 1: [that] Agbogbloshie, Accra is the largest electronic waste dump in the world.

A cursory visitor to Agbogbloshie, after reading most of the sensational media stories and documentaries, will wonder whether he/she had not used the wrong geographical compass. On the ground, Agbogbloshie accommodates a residential area, yam and vegetable markets – notably the onion market, industrial enterprises, a football field, a household waste dump, and a scrap metal yard (see Figure 1).

The Odaw river and the Korle Lagoon form two natural boundaries. At the other side of the Odaw river lies Old Fadama, locally known as Sodom and Gomorrah. Old Fadama is an informal settlement and houses one of the most important yam markets in the metropolis.

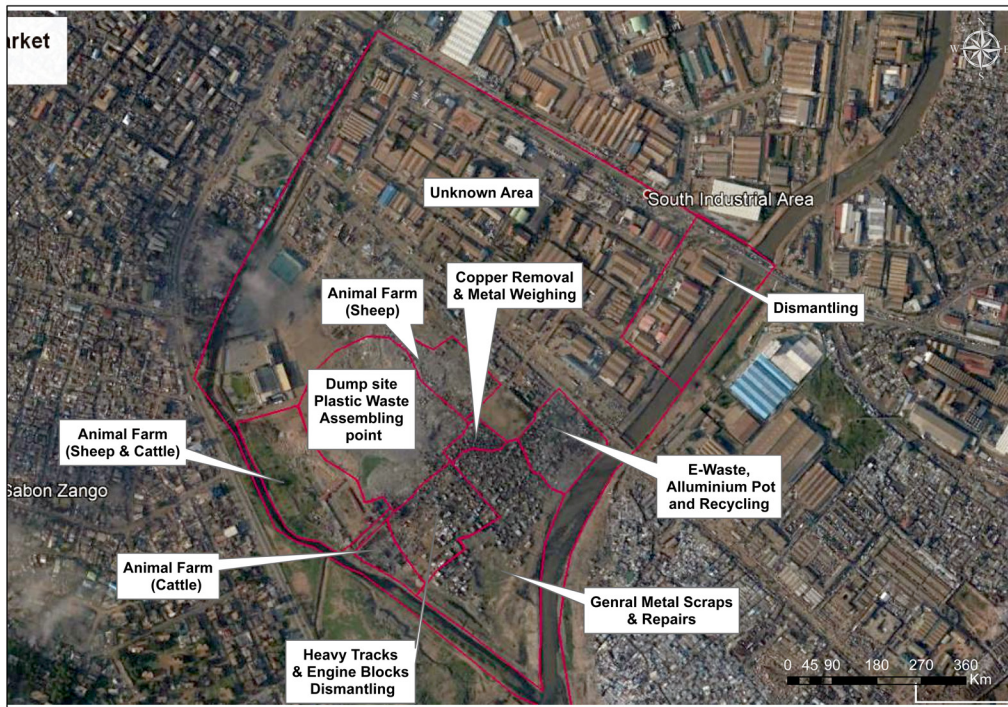


Figure 1

In reports and documentaries, Old Fadama and the scrap metal yard are often erroneously presented as one place, resulting in descriptions such as “the slum of Agbogbloshie is the world’s largest e-waste dump” by journalists, photographers, environmentalists, film makers, and even a music video maker (e.g., Grant and Oteng-Ababio, 2021).

While the descriptions of Agbogbloshie and Old Fadama are often linked to the dumping of e-waste, the history of the area shows that its development pre-dates e-waste (Stacey 2021). The establishment of important wholesale food markets in the early 90’s (onions; yams; etc), resulted in an influx of traders, workers and trucks. Newcomers started settling in Old Fadama, until then a small formal settlement and considered spiritual land by the Ga people.

The part of Agbogbloshie where ‘e-waste’ is dismantled is not an e-waste dump, but a scrap metal yard. All kinds of machinery and household equipment, cars, buses, bicycles, generators, air conditioners, computers, etc. are taken apart for scrap and spare parts. The above notwithstanding, the myth is often repeated that Agbogbloshie is the largest e-waste dump in the world, despite the fact that there are many other sites in the world, actually specialised in e-waste, that are many times larger.

For example, Guiyu in China, employed at its peak 100,000 people and covered 52 square kilometres. Meanwhile, GIZ, the German Organisation for International Cooperation

which has an office and training centre on the site, estimates Agbogbloshie's size as 0.15 km² (Hedemann and Johannes 2019). Other sizes mentioned are 2.5 km², 0.5 km², 0.1 km², 0.08 km², and 0.3 km². Compared with other informal scrap metal yards, such as Guiyu in China, which was about 52 km² during its most active period, it is a relatively small site.

Myth 2: Every year, about 250,000 tons of sorted out computers, smartphones, air conditioners and other devices from a faraway electrified and digitalized world end up here illegally.

Paucity of quality and reliable data has been the bane of policy developmental efforts of most developing economies including Ghana. This section challenges the amount of e-waste supposedly entering Agbogbloshie. The lack of reliable data has also set in motion series of dramatisations and one of the most interesting sets of numbers, especially when considering the size of Agbogbloshie and the words used to introduce these numbers, such as “illegal”, “dumped”, and “imported”.

Not only are these clearly mythologised presentations, but also they generally ignore the large amount of domestically produced e-waste. For example, the Ghana ICT for Accelerated Development Policy resulted in the accelerated import of ICTs, aided by tax-exemptions for imported computers and other computer equipment. As a result, the imports of used computers rose from 1500 tonnes in 2004 to 10,300 tonnes in 2011. In the Greater Accra Municipal Area (GAMA), the source of most e-waste entering Agbogbloshie, 90% of the households have a mobile phone, 85% a television, 82% a fan, 78% an electric iron, 62% a fridge, 50% a VCD/DVD/MP3 player, and 24% a laptop or PC (2014 living conditions).

In spite of these large potential sources of e-waste generation, many studies continue to preach the e-waste dumping propaganda with clearly outrageous numbers. The highest number was “hundreds of millions of tons” of e-waste dumped, an impossible statistic, as the global amount of e-waste produced was 50 million tonnes in 2017, but nevertheless still used. The *Guardian* newspaper published in 2014 a photo report by Asare Adjei, who mentions that 50 million tonnes of e-waste were dumped in Agbogbloshie (2014). In the “Welcome to Sodom” documentary, the directors mention that 250,000 tonnes of e-waste end up illegally at Agbogbloshie.

Indeed, many resources cite 215,000 tonnes of imported e-waste ending up at Agbogbloshie. This number may be a misrepresentation of the 2011 Ghana E-waste Country Assessment, which mentions that in 2009, Ghana imported up to 215,000 tons of electrical and electronic equipment (EEE), of which 30% was new and 70% second-hand EEE. GIZ, which provides training and health services to e-waste workers at Agbogbloshie, estimates that 17,000 tonnes of imported and domestically produced scrap ends up at Agbogbloshie every year (Hedemann and Johannes 2019).

Sovacool mentions that Ghana is the fifth largest e-waste importer in the world (2019). Be that as it may, the fact remains that if 250,000 tons of illegally imported e-waste was brought into the scrap metal yard every year, this would amount to 35,000 computer monitors or 14,000 air conditioner units or 4 million mobile phones every day. Clearly, everyone spending a few days in Agbogbloshie knows that these numbers are absurd.

Meanwhile, prior studies by the Global E-waste Monitor 2020 (Forti et al. 2020), noted that Ghana produced 53,000 tons of e-waste in 2019. Further, a report by the Dutch Ministry of Foreign Affairs, published in 2019, stated that the Accra-Tema corridor alone, housing 10% of Ghana's population, was producing 59,000 tons of e-waste in 2015 (Holland Circular Hotspot 2019). The lack of reliable data, plus the fact that about 95% of all e-waste handling in Ghana takes place in the informal sector (Grant and Oteng-Ababio 2016), makes it impossible to establish how much discarded EEE enters Agbogbloshie, how much is repaired, how much is sold as spare parts, and how much is recovered and sold as recycled materials (copper, aluminium, plastic, printed circuit boards (PCBs), etc.

Incidentally, but not surprisingly, none of the sensationalised reports highlights materials and products leaving Agbogbloshie. While there are many different numbers available for the amount of e-waste entering Agbogbloshie, there are hardly any numbers for the materials (spare parts, repaired products, recycled materials, new products from recycled materials) that leave site. Indeed, the notion of dump, often used in the context of Agbogbloshie, suggests a place where things are left behind – they are not even managed, as in a landfill.

However, evidence from the field revealed the results of repair, recycling, and re-use activities, though it is quite difficult to estimate how much recycled materials left Agbogbloshie. Nevertheless, the World Bank (2015; 41) suggests that the e-waste economy contributed an estimated US\$416 million dollars in 2015 to the Ghanaian economy, while Prakash et al. (2010; 38) quoted an equivalent of 0.55% of Ghana's GDP (Oteng-Ababio et al. 2018) albeit in harsh urban environment. The availability of figures on e-waste, imported, dumped or domestically generated ending up in Agbogbloshie, contrasts with the lack of numbers on recycled, repaired or refurbished e-waste leaving Agbogbloshie.

Mythoi 3: mask innovations and hurt policy compliance.

The myths about the Agbogbloshie e-waste situation have been busted before. While Welcome to Sodom may be well-intentioned – especially as it lifts the profile of minorities in the context of poverty in Ghana – it is not well informed. In fact, it is a good example of what Bennett called dramatisation bias. Its images reinforce common

cultural attitudes and values among an audience that has no opportunity to check the validity of the statements made in the documentary. The uninformed statements made in the documentary, combined with imagery that does not distinguish between the scrap metal yard, the slum, and the household waste dump next to the yard, presents an uncomplicated objectionable image of Agbogbloshie as an e-waste dump.

Calling Agbogbloshie an apocalyptic society suggests the vulnerabilities experienced by its inhabitants and workers are somehow uniquely appalling. They are not. The vulnerabilities experienced by the people of Agbogbloshie are terrible in and of themselves, but they are morally unbearable precisely because they are a normal part of the global economic system that sustains modern over-consumption. There are many slums in the world and even more small scrap metal yards where electronics and other equipment and machinery are dismantled with rudimentary tools, with resulting health and safety risks for the workers involved, including children.

By portraying Agbogbloshie as an 'apocalyptic society', the film may even contribute to risks for those vulnerable people for whom it clearly seeks to generate sympathy: the Ghanaian authorities have shown in the past that they are not unwilling to use foreign media attention for 'the largest e-waste dump in the world' as the justification to forcefully evict people from Agbogbloshie. By perpetuating these myths, the film is unlikely to help the people working there.

The film presents e-waste as a 'First World' problem, ignoring the fact that Ghanaians consume large amounts of electronics, and that the repair and recycling of these electronics is not only an important economic activity, but a major contribution to sustainable consumption. Admittedly, e-waste is a huge global problem. It is not a problem that stops by guilt-tripping some consumers in rich countries.

Ghana needs practical and maintainable electronic waste policies, which recognise the importance of the informal repair and recycling sector and secure the health and safety of the people involved in this trade. The road to hell is paved with good intentions, and the intentions of those preaching a geography of vulnerability and advocating for the prohibition of e-waste recycling are no exception. This commentary supports the position that e-waste is a secondary product and therefore any policy initiatives regarding its management which are developed in an empirical vacuum are likely to suffer from a lack of compliance.

Contents of this issue

This edition of *Ghana Social Science Journal* addresses various models used in social sciences to represent public policy development processes and their outcomes. Each of the individual articles suggests how a particular model of policy formulation

constitutes a useful interpretive lens that can guide reflection and action leading to the production of healthy public policies. The first article by Ablo and Boadu examines how liberalisation policies constitute a significant instrument for African governments to catalyse development through foreign direct investment (FDI) and private sector led job creation. They reckon that unemployment has been a major development challenge in sub-Saharan Africa, and evidence abounds that governments' efforts to address the canker have yielded very limited successes.

Using data from the Lower Volta Basin, their paper examines foreign direct investment in the agricultural sector. Their results revealed that FDI in agriculture injects capital into the national economy and produces positive spillovers, including youth employment, technology and skills transfer. They also noted that poor wages, precarious working conditions, perceived exploitation, leakages, and dislocation of smallholder farmers are evident. In their conclusion, they opined that investments in the agriculture sector must suit local socio-cultural conditions to minimise micro adverse outcomes.

The second article assesses the state of selected formal institutions and agencies within Ghana's juvenile justice system as part of a larger study that assessed Child Panels in the country. The findings expose the abject sordid state of the institutions and agencies which reduces them to a state of gross inefficiency and under-utilization. This paper highlights the fact that despite numerous studies that have identified similar challenges, lack of appropriate policies and actions has stalled all attempts to address them. The paper urges scholars to move beyond assessing the efficiency of the system to a focus on exploring how the system can realistically be transformed in light of the numerous challenges facing it and the socio-political realities in which it operates. It is also a call to the responsible public authorities to take policy action to address the challenges.

The third article provides empirical evidence on the association between personality and childbearing in an African context using the dimensions of the Big Five factor model - extraversion, conscientiousness, neuroticism, openness to experience and agreeableness. Applying the negative binomial and zero-inflated negative binomial regression models to data obtained from the World Bank's survey on Skills toward Employment and Productivity (STEP) for Ghana, the authors found that after controlling for age, education, spouse and employment status, three of the personality traits, namely conscientiousness, openness to experience and agreeableness, have significant associations with number of children. Openness to experience is negatively associated with number of children in both males and females. However, conscientiousness and agreeableness are, respectively, negatively and positively associated with number of children, but only in the male sample. Extraversion and stability were not significantly associated with number of children even when the models were estimated without the control variables.

Based on a systematic analysis of data collected from four rural communities in the Wa West district, the fourth paper explores the possibility of synergising mitigation and adaptation policy strategies at the local level since both seek to arrest the menace of climate change. The paper exposes the weakness in the solitary strategy adopted by local farmers to expand their socio-economic activities within fragile eco-systems. It argues that in building a sustainable 'immune system' for climate-induced vulnerabilities, local farmers need to balance their adaptation and mitigation strategies by searching for mutually supportive actions and trade-offs. The final paper is a study undertaken by Songsore in September 2009, prepared for the International Institute for Environment and Development (IIED) as part of its eight country case studies on urbanisation. Titled "The Urban Transition in Ghana: Urbanization, National Development and Poverty Reduction", the paper noted that though the rate of urbanization in the developing world is proceeding at a fairly comparable rate as that of the industrial nations, the rate of population growth of cities in developing countries is rather unprecedented.

Concluding remarks

Broadly, this editorial comment highlights the fact that Agbogloboshie has suffered years of research, writing and photographing, which over-concentrate on the negative environmental and health effects of e-waste. Conspicuously, the narratives so far are characterized by myths, half-truths and indeed, misinformation. What is obvious is a situation where complex realities are being lifted from their context and pasted onto other meanings and frameworks, thereby reproducing an image apparently grounded in real life, whereby Agbogloboshie has risen to epitomize 'ground zero' of an e-waste apocalypse. This commentary argues that recirculating such mischaracterisations and myths is out of kilter and could be a result of a multiplicity of motivations which, if not corrected, could potentially serve various agendas and influence the policy choices pursued.

The commentary cautions against how the continuous depictions of marginality and misery at the locale can contribute to sustaining marginalisation. It demonstrates how the policy space and initiatives in Ghana have exhibited continuous inconsistencies including, for example, erroneously tilting policy response toward formalizing and elevating formal firms, and promoting technological solutions. The author concurs with Rekdal (2014) who aptly noted that the attainment of truth is not because a claim has been scientifically proven; rather, the appearance and status of truth emanates from repeated citations in multiple sources and the claim's gradual insertion in ways that often render it the desired point of replication for future studies. The story of Agbogloboshie shows evidently that those on the lowest rungs of the urban economic ladder meld bodily expenditure, social aspiration and material breakdown to forge fragile futures and to format urban space. Therefore, until informality and its culture and practices are incorporated properly into holistic policies, the quest for sustainable cities and society will be unattainable.

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Assessing foreign direct investment (FDI) in agriculture and employment in rural Ghana

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Abstract

Unemployment remains a major development challenge in sub-Saharan Africa, and government efforts to address it have yielded limited successes, especially in rural communities. The liberalisation policies constitute a significant instrument for African governments to catalyse development through foreign direct investment and private sector led job creation. This paper examines foreign direct investment in the agricultural sector in the Lower Volta Basin of Ghana. Data was collected through interviews, participant observation and survey to analyse both positive and negative effects of FDI in agriculture. On the one hand, FDI in agriculture injects capital into the national economy and produces positive spillovers, including youth employment, technology, and skills transfer. On the other hand, poor wages, precarious working conditions, perceived exploitation, leakages, and dislocation of smallholder farmers are evident. Investments in the agriculture sector must suit local socio-cultural conditions to minimise micro adverse outcomes.

Keywords:

Foreign direct investment;
Agriculture; employment,
decent work, Ghana

Introduction

Liberalisation policies that encourage FDI have been a cornerstone of development policies in sub-Saharan Africa, aiming to catalyse development and lift people out of poverty (OECD, 2002; Tee, Larbi, & Johnson, 2017). Much scholarly attention has been on cities as the engine of economic transformation (Debrah et al., 2020; Owusu & Oteng-Ababio, 2015; World Bank, 2015). The role of rural FDI and its potential to lift people out of poverty is understudied (Adu, 2018; Awunyo-Vitor & Sackey, 2018; Djokoto, 2012). Goals 1, 2, 5, 8 and 10 of the UN SDGs aim to tackle poverty and inequalities and provide decent work for all and thus, requires efforts to be concentrated not only on cities but also on rural areas (United Nations Country Team (Ghana), 2017).

In Ghana, unemployment has increased, and its impacts are particularly severe for the youth (Amankrah, 2012; Baah-Boateng, 2018; Kudjey, 2015). The rate of unemployment is highest within the age group 15 to 24 years (10.9%) and lowest among those aged 65 years and above (2.5%) (Ghana Statistical Service, 2014b). The youth are usually new labour market entrants, often casual workers, and are very vulnerable compared to other groups, as they face more severe constraints to finding good jobs (Honorati & Johansson de Silva, 2016; Sakyiamah, 2014). Data from the registration of unemployed and underemployed persons highlights approximately 230,000 new entrants to the Ghanaian labour market every year, the majority of whom are youth seeking work (Tornyezuku, 2017).

Over the past few decades, graduate unemployment has been increasing, (Kudjey, 2015). Only about 10% of graduates find jobs within a year of completing tertiary education or after completing national service. It can take up to 10 years for many graduates to secure full-time employment. Graduates face challenges such as lack of employable skills, unavailability of funding capital for entrepreneurship, poor attitudes of graduates towards job opportunities and low capacities of the industry to absorb the vast numbers (Ghana News Agency, 2017). Such a high rate of youth unemployment is undoubtedly a threat to social, economic and political stability (Msigwa & Kipesha, 2013) and widens rural-urban disparities.

The economy of Ghana revolves around the service, agricultural and industrial sectors for income and foreign exchange. Agriculture remains the backbone of the economy, as it contributes to food security and poverty reduction, supplies raw materials for industry and generates foreign exchange. Agriculture also plays a role in rural development, social stabilisation, creating a buffer in economic shocks and supporting environmental sustainability and cultural values associated with farming. Again, the agricultural sector creates jobs for about 300,000-350,000 new workers who enter the Ghanaian labour market annually (Ministry of Food and Agriculture, 2007; World Bank, 2017).

Despite the potential of the agricultural sector to contribute to the structural transformation of African economies, it remains rain-fed and largely subsistent. In Ghana, almost 90% of farm holdings operate on less than two hectares and use primarily the traditional farming system (Ministry of Food and Agriculture, 2011), with more than 90% of the food produced in the country originating from smallholders (Chamberlin, 2007). Smallholder farmers have to contend with challenges such as limited access to finance, capital, information, markets and infrastructure, and smallholder friendly technologies; price shocks; high cost of transportation; a distorted land tenure structure and high postharvest losses (Fan, Brzeska, Keyzer, & Halsema, 2013). These challenges have made agriculture less attractive to the youth (International Youth Organization, 2014).

FDI in agriculture is considered critical to the sector's growth across Africa (Amankrah, 2012). Following the liberalisation of sub-Saharan economies in the 1980s, FDI in agriculture has seen significant growth (Ackah & Aryeetey, 2012). According to Ghana's Ministry of Food and Agriculture (2018a), FDI can change the methods of agriculture in Ghana through modernisation and diversification, making it more catalytic and attractive to the youth. The effects of FDI in agriculture are, however, complex and produce diverse outcomes.

According to the International Labour Organization (2011), agriculture is key to rural households and employs half of the world's population and 75% of the world's poor. Evidence from emerging economies shows that farm and non-farm rural operations, if adequately supported, will flourish and become engines of prosperity and creativity, and hence desirable. The Food and Agriculture Organization (2011) identifies four pillars of decent work, including employment generation and enterprise development; standards and rights at work; social protection; and governance and social dialogue. Thus, under better working conditions, agricultural productivity can increase, benefiting the "working poor" in particular. People in occupations that lack social security and safety nets to protect them against periods of low economic demand, and are often unable to produce sufficient savings to mitigate a financial crisis, also stand to gain (Food and Agriculture Organization, 2011). Although the government of Ghana has put in place various development programs to aid rural development, implementation of current rural policies and regulation has not been successful (Badu, Owusu-Manu, Edwards, Adesi, & Lichtenstein, 2013).

The SDGs aim to improve livelihoods and working conditions for all members of societies. Therefore, it is essential to foster rural development by providing decent work in rural areas. Rural development is key to ensuring that Ghana's economic and demographic structure does not become overly concentrated on significant cities while neglecting rural spaces, as that will intensify urban-rural dichotomies and rural unemployment.

This paper assesses the dual effects of agricultural FDI in rural communities, using a case study of the Lower Volta Basin of Ghana. The study shows that FDI increases Ghana's export at the macro level and produces positive spillovers, including youth employment, technology, and some skills transfer. FDI in agriculture is conversely characterised by poor wages, precarious working conditions, exploitation, leakages, and dislocation of smallholder farmers at the micro-level. Investments in the agriculture sector must suit local socio-cultural context and minimise negative externalities. The rest of the paper is organised into five sections. Section 2 discusses FDI and agriculture; section 3 is an overview of neoliberal policies in Ghana, section 4 describes the study area and methods while section 5 presents the findings and discussions. Conclusions are drawn in section 6.

FDI and agriculture

Though the FDI inflow into Sub Saharan Africa is small compared to FDI inflows in developed countries, FDI in many SSA countries is increasing. The interaction between FDI and local conditions can lead to a positive process, spillover or development on the one hand, and to the creation of a backwash or dependency, on the other (Fløysand, Haarstad, Jakobsen, & Tønnesen, 2005).

FDI in agriculture can lead to technology transfer, expansion and modernisation, and linkage between farmers, manufacturers and local suppliers (Huchet-Bourdon, Ben Slimane, & Zitouna, 2015). FDI in agriculture will attract more funds and capital and increase output from the agricultural sector. FDI in agriculture unlocks capital for the purchase of sophisticated machines while reducing the over-reliance on rudimentary technology and enhancing local people's lives. Proper docking of FDI in agriculture can lead to increased yield and income and make the sector more attractive to the youth.

In many developing countries, FDI in agriculture creates the opportunity for spillovers in the form of diffusion of competence and skills, increases in tax incomes to the national economy and improved competence among local firms, thereby facilitating growth in the economy (Juliussen & Fløysand, 2010). The interaction between investors and locals can lead to knowledge transfer. Overall, FDI in agriculture creates the opportunity to transfer improved farming techniques and practices such as crop recovery and the management of moisture nutrients and canopy (Adeho, 2015). Proper interaction between FDI and local economies can thus lead to the development of human capital and increased revenue from farm produce in local and foreign markets. Investors in local economies sometimes support the development of infrastructure including roads, schools, hospitals, and water as part of their corporate social responsibility. National governments also benefit from tax revenue and income of employees to stimulate growth in the broader economy.

Conversely, FDI can create dependency – dislocation, corruption, “crowding out” of local businesses and leakages (Jakobsen, Rusten, & Fløysand, 2005). Thus, a significant proportion of income from FDI in the agricultural sector is repatriated to the investing country. Because of the tendency for investors to repatriate much of the profit, the sector can potentially remain undeveloped while at the same time putting pressure on the local currency. Often, the expectation that FDI will generate employment may not be actualised, as investors bring expatriate professionals and more modern technologies into the sectors, limiting the number of local labourers employed.

Besides, the activities of investors can result in the displacement of smallholder farmers and local companies. Local companies will collapse due to high or increased competition from foreign companies and lower profits. This will lead to the loss of jobs as it increases unemployment in the communities. FDIs can also result in modern-day economic colonialism characterised by labour exploitation and precarious working conditions.

Structural adjustment and FDI in Ghana

Although the initial performance of many SSA economies immediately after independence was good, the pace of economic development declined in the 1970s and came to a standstill in the 1980s (Heidhues & Obare, 2011). Ghana had a buoyant economy with an inflation of less than 1% immediately after independence (Aryeetey & Fosu, 2002). As the world-leading producer of cocoa and the second-largest producer of gold, timber and forest products, Ghana had a very high per-capita income and an average income like that of Mexico and South Korea just after independence. However, by the end of 1983, Ghana had a debt stock of US\$ 1,820 billion with inflation as high as 123% (Dzidza, Jackson, Normanyo, & Walsh, 2017).

After the failure of interventions like import substitution, industrialisation and state-led investment by the Ghanaian government, the country sought support from the World Bank and IMF. It implemented the structural adjustment programme (SAP) (Amo-Asante, 2016). The goal of SAP was to boost local productivity, increase and expand the economic base, improve the balance of payment, reduce government expenditure, improve the economy, and promote its growth potential (Sulaiman, Migiro, & Aluko, 2014). Characteristically, SAP requires the liberalisation of foreign exchange, withdrawal of subsidies, fiscal and budgetary discipline, greater hospitality to foreign investors through privatisation and trade liberalisation (Azindow, 2005).

The fundamental logic of the World Bank/IMF-led SAP is that export promotion and private investment were the vital means to achieve economic growth and development. With a limited domestic capital base, FDI is considered critical to export promotion and private investment in SSA economies (Awudi, 2002). FDIs are investments that reflect the objective of establishing a lasting interest by a resident enterprise in another

economy. It is an investment in a foreign country where the investor controls the investment (OECD, 2008). For an economy to attract FDI, it requires a sizable market, a liberalised economy, rationalised economic policies, improvement in domestic financial institutions and banks, good manufacturing and outsourcing hubs and political stability (Ramesh & Packialakshmi, 2014)2014.

In Ghana, post-independence development policies focused on state-led industrialisation. The government developed industrial policies like the Pioneer Industries and Companies Act of 1959, the Capital Investment Act of 1963 (Act 172), the 1973 Investment Decree (NRCD 141) and the Investment Policy Degree (NRCD 329) of 1975. By 1985, the government had established the investment core (PNDCL 116) and the Ghana Investment Centre, which was later replaced by the Ghana Investment Promotion Centre (GIPC Act 478) in 1994 to promote and regulate investment on behalf of the government (Gyebi, Owusu, & Etroo, 2013).

Ghana implemented economic and institutional reforms to attract FDI and introduce a multi-party democratic system in 1992 to improve the climate for doing business (Barthel, Busse, & Osei, 2011). Total FDI inflows started increasing in the 1990s, recording about US\$50 million in 1993, US\$250 million in 2005 and almost US\$450 in 2006, and the figures continued to rise. Currently, Ghana is amongst the top FDI receiving countries in Africa. Between 2006 and 2016, there has been more FDI inflow in the country, attributable to the initiation of good investment policies by the government of Ghana (Yeboah, 2018).

According to the GIPC, FDI in Ghana goes to agriculture, building and construction, general trading, manufacturing, service and tourism (Yeboah, Kesse, Apana, & Kudakwashe, 2018). The majority of FDI, however, goes to mining and oil and gas extraction. In the manufacturing sector, FDI is mainly resource-based, such as the processing and export of cut pineapples. In the service sector, FDI is in banking and the construction sector— building roads, public works, and hotels.

Currently, the primary sources of FDI in Ghana are the United Kingdom (320 projects), the USA (210 projects), and China (562 projects). Investments from the sub-region to the Ghanaian economy come from Nigeria with 205 projects and South Africa with 73 projects (Aheto, 2014). The Ghana Investment Promotion Centre (GIPC) registered agriculture projects worth US\$6,469,000 in 2016. In 2015, two agriculture projects worth US\$2,520,000 were registered by the GIPC. In all, GIPC registered 110 agriculture-related projects worth US\$1,303 billion from 2008 to 2016 (Ministry of Food and Agriculture, 2018b).

Table 1: Sectoral distribution of FDI in Ghana

Number	Value million US\$	Sector
6	8.58	Agriculture
8	78.66	Building and construction
12	137.51	Export trade
28	1,091.23	General trade
27	55.31	Liaison
45	662.93	Manufacturing
42	1,289.77	Service

Source: Ghana Investment Promotion Centre (2018).

In 2018, the GIPC registered 168 projects from January to December, summarized in Table 1 above. Of these, 117 projects worth US\$ 2.89 billion were solely owned by foreign investors. The remaining 51 projects worth US\$ 652.02 million were joint ventures between Ghanaians and their foreign investors. Chinese investors participated in 37 projects, Indian investors in 18 projects, Netherlands investors in 15 projects and United Kingdom investors in 12 projects. Geographically, the investments were in eight regions. Table 2 below is a summary of the regional distribution and value of the investments.

Despite the devastating impacts of the COVID-19 pandemic on global economies, Ghana recorded 69 projects worth about US\$688.74 million in the first half of 2020. With these investments, the FDI component amounted to US\$ 627.52 million and the local components amounted to US\$ 61.22 million. The FDI value in 2020 was a significant increase of 409.10% over the FDI value of US\$ 123.26 million recorded in the first half of 2019 (Ghana Investment Promotion Centre, 2020).

Table 2: Geographic distribution of investment in Ghana in 2018

Regions	No. of Projects	Value (US\$ million)	Job created
Northern	2	400.50	365
Brong-Ahafo	2	1.41	158
Ashanti	7	4.95	1,532
Eastern	8	9.13	356
Volta	1	0.42	458
Greater Accra	138	3,069.52	14,464
Central	3	20.62	156
Western	7	34.02	435

Source: Ghana Investment Promotion Centre (2018)

SAP and Employment in Ghana

The SAP conditions included the devaluation of the currency, increased exports (usually primary materials), privatisation of industries (including necessities such as water and healthcare) and trade liberalization. Additionally, the government was required to cut back on social spending and imposition of user fees, reduce financial regulation and promote market-based pricing (which tends to raise the cost of essential goods and services) (Oppong, 2013). Two significant phases of SAP were implemented between 1983 and 1992, locally known as the Economic Recovery Program: ERP 1 focused on revitalizing the economy and ERP 2 focused on consolidating the gains made in ERP 1. Though both phases of recovery programs made some successes, they also resulted in retrenchment and froze employment (Azindow, 2005).

In the 1980s, public employment began to falter due to high employment freezes, early retirements, the retrenchment of existing employees and the suspension of the automatic recruitment of university graduates (Cornia, Van der Hoeven, & Mkandawire, 1992). In the late 1980s, over 60,000 civil servants and cocoa board staff were retrenched (Weissman, 1990). Overall, more than 200,000 public servants lost their jobs within the first ten years of implementing the SAP, while unemployment increased to about 11% from 1980 to 1993 (Amo-Asante, 2016). The employment structure in Ghana changed, with total employment by large-and-medium-scale formal sector dropping by almost 60% from 462,000 in 1985 to 186,000 in 1991 (Ablo, 2012).

The SAP and ERP negatively affected virtually all sectors of the economy. With all these retrenchments, women and the least paid, such as secretaries, clerks, and cleaners, were most affected. To mitigate the negative impacts of SAP, the government-initiated policies such as the Program of Action to Mitigate the Social Cost of Adjustment (PAMSCAD) and the Ghana Poverty Reduction Strategy (GPRS). Other interventions are the President's Special Initiative, the Medium Term Private Sector Development Strategy, Livelihood Empowerment Against Poverty (LEAP), the Trade Private Sector Support Program and Vision 2020 all, aimed at reducing poverty and unemployment, but with limited success (Asafu-Adjaye, 2005).

Unemployment is high among Ghanaian youth, who make up one-third of the country's population. Youth unemployment is a major developmental problem that can bring about social conflicts and brutal revolutions, as evident in the Arab Spring (Drine, 2016) that is far from resolved. The primary concern about youth unemployment is the rising proportion of unemployed graduates. More Ghanaian youth join the labour market annually with tertiary education qualifications, but the economy has not expanded to accommodate them (Ministry of Employment and Labour Relations, 2014). Thousands of young graduates roam the streets and various offices in the cities in search of unavailable jobs. Often, the types of job graduates consider appropriate for their status are not available (Dai Kosi, Tsadidey, Ashiaghor, & Baku, 2008).

Agriculture and job creation

Agriculture, the backbone of the Ghanaian economy, is vital in tackling unemployment. Agriculture was the leading contributor to GDP, accounting for 41.4%, 39.4%, and 40.9% of national GDP in 1993, 2000 and 2005, respectively. By 2013, agriculture's contribution to GDP had declined to 22.0% with an average growth rate of 3.9%, while contribution to GDP increased to 49.4% with a growth rate of 6.5% (Aryeetey & Baah-Boateng, 2016). Interestingly, the service sector took over from the agricultural sector as the primary contributor to national GDP after the rebasing of the economy in 2006 (Osei-Boateng & Ampratwum, 2011).

The relevance of economic growth is measured by its effect on citizens' quality of life by creating enough good quality jobs (Aryeetey & Baah-Boateng, 2016). Despite the decline in agriculture's contribution to GDP, it remains the major source of employment for the growing workforce. Though agriculture's share in total employment has been declining, the sector still engages over half of the workforce in the country (Ministry of Employment and Labour Relations, 2014). Unlike the other sectors, agriculture employs many unskilled workers. It provides a livelihood for more than 70% of the rural population, including a considerable share of the poorest households in the country (World Bank, 2017).

The agriculture sector also provides raw materials for local industries, revenue for the government, foreign exchange, and poverty reduction (Banson, Nguyen, & Bosch, 2016). The majority of the total agricultural output is from smallholder farmers whose farms are between two and five hectares in size (Al-Hassan & Jatoo, 2003). Smallholder farmers face challenges like limited access to input, lack of capital, lack of modern technology, high postharvest losses, lack of training, inadequate storage and marketing facilities, land acquisition, and land tenure issues (Chamberlin, 2007). Agriculture remains largely rain-fed and subsistence-based, with the rudimentary technology used to produce 80% of total output (Liu, Koroma, Arias, & Hallam, 2013).

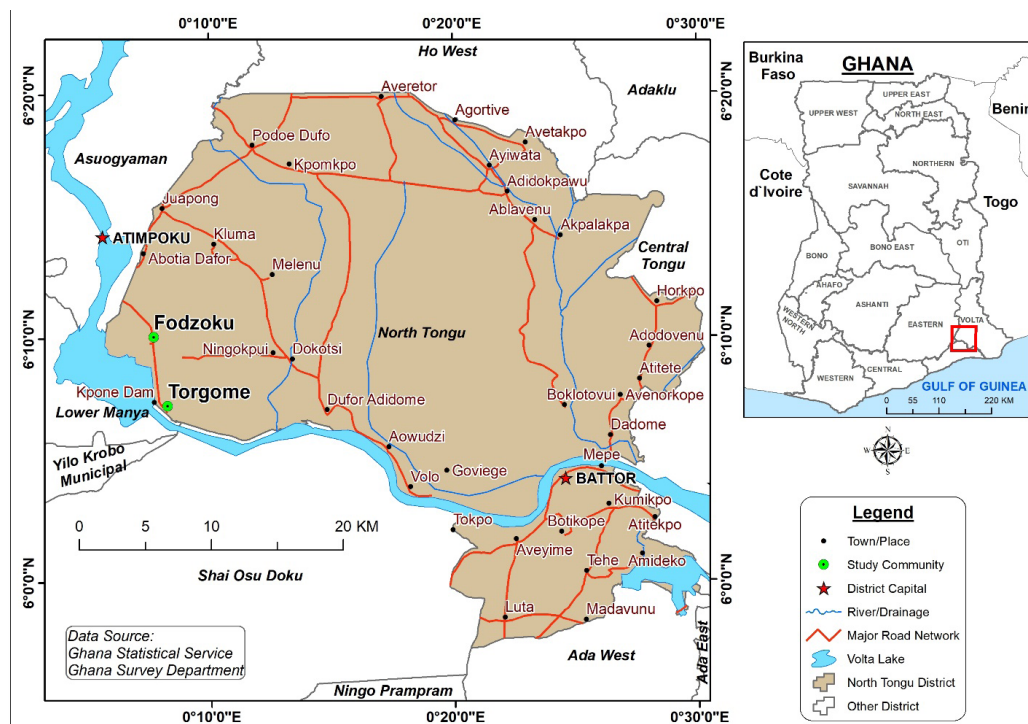
Agriculture is not a glamorous job and suffers from entrenched negative perceptions by the youth (Bafana, 2014). However, through modernisation, agriculture will be able to drive the economy and create jobs for the unemployed youth and improve food security in the country (Adeho, 2015).

Study Area and Methods

The study was conducted in the North Tongu District. It has a total land size of about 1,131.64 km² constituting 6% of the total land area of the Volta Region (See Figure 1). The people of North Tongu are Ewe; they are organised under traditional authorities (North Tongu District Assembly, 2016). The district has an agrarian economy with

57.2% of the employed population engaged in agriculture, forestry and fishery, compared to 15.3% involved in service employment (Ghana Statistical Service, 2014a).

Figure 1: Map of the North Tongu District



Source: Author (2021)

Agriculture in the district is carried out by small-scale unorganised farmers who depend mainly on basic labour-intensive production techniques. The fertile soil and available water attract foreign companies such as Praire Volta Limited, Vegpro Kenya Company Limited and Quist Farm to the district to produce various crops for export (North Tongu District Assembly, 2017), summarised in Table 3.

Table 3: Major Agriculture Investments in North Tongu District

Name of Farm	Crop	Location
Prairie Volta Rice	Rice	Aveyime
Musahamat Farm	Banana	Aveyime
Vegpro	Maise	Torgorme-Fodzoku
Anyako Farm	Pepper	FodzokuTorgorme
Fresh Field	Pepper	Yaeweh
Quist Farm	Mushroom	Aveyime

Source: NTDA (2017).

We collected data for the study through fieldwork undertaken between May 2017 and August 2019. During fieldwork, the case study method used in the social sciences was employed (Yin, 2013). In this study, the case study research design was used to check whether the theory of FDI as a positive process and FDI as backwash applied to the phenomena in Vegpro. Vegpro Company, which is one of the major and early investors in the district, was studied to know whether it would yield if it were to interact with the local economy, whether it will produce rural development or dependency. The study also aimed to find out whether the jobs the company provides to North Tongu District are sustainable.

Data was collected using interviews, informal conversations, participant observation, surveys and site reconnaissance. Thirty-five key stakeholders were interviewed. These stakeholders include assembly members, executives of youth groups, community landowners, management of companies such as Vegpro, team leaders and workers at Vegpro. Interviews focused on the employment history, terms and conditions of work at Vegpro, training and capacity building, benefits enjoyed, and challenges faced by youth who work on the Vegpro project. The survey included 80 respondents and focused on assessing levels of education, health, employment and financial history, and working conditions. Participant observation was carried out on social amenities, infrastructure and living situation in the communities.

Overview of the Vegpro project

Vegpro is a horticulture company founded in 1979, operating on the nucleus-out-grower schemes. As a result, Vegpro cultivates less of its area as smallholders provide most of the company's supplies. In the 1980s and 1990s, the company focused on producing French beans and Asian vegetables such as karalla, dudhi, okra, turia and various chillies for export markets in the UK, France and Germany. The company maintains additional investments in African countries such as Kenya, Ethiopia and Ghana that produce vegetables and flowers for supermarkets in the UK and Europe.

The company secured funding from the International Finance Corporation and started operation in Ghana in 2011 but started exporting in 2012. Vegpro produces baby corn, butternut squash, sweet potatoes, sweet corn, chillies, and other vegetables. According to the company's management, they cultivate more than 1,000 hectares and aim for full employment of more than 4,000 workers by the time the project is in full operation. The company currently employs about 400 skilled and unskilled personnel in and around the North Tongu district.

According to the manager, the North Tongu District was their chosen investment destination, 'basically because of land and water availability for irrigation. This is the perfect environment for the type of farming we do' (Manager, January 2018). The

availability of low-wage labour in the North Tongu District is key to ensuring low production cost. According to the farm manager, their workers 'are from Fodzoku, Torgome, Azagornokope, Sorkope, Somenya, Kpong, etc. Because these people are predominantly farmers, they understand the farm work' (Manager, January 2018).

There are three main operational areas in the company – administration, the farm, and the pack-house. The administration is where the managerial work occurs – the preparation of accounts and budgets, recording information on production and farm management practices. Other tasks performed here are providing equipment and supplies (personal protective equipment, seeds, and fertilizer) for effective work, calculating employees' pay and keeping employment records. To be able to work in administration, one must have some level of educational qualification. According to the manager, the categories of people employed 'depends on where they need people. For areas like administration, you need some qualification or skills, to be able to work there' (Manager, June 2019). Indeed, some workers confirmed that there are people with Senior High School Certificate who work at the administration as office assistants. But none of the 80 respondents surveyed at the time worked at the administration, although some had a high school certificate.

On the farm, the manager says they have plans for the cultivation of other fruits and vegetables and baby corn, which is their main product. He said, 'Our main product is baby corn. We have some vegetables on trial stages, Okra, Cherry tomatoes. So, in the future, we are also looking at going into mangoes and avocados. As I speak to you now, we have a nursery of about more than 20,000 seedlings of avocados and mangoes which we look forward to growing' (Farm Manager, December 2018).

Since the company operates a highly mechanised farm, the only manual work done is the harvesting of crops. Since baby corn is harvested daily, people are employed to harvest the crops. As stated by the manager at Vegpro, education is not a requirement for general workers. He said, 'for the general workers, the main thing is you need to be fit and then at least, able to understand what is required of you. Education is not a major requirement' (Farm Manager, January 2018). Out of the total population sampled, 15% are farmworkers, of whom 75% are men and 25% women. Fifty per cent of the farmworkers are casual workers, and the rest are permanent workers. The salaries for the farmworkers ranged from GHC 100 to GHC 500 a month.

Another operational area employing local labour is the packhouse, where the baby corn is cleaned, packed, and stored for export. As indicated earlier, education is not a major requirement to work at the packhouse. However, a farm manager noted that 'for certain positions like a team leader, you need to have at least a secondary school certificate' (Farm Manager, January 2018). Some respondents work at the receiving area in the packhouse where harvested baby corn is processed. After harvesting, the crops are transported to the receiving area and offloaded. Sixteen respondents worked in the receiving area, all of

whom are men; 10 of them are permanent employees, and the remaining six are casual workers with salaries from GHC 100 to GHC 500 monthly.

In the production area of the packhouse, the baby corn is de-husked, weighed, and wrapped. Thirty-six respondents worked in the production area, including 14 men and 22 women. Of these, 24 are permanent workers, and 12 are casual workers. After processing, the baby corn is moved to the dispatch area, where the final wrapping and packaging occurs. Here, the baby corn is packaged to meet international standards and transported to the airport for shipping. Eight (8) men work in the dispatch area, seven (7) of whom are permanent workers, while one (1) is a casual worker.

The quality control department is central to the operations of the company. The quality control personnel are responsible for ensuring that crops meet EU standards before export. They examine the baby corn and reject overgrown corn. Periodically, the quality control unit workers are trained on the current trends to prevent products from being rejected on the international market. A total of twelve people, comprising six permanent workers and six casual workers, are employed in quality control.

FDI as Development or Spillover: Evidence from Youth employment in the North Tongu District

The operations of the company provide an important employment source to many of the youths in the communities. A 25-year-old cleaner noted that before securing a job with Vegpro, she was a casual labourer helping a kenkey seller. According to her, 'my previous employer paid me 8 cedis daily, and I could eat kenkey and fish for free as well as take some home to give to my family. I joined Vegpro because most of my friends work here and due to the prestige attached to working with a big company' (Cleaner at Vegpro, June 2018). Thus, for many of the youths, waged employment provides income and has symbolic significance.

The survey data shows that 63.8% of respondents were unemployed before securing a job with Vegpro. According to a youth executive from Fodzoku, unemployment among the youth is a significant challenge in the community. He noted that 'The rate of unemployment among the youth is on the increase. Though we made several complaints to the Member of Parliament of North Tongu and the District Chief Executive, nothing has been done to curb the problem' (Youth Executive Member, January 2019). According to an Assemblymember, youth unemployment in many of the communities in the district remains a problem. According to him, the 'unemployment issue is very high amongst uneducated youth since they do not qualify for jobs requiring specific skills and knowledge' (Assemblymember, January 2018). Many respondents argue that fishing and farming no longer provide a stable income source, and hence they are unattractive. Many of the North Tongu District youth migrate to the cities searching for jobs, while those who stay behind are mainly unemployed.

Ninety-two percent (92%) of the respondents agreed that Vegpro has helped in addressing the unemployment challenges. Employment has provided some independence for the youths who previously depended on their parents for food, shelter, and clothing. The benefits of work go beyond the individuals, for as the team leader in the packhouse observed, ‘before Vegpro project commenced, unemployment was high. The unemployed youth were dependent on their parents for money, and crime was high in many communities. But since Vegpro began, the youth have become more independent, and they have learnt how to manage time and money. Also, during fundraising in the town, youth can contribute to the town’s development parenthesis (Team Leader, January 2018). Youth employment is thus essential to addressing various social vices. A UN-Habitat and IHS-Erasmus University Rotterdam (2018) report confirms that FDI employs in the different sectors of the economy. FDI usually generates employment in two ways: direct employment by the investor and indirect employment through backward and forward linkages to local and national economies. In this study, local food vendors also sell food around the company premises.

Capacity building, skills, technology, and other positive spillovers

Most of the respondents confirmed that they had received on-the-job training. The training focused on leadership, personal hygiene, safety measures and quality control. Some workers are trained monthly, and respondents believed that the new knowledge and skills gained can be used elsewhere. Respondents have also gained knowledge in dealing with fire hazards and overall workplace safety. Additionally, some of them have been trained in the use and maintenance of farm equipment. As one of the managers noted, ‘some of the workers have developed computer skills while others have been trained on the use and maintenance of farm machinery’ (Manager, January 2018). For an agrarian district, such skills in the operation and maintenance of farm machines can be helpful beyond the company as an increasing number of farmers are renting tractors to clear their lands.

The project has therefore provided a critical avenue for the acquisition of skills that can be transferred to other sectors of the economy. FDI in agriculture also provides the avenue for the transfer of technology and technical know-how to developing economies. A critical relevance of the Vegpro project is the development of human resource in many of the villages in the project catchment area. As argued by a key informant, ‘some of the youths have improved their knowledge of farming and how to operate machines’ (Key informant, January 2018). As Eimers, Nouwens, and Toorman (2005) noted, the potential for improving access to modern technology is core to countries’ drive to attract FDI. Thus, working with foreign companies provides locals with the avenue to acquire new skills and knowledge as they learn how to use these modern technologies. Such knowledge and skill may not be readily available to local producers or people in host countries.

About 37.5% of respondents confirmed positive changes in their lives since they started working at Vegpro. With a stable income, respondents can now take care of themselves and other family members. Conversely, 62.5% said they had not seen any changes in their lives since they started work at Vegpro. In general, workers' benefits also included awards on Farmers' Day celebrations, Christmas gifts, bonuses, pension contributions and health insurance.

FDI can produce spillovers like capital, economic freedom, employment and integration into the global economy (Ramesh & Packialakshmi, 2014) 2014. Dinh, Vo, and Nguyen, (2019) added that FDI enhances tax revenue and human capital and increases long-term benefits and connections between different countries. This is obvious in North Tongu as the youths who could not contribute to development in the past can do so now.

FDI as backwash: Poor wages and exploitation

While there is no doubt that the FDI in agriculture plays a positive role regarding employment, stimulating local economies and linkages to broader national economies, there are also several adverse outcomes. In addition to their salary, the company also provides lunch and transportation for the workers. Nevertheless, most workers stated that they were being exploited and complained about the working conditions (Survey, January 2018). Work starts from 7 am and ends at 4 pm with a one-hour break for the workers to eat and rest. Many workers further complained that the work was tedious, and that there were no efforts to improve the work environment and opportunities for upskilling.

Although workers received wages above the minimum wage per day (9.68 cedis), most of them still considered the salary, insurance, and allowance as inadequate. Wages depend on how long they have worked at Vegpro and range from GHC 9.80 for less than a year to GHC 11 for four years and above. However, workers who work overtime claim they are usually paid only half of what is due to them.

There is a lack of stability in employment for the workers. Most of the respondents argued that the job is not sustainable as their employment is seasonal. The majority of workers are laid off when production is down. This view was confirmed by a manager who noted that 'I may say, the work is not stable. Small-time, on and off.' Interestingly, only 25% of respondents have an alternative source of income. The remaining 75% do not have an alternative income source, and hence when they are laid off, they become temporarily unemployed.

The baby corn is kept in cold storage units during processing, packaging, and transportation for export. According to an informant, 'when you put a sachet of water where we work, it will freeze in just 30 minutes' (Male worker at Vegpro, January 2018). Although workers have PPEs when they work in the cold area, many still feel the effects of the cold. Workers

stand up to five hours in the cold room and only come out during break periods. Due to this, the women who de-husk the baby corn complain of health problems linked to their work in the cold areas. Many of the women interviewed complained about irregular menstrual cycles and severe abdominal pains attributed to their work in the cold room. As one of the women who worked in the cold room noted, 'The cold room prevents the baby corn from going bad. If you are inside the cold room, sometimes you will feel pains under your feet. And your hands can freeze. One of my friends who works in the cold room cannot wear a normal sanitary towel during her menstrual periods. This started when she started to work in a cold room. However, she could not stop the work because she needs the money' (Female worker at Vegpro, January 2018). A medical expert who was interviewed on this issue attested that drastic changes in lifestyle and environment could cause hormonal changes, especially in women. These lifestyle changes can cause drastic changes in human bodies. He said that 'For many women, the freezing environment can cause changes in their menstrual cycle' (Medical Expert, December 2020), as was experienced by some respondents.

Also, most of the workers complained about intimidation from management and in many cases, they are often sacked when people raise concerns about specific issues that adversely affect them. A female worker said, 'I see that because we are youth and they see us that we are not well educated, they do not respect us. If the managers say something and you disagree, then you try to voice up, they feel that you are challenging them. So, before you realise, with a little mistake, they will just sack you. This is because they feel like what they are doing is right, or we do not have to complain, because after all, we are working for money' (Female worker at Vegpro, January 2018).

Management officials, on the other hand, also complained about the poor attitude of employees towards work. They complained that on weekends many workers prefer to attend funerals or weddings, or to stay at home instead of working. The unwillingness of workers to work on weekends, the employers contended, affects production negatively. Officials noted that baby corn cannot be exported when it overgrows, leading to a loss for the company. Thus, they expect workers to be at post whenever they are needed for harvesting. Officials also complained about theft, encroachment and fire outbreaks that adversely affect their output. According to officials, several sacks for packaging cables and other equipment were stolen by some employees.

Though the company provides workers lunch, respondents complained about the lack of animal protein in the food. It is important to note that most Ghanaian foods are served with animal protein. Since the company is managed by vegetarians and targeted consumers are usually vegetarians, eating meat, fish or eggs is prohibited. Also, nuts are not allowed on the premises. Therefore, workers are served food that is usually without animal protein. One team leader at Vegpro argued that 'because the managers are

vegetarians, they want to impose their culture on us. Ewes cannot eat without fish or meat. Yet they serve us lunch without protein. For instance, they give us rice and stew without fish, meat or eggs, sometimes just banku and pepper. If you want to eat fish or meat, you have to hide and do it. Ensure you are not caught else you will be sacked' (Team leader, January 2018). A cook with the company confirmed that they do not add any animal protein to any of the food they cook for the workers.

However, company officials explained that most of their clients in Europe are vegetarians, so if the product gets contaminated with animal protein or nut, they will be out of business. The manager said, 'It is true. The company has a nut and allergen control site. That is why you go to other companies, and you have rules for their site, so that is it. The food that we produce is consumed by customers who are allergic to some of these things. Most of our customers outside [Europeans] are vegetarians. If you are producing food for vegetarians, you do not have to bring anything that vegetarians do not consume close. So that we do not get ourselves that problem, the company has that policy, we do not bring meat, fish, or nut around. You can eat it outside but not in the premise where production is going on' (Manager at Vegpro, January 2018). There is, thus, a clash of cultures in the docking of FDI in a local context.

The project has resulted in the displacement of several smallholder farmers. The land acquired for the project belonged to several communities and multiple families whose members cultivate the land. Backed by the state, the land has been leased for large scale commercial production geared for the export market leading to the dispossession of several farmers of their lands. These negative outcomes of FDI at the local communities (Haarstad, 2009) are often not the subject of critical policy and scholarly debates. In North Tongu, the land acquisition for the project also led to intra-family disputes over compensation for the land.

Ultimately, community elites received a significant proportion of the compensation while vulnerable social groups like women and migrants did not benefit from the compensation. These vulnerable groups also suffer further as they have lost their lands to the project without allocation of alternative lands. Also on the rise is inter-family and inter-community boundary disputes. While some of these disputes are not new, they have been largely dormant and only became a problem when the land was acquired for the project. Thus, FDI can also produce adverse outcomes such as exploitation, environmental degradation, crowd-out, leakages of resources from the country, poor wages, dislocation of smallholder farmers and precarious working conditions (Juliussen & Fløysand, 2010). Ecologically, monocropping, which investors practice, has negative implications for biodiversity.

Conclusion

FDI inflows into the agriculture sector generated mixed outcomes. Although there are macro-economic benefits, micro negative effects were also recorded. Unless jobs are upgraded, and more technological innovations introduced, FDI orientated investments in agriculture will remain satellites of investments with little prospects for transforming rural areas into sustainable communities with decent work. Of course, a critical mass of FDI is needed, and frontier investors such as Vegpro are likely pioneers. Transformation may only occur when workers have various employment prospects so that companies are forced to improve working conditions, upgrade rural agricultural activity and catalyse rural communities as local engines of sustainable development.

It is important to note that Agricultural FDI in the North Tongu District resulted in modest positive outcomes such as skills upgrading for a minority of the workforce, technological transfer and economic activity, but not enough to transform communities. For instance, international companies train the youth in particular projects, contribute to human resource development and engage workers in utilising technological approaches to agricultural development. This enables the workforce to transition towards a more technical and scientific-based approach to agricultural development and crop production. Through such operations, the high rate of unemployment in the communities and their catchment areas has been reduced, and the success of these projects makes the area more attractive to enticing new FDI, but not enough to generate and sustain sustainable rural development.

On the other hand, agricultural FDI in North Tongu District has also resulted in negative outcomes such as loss of land, poor wages and precarious working conditions for some, and limited upskilling. It is evident that not all the workers participated in and engage in technological approaches. Some remain as basic labourers with little prospects of being upgraded and, therefore, are not much better than traditional agricultural labourers.

FDI in the agriculture sector needs to balance its positive effects and its local negative externalities. Investments could be better designed to suit the local socio-cultural and economic context; thus, government support programs could play a better partnership role in marrying FDI with upgrading the labour force. The investment framework should not only favour foreign investors outside the continent but incentivise and target African investors, both in Ghana and from other SSA countries. The government should target more FDI into rural areas and not overly emphasise urban-based projects. Since FDI with efficiency-seeking objectives look out for host countries with a lot of labour, they will be willing to invest in Ghana. This will create more jobs for the youth in the country.

FDI could also consider shared community ownership in FDI. It is essential to transition away from the neo-colonial models of FDI, and neoliberal emphases that privileged

outsiders and led to a frenzy of land grabs in many countries. It will help move towards more sustainable and resilient pathways so that Ghanaian agriculture can bring about actual, sustainable development for its people. It is high time that policymakers and experts focused more attention and policy instrument towards the sustainability of Africa's rural spaces and populations.

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Ghana's Juvenile Justice System: Assessment of Selected Formal Juvenile Justice Institutions and Agencies

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Abstract

This paper assesses the state of selected formal institutions and agencies within Ghana's juvenile justice system and is part of a larger study that assessed Child Panels in the country. The study utilized qualitative research methods involving observation and semi-structured interviews. Field work covered a total of 16 districts in four regions of Ghana and a total of 115 respondents were interviewed. The findings expose the abject sordid state of the institutions and agencies which reduces them to a state of gross inefficiency and under-utilization. This paper highlights the fact that despite numerous studies that have identified similar challenges, no action has been taken to address them. It argues that scholars should now move beyond assessing the efficiency of the system to a focus on exploring how the system can realistically be transformed in light of the numerous challenges facing it and the socio-political realities in which it operates. It is also a call to the responsible public authorities to take action to address the challenges. The findings also show that non-governmental organizations (NGOs) play a significant role that complements the work of the formal juvenile justice system.

Key words: youth justice, juvenile justice institutions and agencies, Ghana, cultural interference in the justice system, non-governmental organizations

Introduction¹

Recent attempts by the Ghana government, supported by the United Nations Children's Fund (UNICEF), to reform Ghana's child protection system in order to strengthen and make it more effective and sustainable generated several studies that sought to assess the existing system. One such study was an assessment of Child Panels (CPs). The primary objective of that study was to critically evaluate the relevance, effectiveness, efficiency, and sustainability of child panels (Ame et al., 2020, 2014). The secondary objective was to assess the state of the formal juvenile justice institutions, namely the police, remand institutions, the courts, and correctional institutions. This secondary objective explored whether the formal institutions of the juvenile justice system were in a state to effectively achieve their respective mandates. A related issue was to identify the challenges and constraints that confront these institutions and to make recommendations on the type of policy that could address them. It is this secondary objective that constitutes the focus

of this paper. Utilizing the theoretical frame of governmentality as postulated by Michel Foucault (1979, 1997, 1980, 2008), the paper discusses only the state of the juvenile justice institutions and agencies in the system that the authors encountered in their study of Child Panels, which are described below.

Several child-related legislations adopted by the colonial administration in the 1940s together created a separate juvenile justice system for the first time in the history of Ghana with the juvenile court as its fulcrum (Riby-Williams 1954, Ame 2018). Together, the legislations created a Department of Social Welfare and a Probation Office, and gave the juvenile court jurisdiction over all juvenile cases while operating on the principles and purposes of a welfare model with the objective of rehabilitation (Ame 2017, 2018; Mensa-Bonsu 1990-92, 2006, 2017).² Probation officers, who were usually trained social workers, and juvenile court judges were the key personnel within the system. Probation officers were the case workers who, in their Social Enquiry Reports, diagnosed pathology, made recommendations to the juvenile court on the type of treatment for delinquents, executed probation orders, and also provided treatment at correctional centres, with the purpose of rehabilitating offenders. In addition to the juvenile court, the other key institutions within the system were the “treatment” institutions, the Remand Homes, the Industrial Schools, and the Borstal Institute (Ame 2017, 2018; Mensa-Bonsu 1990-92, 2006, 2017).

In actual practice, the “treatment” institutions were more of custodial institutions because, as pointed out by scholars (e.g. Ame 2017, 2018; Ayete-Nyampong 2011, 2013, 2014; Dako-Gyeke, Adam, and Mills, 2020), the institutions and agencies within the system lacked both financial and personnel resources that would enable effective treatment to occur. As a result, the juvenile courts sent many juveniles who appeared before them to “treatment” institutions that were mainly warehouses where convicted juveniles were kept, rather than treatment centres. This is not surprising because within the global democracy project, as Foucault (2008, 1979) contended, the total scope of governmentality has transcended the institutional apparatuses of the State in such ways that the State itself is experiencing the mobile effects of a regime of multiple governmentalities. While the colonial legislations that created the juvenile court and probation system was replaced in the immediate post-independence period with the Criminal Procedure Code 1960, the juvenile justice model remained the same – a welfare model on paper, but in practice a justice model, as most of the juveniles appearing before the courts were sentenced to serve time at “treatment” institutions that had neither the personnel nor the equipment to offer effective treatment, and many of the juveniles appearing before the courts did not have any legal representation (Ame, 2019; Judicial Service of Ghana, 2018; Department of Social Welfare and UNICEF, 2005; Mensa-Bonsu, 1995, 2006, 2017).

It was only after the passage of the Juvenile Justice Act 2003, the current juvenile justice law, that substantive changes emerged (Ame, 2017). The innovations the Act introduced into the system changed it to a modified justice model with the retention of key elements of the welfare approach. The key innovations were alternative measures to be implemented by child panels using principles and mechanisms of restorative justice (Ame, 2010, 2017; Ame et al. 2020) and the infusion of children's rights at every stage in the system in accordance with the standards and principles of the Convention on the Rights of the Child (1989) for juvenile justice systems globally (Ame, 2011).

These are the key institutions and agencies within Ghana's juvenile justice system:

- (i) The Domestic Violence and Victim Support Unit (DOVVSU): this is an agency within the Ghana Police Service that is responsible for all types of cases involving children. Such cases include criminal offences, status offences, and family and child maintenance cases. DOVVSU is, thus, the Ghana Police Services' specialized unit on children's issues. DOVVSU units do not, however, exist in all regions and districts of the country. The general Ghana Police Service assumes responsibility for children's cases in places without DOVVSU. Wherever DOVVSU units do not exist, interviewees were drawn from the district offices of the Ghana Police Service.
- (ii) The Department of Social Welfare (DSW): The DSW is in charge of all juvenile detention institutions including Remand Homes and Junior Correctional Centres (formerly Industrial Schools) in the country.
- (iii) Municipal/Metropolitan/District Assemblies (MMDAs) are mandated by the Juvenile Justice Act of 2003 and the Children's Act of 1998 to establish and manage child panels, which were to devise alternative measures for dealing with less serious juvenile crime. MMDAs are created by and report to the Ministry of Local Government and Rural Development (MLGRD).
- (iv) The Judicial Service of Ghana is responsible for all Juvenile Courts (criminal cases) and Family Tribunals (maintenance and custody cases). In districts that do not have Juvenile Courts and Family Tribunals, District Courts assume responsibility for all juvenile cases.
- (v) The Senior Correctional Centre (SCC) is the institution where all juveniles, 16 years and above, who are convicted of committing serious crimes are sent. The SCC at Mamobi-Accra is the only such centre in the country and is run by the Prisons Service of Ghana, which is responsible for all adult prisons in the country. The Prison Service is under the authority of the Ministry of Interior.

- (vi) The Ministry of Gender, Children, and Social Protection (MoGCSP) is responsible for children and women related issues in Ghana. The Department for Children is a branch of this ministry.
- (vii) Commission on Human Rights and Administrative Justice (CHRAJ) is Ghana's national human rights institution; and,
- (viii) Legal Aid, which is mandated to provide pro-bono legal assistance to Ghanaians.

Overall, Ghana's juvenile justice system looks good on paper. In practice, however, the child panels, the abundant rights that the new Act accords children who are in conflict with the law, or the preceding institutions and agencies with high sounding mandates have not been implemented successfully (Ame, 2011, 2017; Hoffmann & Baerg, 2011; Gagnon, 2005; Ame et al, 2020; Mensa-Bonsu, 2006, 2017).

In fact, a lack of resources to implement juvenile justice policies and programs that look sound on paper is a problem with Ghana's juvenile justice system that dates back to its inception in the late 1940s. The first hint of a lack of adequate human resources to staff the probation machinery was given in the very first academic account of the system by James Riby-Williams in 1954. He intimated that of the first seven African officers recruited for the Department of Social Welfare (DSW), only three eventually stayed with the Department (Riby-Williams, 1954, p.6). All subsequent studies listed a lack of qualified staff, such as police officers who are knowledgeable on the relevant juvenile laws; inappropriate police cells for juveniles on remand; inadequate number of juvenile court judges and panel members; lack of legal representation; shortage of probation officers, social workers, professional counsellors and other required experts. Other problems include inadequate training facilities, tools and staff; lack of therapeutic services at the Remand Homes, Industrial Schools (now Junior Correctional Centres), and Borstal Institute (now Senior Correction Centre); absence of institutions for female delinquents; lack of parental commitment; and inmates' lack of interest in the training being offered (Tooth, 1956; Clifford, 1963; Mensa-Bonsu, 1990-92, 1995). Each of these scholars bemoaned the state of overall inadequate funding to run the juvenile justice system.

Of the few existing contemporary works on the subject (e.g. Ame, 2011, 2017; Ame et al. 2020; Ayete-Nyampong, 2011, 2013, 2014; Boakye, 2013; Gagnon, 2005; Hoffmann & Baerg, 2011; Mensa-Bonsu, 2006, 2017; Child Frontiers, 2011; Judicial Service of Ghana, 2018; Dako-Gyeke et al., 2020), the most comprehensive assessment of Ghana's juvenile justice system to date has been provided by the Department of Social Welfare and UNICEF Ghana (2005). It has become the benchmark assessment of the system because of its comprehensiveness. Nevertheless, the overlap between its findings and

those of previous and subsequent studies is profound: the same old challenges of a lack of regular sittings of juvenile courts due to the unavailability of magistrates, panel members and poor compensation; absence of diversion; shortage of qualified staff and logistics for effective performance of duties by institutions and agencies; the deplorable state of physical facilities that hinder the attainment of objectives; inefficient record keeping by institutions and agencies or unavailable data; and very little collaboration and information sharing among key institutions and agencies within the system (pp. xii-xiii, 59-61).

Another relevant issue that stands out in the literature is the impact of cultural norms, attitudes, and perceptions about the effectiveness of formal agencies within the justice system. Cultural attitudes can either hinder or enhance the work of the formal justice institutions and agencies. In Ghana, Boakye (2009a, 2009b) has argued that three cultural factors – patriarchal nuances, rape myth acceptance, and collective shame – contribute to the non-disclosure of certain types of crimes in Ghana including sexual abuse. Other scholars have argued that certain significant factors influence the decision making processes of victims in terms of whether or not to cooperate with law enforcement agencies prosecuting a case. For example, Kaiser, O’Neal and Spohn (2016, p. 22) have determined that “suspect dangerousness/offence seriousness, costs of cooperation, and likelihood of conviction influence a victim’s decision to cooperate.” This study will also explore how cultural interference impacts the work of the juvenile justice system in Ghana.

This paper is further evidence that even as the first quarter of the 21st century draws to a close, the challenges and problems identified within the juvenile justice system of Ghana in the mid-twentieth century when it was first created, still persist. Little has changed about Ghana’s juvenile justice system. Therefore, the paper calls for a change in research direction, and for action to be taken by the relevant authorities to address the challenges facing the system. It is argued that we must embrace the admonishing by Foucault (2008, 1979) to pay attention to “disciplinary power” that is applied to individual bodies by techniques of normalizing sanctions, surveillance, and a panoptic organization of punitive institutions that meticulously control the general population, life, and human beings. This is because governmentality as applied within the context of this paper must be understood in the broad sense of techniques and procedures for directing human behaviour.

Research Methods

The study utilized qualitative research methods of observation and semi-structured interviews. A purposive sampling method was employed and was targeted at the stakeholders and agencies within the child protection system generally and in the

juvenile justice system described in the preceding section. After stakeholder meetings with representatives of the institutions and agencies described above were held in Accra, the national capital, the team randomly selected four regions (Greater Accra, Western, Ashanti, and Northern regions) for field work.

We interviewed staff of the following agencies and institutions (as described above) with relevant knowledge about the issues related to the objectives of the study in the four regions: (i) the Domestic Violence and Victim Support Unit (DOVVSU); (ii) the Ghana Police Service regional and district offices which do not have DOVVSU units; (iii) the Department of Social Welfare (DSW); (iv) Remand Homes and Junior Correctional Centres (formerly Industrial Schools) in the country; (v) Municipal/Metropolitan/District Assemblies (MMDAs); (vi) the Ministry of Local Government and Rural Development (MLGRD); (vii) Magistrates and Registrars of Juvenile Courts, Family Tribunals, and District Courts; (viii) The Ministry of Gender, Children, and Social Protection (MoGCSP); (ix) the Department for Children; (x) the Commission on Human Rights and Administrative Justice (CHRAJ); and, (xi) Legal Aid.

In addition, we also interviewed staff of two NGOs that we encountered during the period of our interviews in the regions: Defence for Children International (DCI) Ghana, Kumasi, Ashanti Region and Campaign for Female Education (CAMFED) in Tamale, Northern Region. The two NGOs were selected because they were the only ones whose work focused on children in conflict with the law in their respective regions.

Letters were sent to the regional and district offices of each of these institutions ahead of our arrival in the field. Semi-structured interview questions were administered in-person to officers selected by the institutions. The interviews lasted about an hour and were conducted at their offices. Overall, a total of 115 respondents were interviewed. To address the objectives of this paper, interviewees were asked about the state of the institutions or agencies and their role within the overall juvenile justice system. The authors collected a substantial amount of data on the state of these institutions and agencies. The findings of the study are featured in this paper.

Theoretical Framework

This paper is anchored within the theoretical framework of Michel Foucault's concept of governmentality. Foucault was interested in power and social change, how power operates in modern societies, and how institutions through compliance with social norms come to produce obedient citizens, not under the threat of corporal punishment but simply as a result of their behaviour being constantly molded to ensure the full institutionalization and internalization of the dominant norms, beliefs, and values of their societies. This epitome of punishment, the institutionalization of norms or "discipline," as Foucault called them, was based on Jeremy Bentham's idea of the Panopticon, which as a mode of control seeks to render instances of "deviance" utterly visible.

It is within this sphere of the Panopticon that Foucault turned his attention to “governmentality,” a concept that embraces the array of socio-political arrangements, past and present, and within which individuals and groups of people have not simply been dominated as subjects but have also been able in some measure to govern, create and recreate themselves in the process. The problem of “government,” Foucault (1979) argues, does not refer only to the government of the State, but also the government of souls and conduct and the government of oneself and as a regulatory or conducting power. Governmentality, as Foucault contended, signifies problems of self-control, guidance for the family and children, directing of the soul, and so forth, i.e., the “conduct of conduct” and the “governing of self” to “governing others”. This is all the more important because governmentality is a rubric that is central to conceptions of power, knowledge, and dominance within social organizations as a system that not only controls the actions and behaviour of an individual but also allows that individual to control the possible actions and behaviour of others (Foucault, 1980).

In *Society Must Be Defended* (1997), Foucault wrote about the features of “disciplinary power”; he indicated that this type of power is applied to individual bodies by techniques of normalizing sanctions, surveillance, and a panoptic organization of punitive institutions that meticulously controls the general population, life, and human beings. Simply put, Foucault posits that governmentality should be “understood in the broad sense of techniques and procedures for directing human behaviour” (1997, p. 82). Foucault therefore used governmentality as a concept to emphasize the importance of a government of subjects oriented to a calculated administration of lives (Foucault, 1980). In fact, Foucault has admonished that power produces knowledge and that power and knowledge are coterminous in that they directly imply one another. For that matter, Foucault contended that there is no power relation without the correlative constitution of a field of knowledge, nor any knowledge that does not presuppose and constitute at the same time power relations. These “power-knowledge relations” are to be analyzed on the basis of the subject who knows and the objects to be known, and the modalities of knowledge must be regarded as so many effects of these fundamental implications of power-knowledge and their historical transformations. As such, within the global democracy project, the total scope of governmentality has transcended the institutional apparatuses of the State in such ways that the State itself is experiencing the mobile effects of a regime of multiple governmentalities (Foucault, 2008). Foucault’s concept of governmentality will be applied to the juvenile justice system of Ghana to demonstrate how the system, set up to rehabilitate juvenile offenders, has inadvertently become a system of power and dominance that controls the actions and behavior of stakeholders in the system such as the juveniles processed through it but which at the same time permits the juveniles and other stakeholders to control the actions of others in the system.

Findings

The findings from our interviews and observations on the state of juvenile justice institutions and agencies within Ghana's juvenile justice system include institutional constraints and lack of logistical support, dilapidated remand homes and cells, under-utilized juvenile courts and family tribunals, non-functioning juvenile courts and family tribunals, and the interference of local cultural perceptions and traditional authorities with the work of the formal juvenile justice institutions. These are presented in this section of the paper.

Institutional Constraints and Lack of Logistical Support

Our data indicate that cases involving children were mainly referred to the Department of Social Welfare (DSW), the Commission on Human Rights and Administrative Justice (CHRAJ), the Police, DOVVSU, and Legal Aid. A major problem is that not all these child protection and formal justice institutions are located in every district. For example, the Legal Aid Scheme in the Greater Accra and Western Regions has offices only in the capital cities of Accra and Sekondi-Takoradi, respectively. CHRAJ has only 10 district offices out of a total of 23 districts in the Western Region at the time of this study. Of a total of 28 districts in the Northern Region, CHRAJ is only represented in 12. Information gathered indicates that only the DSW has an office in every district in the country and so they end up receiving the bulk of child related cases.

Criminal cases, however, tend to be more often referred to the Police and DOVVSU, who would then lay charges at the Juvenile Court or Family Tribunal if there are grounds to do so and depending on the nature of the case. But DOVVSU, unlike the regular police, does not have offices in every district, nor do Juvenile Courts and Family Tribunals. For example, even though there is a District Court in Shama, Western Region, it sits neither as a Juvenile Court nor a Family Tribunal. Children's cases are therefore referred through the supervising High Court Judge to other courts in the Region. This may take several days to accomplish.

Overall, our data indicate that the proximity of complainants to an institution determines their decision to report a case to that particular child protection institution. The mandate of the institutions and agencies within the juvenile justice system to address juvenile justice cases is therefore fragmented among several parallel institutions, with each addressing just a small proportion of cases, mainly based on the physical location of the institutions and agencies in the community.

A police officer expressed concern about how the inadequate number of relevant institutions in the districts and communities creates problems for them when they make arrests by noting that, "[t]he number of children arrested are many but since there is no

place to keep them, the Police are forced to release them and prosecute only serious cases and you know that cases are also withdrawn for settlement at home.” Another police officer pointed out that “[c]hild offenders are usually granted bail to go with their parents, even though in some cases they are not supposed to do so. But because we have no place to keep them, we do just that” (DOVVSU Officer, Kumasi, September 18, 2013).

There is also the problem of lack of trained professionals who work at the few existing institutions. A Social Welfare officer stated that there are only three (3) probation officers in Kumasi, Ashanti Region, and this is woefully inadequate, hence, he concluded the statement saying, “...we are therefore unable to effectively monitor child delinquents.” He stated further that Kumasi has only three (3) police stations with juvenile cells (Tafo Pankrono, Suntreso, and Asokwa). “It is bad because if the Police do not find a place to put child offenders, they will have to release them to the public who can lynch them. In cases where children are witnesses, they could be influenced if the Police do not find a place to keep them” (Regional Social Welfare Officer, Kumasi, September 3, 2013).

A magistrate also shared similar views:

The juvenile justice system is problematic and requires a lot of improvement. There are no remand homes and no cells for juveniles, and yet certain cases are unbailable requiring that juveniles be remanded. This is really problematic for all of us and we are compelled to bend the rules in order to resolve such situations (Magistrate, South Sekyere District, Agona, September 11, 2013).

In addition to the inadequate number of remand homes for juveniles, a lack of trained professionals for the agencies, and the inhabitable conditions of the few existing units, a District Police Commander brought to the fore other challenges such as feeding and transportation in response to a question about where children are kept when arrested. He stated that:

Juveniles are usually put behind the counter, but they abscond easily. Most courts have fixed days for juveniles, for instance if it is a Friday and a juvenile is arrested much earlier, you have to keep the juvenile till Friday and where do you keep them? How do you feed them? Even escorting them to remand homes is problematic, there are not enough remand homes and the few that are functioning are not fit for human habitation. Besides, the police do not have any means to transport children from one facility to the other (District Commander, Ghana Police Service, Sekyere South District, Agona, September 11, 2013).

A Coordinator of DOVVSU lamented about some of the victim-related problems they face when arrests are made in criminal cases and victims have to be cared for as follows:

Who cares for the victims when the accused is arrested? Often medical bills have to be paid whether victims have health insurance or not; there are very few shelters or homes to take the victims. Our officers end up paying the medical bills and for the transportation of victims to the hospital and for the accused to go to court out of their own [officers'] pocket. Lack of resources is the saddest aspect of this work. It is a sacrificial job. We pay for victim needs out of our own pockets (Coordinator, DOVVSU, Tema, August 28, 2013).

The Coordinator stated further that even though DOVVSU focuses on victims, it is woefully under resourced. One of their biggest challenges, according to her, concerns the payment of medical bills by victims of sexual and physical abuse. She noted that “a simple slap [physical assault] attracts a medical cost of 100 Ghana cedis [approximately USD 18] and without a medical certificate, victims cannot go to court.”

The preceding excerpts illustrate some of the concerns of the police, magistrates, and social welfare officers about the fact that the facilities to detain child suspects and children in conflict with the law are woefully inadequate, and that existing ones, due to lack of logistical support, are not fit for human habitation. There are virtually no juvenile cells in the Ashanti and Western Regions. The Northern Region has only two juvenile cells, one at Sakasaka and another at Lamashegu. The Remand Home in Kumasi serves the Ashanti, Central and sometimes other regions, and the Boys Remand Home in Tamale, along with the Junior Correctional Centre (JCC) in Pong-Tamale, serves the five Northern Regions. Generally, correctional centres for juvenile and young offenders in Ghana are woefully inadequate. Ghana has only one senior correctional centre for young male offenders (managed by the Ghana Prisons Service) and only one JCC (managed by the Department of Social Welfare) for female juvenile offenders. Female juvenile offenders are particularly disadvantaged because the only senior correctional centre serves only male juveniles in conflict with the law. The implication is that the majority of females may end up in adult prisons or spend a longer time in police detention.

The above observations by interviewees confirm the findings of previous researchers. Mensa-Bonsu (2006, 2017) has observed that pre-trial remand is a huge problem in Ghana with arrested male juveniles being kept in the same police cells as adults and female juveniles being kept at “counter-back.”³ Our interviewees’ statements about the problem of feeding, medical bills, and transportation when juveniles are on remand further confirm similar findings by Mensa-Bonsu (2006, 2017). Acute lack of personnel and logistics at all levels in the juvenile justice system as stated by our interviewees are findings that have been confirmed by several other researchers (e.g. Department of Social Welfare and UNICEF Ghana, 2005; Gagnon, 2005; Hoffmann & Baerg 2011-; Dako-Gyeke et al., 2020). As Hoffman and Baerg (2011) and Gagnon (2005) have noted in their respective studies, these institutional constraints render the institutions

and agencies within the system inefficient. We argue further that the inefficiency of the system is one of the reasons for the low patronage of these institutions and agencies, which is discussed in the next sub-sections.

Dilapidated Structures and Appalling Conditions

In addition to drawing attention to the inadequate number of juvenile justice institutions, the interviewees noted that the existing buildings were dilapidated and not fit for human habitation. The Boys Remand Home in Tamale was not even functioning at the time of this study because of this situation. A former Warden who served at the Boys Remand Home from 2006 until 2012 when it ceased operation described the appalling conditions at the Home during his tenure:

The Home stopped functioning because its physical structure was no longer safe. It was run-down and inmates could easily abscond because security was not up to standard. The home cannot function again unless the building undergoes massive renovation (Former Warden, Boys Remand Home Tamale, September 3, 2013).

During a tour of the Home, we observed the worn-down single structure with a large open room which served as a dormitory, one toilet and bath for the inmates at one end of the building, and a modest apartment at the other end, which served as the residence of the Warden. The absence of any security structure such as a fence wall at this Remand Home typifies the porous security situation at these institutions discussed by Mensa-Bonsu (2006, 2017).

The statement of a Deputy Director at the headquarters of DSW sums up the impact of the dilapidated structures on the juveniles: “Remand homes are run down and thereby abusive by themselves. By the time that children make an appearance in court, they are already hardened criminals and rehabilitating such hardened criminal becomes very difficult” (Deputy Director, DSW, Accra, August 27, 2013). Neither are the facilities in these dilapidated structures anything to write home about. The DSW regional office in Tamale, housed in a dilapidated structure very much like the Head Office building in Accra, boasts of only two vehicles and a computer, which were all donated by NGOs. Up to the time of our interview with the Regional Director in September, they had not yet received their subvention for the year 2013. Interviewees argued that considering the run-down state of remand homes, these ramshackle structures called remand homes are tantamount to a crime as well as a sentence imposed on juveniles even before their appearance in court. This is what Foucault presents us in his classic work *Discipline and Punish* (1979) regarding the role of judgment in juvenile settings, where a whole micro-penality of time, of activity, of behaviour, of speech, of the body, and of sexuality result in a state in which one was always punishing and punishable.

Under-Utilized Juvenile Courts and Family Tribunals

Our data show highly under-utilized juvenile courts and family tribunals. Information received in the field indicates that cases handled by the juvenile courts vary from zero (in Walewale and Agona Nkwanta in 2011) to as many as 51 at the Ministries Juvenile Court in Accra the capital city in 2012. In light of this situation, it should not come as a surprise at all that the remand homes in the districts studied are either not functioning or are highly underutilized. The data established a *prima facie* case of very low criminal activity among juveniles. For example, the District Social Welfare Office in Tamale reports of only three children in conflict with the law in 2011, nine in 2012, and nine in 2013, while the Boys Remand Home in Tamale had only five inmates instead of a maximum of 20 from 2006-2012 and, at the time of this study, had no inmate because it had been shut down. The Pong-Tamale Junior Correctional Centre (formerly Tamale Boys Industrial School), which at its peak period from 1960-1970 had more than 100 inmates, had only one (1) each year from 2009-2011 and did not yet have an inmate at the time of this study (September 5, 2013)⁴. The Agona Nkwanta District Court tends to receive about four juvenile cases per year (even though it did not receive any case in 2011). However, these numbers do not provide a complete picture of the real situation. The Police and Magistrates have testified that a lot of cases come to the police stations and courts but are quickly settled informally due to a lack of juvenile detention facilities, as discussed earlier. Even those that end up in court are settled before conviction or sentencing and are labelled as having been withdrawn for informal settlement at home or at the chief's palace, as will be discussed below. Unfortunately, proper records are not kept of these settlements.

Non-functioning Juvenile Courts and Family Tribunals

Both the juvenile court and family tribunal are made up of a panel of three comprising a magistrate, a social welfare officer, and a lay person who must be sworn in before the High Court in the Region before being allowed to start work (Judicial Service of Ghana, 2018). Many Juvenile Courts and Family Tribunals we encountered in the field were not functioning because they could not constitute a complete panel, or a member of the panel had not yet been sworn-in. A Social Welfare Officer decried how this requirement has adversely affected the functioning of the juvenile court:

I have written to the Regional Director of Social Welfare and the Judicial Service, but I have still not been sworn in... Someone has to come from Kumasi to do some of my duties because I have not yet been sworn in. Juvenile cases, therefore, have to be sent to the Family Tribunal at Mampong, which has an officer coming from Kumasi to sit on the panel (Social Welfare Officer, Sekyere South District, Agona, September 9, 2013).

The Registrar of the District Court in Agona confirmed the Social Welfare Officer's statement. Similarly, the Social Welfare Officer of the Bosumtwe district (Kuntunase) narrated how the Juvenile Court and the Family Tribunal are not functioning because she had not been sworn in by the Judiciary since she was posted to the district: "I have applied to the Chief Justice/Judicial Service to swear me in but all to no avail. I do not know why I have still not been sworn in. As a result, the Probation Panel of the Juvenile Court has not been empaneled because I have to be part of the Panel," (Social Welfare Officer, Bosumtwe, Ashanti Region, September 6, 2013).

The situation was not too different in the Ahafo Ano South district. According to the registrar, the Family Tribunal does not sit, even though the Social Welfare Officer had been sworn in but not the lay member of the panel. "I have written letters upon letters to the Judicial Service, but nothing has been heard from them" (Registrar, Ahafo Ano South, September 10, 2013). The scenario described here fits into the broader Foucauldian theoretical analysis utilized in this paper, the concept of governmentality. As conceptualized within this sphere of panopticism, governmentality embraces the array of socio-political arrangements, past and present, and within which individuals and groups of people have not simply been dominated as subjects but have also been able in some measure to govern, create and recreate themselves in the process. It is clear that the problem of government does not refer only to the government of the State, but also the government of souls and conduct and the government of oneself and serves as a regulatory or conducting power (Foucault, 1979). The whole juvenile system in Ghana is fraught with problems which could rightly be termed the problem of governmentality.

Local/Cultural Perceptions and Interference from Traditional Authorities

Our data also suggest that a major hindrance to the proper functioning of state child protection agencies in Ghanaian communities relates to cultural attitudes, perceptions, practices, and interference from traditional leaders. Local perceptions impinge very strongly on whether one should resort to state institutions, judicial and quasi-judicial bodies, or the available local alternatives for the resolution of cases. According to interviewees, communities make frequent references to expressions such as "we are one people," "Someone's child is every one's child," and other similar statements which are partly used as justification by local communities not to file complaints at all or when they do, to withdraw them afterwards. Such cultural attitudes and perceptions, which led to interference from traditional and opinion leaders in the community, were unanimously expressed by all the key actors interviewed, especially in the Northern and Ashanti regions. However, the data points to less interference in cases on the grounds of cultural beliefs in the metropolitan areas in the Greater-Accra and Western Regions.

A respondent in the Northern Region explained the role of cultural beliefs in deciding to report cases to state juvenile justice institutions:

There is a general belief that it is wrong to report your people to outsiders and definitely not to a state agency. The term “*kabonsi*” is used to refer to “southerners” in particular and outsiders in general. So, when something happens, the accused party would approach the victim’s side and ask for a settlement out of the formal system. Often, even if the case has already been reported to any of the agencies within the justice system, a request would be made for the case to be withdrawn and settled at home or at the traditional ruler’s court. Sometimes, the accused even use intimidation to compel complainants to withdraw cases by labelling them as traitors for reporting a case to a state agency. For many in the local communities, the law is whatever the chief says (Regional Coordinator, DOVVSU, Tamale, September 3, 2013).

However, most of our interviewees were of the view that these community perceptions are flawed and hinder the work of child protection institutions in the communities.

Another key concern was serious interference from opinion leaders in the community such as traditional authorities, politicians, and religious leaders. When child offenders are arrested, the support of these influential people is usually sought to withdraw complaints for home settlement. One District Chief Executive (DCE) remarked that, “...these opinion leaders beg and use their influence to seek forgiveness for that person. They, therefore, cause victims and their families to withdraw cases reported to the Police station to be settled at home” (DCE, Ahafo Ano South, September 5, 2013). Such actions, according to a police officer, can be detrimental to the child. The officer cited a defilement case involving a 13-year-old who bled for three days and yet the parents begged that the case be settled at home. The police officer however pursued it further in court, but the parents refused to respond to the court summons. The officer stated: “We managed to grant bail to the perpetrator, but I know the case would soon be discarded for want of prosecution” (District Police Commander, Mankranso, September 10, 2013).

A regional coordinator of DOVVSU narrated a case involving sodomy (which is a crime in Ghana) that was reported to the unit:

...after charges were laid, the accused took refuge in the overlord’s [chief’s] palace. Representatives were sent from the overlord’s palace asking for the case to be transferred to his palace for resolution. The police could not go to the chief’s palace to arrest the accused because that would have generated a lot of unnecessary negative media attention. So that was the end of the case. (Regional Coordinator, DOVVSU, Tamale, September 3, 2013).

A passive form of interference is when parents refuse to cooperate with state institutions when their children are arrested. A social welfare officer observed that: “A lot of children

are arrested, but because parents do not want to be associated with child delinquents, some parents abandon them and so the Police are forced to release them” (Regional Social Welfare Officer, Kumasi, September 3, 2013). According to Ayete-Nyampong (2013, 2014), the majority of juvenile offenders in police detention and correctional homes seldom receive visits from their families. From the point of arrest and even prior to arrest, families have very little association with such children and youngsters. The majority of children and youngsters in correctional centers have reportedly suffered rejection from their parents and families from very young ages. However, some juvenile and young offenders in correctional centres also deliberately do not want any association with their families. Mensa-Bonsu (1990-92, 1995) and Dako-Gyeke et al. (2020) have reported similar findings.

Whereas the police sometimes reject the requests for withdrawal or non-prosecution of cases, withdrawal of such cases may rather augur well for the family of the victim as shared by a Commissioner of Police at the Police headquarters:

Parents of victims of defilement stand to benefit more from withdrawing the case from court than prosecuting it. This is because when the offender is sent to court and jailed, the victim gets nothing in terms of treatment or compensation from the state or the offender. However, if the parents of the victim withdraw the case and negotiate with the offender, they will get treatment for the [juvenile] and also compensation. (Police Commissioner, Accra, October 3, 2013)

A Coordinator of DOVVSU who shared similar sentiments argued that lack of care for victims of crime may be one reason why many children do not report cases in which the accused is a family member. She states, “if you arrest the parents, who will provide for the victim and the rest of the family? The government must make provision for the victims of such cases” (Coordinator, DOVVSU, Tema, August 28, 2013). Some interviewees, however, pointed out that in most cases, the interest of the victim is not the prime motivation for withdrawing a case and that the views of children are rarely sought or respected. Most communities strive to avoid being associated with criminality and so cases are withdrawn with the aim of preserving the honor of the family and community.

In sum, by regarding themselves as one people who must act as a corporate unit, and by defining state institutions and agencies as outsiders, local communities consider it a betrayal when a member goes outside the community structure of authority to file complaints with state institutions such as the Police or Department of Social Welfare. Such actions do not only smack of betrayal but are also regarded as a disgrace, as washing one’s dirty clothes in public. This way, local beliefs and respect for the position and authority of the local chief and opinion leaders trumps conformity to the rules and regulations of state institutions and agencies. Law enforcement agencies do not dare make arrests at a chief’s palace nor defy a chief’s orders or request for cases to be withdrawn from the

state justice system for fear of a backlash from community members, which can quickly be taken up by the media. A consequence is that victims' rights are sacrificed on the altar of community cohesion. Such attitudes, perceptions, and cultural norms discussed in this section align with Boakye's (2009a, 2009b) and Kaiser, O'Neal and Spohn's (2016) contentions that cultural factors and practices such as collective shame, patriarchal nuances and leaders' views, and the costs of cooperation contribute to non-disclosure of certain types of crimes and are significant issues that determine victims' decisions whether to cooperate with law enforcement agencies prosecuting a case.

The overall impact of this situation has been that patronage of all the child protection agencies, especially juvenile justice agencies, in the districts studied has been very low. No juvenile case was referred to the District Magistrate Court at Agona Nkwanta in the year 2011. The Walewale District Court (West Mamprusi District) has had only one (1) juvenile case since 2011. Even the juvenile courts in the much bigger city of Tamale receive an average of only one (1) case referral per month, and there are some months when no case is reported at all. The under-utilization of the formal child protection and juvenile justice institutions has made it possible for a few child-advocacy NGOs to establish a foothold in some districts. These developments fit neatly into the theoretical lens of governmentality because they exemplify Foucault's conceptions of power, knowledge, and dominance within social organizations as a system that not only controls the actions and behaviour of an individual but also allows that individual to control the possible actions and behaviour of others (Foucault, 1979).

The Role of NGOs in Child Protection

NGOs involved in child protection related work have proved vital to the juvenile justice system. Within the first decade of the establishment of Ghana's juvenile justice system, Riby-Williams (1954) identified the secondary role of civil society groups in addressing child welfare needs as one of the key problems encountered by the then new Department of Social Welfare that administered the juvenile justice system. According to him, their secondary role led to overreliance on central government planning and the resulting problem of "viewing local needs through the eyes of the central government" (p. 13). Fifty years later, Gagnon (2005, p. 44) expressed concern about NGOs taking over some of the roles of an important institution such as the Department of Social Work, "which should be the first one to provide quality, standardized services for children" (p. 35).

What should be the proper role of NGOs within Ghana's juvenile justice system?

The little this study chanced upon⁵ was that in the Northern Region, respondents narrated the story of a fertile ground for the work of NGOs as a result of the non-functioning, under-resourced, under-utilized, dilapidated nature of state institutions, or even, in some cases, their absence. In the Greater-Accra Region, the District Social Worker in

Dangme East pointed out that because of the situation of under-resourced state agencies, presumably better-resourced “NGOs come from outside the district, do whatever they want, and go without contacting representatives of state agencies” (Interview, Ada-Foah, 30 August 2013). According to him, they are not accountable to anybody in the district.⁶

Our study indicates that NGOs play a significant role in the child protection system including providing support to the juvenile justice system of the country. Given the situation of state institutions and agencies, as discussed above, NGOs step in to fill the gap. They address the needs of children whose cases fall through the cracks in the formal state system. For example, Defence for Children International (DCI) Ghana, in the Ashanti Region, has established community child protection committees called Local Advisory Committees (LACs), comprising assembly members, unit committee members and opinion leaders, teachers, and religious representatives, that visit police stations and remand homes to provide counseling and support lawyers in collaboration with Legal Aid to provide *pro bono* services for children in conflict with the law. This role bridges the gap between the formal and the informal sectors in the administration of juvenile justice in the region. Furthermore, NGOs mostly utilize alternative measures in addressing juvenile crime. Campaign for Female Education (CAMFED), based in Tamale in the Northern Region, utilizes education as a tool (e.g. paying school fees, providing school uniforms, and feeding) to keep children in school and prevent them from engaging in criminal and deviant behavior. Their child protection activities such as anti-child trafficking programs are important in curbing crime generally, saving victims, and preventing potential victims from victimization.

A major problem with NGOs, however, is that, being voluntary and independent organizations, they are not accountable to the communities where they operate, but only to their members and boards (Glasius & Lettinga, 2016). Their goals are often parochial, because they are defined by foreign donors on whom they depend for funding from abroad and who do not always fully understand the intricacies and dynamics of the local cultural environment that defines, and which should determine, how child protection could be done effectively. As the current study did not set out specifically to assess the role of NGOs and little else is found in the literature on it, there is need for in-depth studies to determine the actual role NGOs play in Ghana’s juvenile justice system.

Discussion and Conclusions

The institutions and agencies within Ghana’s juvenile justice system are highly encumbered and saddled with several constraints and challenges. The physical structures of the remand homes and post-trial custodial institutions, and even the offices of the Department of Social Welfare, are in an extremely poor state. They are dilapidated because there has been hardly any maintenance and renovation works in decades. There is an

acute lack of human resources and logistical supplies that seriously hampers staff from carrying out their mandate efficiently. Moreover, the formal agencies and institutions in Ghana's juvenile justice system are handicapped in the face of persistent interference in their work from traditional, religious, and opinion leaders in the communities who present cultural and religious reasons for which reported cases should be withdrawn and addressed outside the formal system. The cumulative effects of all these challenges and constraints is that these institutions and agencies are highly inefficient, under-utilized, and totally non-functioning in some cases.

Unfortunately, many of the findings of this study are not new. Some of these challenges have plagued the formal juvenile justice system in Ghana and its administration since its inception in the mid-1940s. Starting with Riby-Williams' (1954) assessment, and through Tooth's (1956) analysis, to Clifford's work in 1963, the first wave of literature on the administration of the then newly introduced formal juvenile justice system in the country has documented the problem of lack of both human and material resources for a successful implementation of the system. The findings of the second wave of scholarship in the 1990s have all re-stated the findings of the first wave on the lack of material, financial, and human resources, and the almost non-existent juvenile justice information system for effectively dealing with children in conflict with the law (Clifford 1965; Mensa-Bonsu, 1990-92, 1993-1995, 1995).

The beginning of the twenty-first century marks the start of the third wave of scholarship on the system. The studies – among them, Department of Social Welfare & UNICEF (2005), Gagnon (2005), Ame (2011, 2017, 2019), Ame et al. (2014, 2020), Ayete-Nyampong (2011, 2013, 2014), Child Frontiers (2011), Hoffman & Baerg (2011), and Mensa-Bonsu (2006, 2017), Judicial Service of Ghana (2018), and Dako-Gyeke et al. (2020) – have all re-stated the challenges discussed in this paper. They clearly show that little has changed in terms of the challenges confronting Ghana's juvenile justice system. Thus, it is reasonable to argue that either no action has been taken to seriously address these challenges that date back to the inception of the contemporary juvenile justice system in the country, or that the actions taken to address the challenges have not been effective to date.

The findings of this paper confirm that even as the first quarter of the twenty-first century draws to a close, not much has been done to make the administration of the juvenile justice system in the country more effective. Hence, this paper is also a call for addressing the challenges facing the system. We argue that scholars should now move beyond the assessment of the efficiency of the institutions and agencies within the system to a focus on exploring how the challenges could be addressed in order to transform the system into a reliable, effective, and sustainable one. For as Foucault (1979) reminded us, disciplinary power must establish relationships of constraint between individuals rather than relationships of contractual obligation.

The preceding discussions lead us to a couple of conclusions. First, the challenges faced by the formal institutions and agencies within the juvenile justice system, which have made them inefficient and highly under-utilized, should not be ignored. This is especially pertinent, considering that Ghanaians prefer to take cases involving their juveniles to their families, elders, chiefs, religious and other opinion leaders for resolution due to cultural beliefs. It would seem prudent to suggest that any reform of the current juvenile justice system in Ghana should seriously take into consideration incorporating possible roles for informal agencies and institutions such as families, faith-based organizations, and community opinion leaders. Evidently, these entities already play a role outside the formal settings and therefore, defining a formal role for them may augur well in producing a more effective system, one that is grounded within its cultural environment. Although this might have its own challenges, a key element of a sustainable juvenile justice system is having a set of institutions that the people willingly patronize, among other things (Ame, 2019). This means that we have to understand the power dynamics at work within these institutions and their settings. As Foucault put it, "power must be understood in the first instance as the multiplicity of force relations immanent in the sphere in which they operate, and which constitute their own organization" (1990, p. 92).

Second, if well-resourced and utilized properly, NGOs can play both a preventative and complementary role within the juvenile justice system itself. However, this also raises the question as to how NGOs, which are often specific-issue driven, usually led by highly opinionated moral entrepreneurs who are not accountable to anyone else (Glasius & Lettinga, 2016), can work effectively within a public service such as the juvenile justice system.

Subsequent projects will address the recommendations associated with these findings and conclusions.

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Endnotes

- 1 This is an updated version of a report put together as part of a contract between UNICEF Ghana, the Ministry of Local Government and Rural Development, Ghana and the authors. The opinions expressed in this paper are the views of the authors and do not necessarily reflect the policies or views of UNICEF or the Government of Ghana. The authors wish to express gratitude to UNICEF Ghana for funding the research on which this paper was based and for granting us permission to publish the findings of the research. The authors are, however, fully responsible for any shortcomings or weaknesses in this paper.
- 2 It must be stated upfront that the literature on juvenile justice in Ghana is generally thin with only a few scholars contributing the bulk of what is available. Those scholars are heavily cited in this paper.
- 3 A space behind the reception area at police stations in Ghana where accused offenders are first detained before being processed for police cells or remand homes in the case of juveniles. See Mensa-Bonsu (2006, pp. 47-48, 2017, pp. 16-17) for further description of “counter-back”.
- 4 A Ghana News Agency news item of June 28, 2017 (<http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Tamale-vocational-school-enrolls-4-students-in-10-years-553403>) confirms the trend of under-utilization at the Pong-Tamale Junior Correctional Centre. The Centre, formerly called the Tamale Boys Industrial School, is also known as Tamale Vocational School due to a desire to attract non-convicted juveniles from the community to enroll for vocational training. According to the news item, Mr. John Ziemah, the Senior Superintendent of the Pong-Tamale Vocational School expressed concern about the lack of interest among students to gain admission into the school. He stated that for over ten years now, only four students had applied and gained admission and that the “situation is not encouraging and it’s difficult to run the administration of the school effectively”. Essentially, both convicted juvenile offenders and others from the community are not utilizing the facilities of the school.
- 5 Juvenile Justice related NGOs encountered during our fieldwork were Defence for Children International (DCI) Ghana, in the Ashanti Region, Campaign for Female Education (CAMFED), Tamale, Northern Region, and Advocates and Trainers for Children and Women’s Advancement and Rights (ATCWAR) in the Western Region.
- 6 He mentioned the Parent and Child Foundation as one of the NGOs that operates in the District.

Relationship between personality traits and childbearing in an African context: Evidence from Ghana

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Abstract

This paper provides empirical evidence on the association between personality and childbearing in an African context using the dimensions of the Big Five factor model - extraversion, conscientiousness, neuroticism, openness to experience and agreeableness. Applying the negative binomial and zero-inflated negative binomial regression models to data obtained from the World Bank's survey on Skills toward Employment and Productivity (STEP) for Ghana, we found that after controlling for age, education, spouse and employment status, three of the personality traits, namely conscientiousness, openness to experience and agreeableness, have significant associations with number of children. Openness to experience is negatively associated with number of children in both males and females. However, conscientiousness and agreeableness are negatively and positively associated with number of children respectively but only in the male sample. Extraversion and stability were not significantly associated with number of children even when the models were estimated without the control variables.

Keywords: childbearing. reproductive fitness. number of children. Big-five factor model. Curiosity. Novelty.

Introduction

For several decades now, personality psychologists and psycho-social economists have been interested in how individual differences in emotion, cognition and behaviour are related to several social behaviours (Argyle and Little, 1972). For example, personality differences have been examined in relation to mate selection and marital satisfaction (Botwin et al., 1997; Lewak et al., 1985), marital infidelity (Shackelford et al., 2008) and divorce (Eysenck, 1980). In the field of applied economics, there is also a growing interest in how personality is related to economic choices and outcomes (Ferguson et al., 2011). For instance, personality has been implicated in schooling decisions, occupational choices, labour force participation, unemployment duration, employability and earnings (Almlund et al., 2011; Uysal and Pohlmeier, 2011). In the marriage market, personality has also been considered to play an important role in intrahousehold bargaining of time use and partners' labour supply (Flinn et al., 2018; Dupuy and Galichon, 2014).

Consistent with the growing interest in how personality is related to social behaviour and economic choices and outcomes, there is evolving evidence that childbearing and fertility may also be related to personality. The argument advanced in support of this view is that in modern societies, where reliable contraceptives are available to support family planning, childbearing is no longer entirely left to chance (Rantakallio and Myhrman, 1990; Potts, 1997; Miller, 1992); rather, it can be influenced by individuals' choice, preferences and dispositions, such as personality traits (Jokela et al., 2011). Indeed, Taylor et al. (2007) have posited that with the increasing availability of reliable birth control, sex and reproduction can be disconnected. In some societies, the primary purpose of marriage is no longer considered to be procreation and child upbringing. In the US, for example, the term *childfree* was first coined in 1972 by the US-based National Organization of Non-parents to imply freedom and choice.

According to Avison and Furnham (2015), fertility statistics gathered over the past five decades have indicated that: people are having fewer children; they are having children later; and an increasing number of people are not having children at all. Jokela (2012) has also pointed out that in most developing countries, fertility rates have been declining over the past several decades. Consequently, theories of fertility behaviour are now emphasizing the role of social influences and individual preferences on individuals' decisions to have children (Newson et al., 2005). In this regard, personality traits which refer to stable individual characteristics and differences have been associated with various aspects of fertility behaviour including number of children. For example, in a large U.S. sample, higher extraversion was associated with having a larger number of children (Jokela et al., 2011). So far, the emerging empirical evidence on this association between personality and number of children is focused on the western world (Alvergne et al., 2010; Eaves et al., 1990; Tavares, 2010) with limited empirical evidence from African countries. This lacuna notwithstanding, the existing evidence is inconclusive; it provides contrasting findings based on measures of personality employed and the socio-demographic contexts (Eaves et al., 1990; Mealey and Segal, 1993; Roberts and Beeg, 2004).

Given the contrasting findings from the western world and the cultural differences between the west and Africa (LeVine, 1973), it is not known whether the established relationships in previous studies hold for an African country like Ghana where, per the culture, procreation seems to be the main aim of marriage, with attendant social pressure on married couples to give birth. In this paper, we aim to contribute to the dearth of literature on this issue in Ghana by determining the associations between the Big Five factor personality traits (namely extraversion, agreeableness, conscientiousness, stability and openness) and number of children. The Big-Five personality traits are considered in this study because they have received wider application in the literature and also found

to be robust across different cultures and samples (Barrick and Mount, 1991). They have also been found to be relatively stable after biological maturation or early adulthood and shown to have substantial heritability, unlike other personality measures (Cobb-Clark and Schurer, 2012; John and Srivastava, 1999; Loehlin et al., 1998).

Literature Review

Conceptual definition of personality and its linkages with childbearing

Existing literature on fertility suggests that besides socio-demographic and economic factors, fertility can be linked to personality which has been defined as patterns of thought, feelings, and actions or behaviours that are relatively stable and enduring characteristics of human beings (Borghans et al., 2008; Costa and McCrae, 1990). One of the earliest studies in this area is Eaves et al. (1990). Using Australian data, Eaves et al. (1990) found some associations between personality traits and completed fertility among women. Investigating childbearing motivations among 362 married men and 354 married women, Miller (1992) finds that personality traits predict motivation for childbearing differently by gender. Other studies have confirmed these differences and the association between personality traits and the number of children (Dijkstra and Barelds, 2009; Jokela et al., 2011). In Jokela et al.'s (2011) study, these associations were found to be independent of marital status.

In an earlier study, Schoen et al. (1997) traced the mechanisms by which personality could be linked to childbearing. The authors argued that childbearing is motivated, in part, by social relations or sociability (an aspect of personality), such that people who value social relations are more likely to have children than those with low sociability since the former group prefers to be with other people. Corroborating Schoen et al.'s (1997) argument, existing studies have found personality traits related to sociability to be positively associated with increased mating behaviour (e.g., Nettle, 2005) and involvement in romantic relationships (e.g., Asendorpf and Wilpers, 1998; Neyer and Voigt, 2004) which can promote childbearing. Another line of argument buttressing the link between personality and childbearing is related to parenthood. That is, being a parent of young children has been associated with increased psychological distress (McLanahan and Adams, 1987). Therefore, individuals with high emotionality may be less likely to have children of their own because they may perceive parenthood as more stressful compared to those with low emotionality. Also, personality traits related to emotionality have been found to be associated with low marital satisfaction and difficulties in romantic relationships (e.g., Caughlin et al., 2000; Lehnart and Neyer, 2006), and these difficulties are likely to decrease childbearing intentions.

The Five Factor Model of Personality and Childbearing

In psychology, there are different taxonomies of personality. However, the Big-Five factor model (Digman, 1990; McCrae and Costa, 1999; John and Srivastava, 1999) has emerged as the most widely-used comprehensive categorization and robust taxonomy (Mueller and Plug, 2006). Goldberg (1993) has argued that the Big-Five factor model has an advantage over other taxonomies of personality traits because it provides a unifying, hierarchical taxonomy for traits, which enables the study of both broad and narrow personality influences (Marshall et al., 1994; Smith and Williams, 1992). In view of the aforementioned reasons, this study adopts the Big Five factor model. The model posits that personality traits can be categorized into five dimensions consisting of extraversion, conscientiousness, neuroticism, openness to experience and agreeableness, with corresponding opposite dimensions as introversion, unconscientiousness, emotional stability, closedness to experience and antagonism respectively.

Extraversion has been referred to as the level of comfortability in relating with others. It embodies characteristics such as active, assertive, talkative, outgoing, social, gregarious, energetic, surgent and ambitious (Barrick and Mount, 1991; Goldberg, 1990). Conscientiousness is defined to encapsulate the degree of reliability of an individual. It represents different sub traits such as organized, dependable, responsible, conforming, orderly, diligent, vigilant, attentive, cautious, logical, risk averse, systematic, thorough, comprehensive, reliable, determined and focused (Digman, 1990; Barrick and Mount, 1991). Neuroticism, on the other hand, refers to a low level of emotional stability. It is characterized by being prone to worry, fear, anxiety, depression and impulsiveness. Openness to experience is the extent of an individual's imagination or fascination. Personality characteristics that fall under this trait include curiosity, novelty, cultivated, aesthetic, sensitivity, independent minded, intellectual, and creative (Barrick and Mount, 1991; Goldberg, 1990; Digman, 1990). Lastly, agreeableness is defined as the degree to which an individual differs from others. This trait represents personality characteristics such as cooperative, soft-hearted, tolerant, forgiving, altruism, emotionally supportive, courteous, good natured, flexible, and self-sacrifice (Barrick and Mount, 1991; Digman, 1990). Each of the above traits may relate to childbearing differently. Thus, in subsequent sections, we provide a selective review of how each of the five traits – extraversion, neuroticism, agreeableness, conscientiousness, and openness to experience – may be associated with childbearing.

Extraversion and Childbearing

Defined as the level of comfortability in relating with others, people who are extraverts “tend to be socially oriented (outgoing and gregarious), but also are surgent (dominant and ambitious) and active (adventuresome and assertive)” (Judge et al., 1999 p.624).

In social settings, people high in extraversion are more likely to make friends and to fall in love than people low in extraversion (Neyer and Asendorpf, 2001). Generally, extraverts tend to like people and to seek excitement and stimulation while introverts (the opposite of extroverts) tend to prefer to spend more time alone (Costa and McCrae, 1992). As an antecedent to social behaviour, research has shown that extraversion is positively associated with higher mating motivation (Schmitt and Shackelford, 2008), greater success in finding sex partners and spouses (Nettle, 2005), higher probability of earlier parenthood, greater likelihood of non-planned pregnancy, and higher number of children (Berg et al., 2013; Jokela et al., 2011; Tavares, 2008; Skirbekk and Blekesaune, 2014). The related trait of sociability (Buss and Plomin, 1984) has also been shown to increase the probability of having children (Jokela et al., 2009). On the contrary, Caspi et al. (1988) and Kerr et al. (1996) have indicated that shyness (the inverse of extraversion), particularly in men, appears to delay the transition to marriage and consequently parenthood.

Conscientiousness and Childbearing

Conscientiousness is a trait defining people who are organized, diligent, cautious, dependable, goal-oriented, achievement-seeking, perseverant and disciplined (Digman, 1990; Barrick and Mount, 1991). Given these qualities, conscientiousness has mostly been found to be negatively related to the number of children. The reasons offered by some scholars (e.g., Berg et al., 2013; Jokela et al., 2011; Skirbekk and Blekesaune, 2014) are that the achievement motivation may lead career-oriented people, especially women, to delay childbearing or remain without children while the tendency to plan and act cautiously may lead to effective use of contraception, lower likelihood of unplanned pregnancy and fewer children. However, where achievement-seeking is defined to include number of children, women who place high value on family size as opposed to career achievement (Elder and MacInnis, 1983) have reported positive association between conscientiousness and number of children (Dijkstra and Barelds, 2009; Roberts and Bogg, 2004). This means that achievement-seeking could have a positive or negative relationship with the number of children depending on the underlying goal set for achievement and the potential conflict it creates between family and career.

Neuroticism and Childbearing

Neuroticism refers to the tendency to experience negative emotions such as anxiety, anger, stress and depression. According to Costa and McCrae (1992), high neuroticism corresponds with negative emotionality or emotional instability, being prone to worry, fear, anxiety, depression and impulsiveness. Since higher neurotic individuals may find childbearing (or the prospects of it) and parenting stressful, they may have fewer children

or avoid giving birth altogether. In social or marital relationships, neuroticism has been associated with difficulties and negativity in marital interactions (Rogge et al., 2006), leading to lower relationship quality (Karney and Bradbury, 1997; McNulty, 2008). Thus, high neuroticism has been associated mainly with lower number of children for both men and women, although it has been associated positively with early childbirth and the likelihood of unplanned pregnancy (Berg et al., 2013; Tavares, 2008). In other studies, neuroticism has also been associated with childbearing intention and decisional ambivalence in adolescents and young adults (Pinquart et al., 2008) which may lead to postponement of parenthood as well as to having fewer children (Jokela et al., 2009). Reis et al. (2011) demonstrated that higher neuroticism is associated with lower likelihood of becoming a parent by the age of 38.

Openness to Experience and Childbearing

Jokela et al. (2011) has defined openness to experience as the flexibility of social attitudes and worldviews and the cognitive and aesthetic sensitivity to internal and external stimuli. According to Avis and Furnham (2015), people high in openness demonstrate intellectual curiosity, enjoy variety and are inclined to be more creative or open-minded, and less traditional. Thus, such people are likely to be associated with lower probability of parenthood and having fewer children because they are more likely to postpone or forgo marriage in defiance of traditions (Lundberg, 2012) or to delay having children in acceptance of non-traditional lifestyles (Tavares, 2008; Jokela, 2012). Jokela et al. (2011) adduced two reasons for the association between openness to experience and childbearing. First, high openness to experience is known to correlate with cognitive ability and educational achievement (Wainwright et al., 2008). These attributes, especially when found in women, can lead them to postpone childbearing, thereby lowering the number of children (Hopcroft, 2006; Retherford and Sewell, 1989; Skirbekk, 2008). Second, the value orientation of people high in openness towards traditions and family may contribute to a negative association between openness and childbearing. Generally, high openness to experience is correlated with non-traditional attitudes and values (McCrae, 1996; Van Hiel and Mervielde, 2004), and people with non-traditional family values are less likely to have children than those with more traditional perceptions of family life (Holton et al., 2009; Kaufman, 2000).

Agreeableness and Childbearing

The degree to which an individual differs from others defines his agreeableness. Basically, individuals who possess high agreeableness are characterized as trusting, forgiving, caring, altruistic, and gullible. They represent people who are cooperative, soft-hearted, tolerant, forgiving, altruistic, emotionally supportive, courteous, good natured, flexible,

selfless and have good interpersonal relationships (Barrick and Mount, 1991; Digman, 1990). Given these attributes, it is expected that high agreeableness will correlate with a higher childbearing propensity. The reason is that individuals with high agreeableness tend to have less decisional ambivalence toward childbearing (Pinquart et al., 2008). Besides, the attributes of agreeable people such as forgiving, courteous, cooperative and emotionally supportive are among the most desired qualities people seek in potential spouses (Buss and Barnes, 1986; Li et al., 2002), which might contribute to a positive association between agreeableness and childbearing (Jokela et al., 2011).

Empirical Literature

Available empirical evidence suggests there is a relationship between personality and childbearing. However, the association depends on the measures of personality used and the socio-demographic contexts (Eaves et al., 1990; Mealey and Segal, 1993; Roberts and Beeg, 2004). In a cross-sectional study of 1,101 postmenopausal females drawn from the Australian twin registry, Eaves et al. (1990) found that neither extraversion nor neuroticism showed significant linear or quadratic association with reproductive success proxied by the number of biological children. However, they observed a significant non-linear interaction effect between the two dimensions on number of children, such that high neuroticism in introverts (low extraversion) and low neuroticism in extroverts (high extraversion) favoured women with high number of children. Using life history analysis and data from the Minnesota Study of Twins Reared Apart, Mealey and Segal (1993) found no association between retrospectively reported childhood personality and adulthood fertility in a sample of 164 individuals comprising 82 pairs of twins raised apart. Nettle (2005) also reported no associations between having children and extraversion.

Focusing on the four scales of the California Psychological Inventory (i.e. responsibility, socialization, self-control, and achievement via conformance) that dwells on the social responsibility facet of conscientiousness (Deniston and Ramanaiah, 1993; Roberts, 1997), Roberts and Bogg (2004) tested the relation of social responsibility to social-environmental factors such as marital stability, number of children and divorce using data from the Mills Longitudinal study of women over a 30-year period from age 21 to age 52. The study finds that social responsibility (a facet of conscientiousness) was positively associated with having more children by age 43, spending more time in marriage from age 21 to age 43, and not experiencing divorce from age 21 to age 43. In agreement with Roberts and Bogg (2004), Jokela et al. (2009) found that personality traits related to status seeking, just like social responsibility and need for achievement, increase the number of children in men and women.

In two different studies conducted in Germany, Dijkstra and Barelds (2009) found that extraversion, conscientiousness and agreeableness were positively correlated with number of children among women, while Reis et al. (2011) reported that high-childhood neuroticism was negatively related to the likelihood of becoming a parent in both women and men. In another study involving a large sample of Finnish young adults, Jokela et al. (2010) investigated associations between temperament traits and childbearing. The findings revealed that high-novelty seeking, low-harm avoidance, high-reward dependence, and low persistence all independently increased the probability of having children. In a previous study, Jokela et al. (2009) assessed whether 3 personality traits—sociability, emotionality, and activity—predicted the probability of having children. They found that high emotionality decreased the probability of having children while high sociability increased the probability of having children.

Examining the associations between the Five factor model personality traits and various outcomes of reproductive behaviour using a sample of 15,729 women and men from the Wisconsin Longitudinal Study (WLS) and Midlife Development in the United States (MIDUS) survey, Jokela et al. (2011) reported that high extraversion, high openness to experience, and low neuroticism are associated with higher number of children for both males and females, while for females only, high agreeableness and low conscientiousness correlated with higher number of children. In a follow-up study, Jokela (2012) argued that the relationship between fertility and personality might change across cohorts. Testing this hypothesis, the author finds that “Openness”, for both genders, and “Conscientiousness”, only for women, are particularly related to lower fertility among later-born cohorts in the US. In a Norwegian study, Skirbekk and Blekesaune (2014) conclude that the personality–fertility relationship is different for more recently born cohorts who have experienced adult life in a different historical context. The main results of their study showed that conscientiousness is associated with lower fertility for women, extraversion is associated with higher fertility for men, whereas openness and neuroticism in men are associated with having fewer children. Furthermore, their results showed that neuroticism is negatively associated with fertility only for more recently born male cohorts.

In relatively more recent studies, Ferrari and Guerrero (2017) assessed the relationship of the personality of married Catholic clergy fathers to the number and gender of children. They reported that the personality dimensions that predicted clergy dad's family size (i.e., number of children) are emotional stability and conscientiousness (accounting for social desirability). Higher emotional stability and conscientiousness by clergy dads predicted fewer children in their family size. Using the twin subsample from the Midlife Development in the United States study and the Twins UK study to explain what accounts for completed fertility, Briley et al. (2017) found that in both datasets,

early fertility timing, high agreeableness, and low conscientiousness were associated with greater completed fertility through genetic pathways. Results from the regression analyses of Međedovića et al. (2018) also show that whereas the number of children was associated with lower scores on honesty and openness and higher scores on emotionality, agreeableness was positively associated with number of children but only in males.

To sum up, the empirical evidence on the relationship between personality traits and childbearing (or fertility and reproductive success) is heterogeneous and inconclusive (Međedovića et al., 2018). So far, extraversion has emerged as the most important personality trait for fertility in men but appears relatively unimportant for fertility in women (Allen, 2019). According to Međedovića et al. (2018), the obtained results on the positive association between extraversion and reproductive success appear to also be relatively congruent (Bailey et al., 2013; Gurven et al., 2014) while results on negative association between openness and number of children are somewhat consistent (Jokela et al., 2011). With respect to neuroticism and conscientiousness, empirical findings of both positive and negative associations between neuroticism (Alvergne et al., 2010; Jokela et al. 2011), conscientiousness (Alvergne et al., 2010; Dijkstra and Barelds, 2009) and reproductive success abound. However, the effect of agreeableness on fertility still remains scarce, albeit Jokela et al. (2011) have found a positive association. While the studies on personality traits-reproductive success relationship are growing in the western world, empirical evidence from an African country is still lacking. To fill this void and broaden the empirical evidence on this subject, this study is set to determine whether the personality traits defined by the Big Five factor model are associated with number of children, and if so, examine how they are associated with number of children for male and female using data from Ghana.

Methodology

Model Specification

In this study, the dependent variable is the number of children at the time of the survey. This means that it takes only nonnegative integer values and varies from zero to several or many children. Given the nature of the dependent variable, using continuous functional forms such as Ordinary Least Squares without controlling for the censoring in the dependent variable will yield inefficient, inconsistent and biased estimates (Long, 1997). To overcome this limitation, count data models are appropriate because they explicitly recognize the “count” nature of the dependent variable.

From the literature, two count data models are commonly used - the Poisson regression models (PRM) and the Negative binomial regression models (NBRM) (Hilbe, 2011). While the two models are applied under different conditions or assumptions, the

NBRM is generally considered to be an extension of the PRM. For the PRM to be more appropriate, the conditional mean and variance of the Poisson distribution should be equal or similar (a condition or assumption known as the equi-dispersion assumption). When this assumption is violated (i.e., the variance of the distribution exceeds the mean (i.e., over-dispersion), the estimates from the PRM will be consistent, but inefficient (Greene, 2008). That is, the standard errors in the Poisson regression model will be biased downward, resulting in spuriously large z-values and spuriously small p-values) (Long and Freese, 2001; Cameron and Trivedi, 1986).

To address the problems with PRM when there is over-dispersion in data, the negative binomial model is used. The NBRM addresses the problem by adding to the PRM “a parameter that allows the conditional variance (of the count outcome) to exceed the conditional mean” (Long, 1997, p.230). Given the following structural equation for PRM (i.e., equation 1), the NBRM is obtained as equation (2) by introducing a latent heterogeneity in the conditional mean of the Poisson model (Greene, 2008) as follows.

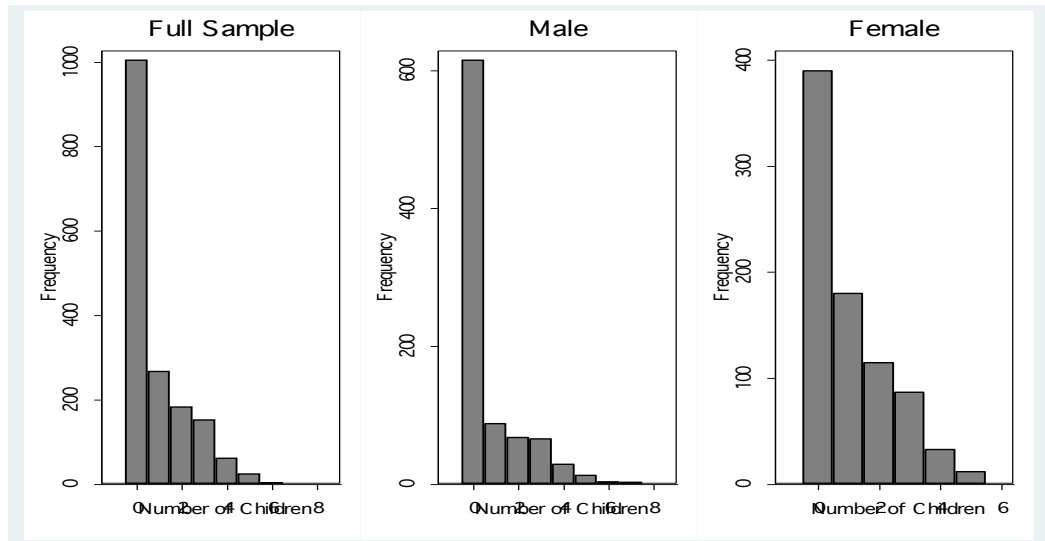
$$E(y_i | X_i) = \mu_i = \exp(\alpha_i + X_i' \beta) \quad (1)$$

$$E(y_i | X_i, \varepsilon_i) = \mu_i h_i = \exp(\alpha_i + X_i' \beta + \varepsilon_i) \quad (2)$$

with assumed to have a one parameter gamma distribution.

where X_i is the vector of covariates and is the set of parameters to be estimated. The descriptions of the variables are given in Table 1.

In practice, numerous empirical studies tend to use the NBRM as opposed to the PRM because the dependent variable is usually not equally dispersed. To establish if the PRM or NBRM is appropriate for this study, the distribution of the count dependent variable is presented in Figure 1. This indicates the presence of over-dispersion in the data; hence, NBRM will be more appropriate to use in this study. A formal test of over-dispersion in the data confirming the appropriateness of the NBRM over PRM is provided in Table 3.

Figure 1: Distribution of Number of Children Born

Another noticeable feature about the distribution of number of children presented in Figure 1 is that there are many zeros in the count dependent variable. As with other scenarios of zero-inflated count data (e.g., fish catch, number of publications by scientists), Poston and McKibben (2003) argue that the preponderance of zeros in fertility data may apply to people of childbearing ages of 15-49 who might have tried to produce children but were not successful or others who have not tried or those who have voluntarily opted against having children. To address this issue in this paper, the zero-inflated negative binomial is used in addition to the NBRM. Long and Freese (2001, p.250) have indicated that Zero-inflated models respond to the problem of excess zeros “by changing the mean structure to allow zeros to be generated by two distinct processes” (Long and Freese, 2001, p. 250). The first process which generates individuals in the Always-0 Group (Group A) which has an outcome of 0 with a probability of 1, and the second which generates individuals in the Not Always-0 Group (Group ~A) which might have a zero count, but there is a nonzero probability that the count is positive (Long and Freese, 2001). Following the recommendations of Long and Freese (2001) and the application of these recommendations in a fertility paper by Poston and McKibben (2003), the estimation of zero-inflated regression models involves three steps: 1) predicting membership in the two latent groups, Group A and Group ~A; 2) estimating the number of counts for persons in Group ~A; and 3) computing “the observed probabilities as a mixture of the probabilities for the two groups” (Long and Freese, 2001, p. 251). For further details on zero-inflated models, refer to Long and Freese (2001, p. 251-252) and Cameron and Trivedi (1998, p. 125-127, 211-215).

Data and Definition of Variables

The source of data for this study is the World Bank's survey on Skills toward Employment and Productivity (STEP) for Ghana. The survey data were collected from urban areas in all the regions of Ghana focusing on the working age population. Following a two-stage sampling process, households were randomly selected in the first stage, after which individuals in the households were selected in the second stage using simple random technique. For the purpose of this study, the variables listed in Table 1 were selected from the survey.

The main variables of interests, personality traits, were measured based on the Big-Five factor model using a four-point scale (where 1 is almost never, 2 is some of the time, 3 is most of the time and 4 is almost always). Sample questions for each trait are: Are you outgoing and sociable, for example, do you make friends very easily? (*extraversion*); When doing a task, are you very careful? (*conscientiousness*); Are you very interested in learning new things? (*openness*); Are you relaxed during stressful situations? (*stability*); and Do you forgive other people easily? (*agreeableness*). The questions relating to each of the personality traits were then aggregated and converted into a composite index after reverse scoring the appropriate responses.

In addition to the personality trait variables, age, education, spouse and labour market status were selected as control variables. The definition and measurement of all the variables used in the analysis are provided in Table 1 together with their summary statistics. Table 2 also shows the correlation matrix for the variables, indicating that some of the personality traits significantly correlate but not highly.

Table 1: Variables Definitions, Measurement and Summary Statistics

Variable	Definition	Measurement	Mean (Std. Dev)
<i>Dependent variable</i>			
Childbearing	Number of Children born	Count of children ever born	2.173 (1.225)
<i>Control variables</i>			
Age	How old respondent is in completed years	Age in completed years	32.419 (11.59)
Education	Educational status	1 if educated, 0 otherwise	0.989 (0.102)
Spouse	Marital status	Value is 1 if respondent has spouse, 0 otherwise	0.420 (0.494)
Labour market status	Labour market status of respondent (whether employed, unemployed or inactive)	1 if respondent is employed, 0 otherwise	0.726 (0.446)
		1 if respondent is unemployed, 0 otherwise	0.065 (0.247)
		1 if respondent is inactive, 0 otherwise	0.209 (0.407)
<i>Independent variables</i>			
Extraversion	How does respondent see himself or herself (talkative; prefer to keep quiet or keep opinion; outgoing, sociable and makes friends).	Average responses to the questions after reverse coding (responses range from 1 “almost never to 4 “almost always”)	2.529 (0.605)

Conscientiousness	How does respondent see himself or herself (careful when doing task; prefers relaxation more than hard work; works well and quickly).	Average responses to the questions after reverse coding (responses range from 1 “almost never to 4 “almost always”)	3.232 (0.569)
Openness	How does respondent see himself or herself (comes up with ideas other people haven’t thought of before; interested in learning new things; enjoy beautiful things, like nature, art and music).	Average responses to the questions after reverse coding (responses range from 1 “almost never to 4 “almost always”)	3.079 (0.588)
Stability	How does respondent see himself or herself (relaxed during stressful situations; tends to worry; gets nervous easily).	Average responses to the questions after reverse coding (responses range from 1 “almost never to 4 “almost always”)	2.727 (0.567)
Agreeableness	How does respondent see himself or herself (forgives other people easily; very polite to other people; prefer to keep quiet or keep opinion; outgoing, sociable a generous to other people with your time or money).	Average responses to the questions after reverse coding (responses range from 1 “almost never to 4 “almost always”)	3.045 (0.648)
Sample size			1,704

Table 2: Kendall Tau-b correlation

	1	2	3	4	5	6	7	8	9	10
1. Number of Children	1									
2. Age	0.387*	1								
3. Education	-0.040	-0.035	1							
4. Has spouse	0.592*	0.422*	-0.063	1						
5. Labour Market status	-0.22*	-0.350*	0.015	-0.269*	1					
6. Extraversion	-0.025	-0.032	0.022	-0.036	0.013	1				
7. Conscientiousness	-0.022	0.028	0.029	0.018	-0.046	0.036	1			
8. Openness	-0.111*	-0.061*	0.024	-0.070*	0.028	0.089*	0.242*	1		
9. Stability	0.007	0.063*	0.007	0.045	-0.032	0.003	0.072*	0.027	1	
10. Agreeableness	-0.036	-0.010	0.019	-0.036	0.053	0.094*	0.229*	0.249*	0.029	1

As shown in Table 1, the average scores for the Big-five personality traits range from 2.552 for extraversion to 3.211 for conscientiousness. The average scores for openness, stability and agreeableness are 3.094, 2.692 and 3.036 respectively. Significant but low correlations are observed between some of these variables, thereby posing no multicollinearity problem.

Results

Since the bivariate analysis showed that some of the personality traits significantly correlate with number of children (e.g., openness), we proceeded to conduct a multivariate analysis to provide more accurate estimates of the associations. In this wise, number of children was regressed on the personality traits (extraversion, conscientiousness, openness, stability and agreeableness) with age, education, spouse and labour market status as control variables. Three regression models using the full sample, male sample and female sample were estimated using two alternative models, negative binomial model and zero-inflated negative binomial. The sub-sample analyses for male and female are done to reveal gender differences in the associations between personality traits and childbearing. Table 3 displays the results of the negative binomial and zero-inflated negative binomial regressions, each presented according to the three models.

Table 3: Negative Binomial and Zero Inflated Negative Binomial regression output

Variable	Negative Binomial			Zero Inflated Negative Binomial		
	Full sample	Male	Female			
Controls						
Age	0.432*** (0.093)	0.324 (0.224)	0.397*** (0.092)	0.316*** (0.071)	0.217* (0.116)	0.220*** (0.082)
Education (1 if educated, 0 otherwise)	-1.069*** (0.266)	-1.754** (0.856)	-0.735*** (0.224)	-0.408** (0.166)	-0.259 (0.213)	-0.265 (0.226)
Spouse (1 if has spouse, 0 otherwise)	1.725*** (0.097)	2.739*** (0.234)	1.217*** (0.098)	0.756*** (0.088)	1.164*** (0.183)	0.630*** (0.095)
Labour market status (base-employed)						
Unemployed	-0.567*** (0.152)	-0.665* (0.387)	-0.560*** (0.166)	-0.438*** (0.140)	-0.423 (0.351)	-0.478*** (0.158)
Inactive	-0.373*** (0.108)	-0.900* (0.515)	-0.371*** (0.100)	-0.144 (0.097)	0.126 (0.783)	-0.174* (0.090)
Personality traits						
Extraversion	0.045 (0.053)	0.015 (0.099)	0.075 (0.059)	0.062 (0.047)	-0.041 (0.077)	0.023 (0.055)
Conscientiousness	-0.205*** (0.055)	-0.293*** (0.100)	-0.087 (0.061)	-0.072 (0.048)	-0.104 (0.080)	0.008 (0.059)
Openness	-0.315*** (0.051)	-0.217** (0.096)	-0.323*** (0.058)	-0.178*** (0.048)	-0.148* (0.085)	-0.190*** (0.056)
Stability	-0.079 (0.055)	0.047 (0.102)	-0.060 (0.062)	-0.053 (0.049)	-0.028 (0.080)	-0.047 (0.059)
Agreeableness	0.094* (0.050)	0.213** (0.086)	0.007 (0.059)	0.050 (0.046)	0.154** (0.066)	-0.020 (0.057)
Test for Over-dispersion						
Chi-squared	55.68	69.58	40.87			
P-value	(0.000)	(0.000)	(0.000)			
Sample size	1,704	887	817	1,704	887	817

Notes: Standard errors in parentheses;

* p<0.10, ** p<0.05 *** p<0.01"

From the results in Table 3, it is noticeable that all the control variables are statistically significant, meaning that we can go ahead to interpret their coefficients. However, before proceeding to interpret the individual coefficients, it is worth noting that the significance of the variables was largely consistent across the two regression models, especially for the full sample. For the male and female sub-samples, the significant variables also bear consistent signs between the two models.

As would be expected, age has a positive association with number of children. This means that as individuals grow, the chance of having more children also increases. Education has a negative coefficient; implying that being educated is associated with a lower probability of having more children. This is consistent with the prediction from the literature which indicates that education can cause a delay in childbearing and for that matter number of children given birth to. The coefficient of spouse is positive, indicating that individuals who have spouses are positively associated with higher number of children compared to those who do not have spouses. This goes to underscore the role of spousal relationship in childbearing. Finally, the coefficients of labour market status variables are negative, showing that individuals who are unemployed or inactive in the labour market are negatively associated with higher number of children when compared to individuals who are employed.

From the coefficients of the personality traits, the results indicate that three of the personality traits variables (i.e., conscientiousness, openness and agreeableness) are significantly associated with the number of children with some notable gender differences. Of the three, the most consistent variable in all the models is openness to experience which demonstrates a negative association with number of children, signifying that people who are more open are less likely to have more children. Conscientiousness and agreeableness which have significant negative and positive associations with number of children respectively are only significant for the full sample and male sample but not the female sample.

Discussion

The Big Five factor model of personality traits, comprising extraversion, conscientiousness, openness, stability and agreeableness, has received wider application in social sciences due to its comprehensive nature and robustness across cultures and samples. In previous research, and for the purpose of this study, it has been linked to a variety of reproductive success or fitness measures including number of children born and found to have some associations in the western world. However, we notice that the model is yet to be applied to determine its association with number of children born in an African country context, which presented a research gap that we sought to fill. Thus, the coefficients of the personality traits presented in Table 3 contribute to filling this gap and adding to the

emerging empirical evidence on personality-childbearing relationships.

The results reveal that three of the Big Five personality traits are associated with the number of children. These traits are conscientiousness, openness and agreeableness. The coefficients of these variables are largely consistent with *a priori* expectations but demonstrate some agreement and departure with prior empirical literature. For example, whereas most literature shows that extraversion is the most consistent trait with positive association to number of children (Dijkstra and Barelds, 2009; Joekela et al., 2011), this study did not find the positive association between extraversion and number of children to be significant, which is nonetheless consistent with Eaves et al (1990) who found that neither extraversion nor neuroticism had significant linear or quadratic association with the number of biological children born to Australian female twins. Nettle (2005) also reported no associations between having children and extraversion. On the contrary, agreeableness which has appeared in some studies to be insignificant (e.g., Allen, 2019) turned out to have a positive association with the number of children, and this is in agreement with the findings of Međedovića et al. (2018) and Joekela et al. (2011).

As the most consistent personality traits with a significant association with number of children in all the models, openness to experience has a significant negative association with the probability of having a higher number of children. This means that people who are high in openness to experience are less likely to have more children. This finding is in line with previous studies (e.g., Berg et al., 2014; Jokela et al., 2011) which found that openness to experience is correlated negatively with number of children. From the literature, we know that people high in openness demonstrate intellectual curiosity, enjoy variety and are inclined to be more creative or open-minded, and less traditional (Avison and Furnham, 2015). Such people are likely to be associated with a lower probability of having more children because they are most likely to postpone or forgo marriage in pursuit of experience or intellectuality. Other scholars have argued that people who are high in openness tend to reject traditional social norms (Lundberg, 2012; Lee et al., 2010; Van Hiel and Mervielde, 2004; McCrae, 1996) and, as a consequence, delay procreation or limit the number of children or childbirth altogether as an expression of their acceptance of non-traditional life styles (Tavares, 2008; Jokela, 2012). The gender-based results show that this trait is significant for both females and males.

In conformity with previous studies (e.g., Berg et al., 2013; Jokela et al., 2011; Skirbekk and Blekesaune, 2014), the results showed that conscientiousness is negatively associated with number of children and this is particularly so for the male sample only. From the literature, it has been suggested that given the attributes of conscientiousness as individuals who are organized, diligent, cautious, dependable, goal-oriented, achievement-seeking, perseverant and disciplined (Digman, 1990; Barrick and Mount, 1991), conscientiousness can either have positive or negative association with number of

children depending on the underlying goals set for achievement (i.e., family vs. career). Where goal-achievement is set in terms of career, conscientiousness may lead career-oriented people, especially women, to delay childbearing or remain without children, while the tendency to plan and act cautiously may lead to effective use of contraception, lower likelihood of unplanned pregnancy and fewer children. What is a bit surprising about this finding is that conscientiousness is not significant in the female sample. However, this may be explained by the fact that in the Ghanaian society, the social pressure to give birth is always on more females than males; therefore, no matter how conscientious females are, they may still yield to societal pressures, notwithstanding their ability to plan and act cautiously.

Conclusion

In this study, the associations between the five dimensions of personality traits defined by the Five factor model (i.e. extraversion, conscientiousness, stability, openness to experience and agreeableness) and number of children have been assessed using the negative binomial and zero-inflated negative binomial models which are appropriate regression estimates when the dependent variable is measured as a count data with variance of the distribution exceeding the mean (i.e. over-dispersion) and excess zeros. After controlling for age, education, spouse and labour market status, the estimates from these models showed that three of the personality traits, namely conscientiousness, openness to experience and agreeableness, have significant associations with number of children. The estimates were presented according to gender, comparing differences in the correlates with regard to number of children by males and females. This evidence showed that whereas openness to experience is negatively associated with number of children in both males and females, conscientiousness and agreeableness were negatively and positively associated with number of children but only in the male sample.

With these findings, this study concludes that some of the personality traits of the five-factor model are associated with number of children in the Ghanaian context, thus adding to the empirical evidence from the western world on this subject. As a single-country cross sectional study, this study has some inherent limitations that create opportunities for further research. First, it does not allow us to infer causality between personality traits and number of children given the nature of the data, although the established associations are still very useful knowledge. Second, it limits the ecological generalizability of the findings, notwithstanding the fact that it adds the perspective of an African country to the rather skewed evidence from the western world. As longitudinal data become available for many African countries, it will be useful for future studies to re-examine these associations to provide fresh causal evidence.

Declarations

Conflict of interest- The authors declare no potential conflicts of interest with respect to the research, authorship or publication of this article.

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Can adaptation and mitigation synergistically cooperate? Lessons from Wa West District, Ghana

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Abstract

This paper explores the possibility of synergising mitigation and adaptation strategies at the local level since both seek to arrest the menace of climate change. Based on a systematic analysis of data collected from four rural communities in the Wa West district, we expose the weakness in the solitary strategy adopted by local farmers to expand their socio-economic activities within fragile eco-systems. We argue that to build a sustainable 'immune system' for climate-induced vulnerabilities, local farmers need to balance their adaptation and mitigation strategies by considering and searching for mutually supportive actions and trade-offs. We opine that community resilience does not happen in a vacuum. Instead, community resilience is achieved through a collectively planned, transparent medium which empowers the community with knowledge about their risks, effectively equipped with the right skills to adapt, cope with, re-group and recover in times of disasters. This calls for investing in understanding and promoting specific local capacities to enhance community readiness and opportunities to unlock mutually beneficial approaches to climate change mitigation and adaptation.

Keywords: Mitigation; adaptation; vulnerabilities; Wa West district; Ghana

Introduction

Arguably, the most defining socio-ecological issues of the 21st century are urbanisation and climate change. The latter, which is the emergence of the real and present threat to planetary sustainability and a potent force of climatic irreversible consequences, has attracted two major kinds of policy interventions: First, mitigation, which seeks to limit emissions of greenhouse gasses, or reduce the risk to life, property, socio-economic activities, and natural resources, has received unparalleled attention (OECD, 2008; While and Whitehead, 2013). The second, adaptation, which accepts some degree of change, seeks to limit the negative impacts of climate change (Ayers and Huq 2008; Zhao et al., 2018).

This paper conceptually sees both mitigation and adaptation as necessary for managing climate risks for two main reasons: First, that not even the most stringent mitigation

efforts can avoid entirely certain adverse effects of climate change due to the already produced emissions, thus making the action of adaptation inevitable (Kelly & Adger, 2000). Second, no society can engage in adaptation indefinitely; therefore, some mitigation measures are always needed to avoid the worst consequences (Willbanks et al. 2007a; King 2004).

In Ghana, the threat of climate change to development has been well documented (Armah et al., 2011; EPA, 2011; MESTI, 2013). Generally, the northern regions in particular face various climatic uncertainties, including increasing frequency, intensity, and duration of extreme weather events with dire consequences (Equavoen, 2012; Laux et al., 2008). The Future Agricultures (2012: 1) see local farmers in the region as: "... resourceful, innovative and entrepreneurial by necessity. While there are profound difficulties in creating secure livelihoods for all, there are also significant successes". The climate challenge is evoking diverse responses to ensure a sustainable biosphere for all forms of life.

The evidence bears policy implications. It quantifies how much the climate change menace –drought, flooding— increases rural poverty and compels the marginalised to resort to varied policy responses (Kansanga et al., 2021). It shows that not all locally adopted strategies may necessarily strengthen the local economy in the long run. This raises legitimate questions: Can locally crafted mitigation and adaptation measures conflict with one another? How can these strategies be co-managed? Can they cooperate and synergise with one another? Our paper engages in a broad inquiry on these questions. We reckon that climate change discourse involves varied actors who have generally found little reason to interact despite their common purpose (Luni et al., 2012). Since rain-fed subsistence agriculture and livestock rearing are the main economic activities at the local level, we believe that considering mitigation and adaptation will help formulate people-centred strategies. Using Wa West district (an ecologically challenging environment) as a case study, we examine how farmers' responses to climate variability (mitigation and adaptation) demonstrate an integrated approach. We assess the 'internal policy coherence' and to what extent the positive and negative attributes in both mitigation and adaptation are taken into account at the local level.

Our paper is presented as follows: The next section presents the paper's theoretical underpinnings, followed by a discussion of the data collection and analytical tools and methods. The results section first examines the four communities' mitigation and adaptation strategies and then explores the possibility of drawing synergies/trade-offs regarding their current practices. The discussion and conclusion sections outline implications for potential integration and provide recommendations to enhance climate change policy integration and coherence at the local community level.

Understanding the mitigation-adaptation strategies nexus

Since 1988, when the UN General Assembly assumed responsibility for the fight against climate change, mitigation and adaptation have been the two primary human response strategies (Ayers and Huq, 2007). According to Willbanks et al. (2007), mitigation involves actions that are pre-emptively undertaken to reduce the magnitude of human contribution to climate change, while adaptation seeks to adjust the built and social environment to minimise its adverse outcomes and harness its beneficial opportunities (Kansanga et al. 2021). Technically, the Intergovernmental Panel on Climate Change (IPCC) sees adaptation as “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities”; and mitigation as any “anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gasses” (IPCC, 2001)

Following this, climate change can be seen as a universal systemic issue that needs approaches to reduce global greenhouse gasses (GHG), including emissions trading schemes and carbon emissions capping to prevent the worst-case scenarios of global warming (Ravindranath 2007). Though the fourth IPCC report (2007) had suggested that the two must be treated as twin sisters and be placed on an equal footing, there appears to be some institutional bias towards mitigation. An unintended consequence of the duality relates to situations where policymakers and negotiators treat the two strategies as policy alternatives, or as aptly put by Dang et al., (2003) in opposition to one another. For example, in the early 2000s, the World Bank conservatively estimated between \$10 billion and \$40 billion was spent on climate-proofing investments in developing countries, against a meagre adaptation investment of only \$100 million to \$500 million per year (Antwi-Agyei, et al., 2012).

Such unhealthy ‘rivalry’ calls for policy ‘integration’, ‘coherence’ or ‘mainstreaming’ (Adelle and Russel 2013). Though engaging fully with the debates is beyond the scope of this paper, we nonetheless adopt Nilsson et al.’s (2012) conceptualisation of policy coherence as the integration of governance and policy-making processes, focusing on residents’ options for response to climate change hazards. We examine how the local strategies are mutually supportive or offer synergic and systematic support towards the achievement of common objectives; and as rightly noted by den Hertog and Stroß (2013: 4), local responses must be implemented so that they:

- a) *reduce negative interactions (trade-offs) and seek to exploit positive interactions supporting mutually beneficial practices (synergies) between climate change mitigation and adaptation. We refer to this as internal climate change policy coherence; and,*

- b) *reduce negative interactions (trade-offs) and seek to exploit positive interactions supporting mutually beneficial practices (synergies) between climate change (mitigation or adaptation) and non-climate objectives. We refer to this as external climate change policy coherence (ibid).*

This is not to suggest that one strategy takes precedence over the other (Lafferty and Hovden 2003). Indeed, internal climate policy coherence does not necessarily imply that the joint outcomes are always favourable (Moser 2012). So far, the two remain the primary human responses to the climate challenge, though recently, resilience is gaining currency. Resilience generally relates to the capacity to accommodate or adapt to external threats. From the IPCC lexicon, resilience is explained as:

The ability to absorb disturbances, be changed, and reorganise and still have the same identity (retain the same basic structure and ways of functioning). It includes the ability to learn from disturbance. As resilience declines, the magnitude of a shock from which it cannot recover gets smaller and smaller. Resilience shifts attention from purely growth and efficiency to needed recovery and flexibility (IPCC, 2007: 65).

Our study argues that if building a resilient community is the overarching goal of local development, then adaptation and mitigation methods should achieve the intermediate objectives of reducing the biophysical, social and economic risk associated with climate change. Whether a balance is achieved between multiple objectives remains an empirical question discussed in subsequent sections. But before that, the following section presents the method used in the study.

The study area and methodology

The study area

This paper is culled from a larger national project titled “Enhancing Resilience to Climate and Ecosystem Changes in Semi-Arid Africa: An Integrated Approach”, funded by the CECAR-Africa Project (see Samaddar et al., 2014; Samaddar et al. 2015; Kusakari et al., 2014). The data for this paper is complemented with a review of archival records and scholarly literature covering four research locations (Baleufli, Bankpama, Chietanga, and Zowayeli) in Wa West district, drained by the Black Volta river (see Figure 1). With a 2010 total population of 2,508, these communities face an imminent threat of increased flooding and drought situations (Samaddar et al. 2015, Kansanga et al. 2021). The communities’ commonalities include identical mode of production, which is primarily rain-fed subsistence farming, with few irrigation facilities, a high occurrence of poverty, and the absence of both government and NGO support.

Figure 1: The map of Wa West District showing the four research localities.

Farmers today endure either floods that devastate large areas of their near-ready grain fields or several episodes of late rains during planting seasons (Van der Geest, 2011). Such is the plight of our sampled population, whose vulnerable conditions has inspired them and brought to the fore their innovative and entrepreneurial capabilities, which form the basis of our study.

Research design and methods

For a detailed methodology of the larger project, see Samaddar et al. (2014; 2015) and Kusakari et al. (2014). We conducted a further three-month participant observation, 15 key informant interviews (KIIs) and 12 FGDs. Our team initially had a plenary meeting with the local stakeholders. A household survey was carried out in May 2013. Based on convenience and the researchers' experience, 40% of the total number of households per community was randomly selected from a geo-referenced database, totalling 92 (i.e. 35 households in Baleufili, 32 Bankpama, 15 in Chietanga, and 10 in Zowayeli).

Two adults of the opposite sex were interviewed in each household, using a guide and with the assistance of 5 local interpreters competent in the local languages (Waale, Dagaare, and Brifori). The FGDs were organised in August 2013 in all the communities. Our focus on participatory tools was informed by the desire to facilitate community participation, stimulate the exchange of ideas and generate empowerment and commitment.

The team further facilitated plenary discussions with officials of the Assembly and other public officials from the National Disaster Management Organization (NADMO), Ministry of Food and Agriculture (MoFA), Environment Protection Agency (EPA) and some Non-Governmental Organisations (NGOs) on climate and ecological change issues and disaster governance. The KIIs were transcribed and thematically analysed, pinpointing interviewees' concerns, opinions, experiences, and feelings. The survey was also analysed statistically, highlighting the trends among participants and between case studies. The local responses to climatic variability and their synergies or trade-offs are highlighted in the discussions below.

Presentation of study results and discussions

This section presents two aspects of climate change architecture. First, we examine the perceived challenges of climate change from the perspectives of the farmers and key informants and how these are impacting their livelihoods and living standards. Second, we analyse the farmers' lived response strategies and their relationship. We chose this level of analysis for two main reasons. First, it presents each community's specific vulnerabilities and response options (as well as observed/unobserved characteristics); second, it ensures comparable units.

The perceived climate-induced challenges

The results of the questionnaire survey showed that 88% of the households were male-headed, with an average household size of seven. Further, because most people are Christian, 42% live as nuclear families, thus coinciding with the findings by van der Geest (2011). Averagely, the educational level of household members older than 14 years was four years, while 77% had migration experiences. Further, 69% had acquired medium to large-sized land plots, with an average farmland holding of 8.2 ha.

We sought the respondents' perception of their observed climatic variability to conceptualise the links between climate change, their livelihood and coping strategies. We sought to uncover the nature of climate related-risks, their underlying factors, and the associated consequences on the farmers. Participants were made to rank (from 1 to 10) the commonly experienced challenges and how they affect their livelihoods, with the highest score being 10 and the least, 1. The overall results (i.e. 120) indicated that respondents perceived increasing drought as the most common, followed by storms (80 points). Detailed analysis showed that each community prioritised different vulnerabilities (see Table 1).

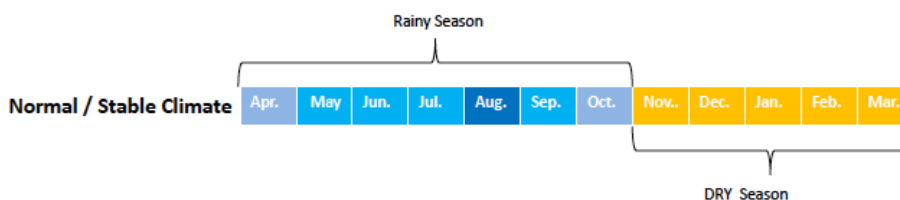
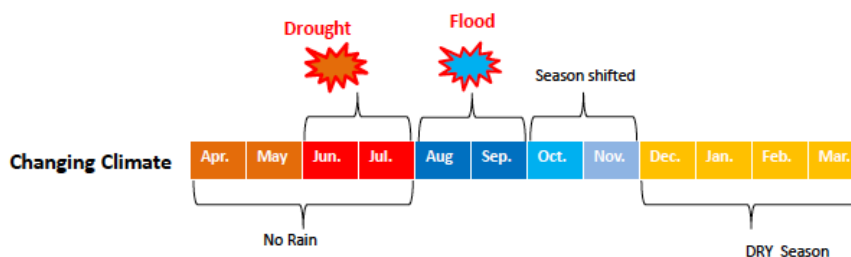
Table: 1. Community-based vulnerability rankings (frequency)

	Baleufili	Bankpama	Chietanga	Zowayeli
1. (Most common)	Drought (30)	Drought (30)	Drought (30)	Drought (30)
2	Bushfire (26)	Storms (18)	Storms (22)	Flood (19)
3	Storms (23)	Temperature (17)	Beginning of rain (19)	Storms (17)
4	Rainfall amount; 12)	Rainfall amount (16)	Temperature (15)	Rainfall amount (16)
5	Beginning of rain (12)	Bushfire (13)	Flood (15)	Beginning of rain 13)

Source: Field research (2013)

NB: The scores of the three focus groups (i.e., a maximum of 10 for elders, men, and women, respectively) were aggregated (maximum 30) based on the ranking.

Besides drought, the respondents in each community prioritised varied climatic variables, but flooding is not unambiguous. Except for Baleufili, where bushfire was ranked second, the others alternated the two hazards in the second and third positions. During the various interactions, the farmers (and indeed, the community at large) were able to construct the variability in rainfall patterns as they have been experiencing in recent times. Figure 2 is a graphical representation of the rainfall calendars as identified by the farmers.

Figure 2. Rainfall calendar as identified by the local farmers**Figure 3.A : Norman Climate (Based on Community Reporting)****Figure 3.B : Changing Climate (Based on Community Reporting)****Indicators**

Source: Samaddar et al., 2014

The farmers revealed that they used to experience average rainfall from April to October, peaking in August. Reportedly, this pattern has seen severe variability with the wet season getting shorter. Thus, farmers do not observe rains until the end of July, which resonates with official data (see Samaddar et al., 2015). Participants in FGDs from Chietanga and Bankpama confirmed experiencing annual drought and flooding simultaneously. This means though the wet spell has gotten shorter, the frequency of floods has increased, and this is consistent with Brown and Crawford's (2008) statement as follows:

Historical data across the country from the year 1960 to 2000 shows a progressive and discernible rise in temperature and a concomitant decrease in rainfall in all agro-ecological zones [...]. It is estimated that temperature will continue to rise by an average of about 0.6 °C, 2.0 °C, and 3.9 °C by 2020, 2050 and 2080, respectively (Brown and Crawford, 2008: 23).

The findings are consistent with IPCC projected climate variability impact on agriculture in Africa, which states that the increased frequency of droughts will result in land degradation, lower yields/crop damage, increased livestock deaths and increased risk of wildfire (IPCC WG2, 2007: 18). Further, FES and GAWU (2012) stated that over the last 30-40 years, observations show that Africa is getting warmer: prognoses predict an overall 2.9°C increase in temperature in sub-Saharan Africa by 2060. Antwi-Agyei et al.

(2012) put it aptly by stating that the region [sub-Saharan Africa] is already extremely vulnerable to food insecurity due to climate variability, which contributes substantially to development problems, as key development sectors, i.e. health, agriculture, water, energy and transport are particularly sensitive areas.

Antwi-Agyei et al. (2012) highlighted examples of far-reaching consequences of climate variability in the sub-region, which included a predicted 50% decrease in rain-fed agriculture by 2020, while the number of people suffering from water stress will rise from 15 to 250 million people. Furthermore, local food supplies will decrease due to, for instance, depleting fish in lakes because of rising water temperatures. In the estimation of Antwi-Agyei et al. (2012), the effects of climate variability on Lake Victoria alone could endanger 30 million people who rely on fish as a food and income source.

Our study considered the impact of climate variability on respondents' farms. As indicated in Table 2, all (120) participants cited drought as the most disastrous hazard affecting their agricultural activities (including livestock). The second-ranked impact alternated between storms and flood, with respondents from Bankpama and Zowayeli mentioning storms while those in Baleufili and Chietanga cited floods. Aside from these climatic hazards, some farmers in Baleufili and Chietanga expressed concerns about the destructive activities of monkeys, hippopotami, cattle and birds, some of which were reportedly getting 'closer home' due to the continuous depletion of their natural habitat;

These days, we sleep with our foodstuffs else monkeys will come at night and destroy everything. When they get nothing, they mess up the compound and make loud noises that disturb the serenity of the night [Personal interview with an aggrieved farmer at Chietanga; May 2014].

One of the respondents of Chietanga who has been fishing in the Black Volta for decades remarked metaphorically on the flood menace in the community as "dreams portray things to come".

Table 2: Ranking of disasters/climate change phenomena affecting farms most.

	Baleufilia	Bankpama	Chietanga	Zowayeli
1. (Most common)	Drought (30)	Drought (30)	Drought (30)	Drought (30)
2	Storms (17)	Flood (24)	Flood (26)	Storms (17)
3	Flood (13)	Bushfire (20)	Bushfire (14)	Annual rainfall (16)
4	Animals (13)	Storms (18)	Beginning of rain (13)	Flood (14)
5	Annual rainfall (11)	Annual rainfall (12)	Annual rainfall (12)	Bushfire (11)

Source: Field research/FGDs (2013)

Our interactions with the KII from the public sector produced useful information. However, contrary to the farmers' concerns, our key stakeholders from the public sector alluded to different climatic challenge. Thus, the public officials ranked bushfire as the prime hazard followed by drought, flood, rainstorm, and epidemics. Though these stakeholders live and work in the same district, there is a glaring disparity between the 'experts' view' and the farmers' lay knowledge', creating a complex subject for public policy. Not only can such a situation affect policy acceptability, but also it can compromise compliance. Admittedly, ideas about lay and expert knowledge underscore recent debates among qualitative researchers, but this paper is not about critiquing the lay-expert divide. Nonetheless, we firmly believe that for the sake of implementable policy which will attract compliance, an exploratory synthesis of the two or an interpretation of one in the light of the other will ensure more excellent conceptual development. Put different, we argue that this lack of coherence is not only an obstacle to effective action, but can potentially contribute to a stalemate on climate policy, a stalemate that matters because climate change in the research locations is real and actions are needed to improve policies and to reduce the vulnerability of people and ecosystems to climate effects..

Farmers' mitigation and adaptation practices

Table 3 presents results of the local farmers' experiences with the climate menace. As earlier discussed, drought was unanimously cited as a recurring event impacting their livelihoods. This was surprising, as the communities' livelihood activities (i.e. rain-fed agriculture and livestock rearing) show a low degree of diversification, thus rendering them vulnerable to climate variability. The geographical location of the farmers (i.e. isolated, remote, highly underdeveloped and marginalised communities) tends to worsen their plight. During the interactions, it came to light that the farmers lack financial resources and know-how, while support from the government or NGOs is non-existent.

The farmers' major climatic challenge was occasional storms that devastate their crops, livestock, and homes. They recalled how these occasional storms consume large tracks of near-ready grain fields, and at the same time, counted several episodes of late rains during planting seasons. In both scenarios, the ultimate result is poor crop yields, creating food insecurity, which worsens their livelihood and housing conditions and condemns many to extreme poverty. The study revealed that the residents of Chietanga, susceptible to drought and flooding, could move to higher ground. However, that appeared to be a wrenching prospect many would need a fortune (e.g., building materials) to accomplish. Hence, they employ traditional ways to fortify their homes and shore up their coastline. The Chietanga Chief puts it aptly: "after years of inattention and hopelessness and with help coming from nowhere, we have no choice than to do things on our own".

Similarly, in Zowayeli, the farmers generally touted the virtues of the '*good old days*, with

a standard narrative such as the following:

When the rainfall was favourable, one could cultivate small parcels of land and harvest a lot. Now it is [rainfall] very unpredictable; we farm larger areas but harvest next to nothing. We are at the mercy of the rains ... [Personal discussion with Chief on Zowayeli: May 2014]

During the FGDs, participants were passionate about their past, a situation which reflected in expressions like:

In those days, things were better [...] in the past, you could harvest a couple of combs of corn from a neighbour's farm for your personal use. All you needed was to inform him about the act [a community leader at Baluefeli in May 2014]

Admittedly, empirical verification of these experiences of the farmers of “the good old days” with historical data is beyond the scope of this study. Thus, the need for caution in reading these narratives, as “distressed” farmers may unconsciously romanticise the past. Nonetheless, our KII interviewees also confirmed an unprecedented decline in crop yields due to worsening unreliable rainfall patterns and increasing soil infertility. This is also consistent with earlier studies that blamed the continuous use of the same plots and traditional farming practices in the face of increased climatic variability for poor crop yields (van der Geest, 2011). In their studies, Antwi-Agyei et al. (2012) noted, for example, that climate change and variability are having severe impacts on agriculture production and food security, with yields from rain-fed agriculture projected to half by 2020. From their general linear regression model, the combined effect of rainfall and temperature was shown to account for 25.3% of variations in cocoa outputs for Dormaa West District.

Table 3:

Settlement characteristics		Chietanga	Bankpama	Zowayeli	Baleufili
General overview	Population	359	742	665	742
	No of years in school	4	4	4	4
General overview	Average household size	6	7	7	8
	Population growth rate	4-8 persons/year	6-8 persons/year	5-7 persons/year	6-8 persons per year
	Per capita Income	1/4 of national figure of 240	-same-	-same-	-same-
	Per capita expenditure	1/3 of national figure of 620	-same-	-same-	-same-
	Climate	- Guinea savannah agro-ecological zone	-same-	-same-	-same-
	Major rainy season	- May - September	-same-	-same-	-same-
	Lean (rainy)season	- April - June/ May.	-same-	-same-	-same-
Level of Vulnerability	Main livelihood activity	- Rain-fed agriculture (96%)			
	Major Hazard	- Sea level rise as storm surges - Erosion threatens coastal eco-system and infrastructure. - Storms threaten coastal housing and infrastructure. - Increased economic losses/crop production failure.	- Water scarcity (water stress and water-related extremes) - Changes in precipitation patterns reduce reservoir supplies.	- Water scarcity leads to food insecurity - Topography facilitates gully erosion. - Increased distress youth out-migration [loss of livelihood, leading to more work for women]	- Higher temperatures and intense drought - This leads to longer working hours (women wake up early since often, noons are too hot to work)
Building resilience	Mitigation.	- Construction of coastal mangrove - Irrigation using river water, shallow groundwater extracted manually using buckets. - Farming along river banks - Relying on remittances and less expensive foods, borrowing food. - Reducing non-essential expenditure. - Limiting the meal times - Restricting consumption by adults.	- Artificial restoration of the hydrological system by enhancing water storage and infiltration - Diversity of income with women supplementing family budget with their small scale processing and selling activities.	- Modification of crop production - Planting early maturing varieties - Application of both organic fertilisers and manure - Water savings using mini dams - The sale of assets (livestock) - Diversification of income source. - Migration and remittances - Crop modifications	- Irrigation using mini dams, extracted using pumps and manually using buckets - Resort to charcoal production - Pito brewing by women - Groundwater recharge by wetland restoration & green infrastructure.
	Adaptation				

Our interviewees (local farmers) described a number of their adaptation and mitigation strategies (see Table 3). From the table, farmers' adaptation strategies against food insecurity include the sale of (acquired) assets; deliberate reduction of food consumption; diversification of household income, modifications of the crop production and migration. The findings indicate that farmers in the four communities generally sell their livestock (described as "the main safety valve") in times of drought (due to its high market value). Though it was difficult to quantify the value of this farmers' adaptation strategy, prior studies in 2010 estimate the value of the pastoral and meat trade from the district as near US\$ 100 million a year (Van der Geest, 2011).

The study revealed that this universal adaptation strategy is purposefully preceded by specific mitigation processes such as adopting early maturing seeds and applying organic fertilisers and manure. The results show that mitigation activities can benefit or hinder adaptation, and promoting activities that contribute to both objectives can increase efficiency and minimise trade-offs, particularly in land-related activities such as agriculture and forestry. Information is however, missing on how climate funding organisations consider the integration of adaptation and mitigation.

Climate-smart practices also appear to be among the standard vehicles for mitigation and adaptation to their local climatic challenges. The study revealed that farmers use drought-resistant seeds, early maturing crops, and irrigation as some of the most preferred adaptation strategies against drought. Our interviewees opined that access to irrigation guarantees security in cultivation and provides them with a more stable income. During the fieldwork, farmers in Zowayeli who engage in dry season farming had to use river water and shallow groundwater extracted manually using buckets.

Apart from spending a significant amount of time daily "searching for water", the farmers conceded that wells and boreholes are not essentially sustainable adaptation strategies since most of them dry up during prolonged drought periods. Further, the community has no mechanism to store and recycle rainwater, possibly due to financial and technical constraints. Additionally, the adoption of drought-tolerant (early bearing) crops and vegetables is a common practice. Still, from the study, the practice is more or less a short term solution due to the post-harvest challenges, including storage and marketing.

During the plenary discussions with the public officials, a member of MoFA gave an example of a new breed of cowpea developed and introduced to the farmers by the Savannah Agricultural Research Institute (SARI) which matures early and cooks faster. The official noted that, due to its earlier maturity period, most married women had described it as *nwubi mong doo*, which means *eat without the husband*. Thus, when an 'irresponsible' husband fails to provide food for the family, the wife can quickly and easily feed her children with that cowpea and pretend nothing has happened since the man will not come from work to find her cooking.

Independent of what is happening generally across the four communities, the findings also show local variations in the farmers' adaptation and mitigation strategies which were mostly driven by local circumstances. For example, some interviewees from Chietanga recalled reducing their "non-essential expenditure including stopping paying of school fees" in times of crisis as a way of financing their adaptation and mitigation activities. Additionally, these farmers as well as those from Zowayeli relied on external remittances to ensure that their adaptation and mitigation are aligned with their local conditions.

During the interactions, there was a general consensus that considering their weak educational background, for most farmers, getting the opportunity to work outside farming is an exception and coincidental. For example, farmers along the Black Volta (i.e. Chietanga and Bankpama) claimed they turned to fishing and charcoal production as alternative livelihood activities. They lauded charcoal production for its quick market, though the gains appear fragile and pose dire long-term implications. The most commonly cited impact of charcoal production is deforestation, i.e., the clearance of forest or woodland. For example, the cutting of trees along the Black Volta exposes the river to evapotranspiration. This explains why the river is rapidly drying up and impacting its biodiversity. Further, the illegal use of economic trees - shea tree – affects the women's shea butter trade, creates deforestation and increases the incidence of bushfires and impacts on soil fertility. Charcoal production in tropical regions of the world is often perceived to have devastating ecological and environmental effects.

Contrary to the literature (see Awumbila et al., 2014), migration down-south was not among the most preferred adaptation strategies for the elderly, but a commonly adopted one nonetheless. This is particularly so in recent times, when migrants stay longer before returning, if at all. The farmers opined that migration drains away their able-bodied youth (at the expense of the aged), thus consigning their communities to imminent food insecurity.

During the FGDs, farmers along the Black Volta noted they rely on local knowledge for early warning signals and only occasionally on those from the metrological agencies, albeit such warnings often come at too short notice to be useful. The farmers opine that 'timely' notifications using appropriate channels will prepare them better against climatic variability (i.e., through field preparation, seed sowing, and water management). Such information is imperative, as their long-tested traditional knowledge relating to seasonal predictions is fast disappearing and increasingly becoming unreliable.

FES and GAWU (2012) corroborated the observation by noting that global climate change is one of today's greatest challenges and therefore it is crucial for all countries to act now. They reiterated that society is at a cross-roads and only decisive and immediate action will make it possible to influence the future consequences of climate change and stall global warming. In their estimation, the key is mitigation, and all countries have the

opportunity and the obligation to be part of the solution to a global problem. They rightly maintained that it is of fundamental importance that adaptation to dangerous climate change, as well as its prevention, is placed at the top of the political agenda. Concluding, they noted that countries' policies to eradicate poverty, ensure food security, as well as to provide education and health services need to include adaptation strategies.

Looking for synergies in local adaptation and mitigation

Our findings revealed that our study communities are facing climate-induced challenges. The challenges, which are becoming severe, frequent and costly by the day, cover everyday hazards like water scarcity in Zowayeli and Bankpama, land degradation in Baleufili and severe storms in Chietanga. These study communities, marginalised geographically and politically and with no official assistance, are vulnerable to everyday hazards like living and working in unsafe areas, being under-educated and illiterate, poor with fragile and often hazardous livelihoods, and being individually and collectively politically weak (Grant and Oteng-Ababio, 2016). This section explores opportunities for policy integration embedded in the farmers' local strategies for adaptation to and mitigation of climate change, a conceptual synergy. Dang and et al. (2003) described as a "cause and effect" interaction. In their opinion, future adaptation is related to current mitigation levels. Willbanks et al. (2007: 714) also remark that "if mitigation can be successful in keeping impacts at a lower level, adaptation can be successful in coping with more of the resulting impacts".

In this instance, data paucity makes this study imperative. The various adaptive actions of the farmers have consequences for mitigation (positive or negative). The question then is whether their mitigation actions impact future adaptation since these local strategies are direct and involve the same resource base and the affected stakeholders. Thus, the people of Zowayeli and Bankpama reported acute potable water scarcity, which remains the single biggest threat to human health and economic livelihood (Samaddar et al., 2015). During the fieldwork, the farmers displayed great consciousness of the recent late arrival of the rains, a shift they aptly tie to climate change.

The community of Baleufili, for example, is privileged to have a mini-dam that provides them with sustained annual drinking water. It also guarantees small-scale irrigation and recession farming which serves as an essential component of their local livelihoods. Yet, the fact that the farmers and their livestock share the same mini-dam, particularly in the long dry season, has serious health implications (Samaddar et al., 2015). It stands to reason that though the mini-dam is a vital adaptation asset, it can also be a source of everyday hazards by providing a conducive environment for the breeding mosquitoes and spread of malaria and other vector-borne diseases.

Similarly, in Baleufili, as in Bankpama, charcoal production is rife, a traditional adaptation strategy among men. Although the practice is widespread due to its fast and high-income generating potentials, it risks compromising the long-term sustainability of the community due to its embedded negativities - increasing trans-evaporation, bushfires, deforestation and soil degradation of already fragile (infertile) soils (Samaddar et al., 2015). However, adopting an integration of adaptation and mitigation strategies that consider more efficient use of energy can promote land-use development that supports local economies and livelihoods (e.g. shea butter, fishing, etc.) and help maintain biodiversity in the Black Volta (Kansanga et al, 2020).

Again, the village of Chietanga on the banks of the Black Volta is battling with the sessional storms, which are eroding farmlands. The flooding of the river has become so severe in recent times that the Chief of the village recalled during the FGD as follows:

The last big storm in 2012 came close to inundating the whole village ... That was pretty scary. It seemed like the water would run right over and cover us up, but thankfully it didn't. Though no human casualty was recorded, residents who farm within the river valley lost all their investments. I am wondering what the storm will be in August [Personal interviews with Chietanga Chief, May 2015]

The farmers, who are menaced by the flooding, create coastal mangrove plantations as a makeshift barricade to build their resilience to the sessional storms. In our view, the mangrove plantations, when properly integrated, can sequester carbon, reduce future climate change and serve as a safety net for the farmers against droughts. This resonates with Ayers and Huq's (2007: 761) remarks that "this creates a neat mitigation-adaptation-sustainable development nexus: the composting mitigates GHGs directly through reduction of methane emissions and indirectly by contributing to carbon sequestration of crops; adaptation through soil improvement; [and] sustainable development because poverty is exacerbated when climate change reduces the flows of eco-system services".

In Zowayeli, the residents contended that the severe drought threatened indigenous farming practices and drinking water supply systems. They acknowledged that the rainy periods are getting shorter, yet erosion is becoming so severe mainly due to the settlement's physical topography and increasing human activities. This, the residents noted, is affecting their farmlands and threatening food security. During the fieldwork a widow (about 70 years old) was seen preparing an almost barren land in expectation of the uncertain rains. In an interview, she revealed the challenge in getting a meal a day. She remarked:

Nowadays, most of the villagers interpret the lack of smoke from a household in the evening to mean that the occupants will bed on an empty stomach. To avoid such a social stigma, most families make fire and boil water to bathe their

grandchildren, whose mothers might have migrated to the city to look for a job to supplement the family income [Interview with a 70-year older woman].

Though some farmers have resorted to harvesting rainwater during the short rain spell or water savings with the construction of mini-dams to support irrigation, these are not enough to survive the long dry period. Besides, the increasing adoption of energy-intensive irrigation by introducing small generators can also inadvertently increase carbon emissions and exacerbate climate variability (Moser, 2012; Kansanga et al, 2020). This underscores the importance of synergising adaptation and mitigation strategies so that their socio-productive dimension can be enhanced.

One common mitigation strategy is the farmers' preference for investing in male education to the detriment of the girl child based on the perception that girls "are to be married off". The practice encourages early marriages (Awumbilla and Adarfio-Schandorf, 2008), which worsens poverty levels. This ultimately potentiates the North-South migration of the youth in their quest to improve their resilience (Oteng-Ababio, 2020). Similarly, the adoption of drought-resistant, early harvesting seedlings as an adaptation strategy also leads to a situation where the farmers will have to contend with post-harvest losses occasioned by inadequate storage facilities and marketing opportunities.

Progress with either mitigation or adaptation at the local level can impact the other. This mimics remarks by Jones et al. (2007) that the demand for mitigation measures is highest when the adaptive capacity is exceeded, implying that the supply of mitigative capacity must emanate from local adaptation strategies. This calls for accepting that 'rural' is broader than just the 'agriculture' sector and is linked to other sectors involved in local development. Indeed, the Fourth Assessment Report of IPCC articulated the peculiarities of climate havoc on the African continent thus:

Agricultural production, including access to food, in many African countries and regions, is projected to be severely compromised by climate variability and change. The area suitable for agriculture, the length of growing seasons and yield potential, particularly along the margins of semi-arid and arid regions, are expected to decrease. This would further adversely affect food security and exacerbate malnutrition in the continent. In some countries, yields from rain-fed agriculture could be reduced by up to 50% by 2020 (IPCC 2007: 13).

This calls for integrative adaptation and mitigation strategies in addressing climate change effects in rural areas. Adaptability and sustainability depend not only on technological innovations and the rationalisation of production and consumption, but also on seeking permanent socio-cultural innovations and a renewed political interpretation of resources (Beduschi and Faret, 2016). There is a need to develop a funding architecture capable of supporting marginalised communities and their institutions since any intervention is only as effective as its local institution. Even where the government provides services, the

institutional arrangement for the on-the-ground implementation often involves the local communities and their institutions.

Exploring local synergies between mitigation and adaptation can address climate-induced challenges by reducing costs and increasing co-benefits. Such a synergy is mainly synonymous with development and can increase adaptive capacity, reduce vulnerability and encourage socio-economic development pathways that mitigate emissions. Ultimately, linking the two at the local level may make mitigation options more attractive, generate incentives to strengthen the local mitigative capacity, and influence the authorities to align the mitigation strategies more closely with climate change priorities.

Conclusion

We sought to explore the synergy of inter- and intra-community mitigation and adaptation responses in the four research communities in Wa West. This concluding section answers the initial questions posed: Can local communities' mitigation and adaptation conflict with one another? And can the adaptation and mitigation response options also cooperate and synergise? Our results conclusively indicate that attempts to separate adaptation and mitigation responses in climate science and policy can hinder the progress in addressing climate-induced vulnerabilities.

Instead, our findings underline the importance of exploring their local synergies by considering adaptation activities that have consequences for mitigation and vice versa. This is consistent with the study by Klein et al. (2007) which point to some of the pathways through which these synergies may be explored. Agreeably, individual community members are no experts in climate policy, nor do they have much genuine interest in its causality. They nonetheless have a role in its cause and, by extension, the pathways to addressing the outcomes through their livelihood activities.

This observation is particularly imperative due to increasing environmental fragility and the virtually non-existent future climate policy and adaptation priorities at the local level. This study has pioneered the conversation on the need to explore the synergies between climate change adaptation and mitigation responses as a way of bridging the gap between local priorities and national commons. We have examined these in a case study of a fragile eco-system where ordinarily, local farmers' adaptation needs are high and mitigative capacity is low (Samaddar et al., 2015). The research shows encouraging synergies between the two at the local level, though the results may not be a magic bullet for a comprehensive climate policy.

Concluding, we acknowledge that the theoretical debate underpinning the issues is hardly a new one. However, given the relatively short history of climate change discourse

in Ghana, there appears to be a strong case for scaling up the efforts to research, educate and encourage combined mitigation and adaptation policy initiatives at all levels. This will empower the local farmers and create active citizenship at the local level capable of holding governments accountable. The current desperation to escape poverty and ensure financial sustainability within the fragile eco-system serves to crowd out social mobilisation, favouring individualism. And there are understandable reasons why most individuals might be reluctant to take on a mobilising role, mainly when they feel least responsible for the current climatic variability. Therefore, their desirability and potential for mitigating opportunities are low.

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The Urban Transition in Ghana: Urbanization, National development and Poverty Reduction

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Ghana's urbanization in the African and Global Context

The first point to note is that the intensive urbanization of the industrial nations which occurred in the past is currently underway in developing countries. Although the rate of urbanization in the developing world is proceeding at a fairly comparable rate as what pertained in the industrial nations in the heyday of their rapid urbanization, the rate of population growth of cities in developing countries is rather unprecedented (Songsore, 2003a; Davis, 1967; Satterthwaite, 1996; Preston, 1979). In 2008, for the first time, more than half of the world's population, 3.3 billion people, were living in urban areas. This number is projected to increase to some 5 billion by 2030 (UNFPA, 2007: 1; UN-HABITAT, 2008a). "Over 80 per cent of this growth will accrue to Asia and Africa, with most of the rest to Latin America" (Martine et al, 2008:1).

Much of this urban population is concentrated in Asia and Latin America which have a good number of mega-cities which are increasingly integrated into functional networks of economic linkages with global or core cities (Rakodi, 1997: 52). Between 2000 and 2030, while Asia's urban population of 1.36 billion will almost double to 2.64 billion, that of Africa which is far smaller will more than double from 294 to 742 million if the impact of HIV/AIDS can be held in check. At this rate, by 2030 seven out of every ten urban inhabitants of the globe will be from Asia and Africa (Martine et al, 2008: 5). By 2050, Asia will host 63 per cent of the global urban population, or 3.3 billion people; Africa will have an urban population of 1.2 billion, or nearly a quarter of the world's urban population. Altogether, 95 per cent of the world's urban population growth over the next four decades will be absorbed by cities in developing countries' (UN-HABITAT, 2008a: 15).

Table 1. Percentage of Total Population that is Urban, 1950-2010

Region	1950	1965	1980	1995	2010*
Africa	14.6	20.7	27.3	34.9	43.6
Asia	17.4	22.4	26.7	34.7	43.6
	41.4	53.4	64.9	73.4	78.6
Latin America and the Caribbean					
Rest of the World **	55.3	64.1	70.5	74.2	78.0

**Projected. Rest of the World includes all countries in Europe, Northern America and Oceania.

Source: Drawn from figures in United Nations, 1998, *World Urbanization Prospects: the 1996 Revision* (Population Division, New York).

As illustrated in Table 1, Africa is currently rated among the least urbanized regions of the world and has hardly any of its mega-cities, although its process of urbanization is very rapid (UNCHS (Habitat, 1996: 13). Until independence in the 1960's, European colonial powers deliberately kept down the populations of urban centres by imposing restrictions on migrations of the indigenous African population to the towns (Satterthwaite, 1996). As a result, Africa is only in the early phases of its urban transition. With a 3.3 per cent growth rate per year between 2000 and 2005, the rate of change of Africa's urban population is currently the highest in the world. With growth rates of 4.02 for West and Central Africa, and 4.05 for East Africa, these are the fastest growing regions in Africa (UN-HABITAT, 2008b: 4). The percentage share of the total urban population in West Africa in 2007, which was 41.75, was well above the average of 38.70 for the continent, while that of East Africa, which was 20.48, made the region the least urbanized in Africa (UN-HABITAT, 2008b: 4).

It is however the belief that Africa, with its relatively rapid rate of urbanization, will in future also be part of what Toynbee has called the 'world city' or 'ecumenopolis', according to Doxiadis, with the majority of the world's population living in a network of urban centres (Songsore, 2000a). Whereas in 1995 only about 35 per cent of all Africans were urban dwellers as shown in Table 1, it is projected that by 2030 Africa may reach the milestone of having half of its population living in urban settlements and with a total population of 749 million people (UN-HABITAT, 2008b). Africa's urbanization is approaching a demographic inflection point as a result of the projected sharp rise in the urban population (Kessides, 2006: xiv).

Africa presents a particularly poignant example of the problems involved, as it has the fastest population and urban growth in the world as well as the lowest economic development and growth among the poorest countries, especially in Tropical Africa (Clarke, 1993:

260). The driving forces behind the rapid urbanization in Africa today are a combination of rural-urban migration and natural increase within towns and cities themselves. This is worsened in some regions by forced migrations precipitated by various stresses including ethnic conflicts, wars, droughts and famine (Potts, 1997). As a result of the profound impact of the effects of war or widespread civil strife, some analysts now talk in terms of 'destabilization-driven urbanization' (Swilling, 1994: 288; Woube and Sjöberg, 1999). Africa's urbanization has therefore been termed demographic urbanization rather than economic urbanization because it is not driven by radical transformations in agricultural productivity and industrialization (Escallier, 1988: 179; Clarke, 1993: 265; Gould 1998: 175; Songsore, 2003a: 2).

This overall trajectory of urban evolution in Africa would seem to be a valid paradigm underpinning the urbanization process in Ghana, as urbanization has generally occurred without development, that is, the transformation of the production structure through industrialization and agricultural modernization. This fundamental disconnect is the major difference between the urban experience in Africa and other regions in the North or the Newly Industrializing Countries.

Objectives of Study

This demonstrative country study on urbanization is part of a broader study of five major developing regions. The thrust of this study is to provide an understanding of the scale and nature of urban population change and the interconnections between urban development and demographic, economic, social and political processes and contributors to this change in Ghana. The study is aimed at helping clarify rural-urban linkages, evaluate policies, remove obstacles and biases, and clear the way for more proactive approaches towards upcoming urban growth. The case studies will serve as blueprints for the subsequent promotion of analogous studies in other developing countries, in a second stage that will be carried out under the auspices of UNFPA's country offices.

- First, it provides detailed statistics about the scale and nature of the urban population change and the demographic, social, economic, and political causes and contributors to this change;
- Second, it attempts to draw a link between urbanization and national or regional development historically and in the contemporary period of crisis and restructuring of the national space economy;
- Finally, by way of conclusion, it gives a highlight of some necessary conditions which ought to be addressed to promote a viable urban future and an all inclusive, balanced national development in Ghana.

The Urban Transition Process in Ghana

The Broad Picture of Demographic and Urban Change in Ghana

Consistent with observed trends in the rest of Africa, Ghana's population is becoming increasingly urbanized. The census or statistical definition of an urban centre in Ghana is any settlement with a population of 5,000 or more persons. Today, more than four out of every ten Ghanaians live in a city or town of more than 5,000 people. "If current trends continue, by the year 2020 more than half of all Ghanaians will live in urban areas" (Nabila, 1988: 1). Whereas only 9.4 per cent of the total population lived in urban settlements in 1931, this population shifted to 13 per cent in 1948, 23 per cent in 1960, 28.9 per cent in 1970, 31.3 per cent in 1984 and 43.9 per cent in 2000. To put it differently, by 1984, the number of urban settlements had increased nearly nine fold from 41 in 1948 to 364 in 2000, whilst the associated population increased nearly fifteen fold from 570,597 persons in 1948 to 8,278,636 persons in 2000 (Table 2).

Table 2. Growth in Number of Urban Settlements and Urban Population, 1948 to 2000

Year	No. of Settlements	Population
1948	41	570,597
1960	98	1,551,174
1970	135	2,472,456
1984	203	3,938,614
2000	364	8,278,636

Source: Ghana Statistical Service, April 1995, Vol. 2, p.20; 2001;2002.

This rising trend in urbanization has been driven by the following demographic processes:

- rural-urban migration;
- natural increase in towns and cities; and
- re-classification as villages grow into towns once they attain the threshold population of 5000 or more persons which is the census definition of an urban centre in Ghana.

The growth in the large number of urban places over the years would seem to suggest that re-classification is quite significant even though the two dominant elements driving the urbanization process have been rural-urban migration and natural increase within the towns and cities themselves. In the period 1948 to 1960, about 98% of the urban growth was caused by migration from rural areas. This is not surprising, as this period coincided with the post-war economic boom and the efforts by the new post-independence government from 1957 onwards to initiate a major urban industrial development and the provision of social infrastructure for the population using the urban places as the

growth nodes. This period also saw the mass influx of immigrants from other African countries into especially mining towns and the areas of cocoa production in Southern Ghana (Benneh et al, 1990: 39).

The share of rural-urban migration to the growth of the urban population dropped to just over 54% in the period 1960 to 1970. Again, following the economic crisis of the late 1970s and early 1980s with its devastating effect on urban real incomes, net internal migration to the towns and cities shrank to a mere 18% of urban growth during 1970-1984 (Benneh et.al, 1990: 39). Similar conclusions have been drawn from the evidence of other African countries (Simon, 1997). The 'vanishing rural-urban gap' in living conditions between the urban and rural poor under severe economic collapse and structural adjustment and the mass emigration of Ghanaians or in some cases return migration to the rural areas explain this collapse in the share of rural-urban migration to urban growth (Jamal and Weeks, 1988; 1993: Potts, 1997).

This initial mass movement to the towns in Ghana did not result in an absolute decline in the rural population which has continued to increase in absolute terms. For example, the rural population increased from about 5 million in 1960 to about 6 million in 1970, reaching almost 8.4 million in 1984 out of a total population of about 12.3 million. Thus, whereas the rural population increased by about 15 per cent between 1960 and 1970, the intercensal increase between 1970 and 1984 was about 27 per cent reflecting an acceleration of rural population growth. The higher percentage increase between 1970 and 1984 could partly be attributed to return migration of the growing poor from the towns as living conditions deteriorated and the decline in level of migration to the cities as a result of the urban crisis. It should however be recognised that part of the difference is due to varying duration of the intercensal intervals. The rural population now stands at over 10.5 million in 2000 at the last census count reflecting a 25 per cent increase which is lower than that of the earlier period. It relates in part to the restoration of the urban economies after over 25 years of consistent positive GDP growth which has privileged the urban sector.

It is therefore valid to assert that natural increase has been a significant factor in the overall growth of population in both urban and rural areas, especially after independence when migration to the towns was becoming more long-term with wives accompanying husbands. Indeed, the average population growth rate in Ghana, for the period 1948-1960, was 4.2 per cent per annum. This, however, was affected by net immigration from other West African countries, notably Nigeria, Burkina Faso, Togo and Mali, given the economic boom the country experienced and Nkrumah's pan-Africanist dream which was generally supportive of these migratory waves. By contrast, between 1960 and 1970, the average growth rate declined to 2.4 per cent per annum, thereafter rising slightly to 2.6 per cent in the 1970 to 1984 period (Ghana Statistical Service, 1995: 2).

It is important to emphasise that both the 1970 and 1984 population censuses do not seem to have given a correct picture of actual population dynamics because of the effects of emigration. For example, in 1960, between 10 and 12 per cent of the population in Ghana was foreign, largely from other West African countries. Following economic difficulties in the late 1960s, which partly explain the overthrow of the Nkrumah regime in 1966, the era of 'each one his brother's keeper' under Nkrumah gave way to a new policy doctrine of 'each one for himself and God for us all' in interstate relations. The successor civilian regime of Busia's Progress Party instituted an 'Aliens Compliance Order' just before the 1970 population census, leading to the mass expulsion of aliens from the West African sub-region, most of whom lacked valid residence permits. This must have influenced the rather sharp decline in growth rate in 1970.

This singular act continued to affect the electoral fortunes of successive offshoots of the then Progress Party in zongos or strangers' quarters within the most populous cities of Accra and Kumasi, notwithstanding the ECOWAS protocol which now allows free movement of West African citizens in the ECOWAS region. This handicap was rectified by the promotion of Nasara Clubs in these communities by the New Patriotic Party before the 2000 elections and this enhanced their electoral fortunes in these communities to the chagrin of the National Democratic Congress. The zongos are ethnic enclaves with a predominantly West African immigrant population, some of whom came to present-day Ghana in the pre-colonial era along Trans-Saharan Trade routes before the country's borders were defined in the colonial scramble for Africa.

Ghana suffered further economic stagnation and decline from mid-1970 to 1983. The new regional growth pole was Nigeria and to some extent Cote d'Ivoire. Following the oil boom in Nigeria in the 1970s, it had become the turn of Ghanaians to emigrate in mass waves to especially Nigeria and Cote d'Ivoire. Even though over one million illegal Ghanaians were later expelled from Nigeria following a recession in the economy just before the 1984 population census, it is believed many more Ghanaians still live and work outside Ghana. The population growth rates of 2.4 per cent per annum between 1960 and 1970 and 2.6 per cent per annum between 1970 and 1984 would seem to be on the lower side because of these international emigration waves, one forced and the other voluntary. For the above reasons, demographers have argued that the post 1984 population growth rate per annum lies around 3 per cent (Ghana Statistical Service, 1995: 2). The actual population growth rate between 1984 and 2000 is 2.6 per cent per annum.

As a result of this overall high population growth rate, urbanization, which is defined as the relative share of the total population is not proceeding as fast as one would expect because of the sheer weight of natural increase in especially the rural areas. The urban growth rate in 1984 was 3.3 per cent, 1 per cent higher than the rural growth rate of 2.3

per cent, because of net out-migration from the rural areas. At the growth rate of 2.3 per cent, the rural population will double itself in the next 30 years. Ghana is therefore a long way from the Western experience of rising urbanization going hand-in-hand with declines in the absolute numbers of people living in rural areas, raising a spectre of the implications of urban change for rural development and the transformation of peasant agriculture through mechanization and technical innovation.

Regional Trends in Total Urban Population

In terms of comparison by administrative region within Ghana, the greatest contrast is between the Greater Accra Region and the Ashanti Region, on the one hand, and the other regions, on the other. The Greater Accra region is the most urbanized with as much as 87.4 per cent of its total population living in urban centres – principally clustered within the Greater Accra Metropolitan Area where Accra and Tema provide the main nuclei within the metropolitan complex (Table 3). This is followed by Ashanti Region with 53.2 per cent of the population living in urban settlements dominated by Kumasi, the second largest metropolitan agglomeration after the Greater Accra Metropolitan Area. All other regions had urbanization levels that fell below the national average of 43.9 per cent. The table further shows that Brong Ahafo, Central, Western and Eastern regions are the next batch with between 34 per cent and 37 per cent of their populations living in urban areas. The least urbanized regions are the poorest regions in Ghana, namely the Upper West (17.5) and the Upper East (15.1) (see also Fig.1).

Table 3: Urban Population as a Percentage of Total Population by Region: 1960, 1970, 1984, 2000

Regions	1960	1970	1984	2000
All Regions	23.0	28.9	31.3	43.9
Western	24.7	27.6	22.8	34.9
Central	28.0	28.5	26.5	37.1
Greater Accra	78.8	85.3	83.5	87.4
Eastern	20.2	24.6	26.7	34.7
Volta	13.2	16.0	20.7	26.6
Ashanti	25.0	29.7	32.1	53.2
Brong Ahafo	15.6	22.1	26.6	37.4
Northern	13.0	21.2	24.7	27.0
Upper West	5.0	6.7	10.8	17.5
Upper East	3.9	5.8	8.5	15.1

Source: 1984 Population Census of Ghana, Preliminary Report, p. 58; 2000 Population & Housing Census, Ghana Statistical Service, Dec. 2001, Table 1.

One other striking feature is the slight de-urbanization which was experienced for some regions between 1970 and 1984, in contrast to the periods from 1960 to 1970 and 1984 to 2000 during which all regions experienced increased urbanization. The Western, Central and Greater Accra regions were those which suffered a drop in levels of urbanization as a result of economic decline in their urban areas, and in some cases return migration to rural areas from the urban centres (Benneh et. al. 1990, p.119; Gyamfi, 1989, p.20). For example, in the Western Region, Samreboi's population fell from 7,151 in 1970 to 4,514 in 1984 and Awaaso's fell from 5,449 in 1970 to 3,548 in 1984. Even the city of Sekondi-Takoradi lost population, declining from 160,868 to 117,196 people between 1970 and 1984. Some urban settlements were therefore reclassified as rural settlements because they fell below the 5000 population threshold in 1984. For the Western Region, this was occurring at a time of positive net migration rate of 6.6 per cent with an intercensal population growth rate of 3 per cent per annum (Benneh et.al, 1990: 119). This suggests that a lot of the migration was rural-rural migration and in some cases urban-rural migration, especially to the pioneer cocoa frontier area of Wassa Amenfi and away from mining towns which were the most impacted by the economic decline.

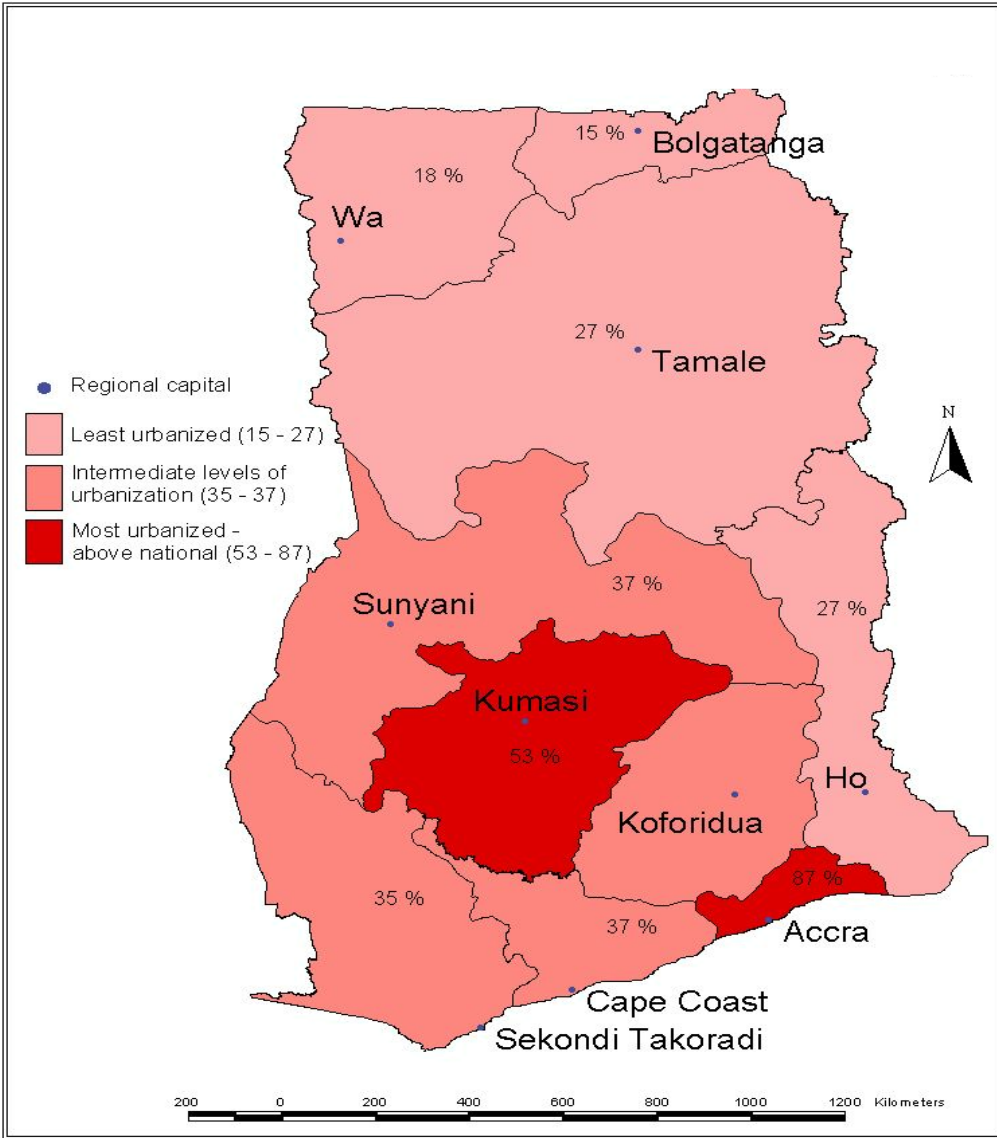


Fig 1. Urban Population as a Percentage of total Population

The slight drop for the Greater Accra Region could be explained by the declining perception of the metropolitan area as a destination for migrants and the outward flow of emigrants from the Greater Accra Metropolitan Area, the largest urban agglomeration in the region, to other West African countries, especially Nigeria, between 1973 and 1983. There was hardly any extended family in the metropolis that remained untouched by this outward flow to the high wage regional growth pole of oil rich Nigeria. Even so, the Greater Accra Metropolitan Area still stood as a high pole of attraction of internal migrants from

other regions in Ghana, with a net migration rate of 24.3% for the metropolis (Benneh et. al. 1990). Most of these simply used the metropolis as a staging post for emigration, as a passport for travel could only be processed in Accra. As a result, the rural population of the region must have increased faster than the urban population, in part also due to urban sprawl and suburbanization which was not captured within the old corporate boundary of the city.

Brong Ahafo and Northern regions experienced positive net migration rates of 13.7 per cent and 16.4 per cent respectively. This reflects the improved terms of trade for food producing regions during the crisis between 1970 and 1984 when the barter terms of trade moved in favour of food producers as against cash crops and urban minimum wage earners (Jamel and Weeks, 1993, p. 105). The two regions are the emerging food baskets in Ghana where new agricultural frontiers provide higher than average yields per hectare. The principal food crops produced in Brong Ahafo Region include plantain, cassava, maize, cocoyam and yam. For the Northern Region, the major food crops of national importance include yam, rice, groundnuts and sorghum. Both their rural and urban settlements would have gained from this net migration rate, as both regions experienced increases in their levels of urbanization. Apart from the Greater Accra, Northern, Brong Ahafo and Western regions, all others experienced negative net migration rates, with the most extreme cases being Volta (-15.8%), Central (-15.4%) and Eastern (-10.5%) regions (Benneh et.al. 1990: 119, Gyamfi, 1989: 20). Urbanization trends nevertheless remained positive for both the Volta and Eastern regions, suggesting that there was net loss from the rural areas.

One can argue that even though the regional trends in urbanization have shown some volatility during periods of economic crisis, the pattern overall has been dominated by the pre-eminence of Greater Accra and Ashanti regions, which over the period have experienced above average levels of urbanization for the country. For most other regions, it is valid to assert that Ghana is still a country of villagers, with the experience between 1970 and 1984 suggesting that for some regions, the urbanization process is not necessarily irreversible, especially under great external shocks to the urban economy that could trigger a retreat to the self-provisioning of the village. The recovery of the national economy from 1984 onwards has induced a recovery and an increase in levels of urbanization between 1984 and 2000 for all regions, as shown in Fig.2.

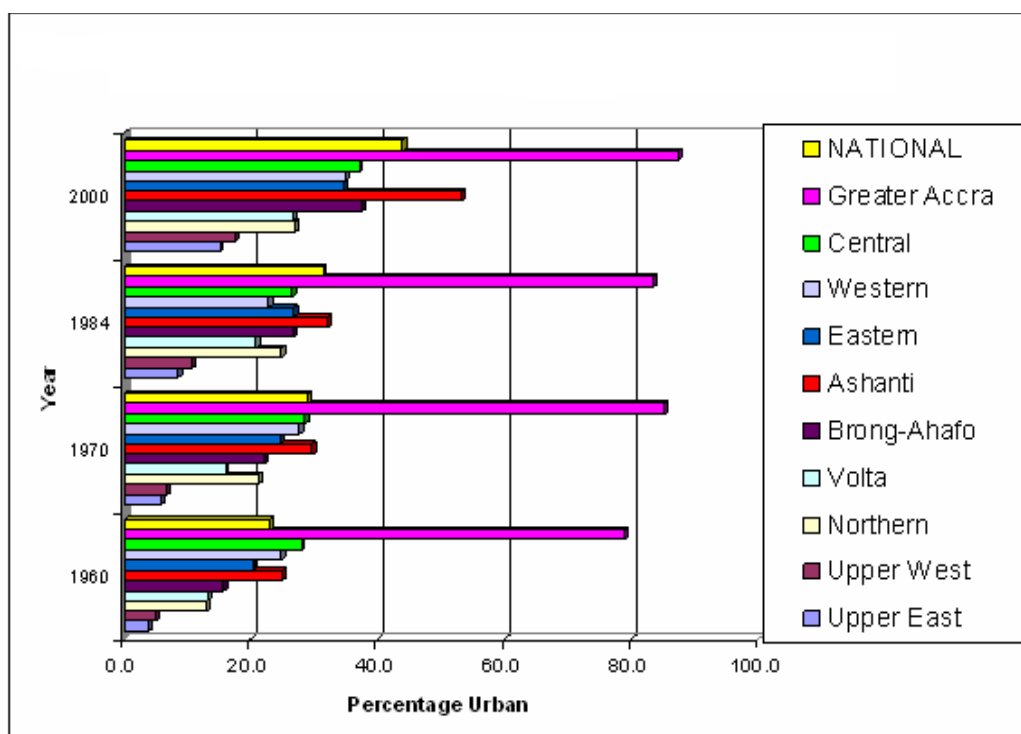


Fig 2 Regional Urbanization Trends (1960)

Growth Trends within the Hierarchy of Urban Settlements

Having articulated broad regional trends, it is also important to attempt an analysis of the evolving urban system in Ghana. It is often argued that the urban systems in the Third World are characterised by urban primacy in which there is a disproportion in size between the largest city or the first few large cities and the rest of the urban system (Jefferson, 1939; Shakks, 1972; Berry, 1971). This is often contrasted with a rank-size or lognormal distribution of cities which is considered more consistent with the well developed systems as found in most advanced industrialized societies (Zipf, 1941; 1949; Duncan, 1957). Of late, Vapnarsky has also associated primacy and lognormality with the degree of closure and interconnection within a national space-economy (Vapnarsky, 1969). The extraverted and poorly integrated economies of the Third World are characterised by primate distributions whilst the autocentric and internally integrated economies of central capitalism are characterized by lognormal distributions of their urban systems.

Table 4. Population Growth in 4 Largest Towns, 1960, 1970, 1980

Town				Annual Growth Rates	
	1960	1970	1984	1960-70	1970-84
Accra-Tema	415,523	738,498	1,160,112	5.8	3.2
Metropolitan Area*					
Kumasi City	218,172	345,117	401,934	4.6	1.1
Council**					
Sekondi-Takoradi	123,313	160,868	117,196	2.7	-2.3
City Council**					
Tamale	40,443	83,653	135,952	7.3	3.5

Source: Derived from 1960, 1970 Census Reports on Large Towns and 1984 Population Data

* Accra-Tema includes: Accra District and Tema District

** 1984 data for Kumasi and Sekondi-Takoradi not disaggregated with the possibility that different boundaries were used other than the 1960 and 1970 boundaries. Kumasi 1984 figures include old and new town – a settlement set apart from Kumasi in the census data.

Table 4 shows the population distribution of the top 4 urban centres in Ghana. The 1960 population of Accra-Tema Metropolitan Area was slightly less than double that of Kumasi. By 1984, Accra-Tema Metropolitan Area had almost three times the population of Kumasi, the second largest city. It therefore grew at a disproportionate rate in relation to Kumasi. Even so, Kumasi in turn is growing faster than Sekondi-Takoradi if one considers the population within their respective city council boundaries. Whilst Kumasi had less than twice the population of Sekondi-Takoradi in 1960, it had more than doubled the population of Sekondi-Takoradi in 1970 and had more than tripled it in 1984. Actually there was a –27.4 per cent decline in the population of Sekondi-Takoradi in 1984. Accra-Tema, Kumasi and Sekondi-Takoradi collectively define the industrial core region of Ghana.

The growth of Tamale in the poor, depressed northern savannah belt is a special case. The phenomenal growth of this regional service centre for the entire Northern Ghana meant that it ranked as the third largest centre in the country in 1984, outstripping the position held by Sekondi-Takoradi in 1970. Its growth was much faster in both intercensal periods than any other centre listed in Table 4. This growth was spurred on because of the large-scale rice cultivation in its catchment area which fed into its growth process because it served as a centre for agro-processing and provided vital services to the rice industry. This expansion in rice cultivation ended abruptly in the early 1980's with the onset of the 1981 'revolution' which saw the driving into exile of the emerging capitalist rice producers and the partial destruction of their agricultural equipment. Rice production in the catchment area further declined, especially after the removal of agricultural input

subsidies from 1983 with the adoption of the Structural Adjustment Programme imposed by the IMF. By 1990, all fertilizer subsidies were eliminated. This led to a rapid rise in prices of fertilizers and a consequent fall in consumption (Hutchful 1996). At the same time, liberalization of rice imports discouraged domestic production under structural adjustment (Songsore, 1992a; Songsore and Denkabe, 1995; Songsore et al, 2001).

The three industrial cities mentioned earlier, when considered as a functional unit – the national industrial core – accounted for 43.46 per cent of the total urban population in 1960, and this rose to 50.33 per cent in 1970, only to drop to 42.68 per cent in 1984 (Table 5). This trend of a rise and then a stagnation was slightly experienced in other regional administrative capitals taken as a group.

Overall, between 1984 and 2000, the growth rates of the metropolitan areas of the industrial core region have recovered, with annual growth rates of 4.6 per cent, 6.7 per cent, 7.1 per cent for Greater Accra Metropolitan Area, Kumasi Metropolitan Area and Sekondi-Takoradi Metropolitan Area, respectively. This has reflected in a recovery of the relative share of the total urban population located in the industrial core region to 51 per cent of the urban population. With this recovery, Sekondi-Takoradi had overtaken Tamale in size in the year 2000. This was the result of economic recovery in the large cities during the period.

Table 5: Urban Population Growth Trends 1960, 1970, 1984 for Different Size Clusters of Towns.

	1960		1970		1984	
Size Cluster	Total	%	Total	%	Total	%
Industrial Core*	674,138	43.46	1,244,483	50.33	1,679,242	42.68
Other Regional Capitals	105,628	6.81	248,416	10.05	397,080	10.09
Other Major Towns 10,000+	365,028	23.53	550,061	22.25	1,002,611	25.48
Small Centres 5,000 to 9,999	406,380	26.20	429,496	17.37	855,863	21.75
Total	1,551,174	100.00	2,472,456	100.00	3,934,796	100.00

*Industrial core – Accra-Tema, Sekondi-Takoradi, and Kumasi

The rapid industrialization of the '60s up to the '70s was largely concentrated in the industrial core, and within it the Accra-Tema Metropolitan Area had a clear advantage over Kumasi and Sekondi-Takoradi. Together, they accounted for over 80 per cent of the total number of industrial establishments and industrial labour force and over 90 per cent of the value added. Even so, Accra-Tema alone accounted for more than 50 per cent of the labour force and value added in industry (Berkoh, 1976; Dickson, 1974).

Accra-Tema, in addition to being the administrative capital of Ghana, is also the most important industrial centre since the opening of the modern industrial township of Tema in 1962. It is also the commercial, cultural and financial centre of the country (Berkoh 1975). Hence, functionally it also exhibits all the traits of a primate city (Berkoh, 1975: 88; Caldwell, 1969).

Although most migrants might initially have been attracted by the prospect of employment in the formal sector, it will be naive to presuppose that the limited absorptive capacity of labour in the modern sector of the urban economy could on its own explain these processes of urbanization. It is rather the involutionary potential of the indigenous, informal or petty-commodity sector which to a large extent explains the rapid population growth rates of the large towns (Sandbrook & Arn, 1977; Santos, 1979; Hart, 1973). The 2000 Census result shows that over 80 per cent of the country's employed labour force is concentrated in the private informal sector. Even for the highly urbanized Greater Accra Region, this amounts to 67 per cent.

Urban Sprawl in the Greater Accra Metropolitan Area (GAMA)

General Trends

In recognition of their size and complexity, Accra, Kumasi and Sekondi-Takoradi have from 1988 been designated as metropolitan areas. Tema, which is part of the Greater Accra Metropolitan Area, and Tamale have also been designated as metropolitan areas. For lack of up-to-date information, a more detailed discussion of intra-metropolitan growth dynamics will be restricted to Accra –the national capital where detailed studies have unravelled the nature of intra-urban change. Consistent with general trends mentioned above for the Greater Accra Region where the Greater Accra Metropolitan Area accounts for almost the entire urban population, “the contribution of net-migration was highest for the 1948-1960 and 1960-1970 periods, with figures of 97.7 per cent and 66.1 per cent respectively. The contributions of natural increase was however higher than net-migration for 1970-84; 82.6 per cent and 17.4 per cent for natural increase and net migration respectively” (Benneh et.al., 1990: 35).

Even though these trends are valid, part of the decline was due to the fact that by 1984 the metropolitan regions of Accra, Kumasi and Sekondi-Takoradi were under-bounded, thereby failing to capture segments of the metropolitan populations lying outside their corporate boundaries. In other words, the corporate boundaries of these cities were not consistent with the actual urbanized areas arising from urban sprawl. The population figures presented in Table 4 only refer to the population lying within the statutory boundaries as defined politically and for planning purposes. The persistent use of an under-bounded political boundary could lead to an under-estimation of the population

of a metropolitan region if urban sprawl and de-concentration of the population of the metropolis are both occurring (Gibbs, 1961: 107-114). This will be illustrated in detail in for the Accra Metropolitan Area the following section.

Intra-Metropolitan Growth Dynamics within GAMA

Currently, there are two definitions of the city of Accra in use:

The Accra Metropolitan Area (AMA), which consists of the city of Accra, lying within the 1963 municipal boundary of Accra. Historically, this political (municipal) boundary of the city has been revised only on three occasions after its initial delimitation in 1924. These periods are 1943, 1953 and 1963. These revisions always took place long after the city population had over-spilled its boundary. "This narrow definition, currently in use for most administrative and budgetary purposes, does not correspond to the actual boundaries of the urbanized area. This has negative implications for urban planning and development, as large areas of the city are effectively ignored" (Songsore & Goldstein, 1995: 108); and The Greater Accra Metropolitan Area (GAMA).

Whilst the boundary of Accra was largely established in 1953 before Ghana's political independence from British colonial rule, with some minor adjustments in 1963, much of the urban expansion occurred after independence. It is therefore not surprising that large parts of the urbanized region lie outside the jurisdiction of the Accra Metropolitan Area while economically, physically and functionally, Accra Metropolitan Area, Tema Municipal Area and Ga District have become one single, integrated metropolitan region. The Tema Municipal Area and Ga District have undergone further subdivisions without solving the problem of effective governance and coordination of the entire city region. Urban planners confronted with developing a strategic plan for the national capital now talk in terms of a wider urbanized metropolitan region consisting of two nuclei, i.e., Accra Metropolitan Area and Tema Municipal Area containing the industrial satellite township of Tema, together with Ga District which has received much of the urban sprawl occurring beyond the congested core area of Accra. The new urban reality is what is now termed the Greater Accra Metropolitan Area (GAMA) (Songsore & Goldstein, 1995).

Table 6 shows the absurd results that can occur by under-bounding the metropolitan area in terms of population growth trends. Although about 75% of the total population of GAMA is located in Accra Metropolitan Area, more rapid growth rates are occurring in the industrial area of Tema and the peri-urban area of Ga District (Benneh et.al 1993). As at the 1984 Census, over 327,000 persons were already living outside the Accra Metropolitan Area, out of the total population of 1,296,470 within GAMA.

Table 6. Population Trends within GAMA, 1960, 1970, 1984*

		Population Totals		Annual Growth Rate	
District	1960	1970	1984	1960-70	1970-84
Accra	388,396	636,067	969,195	5.0	3.0
Metropolitan					
Area					
Tema	27,127	102,431	190,917	13.4	4.4
Municipal Area	33,907	66,336	136,358	6.8	5.1
Ga District					
Total GAMA	449,430	804,834	1,296,470	5.9	3.4

*Minor error in the original table corrected. Data source: Benneh et.al, 1993, p. 7.

Given these growth trends, it is not surprising that out of a total population of 2,715,805 million in 2000 within GAMA, Accra Metropolitan Area's share dropped to 61.1% while that for Ga District shot up to 20.3%, therefore outstripping Tema Municipal Area which now accounts for the 18.6% of GAMA's population. It is anticipated that Tema Municipal Area and Ga District will together account for an increasing share of the total population of the greater metropolitan region. By the year 2010, when the estimated population will have reached the 4 million mark, Accra Metropolitan Area's share of the total population will have dropped even further (UNDP & HABITAT, 1992).

This wider metropolitan expansion and integration is particularly strong along the principal transportation arteries radiating from the centres of AMA and TMA. From AMA, developments are strong along the Accra-Winneba, Accra-Nsawam and Accra-Aburi roads. Between Accra Metropolitan Area and the industrial township of Tema, developments, as projected by Doxiadis and Associates, are strong on both sides of the Accra-Tema motorway and also along the coastal route from AMA to Tema linking Accra central, La, Teshie, and Nungua to TMA. Similar developments are occurring in Kumasi, Sekondi-Takoradi and Tamale, although at different intensities depending on the overall rates of growth. These trends need careful studies as they have implications for metropolitan planning and management.

Urbanization and National Development

Urbanization, Regional Development and Inequality

In Western thinking a town does not exist in a vacuum; it exists in mutual relationship with the countryside, depending on the latter for food supplies and additional population. In turn, the town stimulates economic growth in the tributary region, either through the supply of relevant capital and other goods which it may produce directly or obtain

through imports” (Dickson, 1971: 5). This west-centred view of the role of cities in regional development and economic growth based on its own economic history has been presented as a model for the development of the newly urbanizing but underdeveloped societies of Africa, Asia and Latin America. As Reissman puts it, “industrial urban development in the West and in the underdeveloped countries today is the same process although greatly separated in time and place” (Reissman, 1969: 167-168). This model of development, which is said to have been valid since the industrial revolution, has been questioned in the case of Sub-Saharan Africa, as some recent evidence has raised doubts about the links between urbanization, economic growth and social development (White, Mberu and Collinson, 2008: 307)

Counterpoised to this model is the dialectically opposite interpretation of the history of urbanization in the underdeveloped countries. According to one leading proponent: “The colonial city developed... as a centre of commerce and administration, rather than industrial production. It originated as a means whereby the metropolitan rulers established a base for the administration of the countryside, and the exploitation of its resources, and consequently the transfer of the surplus extracted from the countryside to the metropolis. At the same time, the city itself engaged in parasitical extractions of a surplus from the countryside” (Gugler & Flanagan, 1978: 26).

It is therefore arguable that it is not just urbanization but a particular kind of urbanization that is related to national development and economic growth. Urban historians such as Hoselitz began describing cities as parasitic and others raised doubts about the relevance of urban development to the development process in general (Hoselitz, 1955; Armstrong & McGee, 1968; Sandbrook, 1982). “This was highlighted in the World Bank’s World Development Report 1999/2000, which stated that African cities are not serving as the engines of growth that cities on other continents have been: ‘Instead they are part of the cause and a major symptom of the economic and social crises that have enveloped the continent’ (World Bank, 2000: 130). This statement has sparked the notion of ‘exceptionalism’ in relation to African urbanization: essentially, this suggests the possibility of an African departure from the usual pace, pattern and implications of urbanization” (White, Mberu and Collinson, 2008: 308).

At the level of cross-cultural comparison, the position of the first school of thought appears seductive, as there would seem to be a strong association between the level of urbanization and the level of economic development at different levels of spatial resolution – global, continental and national. On a global scale, it is the most advanced industrialised regions of the world such as North America, Western Europe and Russia which are also the most urbanized. Africa, the least developed of all continents, also has some of the lowest levels of urbanization. Within each continent it is the most urbanized regions that also have the highest levels of development. Africa is no exception to this general rule, as South Africa and the North African group of countries which are more

urbanized also have the most advanced development of productive forces (Mabogunje, 1969; Roberts, 1978).

In Ghana, the overall association between urbanization and the level of economic development is underlined if one uses value added per capita. In 1960, the Greater Accra Region which was already highly urbanized had a gross value added per capita of 176 Ghana pounds, which was more than double the figure for the second highest score of 68 Ghana pounds, a position held by Ashanti and Western Regions which were also the next most urbanized regions. Western Region here includes Central Region at the time. The lowest per capita value added of 30 Ghana pounds occurred in the least urbanized region of Northern Ghana (Songsore, 2003a). The physical quality of life index for Ghana shows great regional and rural-urban disparities within regions (Table 7). The Northern sector, consisting of Northern and Upper Regions, stands out as the poorest in both the urban and rural areas. The Greater Accra Region, dominated by the capital district of Accra, had the highest quality of life for its urban population, followed by the Ashanti and Western Regions which contain the other two industrial growth nodes of Kumasi and Sekondi-Takoradi. Overall, for each region, the quality of life was poorer for the rural than for the corresponding urban population.

More recent data from Ghana Living Standards Surveys do reinforce the same structural patterns, as the incidence of poverty in urban Ghana was only 11.6% for the lower poverty line of 2,884,700 cedis per adult per year in 1998/99, declining further to 5.7 in 2005/06. Poverty incidence for urban Ghana for the higher poverty line of 3,708,900 cedis was 19.4% in 1998/99, declining further to 10.8% in 2005/06 per adult per year. The corresponding figures for the lower and higher poverty lines for rural Ghana are 34.6% and 49.5%, respectively, in 1998/99. The rural areas also experienced reductions in poverty, trending down to 25.6 and 39.2 for the lower and upper poverty lines, respectively (GSS 2007: 9). Using the higher poverty line stated above per adult per year, the incidence of poverty nationally was 40%, whilst it was 69%, 84% and 88% for Northern, Upper West and Upper East Regions, respectively, in 1998/99. This implies that poverty is largely a rural problem. These regions experienced a marginal decline to 52.2%, 70.4% and 87.9%, respectively, in 2005/06 (GSS, 2007: 41). According to an earlier survey, about 6 out of every 10 poorest people are concentrated in the least urbanized regions of Northern, Upper East and Upper West regions (Boateng et al, 1988: 15).

Table 7: Ghana-Physical Quality of Life Index, 1969-70 (% scores)

Regions	Urban	Rural
All Regions	58.6	37.3
Greater Accra	76.6	52.4
Eastern	53.2	46.8
Central	50.5	36.3
Western	62.6	40.8
Volta	53.6	49.3
Ashanti	62.0	45.2
Brong Ahafo	50.1	35.2
Northern	42.7	13.0
Upper	45.3	13.9

Source: Ghana Adjustment Policies and Programmes to Protect Children and Other Vulnerable Groups. UNICEF-ACCRA, 1986

The incidence of poverty for Accra (GAMA), the national capital, was 1.9% for the lower poverty line and 4.4 % for the upper poverty line for 1998/99. Accra, however, did experience rising poverty levels in 2005/06, as the incidence of poverty increased to 5.4% for the lower poverty line and 10.6% for the higher poverty line (GSS, 2007: 9). Accra, with just over 10% of the total population, has the most diversified economy in the country and contributes between 15 and 20% of GDP (Benneh et al, 1993: .8). As a result of specialisation and division of labour, together with the economies of scale and agglomeration and the proximity of labour, capital, markets and technology, larger cities tend to be engines of economic development even when they have poor linkages with their regions and rural areas (Songsore,1977a; 1977b).

The question then is, have cities and towns played a major role in promoting economic development in general for different historical periods in Ghana? Is the relationship between urbanization and development merely conjunctural or a result of conferred privileges on the urban population by its power elite? To what extent can one talk of a dynamic integration between town and country? Is an extraverted urban system that mediates in the dependent integration of peasants into an international market capable of generating self-realisation of the vast majority of the national population? An attempt is made in the next section to trace the possible links between urbanization and regional development for different historical periods (Songsore 2003a). There are various mechanisms through which towns interact with their wider region, which can either

generate development in the wider region or induce negative impacts on development. These include labour migration, flows of capital, diffusion of entrepreneurial and consumer innovations, commodity flows or rural-urban terms of trade, and the regional ecological footprint of towns and cities. As no urban experience is entirely negative or positive, we are here indicating the net balance between extractive and distributive forces of urbanism (Songsore, 1987; 1978; 1979a,b; 1982; 1983a; 1983b; 1985; 1992b; 2000b).

Periodisation of Urban and Regional Growth in Ghana.

It is possible to identify three major periods in the evolution of urban and regional development in Ghana. These are the pre-colonial, colonial and post-colonial periods when significant restructuring of the space-economy had important implications for the regional economic role of towns in Ghana. There is nevertheless one unifying element throughout these periods, namely that most urban centres have emerged as centres of trade, administration and consumption rather than as centres of production and industrial manufacturing (Songsore, 2003a). This has ominous implications for the long-term success of the urban revolution.

Pre-Colonial Urbanism

It is now generally accepted that urban life is of respectable antiquity in West Africa. In the pre-colonial period, trade and commerce were the bedrock of state formation, whilst state formation in turn stimulated commerce and the rise of commercial centres. This is valid whether one is considering trade with Western Sudan in the period between the 11th and 16th Centuries AD or European coastal trade from 16th century AD to about the 1850s. Examples of important administrative centres or state capitals in the interior are Gambaga, Nalerigu, Yendi and Wa. These were associated with the Mamprusi, Dagomba and Wala states which developed in response to the trade with Western Sudan. Purely commercial centres which developed in the same period included Walewale, Savelugu, Lawra and Larabanga. These centres were to be found in the north-western and north-eastern parts of Northern Ghana. Others further south include Begho, Salaga and Kumasi. North-western and north-eastern parts of Northern Ghana lay along major trade routes between the Sudan belt to the north and the forest area to the south where most of the commodities which fed into the northern trade were to be found, including especially gold, kola nuts and ivory which were derived from the countryside (Dickson, 1970; 1971).

The change in fortunes between the Sudan belt of West Africa on the one hand and the forest and coastal areas began to occur in the 15th century with the appearance for the first time of Europeans on the coast. With their search for similar trade goods that once fed

the northerly trade of the Sudan belt, notably gold, and the disintegration of the Western Sudanic Empires in the 16th century, present-day Ghana and West Africa as a whole did a round-about turn (Songsore, 1979b, p.3). "The Atlantic Ocean, which had always been a barrier, now became a starting place, a beginning: new foci of economic and political change emerged in the coastlands and forest regions" (Garret, 1976). With a new centre crystallizing on the coast associated with European activities, there was a restructuring of the space-economy to fit the new order in which the coast and the forest areas emerged as the most successful in the adjustment process within present-day Ghana. An urban system emerged within the spatial system from European coastal trade. Along the coast were a string of towns associated with European forts, the most important being Elmina, Cape Coast and Accra. A complex set of middleman towns emerged connecting fort towns to raw material sources in the interior. The source areas also had a set of towns. One of the most significant was the Asante capital Kumasi, which in turn was a terminal point for the northern trade through Northern Ghana to Western Sudan which was in decline (Dickson, 1970; Songsore, 1979b).

During this phase, the trade, initially in gold and ivory, was quickly converted into trade in slaves as a new demand for cheap human labour developed in the West Indies. Reduced to the role of supplier of slave labour for the plantations of America, Africa as a whole lost its autonomy. It began to be shaped according to foreign requirements, those of mercantilism (Amin, 1972, p.108). Whether there were wars or peace, the end products were commercially profitable as wars produced slaves while gold could be worked in peace-times. "By the end of the 17th century available Dutch and English records alone indicated that each on average exported between 5,000 and 6,000 slaves annually"(Songsore, 2003b: 41). The organized banditry of certain state armies drawn from their major towns in the era of the Atlantic Slave Trade, notably the Asante, had a particularly debilitating effect on both the urban and rural areas of weaker states. The states which suffered most from this debacle were the Gonja in Northern Ghana, lying astride the Middle Belt, and the Sefwi of south-western Ghana. These two states were laid waste by Asante raids. By contrast, the wealth that was generated was highly concentrated among the chiefly elements of the various states and a few merchant elements involved in the trade who were located in the emerging urban centres. It marked the first retrograde step in the development of Black Africa as a whole.

This period of European mercantile penetration was to mark the first phase in the dependent integration of the economy into the international capitalist system. It is therefore clear that before the onset of direct colonialism, the coast and forest areas had become conditioned for more urban development because of its better integration with European trade (Dickson, 1970: 46). The urban system played an intermediary role in this extraverted trade and can be said to have facilitated a development which was not internally integrated, as it resulted in the destruction of large swathes of the countryside

and towns of especially weaker states. Africa's agricultural and industrial technologies remained undeveloped, as tools such as the plough and animal traction which were common in Eurasia were absent in much of Africa, and as a result the generation of a surplus to maintain a state class and specialist group from agriculture was limited (Songsore 2003b, Goody, 1980: 25-26). ``In one sense, a superior military technology was the production system of the ruling strata, since it led to the acquisition of slaves, other booty, and taxes on trade. But productivity in the military field clearly differed from productivity in agricultural and industrial sphere, since such activities resulted in the impoverishment of others'' (Goody, 1980: 43, Songsore 2003b: 44). This phase was superseded by the period of direct colonialism.

Colonialism and Urban Change

Development within the emerging colonial economy was uneven. The sectors of the economy and the regions which were integrated as capitalist enclaves – engaged in production for the world markets or more specifically for the metropolitan economy of Britain—were qualitatively different from the pre-capitalist peasant sectors and regions which were the 'labour reserves' of the export enclaves. A simple centre-periphery structure emerged over the colonial space-economy (Songsore, 1983a: 18). The centre consisted of the forest belt where cocoa, timber, gold, diamond and manganese production was concentrated. Overlaying the pre-colonial system of urban centres, some of which declined in importance, were numerous commercial towns serving as marketing centres or mining towns in this generalized growth region. Kumasi, the old Asante capital, lay at the centre of this system. Another type of growth region consisted of the coastal port towns which played a crucial role in import-export activities. Sekondi-Takoradi and Accra were emerging as the most important centres of import-export activity. Accra, Kumasi and Sekondi-Takoradi therefore monopolized much of the modern social infrastructure in the country (Songsore, 1979b: 9; Songsore, 1989).

The generalized periphery consisted of areas outside the forest belt and coastal port towns with neither the relevant potentials for cocoa, timber and mineral production nor the ability of functioning as centres for the articulation of the outward-directed national space-economy as port towns. This consisted of the large land area of Northern Ghana which was not viewed in terms of its agricultural potential but rather as a labour reserve for the growth region. It is therefore not surprising that the three administrative regions constituting Northern Ghana are among the least urbanized even today. "The culmination of the colonial trade was balkanization, in which the 'recipient' micro-regions had no 'interest' in 'sharing' the crumbs of the colonial cake with their labour reserves" (Amin, 1972, p. 117). The pattern of uneven regional development has been the direct result of the uneven regional penetration of capital. Pre-capitalist production relations in the North were to a large extent conserved and subordinated to the interests of capital in

the cocoa and mining industry which produced for the world market (Songsore, 1983b; see also Songsore and Denkabe, 1995).

The skeletal structure of the spatial system consisted of a north-south dendritic transport system along which lay the dominant growth nodes of Kumasi, Accra and Sekondi-Takoradi within the urban system. This structure provided the framework for the systematic process surplus extraction out of the Ghanaian space economy due to the imposition of unequal exchange and the penetration of foreign capital (Songsore, 1979b: 10). The changing fortunes of towns were related to their location in the changing mode of production that came with colonialism, but the functional connection between administration and commerce and urban development remained unchanged. The towns never emerged as centres of industry revolutionising a stagnant extensive agriculture, but rather vegetated on or lived off the surpluses coming from within a super-exploited peasantry at a low technical level of production.

Functionally, the importance of colonial towns arose out of their roles as political, military, economic, religious and intellectual entrepôts between the colonizer and the colonized. “At the same time, the general lack of dynamic industrial development beyond the production of basic and perishable commodities in the colonial cities, even of considerable size, was no accident. The development of significant local industrial capacity would have created competition with metropolitan industry for locally produced raw materials while also undermining the colonies’ other role as captive markets for the products of European or American factories” (Simon, 1992: 22-23, Songsore 2003b). This is what is termed dependent or backwash urbanization (Mabogunje, 1986).

Post-Colonial Change

Between 1945 and 1957, before formal independence was granted to the colony, the open colonial economy underwent substantial modifications, the chief of which centred on the expansion of the public sector and the gradual transfer of political if not economic power to Africans and the beginnings of modern industry (Hopkins, 1973: 288). The initial advantage of an early successful response within the cocoa-growing and mining areas to external demand was to create forces leading to the further concentration of growth within that region. The infrastructure was already available in the large towns of Accra, Sekondi-Takoradi and Kumasi within this region, capable of supporting modern industry, and the markets were similarly concentrated in the cash crop area. “It is, therefore, no surprise that the basic development process after independence led to further spatial concentration of activity within these main urban areas which themselves had their *raison d’être* in the role they played in the functional organization of the colonial economy” (Songsore, 1979b: 11).

The import substitution strategy of industrialization that was vigorously pursued after formal independence created an industrial cluster focused on the 'big three', Accra-Tema, Kumasi and Sekondi-Takoradi which monopolised industrial activity and were each acquiring a metropolitan status in the process (Songsore, 1989). Accra-Tema alone accounted for 49 per-cent and 50 per-cent of the total number of people employed and the value added, respectively, in the manufacturing sector. According to the 1969 directory of industrial enterprises, Accra-Tema alone accounted for 59.5 per-cent of all industrial establishments. Kumasi had 16.5 per-cent and Sekondi-Takoradi 10.2 per-cent. These towns together accounted for over 86 per-cent of all registered industrial enterprises in the country (Songsore, 1979b). The simple north-south centre-periphery spatial model became an oversimplification because of the increasing dominance of the urban-industrial core and the creation of its new periphery – the export cash crop, timber and mineral sector which nevertheless still super-ordinates the old periphery, i.e. the non-export food crop sector and areas of Northern Ghana which remained the least urbanized (Songsore, 1979b: 13).

Post colonial import-substitution industrialization within the major growth nodes merely legitimized colonial trade by seeking to manufacture (assemble) the same products locally. Such assembly functions had no potential for deepening the manufacturing process or establishing vital linkages with agriculture. Indeed, the cocoa interests were simply subordinated to the state, transnational capital and the nascent, industrial class located in the industrial cluster. Although wage rates were higher in capitalist production within towns as opposed to the pre-capitalist economy of the village, this, unlike the historical experience of the West, bore very little positive relationship with the wider indigenous economy, although through this co-existence and articulation the indigenous economy lost its dynamism and autonomy. Hence, despite the substantial growth of secondary industry in Ghana within this period, it is questionable, in view of the ownership and type of industry, whether the growth has had any substantial generative effect on the wider economy, and more specifically, rural agricultural transformation.

The cumulative process of growth which was initiated within the forest ecosystem by its incorporation into the international exchange economy together with added industrialization, resulted in an intensified process of labour out-migration from the depressed rural regions into the more favoured regions. Unlike the colonial era when labour migration was induced initially through coercion, the interregional labour flows could now be explained in terms of largely economic factors— the strong desire for cash and material well-being. Urbanization was more advanced, as towns grew better, where the regional economy was integrated with international markets and the urban centres helped mediate in the process of external trade, but at no point have they developed viable production systems to serve as vehicles for national development in the Western

sense. Herein lies the so-called exceptionalism of African urban development. It does not rest with their form but rather with their deformed economic structure and lack of technology-driven transformation of the rural economy.

Crisis, Adjustment and Informalization of the Urban Economy

Process of Restructuring

Import substitution industrialization which profited the urban industrial growth poles eventually created a perpetual balance of payments crisis as capital goods, raw materials and even foodstuffs for the industrial working class were being increasingly imported under conditions of heightening adverse terms of trade for the raw material exports vis-a-vis capital equipment imports at the international level of exchange. Nor could the export cash crop sector expand further as the expansion of import substitution industrialization was at the expense of export expansion, with the extraction of surplus from this sector providing the basis for industrialization. Agriculture remained static, as a capital goods sector was not developed in the urban-industrial sector to dynamise agricultural production. The input-output table for Ghana shows very little inter-sectoral industrial flows within the national economy (Songsore, 1979b: 15-16). The level of peasant exploitation and rent-seeking by the urban elite was so severe that by the late 1970s peasant protest movements were characterised by a silent withdrawal from commodity production for export or the local urban market into subsistence production and the parallel economy, which resulted in national economic collapse. This was a serious challenge to the viability of the neo-colonial state itself.

As a consequence, during the 1970s and early 1980s, Ghana's Gross Domestic Product persistently declined. Overall, the GDP grew by a mere 0.6% between 1976 and 1980 and declined by -0.9% between 1981 and 1983, with both agriculture and industry registering negative growth in 1981-1983 and services showing a marginal growth of 1.6%. For industry, the decline was as high as -5.8% between 1976 and 1980 (Ghana, 1985: 22). Consequently, the data on the sectoral contribution to the GNP indicated a declining share of industry to GDP. While industry accounted for 21% of GDP in 1975, it fell to 15% in 1980 and to a mere 11% in 1984 (Ghana, 1985: 22). In 1983, Ghana initiated an Economic Recovery/Structural Adjustment Programme (ERP/SAP), with the object of arresting the decline in the economic and social conditions in Ghana. Table 8 shows the extent of recovery in GDP with an average annual growth rate of 6%. Industry grew fastest at 12%, followed by services at 8% and agriculture at a mere 3%. Since there is a high concentration of industry and service activities in urban settlements, these figures would seem to suggest that recovery of economic activities in towns has been strong.

Table 8. Growth of Ghana's GDP by kind of economic activity in constant 1975 prices (% per annum).

	1980	1981	1982	1983	1984	1985	1986	1987
Agriculture	2.17	-2.56	-3.25	-9.11	9.71	0.65	3.31	0.04
Industry	-1.85	-14.46	-16.67	-6.77	11.94	17.60	7.56	11.34
Services	-2.79	2.73	-4.65	-4.54	6.63	7.52	6.50	9.38
Total GDP	-0.23	-3.18	-5.85	-4.34	8.96	5.09	5.20	4.80

Data source: Jebuni et al., 1991, p.8, cited from Benneh et.al, 1993, p. 9

This growth in services appears to have been led by retail and wholesale activities. “It is estimated that in 1989 the wholesale and retail trade and restaurants and hotels component made up 31.6% of the GDP of the services sector in constant 1975 prices. By 1993 this share had risen to 34.3%” (UNDP, 1997, p.12). Between 1990 and 2000 the GDP growth was less than 5% per annum recorded for the earlier period. More recently, the growth rate has averaged 6% per annum. It is not surprising that the informal bazaar economy has become a vent for employment and survival, given the experience of jobless growth since 1983. “Recorded formal sector employment, which essentially only covers establishments with ten or more workers, has experienced a drastic decline from 464,300 in 1985 to 186,300 in 1992. Within this, public sector employment shrank from 397,100 in 1985 to 119,000 in 1992, whilst the drop in the private sector was more than 50%. Though the decline was steeper in the private than in the public sector, the impact of the latter was the more significant, since the public sector accounted for 90% of formal employment” (UNDP, 1997: 42).

In 1980, the ratio of workers in the informal sectors of the Ghanaian economy to workers in the formal sector was 2:1. By 1990, the ratio was 5:1 (ISSER, 1995), and it has apparently grown since 1990 (Accra Study Team, 1998), along with growing poverty in the informal sector, notwithstanding the rather rosy picture painted about the incidence of poverty in urban areas, especially the large metropolitan areas, with rather contrived poverty lines (Maxwell, 1999). Indeed, if one were to use US\$4.0 per day as the poverty line as stipulated by the International Labour Organisation, over 90% of the population of Ghana will fall below the poverty line. This is not peculiar to Ghana. For the Africa region as a whole, the informal economy has been the driver behind urban economic growth and has been estimated to account for 78% of nonagricultural employment, 93% of all new jobs created and 61% of urban employment (Kessides, 2006: 12).

Concentration of Affluence and Poverty in Urban Areas

On the whole, one can observe the growing problems of urban areas characterised by growing inequalities, dualism and informalization, with cities also divided against themselves like the contradiction between town and country (Emmerij, 1997: 105). Poverty and marginality within the city are becoming structural, with a growing number of the youth who have nothing to offer to these globalizing and liberalized economies except to add to the growing problem of street children, child prostitution, child labour, urban violence and the drug/criminal economy.

As Ghana becomes increasingly urbanized, the hallmark of the new millennium will be the geographic concentration of affluence and poverty within urban areas (Massey, 1996). This has been amply demonstrated from the extensive work we have undertaken on intra-urban differentials in wealth, environmental conditions and the associated disease burdens in Ghana (see Songsore and McGranahan, 1993; Benneh et al., 1993; McGranahan and Songsore, 1994; Songsore and Goldstein, 1995; McGranahan, Songsore and Kjellen, 1996; Songsore and McGranahan, 1996; 1998; Atkinson, Songsore and Werna, 1996; Songsore et al., 1998; Songsore 2004; McGranahan et al., 2001; Songsore and McGranahan, 2007). It is important to emphasize, however, that poverty is still overwhelmingly a rural problem with about 84% of the poor residing in rural areas where their absolute numbers are also on the increase (Ghana Statistical Service, 2000: 8).

More recent evidence suggests that the urban poverty situation has grown from bad to worse with the springing up of informal and squatter settlements in almost every major city along water courses and lagoon outlets and in almost every undesirable available space. These informal settlements are both sites of production and residence and are the physical manifestations of the failed attempt at industrial transition which is best described as de-industrialization under globalization and 'free trade'. They represent the built environments for informal economic activities that have taken over the economic landscape of African cities. The proliferation of informal settlements is not unique to Ghana as it is a typical situation in almost all African cities including the most industrialized ones in South Africa with its legacy of apartheid which led to the social exclusion of the black population from the circuit of accumulation and shared growth.

Current Urbanization Trends

As Simon puts it, trying to 'read off' current or future urbanization trends from economic data is a risky undertaking, partly because of the 'vanishing rural-urban gap' in quality of life for the urban and rural poor and limitations of hard data on the basis of which to make these projections (Simon, 1997). The conjecture of future growth trends being undertaken is more like crystal-gazing into the future, a situation made more difficult

because of unstable economic trends in dependent low-income countries such as Ghana since adverse economic fortunes tend to impact on individual decisions on migration and population dynamics. An additional factor is the paucity of data. A number of current developments are however likely to shape the overall evolution of the urban system and national development.

The more significant processes include: the active promotion of the Greater Accra Metropolitan Area as a West Africa regional growth pole under the 'gateway' concept; the decentralisation programme and the creation of new growth nodes at lower levels of the settlement system; tourism promotion around former coastal slave forts; and the prospects for sustaining the recovery of the mining sector and associated towns. These are apparently contradictory processes, the first leading to further polarisation of urban development and the latter processes leading to a more rank-size distribution and a shift away from urban primacy. It would seem to me that it is possible for urban primacy at the level of the capital city to co-exist with more rank-size distribution for the rest of the urban system (Vapnarsky, 1969). The process of urbanization has shown some acceleration between the 1984 and the 2000 Censuses, even though the broad regional trends and structure have remained fairly stable, and this is likely to continue well into the future. The northern periphery, notably Upper West and Upper East Regions, is likely to remain the least urbanized as most of the currents of growth and new investment flows have bypassed them. Northern Region within this northern periphery is more urbanized than the other two regions, although its urbanization trend has tended to slow down because of the effects of ethnic conflict which stimulated some out-migrations from both urban and rural settlements in the conflict areas.

The towns of Salaga, Yendi, Bimbila and Kpandai suffered greatly from one such debacle in which over 150 villages were also destroyed and over 1,000 people killed during fighting between Konkombas on the one hand and Gonjas, Nanumbas and Dagombas on the other hand (Akwetey, 1996: 102). Up till today, long after the cessation of open hostilities, a number of civil servants including teachers and nurses are refusing posting to settlements in the former theatre of conflict in the eastern parts of Northern Region. The long-term trend in this region is therefore difficult to predict even though it has enormous potential for agricultural development and urban growth, as happened during the short-lived revolution in the rice economy.

Box 1. Greater Accra Metropolitan Area and the ECOWAS city-regional corridor

One trend is certain: the Greater Accra Metropolitan Area's dominance over the rest of the urban system will increase both in terms of population shifts and concentration of dynamic activities in the industrial, banking, commercial, business and service sectors, in line with its growing influence as a national and a regional growth pole in West Africa linked increasingly to a globalised capitalist world economy. The Greater

Accra Region, which is dominated by the metropolis, was the location of almost 80% of all investment projects that were attracted to Ghana between 1994 and 1999 through the Ghana Investment Promotion Centre. The Ashanti Region attracted 8% of these investments, with much of the remainder concentrated in Southern Ghana. Just about 1% of all projects went to the three regions in Northern Ghana. The total value of these investments was 1.5 billion US dollars (GIPC,1999).

It has often been argued that a network of cities well-connected within a country or across borders is an important ingredient in the growth of interregional trading groups. "A factor that may be slowing the impacts of current efforts to create regional trading arrangements in Africa is the relative absence of city-regional corridors, reflecting the lack of large-scale industrial investors and of inter-city transport linkages" (Kessides,2006,p. xxiv-xxv). Within the ECOWAS region the emergence of the Greater Ibadan-Lagos-Accra urban corridor provides a development pathway incorporating key cities in four West African countries starting from Ibadan and Lagos in Nigeria, Cotonou in Benin, and Lome in Togo, to Accra in Ghana. "Of these four West African coastal nations, Nigeria and Ghana with a combined GDP of US\$127,592,000 are among the largest national economies in the Economic Community of West African States

The recent discovery of oil in commercial quantities in the Western Region (ECOWAS)"(UN-HABITAT, 2008b,p.94). is sure to add more vitality to the growth of Sekondi-Takoradi with the prospect

At the intra-national level, weak linkages between the urban industrial core region of GAMA and the poorly connected remaining urban settlements do not bode well for the diffusion of entrepreneurial of the rural outside innovations the Greater promote Accra and growth Ashanti though regions current have developments almost similar are linking GAMA levels to of the urbanization(see global system of Bcorex 1) cities. of under other globalization settlements. Fast becoming urban of Since economic recovery has been stronger in the southern cocoa-mineral-timber exporting zone than in the northern periphery, it is to be expected that this sector will maintain its position and continue to show a better performance, although the regional shifts will be difficult to predict, given that most them outside the Greater Accra and Ashanti regions have almost similar levels of urbanization (see Box 1 for trends in GAMA). For example, well over 3 billion US dollars has gone into investments in the mining sector alone (Akabzaa and Darimani, 2001: 8) whilst the cocoa sector also within this zone has had very generous investments to help the export sector recover and lead the growth process. In terms of mining investments, the Western Region which already holds a significant share of mining-led economic investment and regeneration of urban development has been given an additional boost with the discovery of oil and gas in commercial quantities. This will give an additional boost to the growth of Sekondi-Takoradi and to a lesser extent stimulate the growth of

other coastal towns and settlements in the region close to the site of offshore oil drilling and extraction.

Whilst at the national level, the degree of urbanization is likely to continue to increase, the rural population is sure to increase in absolute numbers, resulting in land fragmentation and shared poverty with the majority of the urban population who are being driven into the petty commodity sector where they survive through a great diversity of coping strategies. As Hans Singer so eloquently puts it “the wage earning class has practically disappeared as a distinct entity and there has been an astonishing ‘informalisation’ of the urban labour markets” (Singer, 1993: xiii). The level of living gap between the tiny urban minority linked to the global system and the urban poor is likely to continue to widen as current policies are likely to be sustained.

It is quite clear that the more recent impetus to the urbanization process within the country has derived from inflows of finance capital largely from multilateral financial institutions and private capital flows although it has not brought about any sustainable development process within the urban or rural-regional economy. The debt overhang was so great that if donors were to insist on their pound of flesh, economic conditions in both town and country would be much worse than those inherited during the crisis years of the 1980s. The debt relief granted through the HIPC initiative has sustained a much higher growth level averaging 6 percent for the Ghanaian economy which has impacted positively on urban development, but it is now doubtful if this is sustainable given the current global recession which is widespread among the G-8 countries.

The transformation of economy and society consequent on the urban revolution in the societies of central capitalism has therefore failed to materialise because of the lack of dynamic interconnections between industry and agriculture or town and country. Relying on financial flows from outside into their services sector of interest to globalised capital, the large metropolitan centres are developing increasingly autarchic tendencies. Mining as a ‘robber economy’ will eventually get exhausted without generating spin-off effects in either host communities or the larger economy, whilst other raw material exports such as cocoa and other non-traditional exports are a losing bet in today’s knowledge-based global economy. Rural food producing regions are also unable to feed themselves, let alone provide surpluses to feed the urban population. It does not require any imagination to predict that we are living on borrowed time. This is the underlying reason for the HIPC (Heavily Indebted Poor Country) initiative by the NPP government which led to the granting of debt relief even though the structure of the economy which generates this economic instability has not been effectively tackled. Apart from the economic driver of urban quality of life, the environmental challenges of cities do also affect human wellbeing in many ways.

Cities and Sustainability Issues

Concept of Urban Environmental Transition

A useful framework for understanding urban environmental problems that integrates human needs of a healthy environment and adequate livelihoods on the one hand and sustainability concerns on the other is the Urban Environmental Transition Model (McGranahan et al, 2001). As a general rule, the environmental problems that lie in the realm of public health are those found in poor homes, neighbourhoods and workplaces of cities in Africa and other developing countries. These include inadequate water supplies and sanitary facilities, poor and crowded housing, smoky kitchens, insect infestation, contaminated food, piles of uncollected garbage and bad drainage (McGranahan and Songsore, 1994).

As the above problems recede in importance with development, with the transition from low- to middle-income cities, one is confronted with the most extreme problems of urban metabolism, such as ambient air pollution, polluted rivers and aquifers or the excess consumption of groundwater resources. At the opposite pole, the wealthiest cities of the northern hemisphere have taken measures to reduce the home, neighbourhood and city-wide level pollution problems. However, through excess consumption, the wealthiest cities of the most developed and industrialized countries draw more heavily on the global resource base and generate a disproportionate share of worldwide pollution, accounting for a larger share of global warming, acid rain and depletion of the ozone layer. These impacts have a delayed effect on human health. "The logic behind the transition is that the wealthy use more resources and create more waste, but also use part of their wealth to avoid personal exposure to unpleasant and hazardous pollutants" (Kjellen and McGranahan, 1998: 67-68; Songsore, 2004: 4-5).

Environment, Wealth and Health Inequalities in Urban Areas

Promoting human development, economic growth and sustainable development depends to a large extent on the quality of the living environment. A congenial living environment is more likely to produce productive and healthy individuals. The environmental problems of human settlements including cities, towns and rural settlements are creeping up the political agenda of most governments and many international agencies. This has been encouraged in the South "by the increasingly detailed documentation of environmental problems and their impacts on the health and livelihoods of people and on the ecosystems within which the settlements are located" (UNCHS (Habitat), 1996:130).

Although all constituents of the environment of our planet ultimately exert some influence on human health and well-being, "the environment which exerts the greatest and most immediate influence on the lives of people, their health and well-being, is the

intimate environment of their home and neighbourhood. A health-promoting home and urban environment embody the fundamental aspirations of the majority of people, where the quality of their lives depends on having a clean, decent, safe home in which to live and raise a family” (Novick, 1990: xv). A good home and neighbourhood environment however remains an unmet need for the urban poor who constitute the majority of urban households in Ghana. This section presents a selective overview of the more pertinent environmental problems of urban settlements in Ghana.

Access to Water Supply

An adequate supply of easily accessible, potable water is a necessary condition for households to attain a good quality of life. Many improvements in hygiene and sanitation are contingent on water availability (Lindskog and Lundqvist, 1989: 20-21). Nationally, about 74.2% of all households have access to improved water supply, which includes 41% with access to pipe-borne water (including public outdoor pipes and water piped into dwellings), 26.3% with access to borehole water and 6.9% relying on protected wells. About 25.8% depend on other sources. Sharp contrasts can be found between rural settlements which are deprived in terms of access to potable water and urban settlements. The Accra Metropolitan Area, as far back as 1995, was said to enjoy 100% “coverage” in terms of access to pipe-borne water (GSS, 1995: 51). This is a marked improvement over data from the recent past, implying that we have made progress in providing water for our population in especially urban settlements.

Official national statistics are very often at variance with the results of detailed local or city level studies of the proportion of the population with effective access to housing related services such as potable water, sanitation, garbage disposal facilities etc. Governments often stipulate their own definitions of ‘access’ which in most cases do not consider relevant aspects such as crowding at the service point, efficiency in the operation of the service, affordability, travel time, seasonality etc. which may act as barriers to access. A detailed sample survey in Accra shows that whereas 98% of the people in high income areas have access to indoor piping, only 25.7% of those in low income areas were served with the facility (Benneh et.al, 1993: 12).

In these poor areas, secondary contamination of potable water often occurs from illegal connections to the main water lines lying in cesspools and drains at leaking joints, especially when water pressure is low. The absence of indoor piping often leads to the storage of water in a variety of containers, with communal dip-cups used to fetch water also leading to in-house bacterial contamination and possible cross-contamination among family members (Republic of Ghana, 1995: 73). Thus the description of Accra as enjoying “near-total coverage” requires qualification to reflect the situation on the ground. Diarrhoeal diseases are therefore prevalent among children in these areas. The diarrhoeal prevalence is very high for users of communal standpipes, in part due to

crowding at the service points and the location outside of these standpipes which also promotes cross-contamination (Table 8).

Table 8: Relationship between Drinking Water Source and Prevalence of Diarrhoea in Children under Six in Accra.

Water Source	Number of Households with children <6yrs	% two-week prevalence of Diarrhoea
Indoor Piping	162	6.8
Private Standpipe	139	14.0
Water Vendor	165	10.0
Communal Standpipe	50	42.0
Others	21	14.0
Total	537	13.8

Source: Benneh et al, 1993, p.20.

In especially deprived rural settlements and urban low income communities and peri-urban areas, it is not unusual for women and children to spend 20 minutes or more per trip to obtain water from source. Water collection is usually undertaken during the early hours of the day or the evenings (ROG/UNICEF, 1990, p.105). This has negative implications for educational outcomes of poor children in deprived communities, most especially the females who are mostly responsible for fetching water, as they go late to school, often already exhausted, or may skip school if they think they will be punished for being late.

Deprived low income households in most large urban settlements buy water by the bucket from vendors. The cost of purchasing water from vendors could easily come to 10% of the monthly income of a low income household. This almost certainly serves as a constraint on water use (Benneh et.al. 1993). This was “more than 50% above the highest rate for a metered household before February, 1992. And they must carry it home” (Songsore & McGranahan, 2000). The cost of water from vendors in the peri-urban zones with poor access has grown from bad to worse as a result of inadequate or non-existent service coverage. Although it most impacts the poor, it affects both the wealthy and the poor as water access is related to failures in governance and poor utility performance, whether as a public or public-private utility. Water privatization has indeed not brought any tangible gains to most urban residents. The use of unsafe water or the inadequate supply of potable water, coupled with poor sanitation, contributes to diarrhoea, a major childhood killer disease, as well as hookworms, yaws and scabies. Insect vector diseases which are common in poorly drained neighbourhoods with standing water include malaria, an important cause of infant death, and yellow fever. For cholera, typhoid and infectious hepatitis, water acts as a passive medium for the infecting agent, particularly in rural areas and urban slums (ROG/UNICEF, 1990: 107).

Access to Sanitation Facilities

It is now well-established that the health problems resulting from the lack of sanitation facilities are greater among the urban poor living in overcrowded, informal settlements and deprived rural communities than they are in wealthy areas of towns and cities. Improved sanitation, apart from its health benefits, additionally improves the quality of the home and neighbourhood environment, and hence the quality of life. The desire for privacy when defecating is also important, especially for women (Sinnatamby, 1990). It is however sad to say that access to toilet facilities is still very limited in Ghana.

At the national level, almost 50% of households in Ghana have no access to safe sanitation facilities including flush toilet, covered pit latrine and Kumasi/Ventilated Improved Pit Latrines (VIP/KVIP). As usual, sharp disparities exist between rural and urban low-income areas and wealthy urban neighbourhoods in terms of access to toilet facilities. The most popular toilet facilities such as the pit latrine, bucket and KVIP are often unhygienic, as they are designed for communal use by entire settlements or neighbourhoods, and in the case of bucket latrines, by all residents in multi-habited compound houses in the large metropolitan areas. The use of bucket latrines is now prohibited and is gradually being phased out.

Box 2: Environment and Health in GAMA

One detailed study of the prevalence of diarrhoeal and acute respiratory infection among children under six and of cough symptoms of adult women showed intra-urban differentials by socio-ecological area of GAMA and also by wealth or class. The study also showed that disease prevalence was above all related to the number of environmental risk factors faced by the household.

Table 9 also shows the approximate relative risk of the environmental risk factors monitored for diarrhoea, ARI among children and cough symptoms in adult women. The approximate relative risk or odds ratio is the odds of having the symptoms if the factor is present, divided by the odds of having the symptoms if the factor is absent.

A companion study on mortality in AMA also showed that households living in poorer areas of the city face the double penalty in terms of being most at risk of death from both communicable diseases and chronic diseases such as circulatory diseases (Stephens et.al, 1994, p.47) BOX 1 CONTINUED

TABLE 9: Approximate relative risk of environmental factors in Accra

Table 9a Risk factors with respect to diarrhoea among children under age six

Environmental factor	Approximate relative risk
Pot used for storing water	4.3
Water interruptions occur regularly	3.1
Toilet shared with more than 5 households	2.7
Prepared food purchased from vendor	2.6
Water stored in open container	2.2
Neighbourhood children defecate outdoors	2.1
Many flies in kitchen during interview	2.1
Hands not always washed before food is prepared	2.0

Table 9b: Risk factors with respect to symptoms of acute respiratory problems among children under age six

Environmental factor	Approximate relative risk
Children often present during cooking	2.6
Many flies in kitchen during interview	2.4
Less than 4 square meters per person in most crowded sleeping room	2.3
Water supply interruptions occur regularly	2.2
Mosquito coils used	1.8
Cooking never done outdoors	1.8
Roof leaks during rains	1.7

Table 9c: risk factors with respect to symptoms of respiratory problems among principal women of the households^a

Environmental factor	Approximate relative risk
Pump-spray insecticide used	3.5
Water supply interruptions occur regularly	1.6
Roof leaks during rains	1.5
Cooking never done outdoors	1.4
Cigarettes smoked per day ^b	1.1

^aData for only one woman per household are included. That is the woman who was interviewed and for whom more detailed information is available, on morbidity and education, for example.

^bThe relative risk factor for this environmental factor is determined per cigarette.

Note: All of these factors were statistically significant (greater than 95-percent confidence) in a logistic regression. Control variables (for example, wealth, age of principal women, number of children under age six) were included but are not presented. The approximate relative risk, or odds ratio, is the odds of having the symptoms if the factor is present divided by the odds of having the symptoms in the factor is absent. SOURCE: G. Benneh et al., 1993, McGranahan & Songsore, 1994, p.40).

Even though AMA is the best serviced in terms of access to sanitary facilities, the evidence on the ground suggests that low income communities either remain unserved or are poorly serviced, and the inequalities in service provision correspond to those of water supply. Box 2 shows the impact of environment on health of children and adult women with respect to monitored health conditions in one survey. A case history of the episodic illness of a 10 month old child at Korle Bu Hospital also proves the point about the link between a mother's economic and educational circumstances and child health. The child was regularly taken ill after treatment, suffering from a slightly raised temperature, cough, inflamed eyes, running nose, diarrhoea and sometimes passing roundworms. Following a domiciliary visit to the child's home:

"The findings were that the 27 year old illiterate mother has been divorced for about 1 year. She lived with her mother of about 55 years. The child had a brother 4 years old and sister 2 years, and they all five lived in one room in the recess area of a crowded house in Amaamo (Amamomo). The indoor sanitation was very poor. There were at the time of the first domiciliary visit, two scruffy cats and a mangy dog around, with about six chickens foraging for scraps, with their droppings all over the damp uncemented ground swept on Sundays and Saturdays. There was no toilet in the house, but there was a public toilet about a quarter of a mile away. There was an unroofed bath house separated off with rusty iron sheets, and there was a covered chamber pot near it, containing a child's intestinal waste" (Otoo, 1993: 71). As the mother worked at a chopbar for very long hours far away from home for a very low wage, the children were often left to fend for themselves. This has been corroborated in more recent works in Accra (Maxwell et. al., 1998). From the foregoing analysis, it is obvious that the burden of disease falls more heavily on the rural and urban poor and tends to afflict especially children who are the most vulnerable in society.

Access to Solid Waste and Sullage Disposal Services

Whilst the capacity to handle household and municipal wastes is unsatisfactory in urban areas, such facilities hardly exist at all in rural Ghana. It is apparent that dumping either at official collection points or unofficial sites is the predominant mode of garbage disposal in the country as a whole. About 70% of urban households and 52% of rural households

dump their rubbish. A mere 12% of waste in urban areas is collected. Waste collection systems hardly exist in rural areas. The wastes are mainly organic, with vegetables/putrescible matter forming between 70%-90% of the total refuse produced (Boateng et.al, 1988). The poor performance of the waste disposal sector is due to poor infrastructure and funding. For example, on one occasion, it required mass action by Nima residents which is a low-income settlement in Accra to have piles of refuse abandoned for two months in their community evacuated. In other areas, sanitary sites have been encroached upon, with the result that garbage gets dumped at unauthorized sites in urban areas. One study of low income communities in Accra suggests that 16 out of the 17 studied were grossly under serviced with refuse skips considering the volume of refuse generated (Bidex Counsult, 1992, p.51).

Problems associated with inadequate solid waste disposal include unsightly conditions of neighbourhood environments, odour nuisance and prevalence of diseases such as cholera, diarrhoea, dysentery, worm diseases, tetanus, etc., as already discussed in connection with the water-sanitation complex. Sullage or grey water is the liquid waste water discharged from domestic premises, and consists of effluents from kitchens, bathrooms and laundries. It accounts for the largest share of household water demand in the country (Tahal, 1981). Although great in volume, sullage is a much weaker pollutant than faecal-bearing sewage. In high and medium-income planned residential areas in the towns and cities, concrete channels and pipes drain grey water into roadside ditches that convey the sullage to water courses. For rural settlements and low income residential areas in the towns and cities, sullage normally flows through holes in walls of houses onto the ground outside and is then channeled to a roadside ditch or forms its own channel to a ditch. Poor sullage disposal gives rise to waterlogged soils and stagnant pools that provide breeding grounds for pests such as mosquitoes (Songsore, 1992c).

City-Wide Pollution

Air Pollution Hazards

Air pollution can negatively affect humans, animals and plants, and also contaminates soils and surface waters including marine environments. The most common atmospheric pollutants with the greatest environmental impact include sulphur dioxide, oxides of nitrogen and particulates such as dust, grit, tar and aerosols. While the availability of adequate potable water, sanitation services and solid waste disposal are of critical concern to the central government and metropolitan, municipal and district assemblies, the same cannot be said of air pollution. This is in part due to the low level of industrial development. There is the virtual absence of chemical and heavy industries which are the major polluters, hence air pollution poses a much smaller health risk. Air pollution

monitoring in the country has not been systematic and dates only to 1979, when the quality of the air over the industrial, commercial and residential areas of Accra and Tema were monitored. The study concluded that dust levels in the industrial and residential areas were below the WHO guideline (Amuzu and Leitmann, 1991). Although with increasing industrialisation and motorisation air pollution in urban areas may become a hazard, currently it is not a major health problem (Republic of Ghana, 1995: 69). In anticipation of this trend, the EPA has proposed Ambient Air Quality Guidelines for selected pollutants in Ghana (EPA, June 1995).

Even if ambient air pollution in human settlements in Ghana falls within generally acceptable limits, the same cannot be said of indoor air pollution at the household level. "Indoor air pollution can be particularly hazardous to health because it is released in close proximity to people. The most prominent source of indoor air pollution in developing countries is household use of biomass and coal for heating and cooking, usually involving open fires or stoves without proper chimneys" (WHO/EHG/97.12, 1997: 15). Women and children who stay by their mothers whilst cooking is being done are most at risk. Findings from personal air pollution monitoring undertaken in GAMA indicate that the highest exposure to respirable particulates arises from wood use, followed by charcoal, and finally kerosene, bottled gas and electricity. Wood users were exposed to a mean concentration of respirable particulates of 587.1 $\mu\text{g}/\text{m}^3$, charcoal users to 341.2 $\mu\text{g}/\text{m}^3$, and kerosene, LPG and electricity users together to 195.2 $\mu\text{g}/\text{m}^3$. The maximum permissible level of total suspended particulates (TSP) in residential areas in Ghana is 150 $\mu\text{g}/\text{m}^3$ (averaged over 24 hours). In view of these figures, the levels measured are disturbingly high. For carbon monoxide (CO), charcoal users were the group most exposed to the highest level of CO as compared to the other fuel users who were exposed to a much lower level. About 6% of the charcoal users were exposed to an average CO concentration greater than 25 ppm, the UNEP-WHO guideline for 1 hour of exposure (Benneh, et. al. 1993: 65-71).

Noise Pollution Hazard

Noise is a nuisance to a growing number of residents in especially large towns. It normally derives from traffic, industrial operations, aircraft and construction activities. In the case of Ghana, churches, mosques and micro-enterprises located in residential areas are yet other important sources of noise. Possible adverse effects include sleep disturbance, poorer work output and increased anxiety. "High noise levels and repeated exposure can lead to hearing loss; high noise levels are also known to be one of the critical stress factors which influence mental disorders and social pathologies. The most intense, continuous and frequent exposure to high noise levels is generally within particular jobs in particular industries" (UNCHS – Habitat, 1996: 147). Citizen pressures for government to address high noise levels in residential areas is a recent and growing activity in Ghana. In response

to this, the EPA has issued ambient noise level guidelines for residential and industrial areas in Ghana (EPA September, 1995).

Pollution of Surface Water by Raw Sewage and Solid Waste and Flood Hazards

Most metropolitan areas and coastal towns such as GAMA and Sekondi-Takoradi lie barely above sea level, with large areas lying along major natural water courses and lagoon outlets, and are therefore subject to perennial flooding. Most wetlands are encroached and built up and there is often no comprehensive flood control policy to deal with the concentrated and often spasmodic nature of the tropical rains, especially in the major rainy season between May and August.

The major causes of flooding and flood hazard include:

- Sudden torrents of rainwater with high surface run-off because of the built environment of the city,
- The general low lying nature of much of the coastal cities, with the flood prone areas of GAMA having a height of under 20 metres above mean sea level,
- The lack of a system of secondary drainage works to channel water to the sea outlets,
- The clogging of the few built drainage channels and natural water courses with garbage and silt which is not regularly removed. This often includes chemical pollutants from industries and micro-enterprises, and faecal material, and,
- Above all, the unplanned developments of built areas along water courses obstructing natural water flow and the lack of any comprehensive land use planning and flood control policy (Songsore, 1992c: 10-11).

The UK Department for International Development (DFID) has assisted the Government of Ghana (GOG) to address the problems of urban liquid and solid waste disposal with an Aid and Trade Project known as the Accra Waste Project (AWP). The AWP was designed to bring about sustained reductions in environmental hazards and nuisance in Accra as a result of inappropriate disposal of liquid and solid waste, which included the provision of a modern sewage treatment plant, identification and development of a new solid waste landfill site and more efficient collection of market waste and night soil. The sewage plant is located at the mouth of the Korle Lagoon. This was going on hand in hand with another project designed to dredge and clean the Korle Lagoon and the Odaw River system under the Korle Lagoon Restoration Project (KLERP). Although these

two projects have mitigated flooding along the Korle Lagoon, they are far from being successful, as the Korle Lagoon is soon becoming choked with garbage again while the Central Treatment Plant has broken down. Thus far, the new solid waste landfill site development at Kwabenya has stalled because of citizenship pressure about its location and has almost been abandoned. It is quite obvious that interventions thus far initiated to address the above problems have been far from successful (Songsore and Stephens, 2008).

City Region and Sustainability Issues

Studies of greenhouse gases undertaken by the Environmental Protection Agency (EPA) indicate that Ghana on the whole is a net greenhouse gas sink, implying that Ghana absorbs more greenhouse gases than it emits. According to a more recent EPA report, “available data in 1996 show that Ghana emits 3, 801Gg of CO₂ and removal by sinks was 19,426Gg. This shows a net removal rate of -15,624Gg” (EPA, 2005: 1).

“The effects of excessive global emissions by the affluent North are, however, already being felt in terms of local climate change” (Songsore, 2003b, p.244). Temperatures are already on the increase globally through the emission of Green House Gases such as carbon dioxide, carbon monoxide, oxides of nitrogen and sulphur oxide which is likely to affect rise in sea level because of melting of polar ice (EPA, 2005). Low lying coastal cities such as the Greater Accra Metropolitan Area are therefore in danger of being negatively affected by flooding while the impact of any storm surges will be more drastic as a result for coastal settlements which lie along the earthquake prone belt in Ghana. Rising temperatures and decreasing and variable rainfall at the local level are also likely to have a negative impact on agricultural production and food security. These changes will invariably affect the distribution and concentration of disease vectors which might affect disease patterns locally (Songsore et al 2009).

The Way Forward: An Integrated Urban Development Strategy for Ghana

It is obvious that given the conditions of poverty at the level of the urban population, the Central and Local Governments and the weaknesses of Civil Society Organizations, it is not enough to simply make recommendations on more effective urban governance without situating it in the objective material prerequisites that will make this economically feasible. As a result, any meaningful long term solutions have to be anchored on the economic and technological underpinnings that promote urban development on a sustainable basis.

Promoting Harmonious Rural-Urban Linkages through Industrialization and Agricultural Modernisation

The positive correlation that has been observed in the above analysis between urbanization and economic development is intriguing, although the direction of causality is far from clear in Ghana and Africa in general (Becker, Hamer and Morrison, 1994: 6). The urbanization process of the West, painful as it initially was, led to industrialization and rising productivity of both rural and urban societies. The growth of cities led to a consolidation of agricultural holdings, increased capitalization of agriculture and greater efficiency and productivity of agriculture arising from the harnessing of improved industrial processes to agriculture.

There is however some asynchronism between the urbanization process and societal transformation in Ghana, as the urbanization process is more demographic than economic and social, as the paper has sought to demonstrate. Not only have we failed to industrialize but we have also made a transition from agriculture to a service economy characterised by petty trade based on imported manufactured products that are made available through external loans and grants which are keeping the economy artificially afloat. At the same time, the rural population continues to increase whilst the technology of production is still based on extensive agriculture, which depends on the natural fertility of the land under the land rotation system, with the hoe, cutlass and dibble stick as principal tools. This cannot provide a basis for sustainable urbanization and development.

In order to mitigate or reverse this ominous trend, there should be a renewed emphasis on smallholder agricultural development, especially in the staple food sub-sector to reduce rural poverty, increase incomes and thereby increase the demand for manufactured products in the urban areas. At the same time, the urban centres should be the focal centres for machine tool production and the transformation of agricultural raw materials into processed goods. This positive feedback will create the basis for sustainable urbanization and development. For development to be meaningful it has to be visible in the overall quality of life of the vast majority of the population; in other words, it must include, not exclude the majority, and should be based on the creation of a domestic market for goods and services produced locally.

Promoting ECOWAS Regional Markets for Goods and Services

Given the small size of our economy and market, the current structure of production and external orientation, it is obvious that this strategy can only be pursued within the context of regional integration at the level of the Economic Community of West African States (ECOWAS) and the African Union. It is only at this level that we can begin to ward off the backwash effects of globalization whilst maximizing its beneficial effects since the

strategy we espouse here does not mean autarchy (Songsore, 2003a),

This vision, although initially espoused by Nkrumah, who for that reason was called a megalomaniac, has been adopted by the stronger economies and nations, as seen in the unfolding events in Europe, Asia, North America and Latin America where we see the emergence of strong regional blocks with common interests that negotiate with one another (Amoako, 1999: 20). `` However, there is a fundamental obstacle to the implementation of strategies of self-reliance: the interests and values of the majority of Africa's political elites and their networks of patronage.... It is precisely this selective articulation of elites and valuable assets, together with the social exclusion of most people and the economic devaluation of most natural resources, that is specific to the newest expression of Africa's tragedy" (Castells, 1999: 128). The future of hope lies in the emerging civil society movements all over Africa and the cries for their determination of the conditions for their own development.

Investing in People through a People-Oriented Development Strategy

Self-Reliance

This is also a call for a people-oriented development strategy. Contrary to the rhetoric of globalization, "fundamental to this is the need to promote, strengthen and develop national self-reliance and self-sufficiency, particularly in economic management as well as in production" (NDPC, 1991: 27). The long term objective is the creation of an integrated national economy and society with its own internal dynamic for autonomous development within the new global order. Since there are winners and losers under globalization, we can only be among the winners if we develop a strong local base of value-added production in manufacturing industry and the new knowledge economy based on communication and information technology, and biotechnology.

Making Human Settlements Fit for People through Environmental Care

The National Environmental Sanitation Policy which is aimed at developing and maintaining a clean, safe and pleasant physical environment in all human settlements to promote the social, economic and physical well-being of all sections of the population anticipates the concerns raised in our analysis. The principal elements of this document include:

- Collection and sanitary disposal of wastes including solid wastes, liquid wastes, excreta, industrial wastes, clinical and other hazardous wastes;
- Storm water drainage;
- Cleansing of thoroughfares, markets and other public spaces;

- Control of pests and vectors of disease;
- Food hygiene;
- Environmental sanitation education;
- Inspection and enforcement of sanitary regulations;
- Disposal of the dead;
- Control of rearing and straying of animals; and
- Monitoring the observance of environmental standards.

In line with the above policy thrust, there is an urgent need to update existing legislation to better address current environmental concerns. There is also the urgent need to build the capacities of the District, Municipal and Metropolitan Assemblies to better address these concerns and for expanded public investment in the supply of services. Overall, since infectious and communicable diseases are still dominant in both rural and urban settlements, there is the need to strengthen primary environmental health care in the rural areas and also promote the development of urban primary health care as a way of reducing the preventable fraction of these environmental health burdens. This should improve the general quality of life of citizens, promote labour productivity and reduce foreign exchange costs in recurrent drug imports and help us achieve some of the millennium development goals.

Creating a Balanced Hierarchy of Human Settlements

In order to promote the diffusion of entrepreneurial and consumer innovations that bring growth and development down the settlement hierarchy, it is important to nurture the development of small and medium-sized urban settlements with the requisite human resources to operate as viable economic nodes and service centres, for their own growth and development and that of their catchment areas. This will promote the growth of diversified and stable urban economies which are also healthy in terms of housing and service delivery. In order to make this happen, efforts should be made to encourage the effective coordination of all relevant agencies in planning, developing and managing human settlements (Songsore 2003b: 322).

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Royal Geographical Society with Institute of British Geographers. The original obituary is at

Tribute to Professor Paul William Kojo Yankson

By Prof. Martin Oteng-Ababio
Head, Department of Geography & Resource Development,
University of Ghana, Legon



In the Department of Geography and Resource Development, University of Ghana, when any faculty member mentions “Kojo Kum”, he or she is most likely referring to our senior colleague, Professor Paul William Kojo Yankson. With 40 years of continuous service with the University and the Department, and after supervising a string of students, including 15 PhDs and 41 Masters students; and conducting over 36 major international research projects with students and faculty, there is no question as to why Prof Yankson was seen as a good teacher, an accomplished scholar, an insightful researcher and a visionary administrator, who had great affection for the department.

Educated in St Peter's and Mfantshipim Secondary Schools (1962-1969), Prof Yankson graduated with first class honours (B.A. Hons Geography) from the University of Ghana in 1973, MPhil (Urban Planning) from McGill University, Montreal, Canada in 1976 and PhD (Regional Planning) from the University of Nottingham, UK, in 1980. Prof took up a lectureship position at his alma mater, the University of Ghana, in September 1981 and served in the Department of Geography and Resource Development until his retirement in 2009. Prof Yankson was promoted to Senior Lecturer in April 1987, Associate Professor in February 1994 and Professor in June 2000. Prof served as the Head of Department from October 2001 to July 2005. After retiring in August 2009, Prof Yankson continued to play an active role by taking up a post-retirement contract. Indeed, he was the Department's backbone till he took his last breath on February 7, 2021 to join his maker.

Over the years, students and colleague staff have benefitted from Prof Yankson's kindness, mentorship and gift for good-humoured storytelling. Prof had a significant influence on the lives of many, whether it be the lessons he has taught us or just the pure acts of love and kindness he demonstrated. Prof Yankson could be relied on and never expected anything in return whenever he helped others. His generosity had no bounds and he demonstrated unequivocally that silence can be truly meaningful. He was usually one of the quietest during staff meetings, but his inputs were always spot-on. He brought in a number of research grants to support graduate work and faculty development in the Department.

Both professionally and personally, Prof Yankson was peaceful, full of strength and tremendously loyal. Even when increasingly impeded by old age, Prof. kept working, and continuously maintained "I am retired but not tired". He made a point of attending the annual Ghana Geography Association meetings and retained great affection and commitment for the Department and his research partners, including Prof Kathrine Gough of Loughborough University, UK, and Prof Lasse Møller-Jensen of the University of Copenhagen, Denmark.

Outside the Department, Prof. Yankson played important roles in the University and the College of Humanities. He was a member of a number of College and University level committees and served at different times as a Senior Tutor of Mensah Sarbah Hall. He also served as the Chairman of the College of Humanities Academic Quality Assurance Committee.

As Head of Department, I remember the last few moments I shared with Prof. Yankson in my office before his untimely demise; we sat in silence, pondering over departmental and project issues. In those few moments, I now look back to reflect on the most important lessons he taught us and how much was said without words, lessons that have helped us become better listeners. And when you think about persons like Prof. Paul William

Kojo Yankson, who has inspired many lives in major ways, maybe you can look back on the silent moments with them and think about what was communicated without words. Even though Prof Yankson is no longer with us physically today, we still carry with us his peaceful silence and can hear him in our hearts.

Until we meet again; Prof pa da yie!

Table of Contents

Editorial comment	5
Dispelling common misconceptions to improve policy outlook in developing countries <i>Martin Oteng-Ababio</i>	5
Assessing foreign direct investment (FDI) in agriculture and employment in rural Ghana <i>Austin Dziwornu Ablo and Russhielder Boadu,</i>	21
Ghana's Juvenile Justice System: Assessment of Selected Formal Juvenile Justice Institutions and Agencies <i>Robert Ame Lilian Ayete-Nyampong and Dzifa Ami Gakpleazi</i>	46
Relationship between personality traits and childbearing in an African context: Evidence from Ghana <i>Ibrahim Mohammed, Wassiuw Abdul Rahaman and Edward Nketiah-Amponsah</i>	70
Can adaptation and mitigation synergistically cooperate? Lessons from Wa West District, Ghana <i>Martin Oteng-Ababio, Muneta Yokomatsu, Togbiga Dzivenu, Subhajyoti Samaddar and Jonas Ayaribilla Akudugu</i>	98
The Urban Transition in Ghana: Urbanization, National development and Poverty Reduction <i>Jacob Songsore</i>	120
Tribute to Professor Paul William Kojo Yankson <i>Martin Oteng-Ababio</i>	173